LONGHORN ARMY AMMUNITION PLANT KARNACK, TEXAS

ADMINISTRATIVE RECORD

Volume 29

2020

Bate Stamp Numbers
00999071 – 01000910

Prepared for

Department of the Army
Longhorn Army Ammunition Plant

1976–2020

LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS
ADMINISTRATIVE RECORD – CHRONOLOGICAL INDEX

VOLUME 29

2020

A. Title: (cont'd) Report – Appendix F Lab Results to Draft Final 6th Annual Remedial Action Operations Report (September 2018-August 2019), LHAAP-35A (58), Shops Area, Longhorn Army Ammunition Plant, Karnack, Texas, December 2020
Author(s): Department of the Army
Recipient: U.S. Environmental Protection Agency and Texas Commission on Environmental Quality
Date: December 9, 2020
Bate Stamp: 00999071 – 01000910

HS19090511 LHAAP58 Cover Page

ALS WO# HS19090511

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WorkOrder: HS19090511

LHAAP-58

Bhate Environmental Associates, Inc.

Marcia Olive
445 Union Blvd Ste 129
Lakewood CO 80228

09-Oct-2019

HS19090511 LHAAP58 Final

ALS WO# HS19090511

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October 03, 2019

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS19090511**

Laboratory Results for: **LHAAP-58**

Dear Marcia,

ALS Environmental received 8 sample(s) on Sep 12, 2019 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Work Order: HS19090511

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS19090511-01	35AWW19_091119	Groundwater		11-Sep-2019 07:10	12-Sep-2019 08:50	☐
HS19090511-02	35AWW20_091119	Groundwater		11-Sep-2019 08:10	12-Sep-2019 08:50	☐
HS19090511-03	LHSMW07_091119	Groundwater		11-Sep-2019 09:15	12-Sep-2019 08:50	☐
HS19090511-04	35AWW06_091119	Groundwater		11-Sep-2019 10:15	12-Sep-2019 08:50	☐
HS19090511-05	35AWW06_091119_a	Groundwater		11-Sep-2019 10:15	12-Sep-2019 08:50	☐
HS19090511-06	35AWW23_091119	Groundwater		11-Sep-2019 11:25	12-Sep-2019 08:50	☐
HS19090511-07	35AWW11_091119	Groundwater		11-Sep-2019 12:35	12-Sep-2019 08:50	☐
HS19090511-08	Trip Blank	Water	ALS-112818-31	11-Sep-2019 00:00	12-Sep-2019 08:50	☐

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: LHAAP-58
Work Order: HS19090511

Work Order Comments

• The analysis for TOC was subcontracted to ALS Kelso, WA. Final report attached.

Work Order Comments

• The analysis for VFA was subcontracted to ALS Rochester, NY. Final report attached.

• The analysis for MEE plus CO2 was subcontracted to ALS Simi Valley, CA. Final report attached.

GCMS Volatiles by Method SW8260

Batch ID: R346254

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Batch ID: R346196

Sample ID: 35AWW20_091119 (HS19090511-02MS)

• MSD failed QC limits for some few compounds: 1,1-Dichloroethane, 1,1-Dichloroethene

WetChemistry by Method SW9056

Batch ID: R346164

Sample ID: 35AWW20_091119 (HS19090511-02MS)

• The MS and/or MSD recovery was outside of the control limits; however, the result in the parent sample is greater than 4x the spike amount. (Sulfate)

Batch ID: R346978

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW19_091119
Collection Date: 11-Sep-2019 07:10

ANALYTICAL REPORT
WorkOrder:HS19090511
Lab ID:HS19090511-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:52
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:52
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 15:52
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:52
1,1-Dichloroethane	**0.92**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 15:52
1,1-Dichloroethene	**5.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 15:52
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:52
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 15:52
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 15:52
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 15:52
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:52
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:52
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:52
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 15:52
1,2-Dichloroethane	**1.2**		**0.20**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 15:52
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 15:52
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:52
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 15:52
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:52
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 15:52
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:52
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	12-Sep-2019 15:52
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:52
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	12-Sep-2019 15:52
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 15:52
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:52
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	12-Sep-2019 15:52
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	12-Sep-2019 15:52
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:52
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 15:52
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:52
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:52
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 15:52
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 15:52
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	12-Sep-2019 15:52
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 15:52
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:52
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:52
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:52

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW19_091119
Collection Date: 11-Sep-2019 07:10

ANALYTICAL REPORT
WorkOrder:HS19090511
Lab ID:HS19090511-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:52
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:52
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	12-Sep-2019 15:52
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:52
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:52
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:52
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:52
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	12-Sep-2019 15:52
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:52
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	12-Sep-2019 15:52
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	12-Sep-2019 15:52
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 15:52
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:52
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:52
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:52
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:52
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:52
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:52
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:52
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:52
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:52
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:52
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:52
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:52
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:52
Surr: 1,2-Dichloroethane-d4	*89.8*			**0**	*81-118*	*%REC*	*1*	*12-Sep-2019 15:52*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*1*	*12-Sep-2019 15:52*
Surr: Dibromofluoromethane	*91.9*			**0**	*80-119*	*%REC*	*1*	*12-Sep-2019 15:52*
Surr: Toluene-d8	*95.9*			**0**	*89-112*	*%REC*	*1*	*12-Sep-2019 15:52*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**1,050**		**4.00**	**10.0**	**10.0**	**mg/L**	20	26-Sep-2019 01:15
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	12-Sep-2019 21:02
Nitrogen, Nitrite (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	12-Sep-2019 21:02
Sulfate	**1,010**		**4.00**	**10.0**	**10.0**	**mg/L**	20	26-Sep-2019 01:15
SUBCONTRACT ANALYSIS - DHC/DHB		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	19-Sep-2019 11:24
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	03-Oct-2019 13:26

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW19_091119
Collection Date: 11-Sep-2019 07:10

ANALYTICAL REPORT
WorkOrder:HS19090511
Lab ID:HS19090511-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	02-Oct-2019 16:32
SUBCONTRACT ANALYSIS - VOLATILE FATTY ACIDS		**Method:NA**						Analyst: SUB
Subcontract Analysis	**0**		**0**	**0**	**0**	**NA**	1	27-Sep-2019 09:08

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW20_091119
Collection Date: 11-Sep-2019 08:10

ANALYTICAL REPORT
WorkOrder:HS19090511
Lab ID:HS19090511-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 16:16
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 16:16
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 16:16
1,1,2-Trichloroethane	**72**		**0.30**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 16:16
1,1-Dichloroethane	**550**		**5.0**	**12**	**25**	**UG/L**	25	12-Sep-2019 17:04
1,1-Dichloroethene	**3,900**		**5.0**	**12**	**25**	**UG/L**	25	12-Sep-2019 17:04
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 16:16
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 16:16
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 16:16
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 16:16
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 16:16
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 16:16
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 16:16
1,2-Dichlorobenzene	**16**		**0.50**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 16:16
1,2-Dichloroethane	**19**		**0.20**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 16:16
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 16:16
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 16:16
1,3-Dichlorobenzene	**0.95**	J	**0.40**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 16:16
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 16:16
1,4-Dichlorobenzene	**2.9**		**0.40**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 16:16
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 16:16
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	12-Sep-2019 16:16
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 16:16
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	12-Sep-2019 16:16
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 16:16
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 16:16
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	12-Sep-2019 16:16
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	12-Sep-2019 16:16
Benzene	**8.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 16:16
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 16:16
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 16:16
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 16:16
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 16:16
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 16:16
Carbon disulfide	**6.0**		**0.60**	**1.0**	**2.0**	**UG/L**	1	12-Sep-2019 16:16
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 16:16
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 16:16
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 16:16
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 16:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW20_091119
Collection Date: 11-Sep-2019 08:10

ANALYTICAL REPORT
WorkOrder:HS19090511
Lab ID:HS19090511-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 16:16
cis-1,2-Dichloroethene	**110**		**0.20**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 16:16
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	12-Sep-2019 16:16
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 16:16
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 16:16
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 16:16
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 16:16
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	12-Sep-2019 16:16
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 16:16
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	12-Sep-2019 16:16
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	12-Sep-2019 16:16
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 16:16
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 16:16
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 16:16
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 16:16
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 16:16
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 16:16
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 16:16
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 16:16
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 16:16
trans-1,2-Dichloroethene	**14**		**0.20**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 16:16
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 16:16
Trichloroethene	**350**		**5.0**	**12**	**25**	**UG/L**	25	12-Sep-2019 17:04
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 16:16
Vinyl chloride	**790**		**5.0**	**12**	**25**	**UG/L**	25	12-Sep-2019 17:04
Surr: 1,2-Dichloroethane-d4	*93.5*			**0**	*81-118*	*%REC*	*1*	*12-Sep-2019 16:16*
Surr: 1,2-Dichloroethane-d4	*90.5*			**0**	*81-118*	*%REC*	*25*	*12-Sep-2019 17:04*
Surr: 4-Bromofluorobenzene	*103*			**0**	*85-114*	*%REC*	*1*	*12-Sep-2019 16:16*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*25*	*12-Sep-2019 17:04*
Surr: Dibromofluoromethane	*93.6*			**0**	*80-119*	*%REC*	*1*	*12-Sep-2019 16:16*
Surr: Dibromofluoromethane	*93.7*			**0**	*80-119*	*%REC*	*25*	*12-Sep-2019 17:04*
Surr: Toluene-d8	*94.1*			**0**	*89-112*	*%REC*	*1*	*12-Sep-2019 16:16*
Surr: Toluene-d8	*96.2*			**0**	*89-112*	*%REC*	*25*	*12-Sep-2019 17:04*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**902**		**4.00**	**10.0**	**10.0**	**mg/L**	20	26-Sep-2019 01:31
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	12-Sep-2019 21:18
Nitrogen, Nitrite (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	12-Sep-2019 21:18
Sulfate	**1,200**		**4.00**	**10.0**	**10.0**	**mg/L**	20	26-Sep-2019 01:31

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW20_091119
Collection Date: 11-Sep-2019 08:10

ANALYTICAL REPORT
WorkOrder:HS19090511
Lab ID:HS19090511-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DHC/DHB		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	19-Sep-2019 11:24
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	03-Oct-2019 13:26
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	27-Sep-2019 15:09
SUBCONTRACT ANALYSIS - VOLATILE FATTY ACIDS		**Method:NA**						Analyst: SUB
Subcontract Analysis	**0**		**0**	**0**	**0**	**NA**	1	27-Sep-2019 09:08

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: LHSMW07_091119
Collection Date: 11-Sep-2019 09:15

ANALYTICAL REPORT
WorkOrder:HS19090511
Lab ID:HS19090511-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 18:40
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 18:40
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 18:40
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 18:40
1,1-Dichloroethane	**11**		**0.20**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 18:40
1,1-Dichloroethene	**46**		**0.20**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 18:40
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 18:40
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 18:40
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 18:40
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 18:40
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 18:40
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 18:40
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 18:40
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 18:40
1,2-Dichloroethane	**0.67**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 18:40
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 18:40
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 18:40
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 18:40
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 18:40
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 18:40
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 18:40
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	12-Sep-2019 18:40
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 18:40
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	12-Sep-2019 18:40
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 18:40
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 18:40
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	12-Sep-2019 18:40
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	12-Sep-2019 18:40
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 18:40
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 18:40
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 18:40
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 18:40
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 18:40
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 18:40
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	12-Sep-2019 18:40
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 18:40
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 18:40
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 18:40
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 18:40

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: LHSMW07_091119
Collection Date: 11-Sep-2019 09:15

ANALYTICAL REPORT
WorkOrder:HS19090511
Lab ID:HS19090511-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 18:40
cis-1,2-Dichloroethene	**1.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 18:40
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	12-Sep-2019 18:40
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 18:40
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 18:40
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 18:40
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 18:40
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	12-Sep-2019 18:40
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 18:40
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	12-Sep-2019 18:40
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	12-Sep-2019 18:40
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 18:40
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 18:40
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 18:40
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 18:40
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 18:40
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 18:40
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 18:40
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 18:40
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 18:40
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 18:40
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 18:40
Trichloroethene	**3.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 18:40
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 18:40
Vinyl chloride	**49**		**0.20**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 18:40
Surr: 1,2-Dichloroethane-d4	*91.0*			**0**	*81-118*	*%REC*	*1*	*12-Sep-2019 18:40*
Surr: 4-Bromofluorobenzene	*103*			**0**	*85-114*	*%REC*	*1*	*12-Sep-2019 18:40*
Surr: Dibromofluoromethane	*91.9*			**0**	*80-119*	*%REC*	*1*	*12-Sep-2019 18:40*
Surr: Toluene-d8	*95.4*			**0**	*89-112*	*%REC*	*1*	*12-Sep-2019 18:40*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**1,820**		**8.00**	**20.0**	**20.0**	**mg/L**	40	26-Sep-2019 02:21
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	12-Sep-2019 22:08
Nitrogen, Nitrite (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	12-Sep-2019 22:08
Sulfate	**2,530**		**8.00**	**20.0**	**20.0**	**mg/L**	40	26-Sep-2019 02:21
SUBCONTRACT ANALYSIS - DHC/DHB		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	19-Sep-2019 11:24
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	03-Oct-2019 13:26

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: LHSMW07_091119
Collection Date: 11-Sep-2019 09:15

ANALYTICAL REPORT
WorkOrder:HS19090511
Lab ID:HS19090511-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	27-Sep-2019 15:09
SUBCONTRACT ANALYSIS - VOLATILE FATTY ACIDS		**Method:NA**						Analyst: SUB
Subcontract Analysis	**0**		**0**	**0**	**0**	**NA**	1	27-Sep-2019 09:08

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW06_091119
Collection Date: 11-Sep-2019 10:15

ANALYTICAL REPORT
WorkOrder:HS19090511
Lab ID:HS19090511-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:04
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:04
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 19:04
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:04
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:04
1,1-Dichloroethene	**0.92**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 19:04
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:04
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:04
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 19:04
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 19:04
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:04
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:04
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:04
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 19:04
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:04
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 19:04
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:04
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:04
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:04
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:04
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:04
2-Butanone	**46**		**0.50**	**1.0**	**2.0**	**UG/L**	1	12-Sep-2019 19:04
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:04
2-Hexanone	**1.6**	J	**1.0**	**1.0**	**2.0**	**UG/L**	1	12-Sep-2019 19:04
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:04
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:04
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	12-Sep-2019 19:04
Acetone	**280**		**0.40**	**1.0**	**2.0**	**UG/L**	1	12-Sep-2019 19:04
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:04
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:04
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:04
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:04
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:04
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:04
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	12-Sep-2019 19:04
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 19:04
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:04
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:04
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW06_091119
Collection Date: 11-Sep-2019 10:15

ANALYTICAL REPORT
WorkOrder:HS19090511
Lab ID:HS19090511-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:04
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:04
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	12-Sep-2019 19:04
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:04
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:04
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:04
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:04
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	12-Sep-2019 19:04
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:04
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	12-Sep-2019 19:04
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	12-Sep-2019 19:04
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:04
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:04
Naphthalene	**0.77**	J	**0.30**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 19:04
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:04
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:04
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:04
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:04
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:04
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:04
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:04
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:04
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:04
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:04
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:04
Surr: 1,2-Dichloroethane-d4	*90.9*			**0**	*81-118*	*%REC*	*1*	*12-Sep-2019 19:04*
Surr: 4-Bromofluorobenzene	*99.8*			**0**	*85-114*	*%REC*	*1*	*12-Sep-2019 19:04*
Surr: Dibromofluoromethane	*93.4*			**0**	*80-119*	*%REC*	*1*	*12-Sep-2019 19:04*
Surr: Toluene-d8	*95.2*			**0**	*89-112*	*%REC*	*1*	*12-Sep-2019 19:04*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**917**		**4.00**	**10.0**	**10.0**	**mg/L**	20	26-Sep-2019 02:38
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	12-Sep-2019 22:25
Nitrogen, Nitrite (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	12-Sep-2019 22:25
Sulfate	**1.28**		**0.200**	**0.500**	**0.500**	**mg/L**	1	12-Sep-2019 22:25
SUBCONTRACT ANALYSIS - DHC/DHB		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	19-Sep-2019 11:24
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	03-Oct-2019 13:26

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW06_091119
Collection Date: 11-Sep-2019 10:15

ANALYTICAL REPORT
WorkOrder:HS19090511
Lab ID:HS19090511-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	27-Sep-2019 15:09
SUBCONTRACT ANALYSIS - VOLATILE FATTY ACIDS		**Method:NA**						Analyst: SUB
Subcontract Analysis	**0**		**0**	**0**	**0**	**NA**	1	27-Sep-2019 09:08

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW06_091119_a
Collection Date: 11-Sep-2019 10:15

ANALYTICAL REPORT
WorkOrder:HS19090511
Lab ID:HS19090511-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:28
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:28
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 19:28
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:28
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:28
1,1-Dichloroethene	**0.88**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 19:28
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:28
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:28
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 19:28
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 19:28
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:28
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:28
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:28
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 19:28
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:28
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 19:28
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:28
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:28
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:28
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:28
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:28
2-Butanone	**48**		**0.50**	**1.0**	**2.0**	**UG/L**	1	12-Sep-2019 19:28
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:28
2-Hexanone	**1.5**	J	**1.0**	**1.0**	**2.0**	**UG/L**	1	12-Sep-2019 19:28
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:28
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:28
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	12-Sep-2019 19:28
Acetone	**280**		**0.40**	**1.0**	**2.0**	**UG/L**	1	12-Sep-2019 19:28
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:28
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:28
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:28
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:28
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:28
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:28
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	12-Sep-2019 19:28
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 19:28
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:28
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:28
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:28

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW06_091119_a
Collection Date: 11-Sep-2019 10:15

ANALYTICAL REPORT
WorkOrder:HS19090511
Lab ID:HS19090511-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:28
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:28
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	12-Sep-2019 19:28
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:28
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:28
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:28
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:28
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	12-Sep-2019 19:28
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:28
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	12-Sep-2019 19:28
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	12-Sep-2019 19:28
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:28
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:28
Naphthalene	**0.81**	J	**0.30**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 19:28
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:28
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:28
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:28
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:28
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:28
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:28
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:28
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:28
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:28
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:28
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:28
Surr: 1,2-Dichloroethane-d4	*91.9*			**0**	*81-118*	*%REC*	*1*	*12-Sep-2019 19:28*
Surr: 4-Bromofluorobenzene	*103*			**0**	*85-114*	*%REC*	*1*	*12-Sep-2019 19:28*
Surr: Dibromofluoromethane	*94.4*			**0**	*80-119*	*%REC*	*1*	*12-Sep-2019 19:28*
Surr: Toluene-d8	*96.4*			**0**	*89-112*	*%REC*	*1*	*12-Sep-2019 19:28*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**921**		**4.00**	**10.0**	**10.0**	**mg/L**	20	26-Sep-2019 02:54
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	12-Sep-2019 22:41
Nitrogen, Nitrite (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	12-Sep-2019 22:41
Sulfate	**0.790**		**0.200**	**0.500**	**0.500**	**mg/L**	1	12-Sep-2019 22:41
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	03-Oct-2019 13:26
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	27-Sep-2019 15:09

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW23_091119
Collection Date: 11-Sep-2019 11:25

ANALYTICAL REPORT
WorkOrder:HS19090511
Lab ID:HS19090511-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:52
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:52
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 19:52
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:52
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:52
1,1-Dichloroethene	**0.70**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 19:52
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:52
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:52
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 19:52
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 19:52
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:52
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:52
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:52
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 19:52
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:52
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 19:52
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:52
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:52
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:52
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:52
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:52
2-Butanone	**340**		**0.50**	**1.0**	**2.0**	**UG/L**	1	12-Sep-2019 19:52
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:52
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	12-Sep-2019 19:52
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:52
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:52
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	12-Sep-2019 19:52
Acetone	**380**		**2.0**	**5.0**	**10**	**UG/L**	5	13-Sep-2019 15:03
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:52
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:52
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:52
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:52
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:52
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:52
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	12-Sep-2019 19:52
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 19:52
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:52
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:52
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:52

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW23_091119
Collection Date: 11-Sep-2019 11:25

ANALYTICAL REPORT
WorkOrder:HS19090511
Lab ID:HS19090511-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:52
cis-1,2-Dichloroethene	**7.8**		**0.20**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 19:52
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	12-Sep-2019 19:52
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:52
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:52
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:52
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:52
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	12-Sep-2019 19:52
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:52
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	12-Sep-2019 19:52
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	12-Sep-2019 19:52
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 19:52
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:52
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:52
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:52
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:52
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:52
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:52
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:52
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:52
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:52
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:52
Trichloroethene	**3.8**		**0.20**	**0.50**	**1.0**	**UG/L**	1	12-Sep-2019 19:52
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 19:52
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 19:52
Surr: 1,2-Dichloroethane-d4	*90.0*			**0**	*81-118*	*%REC*	*1*	*12-Sep-2019 19:52*
Surr: 1,2-Dichloroethane-d4	*91.8*			**0**	*81-118*	*%REC*	*5*	*13-Sep-2019 15:03*
Surr: 4-Bromofluorobenzene	*104*			**0**	*85-114*	*%REC*	*1*	*12-Sep-2019 19:52*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*5*	*13-Sep-2019 15:03*
Surr: Dibromofluoromethane	*93.4*			**0**	*80-119*	*%REC*	*1*	*12-Sep-2019 19:52*
Surr: Dibromofluoromethane	*92.2*			**0**	*80-119*	*%REC*	*5*	*13-Sep-2019 15:03*
Surr: Toluene-d8	*94.8*			**0**	*89-112*	*%REC*	*1*	*12-Sep-2019 19:52*
Surr: Toluene-d8	*95.1*			**0**	*89-112*	*%REC*	*5*	*13-Sep-2019 15:03*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**857**		**4.00**	**10.0**	**10.0**	**mg/L**	20	26-Sep-2019 03:44
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	12-Sep-2019 22:58
Nitrogen, Nitrite (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	12-Sep-2019 22:58
Sulfate	**4.63**		**0.200**	**0.500**	**0.500**	**mg/L**	1	12-Sep-2019 22:58

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW23_091119
Collection Date: 11-Sep-2019 11:25

ANALYTICAL REPORT
WorkOrder:HS19090511
Lab ID:HS19090511-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DHC/DHB		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	19-Sep-2019 11:24
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	03-Oct-2019 13:26
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	27-Sep-2019 15:09
SUBCONTRACT ANALYSIS - VOLATILE FATTY ACIDS		**Method:NA**						Analyst: SUB
Subcontract Analysis	**0**		**0**	**0**	**0**	**NA**	1	27-Sep-2019 09:08

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW11_091119
Collection Date: 11-Sep-2019 12:35

ANALYTICAL REPORT
WorkOrder:HS19090511
Lab ID:HS19090511-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 20:17
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 20:17
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 20:17
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 20:17
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 20:17
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 20:17
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 20:17
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 20:17
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 20:17
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 20:17
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 20:17
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 20:17
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 20:17
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 20:17
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 20:17
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 20:17
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 20:17
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 20:17
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 20:17
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 20:17
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 20:17
2-Butanone	**67**		**0.50**	**1.0**	**2.0**	**UG/L**	1	12-Sep-2019 20:17
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 20:17
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	12-Sep-2019 20:17
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 20:17
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 20:17
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	12-Sep-2019 20:17
Acetone	**75**		**0.40**	**1.0**	**2.0**	**UG/L**	1	12-Sep-2019 20:17
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 20:17
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 20:17
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 20:17
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 20:17
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 20:17
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 20:17
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	12-Sep-2019 20:17
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 20:17
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 20:17
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 20:17
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 20:17

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW11_091119
Collection Date: 11-Sep-2019 12:35

ANALYTICAL REPORT
WorkOrder:HS19090511
Lab ID:HS19090511-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 20:17
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 20:17
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	12-Sep-2019 20:17
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 20:17
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 20:17
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 20:17
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 20:17
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	12-Sep-2019 20:17
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 20:17
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	12-Sep-2019 20:17
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	12-Sep-2019 20:17
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 20:17
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 20:17
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 20:17
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 20:17
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 20:17
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 20:17
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 20:17
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 20:17
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 20:17
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 20:17
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 20:17
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 20:17
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 20:17
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 20:17
Surr: 1,2-Dichloroethane-d4	*91.9*			**0**	*81-118*	*%REC*	*1*	*12-Sep-2019 20:17*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*12-Sep-2019 20:17*
Surr: Dibromofluoromethane	*95.3*			**0**	*80-119*	*%REC*	*1*	*12-Sep-2019 20:17*
Surr: Toluene-d8	*96.9*			**0**	*89-112*	*%REC*	*1*	*12-Sep-2019 20:17*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**1,990**		**8.00**	**20.0**	**20.0**	**mg/L**	40	26-Sep-2019 04:01
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	12-Sep-2019 23:15
Nitrogen, Nitrite (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	12-Sep-2019 23:15
Sulfate	**259**		**8.00**	**20.0**	**20.0**	**mg/L**	40	26-Sep-2019 04:01
SUBCONTRACT ANALYSIS - DHC/DHB		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	19-Sep-2019 11:24
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	03-Oct-2019 13:26

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW11_091119
Collection Date: 11-Sep-2019 12:35

ANALYTICAL REPORT
WorkOrder:HS19090511
Lab ID:HS19090511-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	27-Sep-2019 15:09
SUBCONTRACT ANALYSIS - VOLATILE FATTY ACIDS		**Method:NA**						Analyst: SUB
Subcontract Analysis	**0**		**0**	**0**	**0**	**NA**	1	27-Sep-2019 09:08

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: Trip Blank
Collection Date: 11-Sep-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19090511
Lab ID:HS19090511-08
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:28
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:28
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 15:28
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:28
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:28
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:28
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:28
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 15:28
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 15:28
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 15:28
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:28
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:28
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:28
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 15:28
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:28
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 15:28
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:28
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 15:28
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:28
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 15:28
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:28
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	12-Sep-2019 15:28
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:28
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	12-Sep-2019 15:28
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 15:28
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:28
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	12-Sep-2019 15:28
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	12-Sep-2019 15:28
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:28
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 15:28
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:28
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:28
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 15:28
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 15:28
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	12-Sep-2019 15:28
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	12-Sep-2019 15:28
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:28
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:28
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:28

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: Trip Blank
Collection Date: 11-Sep-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19090511
Lab ID:HS19090511-08
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:28
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:28
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	12-Sep-2019 15:28
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:28
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:28
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:28
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:28
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	12-Sep-2019 15:28
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:28
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	12-Sep-2019 15:28
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	12-Sep-2019 15:28
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	12-Sep-2019 15:28
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:28
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:28
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:28
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:28
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:28
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:28
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:28
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:28
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:28
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:28
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:28
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	12-Sep-2019 15:28
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	12-Sep-2019 15:28
Surr: 1,2-Dichloroethane-d4	*89.6*			**0**	*81-118*	*%REC*	*1*	*12-Sep-2019 15:28*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*12-Sep-2019 15:28*
Surr: Dibromofluoromethane	*92.7*			**0**	*80-119*	*%REC*	*1*	*12-Sep-2019 15:28*
Surr: Toluene-d8	*96.3*			**0**	*89-112*	*%REC*	*1*	*12-Sep-2019 15:28*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19090511

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID: R346164 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS19090511-01	35AWW19_091119	11 Sep 2019 07:10			12 Sep 2019 21:02	1
HS19090511-02	35AWW20_091119	11 Sep 2019 08:10			12 Sep 2019 21:18	1
HS19090511-03	LHSMW07_091119	11 Sep 2019 09:15			12 Sep 2019 22:08	1
HS19090511-04	35AWW06_091119	11 Sep 2019 10:15			12 Sep 2019 22:25	1
HS19090511-05	35AWW06_091119_a	11 Sep 2019 10:15			12 Sep 2019 22:41	1
HS19090511-06	35AWW23_091119	11 Sep 2019 11:25			12 Sep 2019 22:58	1
HS19090511-07	35AWW11_091119	11 Sep 2019 12:35			12 Sep 2019 23:15	1
Batch ID: R346196 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS19090511-08	Trip Blank	11 Sep 2019 00:00			12 Sep 2019 15:28	1
Batch ID: R346196 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS19090511-01	35AWW19_091119	11 Sep 2019 07:10			12 Sep 2019 15:52	1
HS19090511-02	35AWW20_091119	11 Sep 2019 08:10			12 Sep 2019 17:04	25
HS19090511-02	35AWW20_091119	11 Sep 2019 08:10			12 Sep 2019 16:16	1
HS19090511-03	LHSMW07_091119	11 Sep 2019 09:15			12 Sep 2019 18:40	1
HS19090511-04	35AWW06_091119	11 Sep 2019 10:15			12 Sep 2019 19:04	1
HS19090511-05	35AWW06_091119_a	11 Sep 2019 10:15			12 Sep 2019 19:28	1
HS19090511-06	35AWW23_091119	11 Sep 2019 11:25			12 Sep 2019 19:52	1
HS19090511-07	35AWW11_091119	11 Sep 2019 12:35			12 Sep 2019 20:17	1
Batch ID: R346254 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS19090511-06	35AWW23_091119	11 Sep 2019 11:25			13 Sep 2019 15:03	5
Batch ID: R346534 (0)	**Test Name :** SUBCONTRACT ANALYSIS - DHC/DHB				**Matrix:** Groundwater	
HS19090511-01	35AWW19_091119	11 Sep 2019 07:10			19 Sep 2019 11:24	1
HS19090511-02	35AWW20_091119	11 Sep 2019 08:10			19 Sep 2019 11:24	1
HS19090511-03	LHSMW07_091119	11 Sep 2019 09:15			19 Sep 2019 11:24	1
HS19090511-04	35AWW06_091119	11 Sep 2019 10:15			19 Sep 2019 11:24	1
HS19090511-06	35AWW23_091119	11 Sep 2019 11:25			19 Sep 2019 11:24	1
HS19090511-07	35AWW11_091119	11 Sep 2019 12:35			19 Sep 2019 11:24	1
Batch ID: R346978 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS19090511-01	35AWW19_091119	11 Sep 2019 07:10			26 Sep 2019 01:15	20
HS19090511-02	35AWW20_091119	11 Sep 2019 08:10			26 Sep 2019 01:31	20
HS19090511-03	LHSMW07_091119	11 Sep 2019 09:15			26 Sep 2019 02:21	40
HS19090511-04	35AWW06_091119	11 Sep 2019 10:15			26 Sep 2019 02:38	20
HS19090511-05	35AWW06_091119_a	11 Sep 2019 10:15			26 Sep 2019 02:54	20
HS19090511-06	35AWW23_091119	11 Sep 2019 11:25			26 Sep 2019 03:44	20
HS19090511-07	35AWW11_091119	11 Sep 2019 12:35			26 Sep 2019 04:01	40

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
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DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID: R347081 (0)	**Test Name :** SUBCONTRACT ANALYSIS - VOLATILE FATTY ACIDS				**Matrix:** Groundwater	
HS19090511-01	35AWW19_091119	11 Sep 2019 07:10			27 Sep 2019 09:08	1
HS19090511-02	35AWW20_091119	11 Sep 2019 08:10			27 Sep 2019 09:08	1
HS19090511-03	LHSMW07_091119	11 Sep 2019 09:15			27 Sep 2019 09:08	1
HS19090511-04	35AWW06_091119	11 Sep 2019 10:15			27 Sep 2019 09:08	1
HS19090511-06	35AWW23_091119	11 Sep 2019 11:25			27 Sep 2019 09:08	1
HS19090511-07	35AWW11_091119	11 Sep 2019 12:35			27 Sep 2019 09:08	1
Batch ID: R347160 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Groundwater	
HS19090511-02	35AWW20_091119	11 Sep 2019 08:10			27 Sep 2019 15:09	1
HS19090511-03	LHSMW07_091119	11 Sep 2019 09:15			27 Sep 2019 15:09	1
HS19090511-04	35AWW06_091119	11 Sep 2019 10:15			27 Sep 2019 15:09	1
HS19090511-05	35AWW06_091119_a	11 Sep 2019 10:15			27 Sep 2019 15:09	1
HS19090511-06	35AWW23_091119	11 Sep 2019 11:25			27 Sep 2019 15:09	1
HS19090511-07	35AWW11_091119	11 Sep 2019 12:35			27 Sep 2019 15:09	1
Batch ID: R347473 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Groundwater	
HS19090511-01	35AWW19_091119	11 Sep 2019 07:10			02 Oct 2019 16:32	1
Batch ID: R347558 (0)	**Test Name :** SUBCONTRACT ANALYSIS - RSK				**Matrix:** Groundwater	
HS19090511-01	35AWW19_091119	11 Sep 2019 07:10			03 Oct 2019 13:26	1
HS19090511-02	35AWW20_091119	11 Sep 2019 08:10			03 Oct 2019 13:26	1
HS19090511-03	LHSMW07_091119	11 Sep 2019 09:15			03 Oct 2019 13:26	1
HS19090511-04	35AWW06_091119	11 Sep 2019 10:15			03 Oct 2019 13:26	1
HS19090511-05	35AWW06_091119_a	11 Sep 2019 10:15			03 Oct 2019 13:26	1
HS19090511-06	35AWW23_091119	11 Sep 2019 11:25			03 Oct 2019 13:26	1
HS19090511-07	35AWW11_091119	11 Sep 2019 12:35			03 Oct 2019 13:26	1

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19090511

QC BATCH REPORT

Batch ID: R346196 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-190912** Units: **UG/L** Analysis Date: **12-Sep-2019 14:16**
Client ID: Run ID: **VOA6_346196** SeqNo: **5251290** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	0.50	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	0.50	1.0								U
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	0.50	1.0								U
1,2,3-Trichlorobenzene	0.50	1.0								U
1,2,3-Trichloropropane	0.50	1.0								U
1,2,4-Trichlorobenzene	0.50	1.0								U
1,2,4-Trimethylbenzene	0.50	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	0.50	1.0								U
1,3,5-Trimethylbenzene	0.50	1.0								U
1,3-Dichlorobenzene	0.50	1.0								U
1,3-Dichloropropane	0.50	1.0								U
1,4-Dichlorobenzene	0.50	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	0.50	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	0.50	1.0								U
4-Isopropyltoluene	0.50	1.0								U
4-Methyl-2-pentanone	1.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	0.50	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	0.50	1.0								U
Bromomethane	0.50	1.0								U

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Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
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QC BATCH REPORT

Batch ID: R346196 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-190912** Units: **UG/L** Analysis Date: **12-Sep-2019 14:16**
Client ID: Run ID: **VOA6_346196** SeqNo: **5251290** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	0.50	1.0								U
Chlorobenzene	0.50	1.0								U
Chloroethane	0.50	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	0.50	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	0.50	1.0								U
Ethylbenzene	0.50	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	0.50	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	0.50	1.0								U
n-Butylbenzene	0.50	1.0								U
n-Propylbenzene	0.50	1.0								U
o-Xylene	0.50	1.0								U
sec-Butylbenzene	0.50	1.0								U
Styrene	0.50	1.0								U
tert-Butylbenzene	0.50	1.0								U
Tetrachloroethene	0.50	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*45.49*	*1.0*	*50*	*0*	*91.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.33*	*1.0*	*50*	*0*	*103*	*85 - 114*				
Surr: Dibromofluoromethane	*47.23*	*1.0*	*50*	*0*	*94.5*	*80 - 119*				
Surr: Toluene-d8	*48.69*	*1.0*	*50*	*0*	*97.4*	*89 - 112*				

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Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19090511

QC BATCH REPORT

Batch ID: R346196 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-190912** Units: **UG/L** Analysis Date: **12-Sep-2019 13:14**
Client ID: Run ID: **VOA6_346196** SeqNo: **5251289** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	18.79	1.0	20	0	94.0	78 - 124				
1,1,1-Trichloroethane	16.84	1.0	20	0	84.2	74 - 131				
1,1,2,2-Tetrachloroethane	19.48	1.0	20	0	97.4	71 - 121				
1,1,2-Trichloroethane	18.36	1.0	20	0	91.8	80 - 119				
1,1-Dichloroethane	17.04	1.0	20	0	85.2	77 - 125				
1,1-Dichloroethene	17.82	1.0	20	0	89.1	71 - 131				
1,1-Dichloropropene	16.59	1.0	20	0	83.0	78 - 125				
1,2,3-Trichlorobenzene	17.1	1.0	20	0	85.5	69 - 129				
1,2,3-Trichloropropane	18.53	1.0	20	0	92.7	73 - 122				
1,2,4-Trichlorobenzene	17.23	1.0	20	0	86.2	69 - 130				
1,2,4-Trimethylbenzene	16.42	1.0	20	0	82.1	76 - 124				
1,2-Dibromo-3-chloropropane	18.85	1.0	20	0	94.3	62 - 128				
1,2-Dibromoethane	18.97	1.0	20	0	94.9	77 - 121				
1,2-Dichlorobenzene	17.59	1.0	20	0	88.0	80 - 119				
1,2-Dichloroethane	18.52	1.0	20	0	92.6	73 - 128				
1,2-Dichloropropane	17.96	1.0	20	0	89.8	78 - 122				
1,3,5-Trimethylbenzene	15.77	1.0	20	0	78.8	75 - 124				
1,3-Dichlorobenzene	17.44	1.0	20	0	87.2	80 - 119				
1,3-Dichloropropane	18.26	1.0	20	0	91.3	80 - 119				
1,4-Dichlorobenzene	17.19	1.0	20	0	86.0	79 - 118				
2,2-Dichloropropane	17.29	1.0	20	0	86.5	60 - 139				
2-Butanone	37.79	2.0	40	0	94.5	56 - 143				
2-Chlorotoluene	17.77	1.0	20	0	88.8	79 - 122				
2-Hexanone	37.23	2.0	40	0	93.1	57 - 139				
4-Chlorotoluene	16.74	1.0	20	0	83.7	78 - 122				
4-Isopropyltoluene	15.52	1.0	20	0	77.6	77 - 127				
4-Methyl-2-pentanone	36.75	2.0	40	0	91.9	67 - 130				
Acetone	48.17	2.0	40	0	120	39 - 160				
Benzene	17.72	1.0	20	0	88.6	79 - 120				
Bromobenzene	18.14	1.0	20	0	90.7	80 - 120				
Bromochloromethane	17.83	1.0	20	0	89.2	78 - 123				
Bromodichloromethane	18.17	1.0	20	0	90.8	79 - 125				
Bromoform	19.55	1.0	20	0	97.8	66 - 130				
Bromomethane	22.76	1.0	20	0	114	53 - 141				

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19090511

QC BATCH REPORT

Batch ID: R346196 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-190912** Units: **UG/L** Analysis Date: **12-Sep-2019 13:14**
Client ID: Run ID: **VOA6_346196** SeqNo: **5251289** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	32.76	2.0	40	0	81.9	64 - 133				
Carbon tetrachloride	16.13	1.0	20	0	80.6	72 - 136				
Chlorobenzene	17.6	1.0	20	0	88.0	82 - 118				
Chloroethane	20.34	1.0	20	0	102	60 - 138				
Chloroform	17.65	1.0	20	0	88.3	79 - 124				
Chloromethane	18.52	1.0	20	0	92.6	50 - 139				
cis-1,2-Dichloroethene	17.79	1.0	20	0	88.9	78 - 123				
cis-1,3-Dichloropropene	18.94	1.0	20	0	94.7	75 - 124				
Dibromochloromethane	18.53	1.0	20	0	92.6	74 - 126				
Dibromomethane	18.41	1.0	20	0	92.1	79 - 123				
Dichlorodifluoromethane	14.86	1.0	20	0	74.3	32 - 152				
Ethylbenzene	16.72	1.0	20	0	83.6	79 - 121				
Hexachlorobutadiene	16.17	1.0	20	0	80.9	66 - 134				
Isopropylbenzene	15.59	1.0	20	0	77.9	72 - 131				
m,p-Xylene	33.77	2.0	40	0	84.4	80 - 121				
Methylene chloride	18.28	2.0	20	0	91.4	74 - 124				
Naphthalene	17.79	1.0	20	0	88.9	61 - 128				
n-Butylbenzene	15.37	1.0	20	0	76.9	75 - 128				
n-Propylbenzene	15.29	1.0	20	0	76.5	76 - 126				
o-Xylene	17.46	1.0	20	0	87.3	78 - 122				
sec-Butylbenzene	15.48	1.0	20	0	77.4	77 - 126				
Styrene	18.32	1.0	20	0	91.6	78 - 123				
tert-Butylbenzene	15.75	1.0	20	0	78.8	78 - 124				
Tetrachloroethene	15.73	1.0	20	0	78.6	74 - 129				
Toluene	17.34	1.0	20	0	86.7	80 - 121				
trans-1,2-Dichloroethene	16.88	1.0	20	0	84.4	75 - 124				
trans-1,3-Dichloropropene	19.15	1.0	20	0	95.8	73 - 127				
Trichloroethene	17.38	1.0	20	0	86.9	79 - 123				
Trichlorofluoromethane	17.08	1.0	20	0	85.4	65 - 141				
Vinyl chloride	17.69	1.0	20	0	88.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*49.82*	*1.0*	*50*	*0*	*99.6*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.67*	*1.0*	*50*	*0*	*103*	*85 - 114*				
Surr: Dibromofluoromethane	*50.96*	*1.0*	*50*	*0*	*102*	*80 - 119*				
Surr: Toluene-d8	*45.71*	*1.0*	*50*	*0*	*91.4*	*89 - 112*				

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19090511

QC BATCH REPORT

Batch ID: R346196 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS19090511-02MS** Units: **UG/L** Analysis Date: **12-Sep-2019 17:28**
Client ID: **35AWW20_091119** Run ID: **VOA6_346196** SeqNo: **5251295** PrepDate: DF: **25**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	473.7	25	500	0	94.7	78 - 124				
1,1,1-Trichloroethane	430.1	25	500	0	86.0	74 - 131				
1,1,2,2-Tetrachloroethane	486.3	25	500	0	97.3	71 - 121				
1,1,2-Trichloroethane	530.5	25	500	80.66	90.0	80 - 119				
1,1-Dichloroethane	953.4	25	500	553.3	80.0	77 - 125				
1,1-Dichloroethene	4339	25	500	3915	84.7	71 - 131				O
1,1-Dichloropropene	455.3	25	500	0	91.1	78 - 125				
1,2,3-Trichlorobenzene	441.7	25	500	0	88.3	69 - 129				
1,2,3-Trichloropropane	444.8	25	500	0	89.0	73 - 122				
1,2,4-Trichlorobenzene	471.1	25	500	0	94.2	69 - 130				
1,2,4-Trimethylbenzene	468.8	25	500	0	93.8	76 - 124				
1,2-Dibromo-3-chloropropane	467.9	25	500	0	93.6	62 - 128				
1,2-Dibromoethane	452.6	25	500	0	90.5	77 - 121				
1,2-Dichlorobenzene	467	25	500	20.32	89.3	80 - 119				
1,2-Dichloroethane	444.1	25	500	20.96	84.6	73 - 128				
1,2-Dichloropropane	426.7	25	500	0	85.3	78 - 122				
1,3,5-Trimethylbenzene	470.9	25	500	0	94.2	75 - 124				
1,3-Dichlorobenzene	468.9	25	500	0	93.8	80 - 119				
1,3-Dichloropropane	451	25	500	0	90.2	80 - 119				
1,4-Dichlorobenzene	448.5	25	500	0	89.7	79 - 118				
2,2-Dichloropropane	430.9	25	500	0	86.2	60 - 139				
2-Butanone	794.6	50	1000	0	79.5	56 - 143				
2-Chlorotoluene	489.8	25	500	0	98.0	79 - 122				
2-Hexanone	895.9	50	1000	0	89.6	57 - 139				
4-Chlorotoluene	460.3	25	500	0	92.1	78 - 122				
4-Isopropyltoluene	490.3	25	500	0	98.1	77 - 127				
4-Methyl-2-pentanone	906.8	50	1000	0	90.7	67 - 130				
Acetone	771.4	50	1000	0	77.1	39 - 160				
Benzene	440.8	25	500	0	88.2	79 - 120				
Bromobenzene	461.6	25	500	0	92.3	80 - 120				
Bromochloromethane	404.5	25	500	0	80.9	78 - 123				
Bromodichloromethane	426.2	25	500	0	85.2	79 - 125				
Bromoform	460.4	25	500	0	92.1	66 - 130				
Bromomethane	366.3	25	500	0	73.3	53 - 141				

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Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19090511

QC BATCH REPORT

Batch ID: R346196 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS19090511-02MS** Units: **UG/L** Analysis Date: **12-Sep-2019 17:28**
Client ID: **35AWW20_091119** Run ID: **VOA6_346196** SeqNo: **5251295** PrepDate: DF: **25**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	770.1	50	1000	0	77.0	64 - 133				
Carbon tetrachloride	459.4	25	500	0	91.9	72 - 136				
Chlorobenzene	446.4	25	500	0	89.3	82 - 118				
Chloroethane	474.6	25	500	0	94.9	60 - 138				
Chloroform	413.4	25	500	0	82.7	79 - 124				
Chloromethane	358.1	25	500	0	71.6	50 - 139				
cis-1,2-Dichloroethene	528.6	25	500	112.9	83.1	78 - 123				
cis-1,3-Dichloropropene	444.6	25	500	0	88.9	75 - 124				
Dibromochloromethane	456.4	25	500	0	91.3	74 - 126				
Dibromomethane	422.2	25	500	0	84.4	79 - 123				
Dichlorodifluoromethane	244	25	500	0	48.8	32 - 152				
Ethylbenzene	465.2	25	500	0	93.0	79 - 121				
Hexachlorobutadiene	524.1	25	500	0	105	66 - 134				
Isopropylbenzene	475.3	25	500	0	95.1	72 - 131				
m,p-Xylene	932	50	1000	0	93.2	80 - 121				
Methylene chloride	415.9	50	500	0	83.2	74 - 124				
Naphthalene	446.4	25	500	0	89.3	61 - 128				
n-Butylbenzene	512.6	25	500	0	103	75 - 128				
n-Propylbenzene	472.6	25	500	0	94.5	76 - 126				
o-Xylene	461.7	25	500	0	92.3	78 - 122				
sec-Butylbenzene	479.8	25	500	0	96.0	77 - 126				
Styrene	462.5	25	500	0	92.5	78 - 123				
tert-Butylbenzene	480	25	500	0	96.0	78 - 124				
Tetrachloroethene	490.1	25	500	0	98.0	74 - 129				
Toluene	456.5	25	500	0	91.3	80 - 121				
trans-1,2-Dichloroethene	425.5	25	500	11.68	82.8	75 - 124				
trans-1,3-Dichloropropene	439.7	25	500	0	87.9	73 - 127				
Trichloroethene	794.3	25	500	350.1	88.8	79 - 123				
Trichlorofluoromethane	460.7	25	500	0	92.1	65 - 141				
Vinyl chloride	1212	25	500	795	83.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*1163*	*25*	*1250*	*0*	*93.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*1252*	*25*	*1250*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*1171*	*25*	*1250*	*0*	*93.7*	*80 - 119*				
Surr: Toluene-d8	*1196*	*25*	*1250*	*0*	*95.7*	*89 - 112*				

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19090511

QC BATCH REPORT

Batch ID: R346196 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS19090511-02MSD** Units: **UG/L** Analysis Date: **12-Sep-2019 17:52**
Client ID: **35AWW20_091119** Run ID: **VOA6_346196** SeqNo: **5251296** PrepDate: DF: **25**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	470.6	25	500	0	94.1	78 - 124	473.7	0.651	20	
1,1,1-Trichloroethane	418.7	25	500	0	83.7	74 - 131	430.1	2.7	20	
1,1,2,2-Tetrachloroethane	504.6	25	500	0	101	71 - 121	486.3	3.69	20	
1,1,2-Trichloroethane	545.1	25	500	80.66	92.9	80 - 119	530.5	2.72	20	
1,1-Dichloroethane	911.4	25	500	553.3	71.6	77 - 125	953.4	4.51	20	S
1,1-Dichloroethene	4224	25	500	3915	61.7	71 - 131	4339	2.68	20	SO
1,1-Dichloropropene	454.7	25	500	0	90.9	78 - 125	455.3	0.129	20	
1,2,3-Trichlorobenzene	510.9	25	500	0	102	69 - 129	441.7	14.5	20	
1,2,3-Trichloropropane	472.7	25	500	0	94.5	73 - 122	444.8	6.08	20	
1,2,4-Trichlorobenzene	506.3	25	500	0	101	69 - 130	471.1	7.2	20	
1,2,4-Trimethylbenzene	480.5	25	500	0	96.1	76 - 124	468.8	2.47	20	
1,2-Dibromo-3-chloropropane	500.7	25	500	0	100	62 - 128	467.9	6.77	20	
1,2-Dibromoethane	472.6	25	500	0	94.5	77 - 121	452.6	4.33	20	
1,2-Dichlorobenzene	494.3	25	500	20.32	94.8	80 - 119	467	5.67	20	
1,2-Dichloroethane	456.3	25	500	20.96	87.1	73 - 128	444.1	2.71	20	
1,2-Dichloropropane	420.8	25	500	0	84.2	78 - 122	426.7	1.38	20	
1,3,5-Trimethylbenzene	485.5	25	500	0	97.1	75 - 124	470.9	3.05	20	
1,3-Dichlorobenzene	487	25	500	0	97.4	80 - 119	468.9	3.79	20	
1,3-Dichloropropane	450.1	25	500	0	90.0	80 - 119	451	0.198	20	
1,4-Dichlorobenzene	474	25	500	0	94.8	79 - 118	448.5	5.53	20	
2,2-Dichloropropane	424.6	25	500	0	84.9	60 - 139	430.9	1.47	20	
2-Butanone	803.4	50	1000	0	80.3	56 - 143	794.6	1.1	20	
2-Chlorotoluene	505	25	500	0	101	79 - 122	489.8	3.06	20	
2-Hexanone	949.3	50	1000	0	94.9	57 - 139	895.9	5.79	20	
4-Chlorotoluene	472.6	25	500	0	94.5	78 - 122	460.3	2.64	20	
4-Isopropyltoluene	502.8	25	500	0	101	77 - 127	490.3	2.51	20	
4-Methyl-2-pentanone	911.6	50	1000	0	91.2	67 - 130	906.8	0.53	20	
Acetone	778	50	1000	0	77.8	39 - 160	771.4	0.859	20	
Benzene	434.7	25	500	0	86.9	79 - 120	440.8	1.38	20	
Bromobenzene	482.7	25	500	0	96.5	80 - 120	461.6	4.45	20	
Bromochloromethane	400.2	25	500	0	80.0	78 - 123	404.5	1.08	20	
Bromodichloromethane	432.8	25	500	0	86.6	79 - 125	426.2	1.53	20	
Bromoform	482.9	25	500	0	96.6	66 - 130	460.4	4.77	20	
Bromomethane	400.1	25	500	0	80.0	53 - 141	366.3	8.82	20	

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19090511

QC BATCH REPORT

Batch ID: R346196 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS19090511-02MSD** Units: **UG/L** Analysis Date: **12-Sep-2019 17:52**
Client ID: **35AWW20_091119** Run ID: **VOA6_346196** SeqNo: **5251296** PrepDate: DF: **25**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	732.9	50	1000	0	73.3	64 - 133	770.1	4.95	20	
Carbon tetrachloride	453.1	25	500	0	90.6	72 - 136	459.4	1.37	20	
Chlorobenzene	451.6	25	500	0	90.3	82 - 118	446.4	1.15	20	
Chloroethane	427.9	25	500	0	85.6	60 - 138	474.6	10.3	20	
Chloroform	401.9	25	500	0	80.4	79 - 124	413.4	2.82	20	
Chloromethane	327.3	25	500	0	65.5	50 - 139	358.1	9	20	
cis-1,2-Dichloroethene	512.7	25	500	112.9	80.0	78 - 123	528.6	3.05	20	
cis-1,3-Dichloropropene	438.3	25	500	0	87.7	75 - 124	444.6	1.42	20	
Dibromochloromethane	464.7	25	500	0	92.9	74 - 126	456.4	1.82	20	
Dibromomethane	423.2	25	500	0	84.6	79 - 123	422.2	0.248	20	
Dichlorodifluoromethane	223.6	25	500	0	44.7	32 - 152	244	8.7	20	
Ethylbenzene	471.8	25	500	0	94.4	79 - 121	465.2	1.41	20	
Hexachlorobutadiene	542.1	25	500	0	108	66 - 134	524.1	3.37	20	
Isopropylbenzene	479.8	25	500	0	96.0	72 - 131	475.3	0.939	20	
m,p-Xylene	939.3	50	1000	0	93.9	80 - 121	932	0.784	20	
Methylene chloride	405.1	50	500	0	81.0	74 - 124	415.9	2.63	20	
Naphthalene	496.9	25	500	0	99.4	61 - 128	446.4	10.7	20	
n-Butylbenzene	527.9	25	500	0	106	75 - 128	512.6	2.93	20	
n-Propylbenzene	490.1	25	500	0	98.0	76 - 126	472.6	3.64	20	
o-Xylene	462.2	25	500	0	92.4	78 - 122	461.7	0.104	20	
sec-Butylbenzene	493.9	25	500	0	98.8	77 - 126	479.8	2.9	20	
Styrene	468.7	25	500	0	93.7	78 - 123	462.5	1.34	20	
tert-Butylbenzene	495.4	25	500	0	99.1	78 - 124	480	3.16	20	
Tetrachloroethene	479	25	500	0	95.8	74 - 129	490.1	2.31	20	
Toluene	456.9	25	500	0	91.4	80 - 121	456.5	0.0941	20	
trans-1,2-Dichloroethene	413	25	500	11.68	80.3	75 - 124	425.5	3	20	
trans-1,3-Dichloropropene	436.8	25	500	0	87.4	73 - 127	439.7	0.658	20	
Trichloroethene	779.4	25	500	350.1	85.9	79 - 123	794.3	1.9	20	
Trichlorofluoromethane	432.5	25	500	0	86.5	65 - 141	460.7	6.32	20	
Vinyl chloride	1153	25	500	795	71.5	58 - 137	1212	5.03	20	
Surr: 1,2-Dichloroethane-d4	*1141*	*25*	*1250*	*0*	*91.3*	*81 - 118*	*1163*	*1.9*	*20*	
Surr: 4-Bromofluorobenzene	*1244*	*25*	*1250*	*0*	*99.5*	*85 - 114*	*1252*	*0.623*	*20*	
Surr: Dibromofluoromethane	*1164*	*25*	*1250*	*0*	*93.1*	*80 - 119*	*1171*	*0.54*	*20*	
Surr: Toluene-d8	*1211*	*25*	*1250*	*0*	*96.9*	*89 - 112*	*1196*	*1.26*	*20*	

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19090511

QC BATCH REPORT

Batch ID: R346196 (0)	Instrument: VOA6	Method: VOLATILES ORGANICS BY METHOD 8260C

The following samples were analyzed in this batch:

HS19090511-01	HS19090511-02	HS19090511-03	HS19090511-04
HS19090511-05	HS19090511-06	HS19090511-07	HS19090511-08

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19090511

QC BATCH REPORT

Batch ID: R346254 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-190913** Units: **UG/L** Analysis Date: **13-Sep-2019 13:03**
Client ID: Run ID: **VOA6_346254** SeqNo: **5252716** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acetone	1.0	2.0								U
Surr: 1,2-Dichloroethane-d4	*44.76*	*1.0*	*50*	*0*	*89.5*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.34*	*1.0*	*50*	*0*	*103*	*85 - 114*				
Surr: Dibromofluoromethane	*46.38*	*1.0*	*50*	*0*	*92.8*	*80 - 119*				
Surr: Toluene-d8	*47.77*	*1.0*	*50*	*0*	*95.5*	*89 - 112*				

LCS Sample ID: **VLCSW-190913** Units: **UG/L** Analysis Date: **13-Sep-2019 12:15**
Client ID: Run ID: **VOA6_346254** SeqNo: **5252715** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acetone	48.23	2.0	40	0	121	39 - 160				
Surr: 1,2-Dichloroethane-d4	*53.71*	*1.0*	*50*	*0*	*107*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*54.67*	*1.0*	*50*	*0*	*109*	*85 - 114*				
Surr: Dibromofluoromethane	*53.23*	*1.0*	*50*	*0*	*106*	*80 - 119*				
Surr: Toluene-d8	*47.76*	*1.0*	*50*	*0*	*95.5*	*89 - 112*				

MS Sample ID: **HS19090535-01MS** Units: **UG/L** Analysis Date: **13-Sep-2019 15:28**
Client ID: Run ID: **VOA6_346254** SeqNo: **5252719** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acetone	33.45	2.0	40	0	83.6	39 - 160				
Surr: 1,2-Dichloroethane-d4	*46.6*	*1.0*	*50*	*0*	*93.2*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.2*	*1.0*	*50*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*46.58*	*1.0*	*50*	*0*	*93.2*	*80 - 119*				
Surr: Toluene-d8	*48.35*	*1.0*	*50*	*0*	*96.7*	*89 - 112*				

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19090511

QC BATCH REPORT

Batch ID: R346254 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS19090535-01MSD** Units: **UG/L** Analysis Date: **13-Sep-2019 15:52**
Client ID: Run ID: **VOA6_346254** SeqNo: **5252720** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acetone	32.56	2.0	40	0	81.4	39 - 160	33.45	2.71	20	
Surr: 1,2-Dichloroethane-d4	*46.21*	*1.0*	*50*	*0*	*92.4*	*81 - 118*	*46.6*	*0.826*	*20*	
Surr: 4-Bromofluorobenzene	*50.61*	*1.0*	*50*	*0*	*101*	*85 - 114*	*50.2*	*0.813*	*20*	
Surr: Dibromofluoromethane	*46.69*	*1.0*	*50*	*0*	*93.4*	*80 - 119*	*46.58*	*0.238*	*20*	
Surr: Toluene-d8	*47.87*	*1.0*	*50*	*0*	*95.7*	*89 - 112*	*48.35*	*0.985*	*20*	

The following samples were analyzed in this batch: HS19090511-06

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19090511

QC BATCH REPORT

Batch ID: R346164 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **WBLKW1-091219** Units: **mg/L** Analysis Date: **12-Sep-2019 17:42**
Client ID: Run ID: **ICS-Integrion_346164** SeqNo: **5250735** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	0.100	0.100								U
Nitrogen, Nitrite (As N)	0.100	0.100								U
Sulfate	0.500	0.500								U

LCS Sample ID: **WLCSW1-091219** Units: **mg/L** Analysis Date: **12-Sep-2019 17:59**
Client ID: Run ID: **ICS-Integrion_346164** SeqNo: **5250736** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	4.011	0.100	4	0	100	80 - 120				
Nitrogen, Nitrite (As N)	4.162	0.100	4	0	104	80 - 120				
Sulfate	20.13	0.500	20	0	101	80 - 120				

LCSD Sample ID: **WLCSDW1-091219** Units: **mg/L** Analysis Date: **12-Sep-2019 18:15**
Client ID: Run ID: **ICS-Integrion_346164** SeqNo: **5250737** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	3.997	0.100	4	0	99.9	80 - 120	4.011	0.365	20	
Nitrogen, Nitrite (As N)	4.146	0.100	4	0	104	80 - 120	4.162	0.366	20	
Sulfate	20.13	0.500	20	0	101	80 - 120	20.13	0.00745	20	

MS Sample ID: **HS19090511-02MS** Units: **mg/L** Analysis Date: **12-Sep-2019 21:35**
Client ID: **35AWW20_091119** Run ID: **ICS-Integrion_346164** SeqNo: **5250980** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	2.02	0.100	2	0	101	80 - 120				
Nitrogen, Nitrite (As N)	2.105	0.100	2	0	105	80 - 120				
Sulfate	1164	0.500	10	1156	73.4	80 - 120				SEO

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19090511

QC BATCH REPORT

Batch ID: R346164 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY SW9056A

MSD Sample ID: **HS19090511-02MSD** Units: **mg/L** Analysis Date: **12-Sep-2019 21:52**
Client ID: **35AWW20_091119** Run ID: **ICS-Integrion_346164** SeqNo: **5250981** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	2.035	0.100	2	0	102	80 - 120	2.02	0.735	20	
Nitrogen, Nitrite (As N)	2.128	0.100	2	0	106	80 - 120	2.105	1.09	20	
Sulfate	1173	0.500	10	1156	166	80 - 120	1164	0.793	20	SEO

The following samples were analyzed in this batch: HS19090511-01 HS19090511-02 HS19090511-03 HS19090511-04 HS19090511-05 HS19090511-06 HS19090511-07

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19090511

QC BATCH REPORT

Batch ID: R346978 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY SW9056A

MBLK Sample ID: **WBLKW2-092519** Units: **mg/L** Analysis Date: **26-Sep-2019 00:25**
Client ID: Run ID: **ICS-Integrion_346978** SeqNo: **5268869** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	0.500	0.500								U
Sulfate	0.500	0.500								U

LCS Sample ID: **WLCSW2-092519** Units: **mg/L** Analysis Date: **26-Sep-2019 00:42**
Client ID: Run ID: **ICS-Integrion_346978** SeqNo: **5268870** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.87	0.500	20	0	99.3	80 - 120				
Sulfate	20.25	0.500	20	0	101	80 - 120				

LCSD Sample ID: **WLCSDW2-092519** Units: **mg/L** Analysis Date: **26-Sep-2019 00:58**
Client ID: Run ID: **ICS-Integrion_346978** SeqNo: **5268871** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.76	0.500	20	0	98.8	80 - 120	19.87	0.565	20	
Sulfate	20.08	0.500	20	0	100	80 - 120	20.25	0.834	20	

MS Sample ID: **HS19090511-02MS** Units: **mg/L** Analysis Date: **26-Sep-2019 01:48**
Client ID: **35AWW20_091119** Run ID: **ICS-Integrion_346978** SeqNo: **5268874** PrepDate: DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	1085	10.0	200	901.8	91.5	80 - 120				O
Sulfate	1377	10.0	200	1197	90.1	80 - 120				O

MSD Sample ID: **HS19090511-02MSD** Units: **mg/L** Analysis Date: **26-Sep-2019 02:05**
Client ID: **35AWW20_091119** Run ID: **ICS-Integrion_346978** SeqNo: **5268875** PrepDate: DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	1078	10.0	200	901.8	88.0	80 - 120	1085	0.649	20	O
Sulfate	1365	10.0	200	1197	84.3	80 - 120	1377	0.841	20	O

The following samples were analyzed in this batch: HS19090511-01 HS19090511-02 HS19090511-03 HS19090511-04 HS19090511-05 HS19090511-06 HS19090511-07

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: **HS19090511**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	19-028-0	27-Mar-2020
California	2919, 2019-2020	30-Apr-2020
Dept of Defense	ANAB L2231	20-Dec-2021
Florida	E87611-28	30-Jun-2020
Illinois	2000322019-2	09-May-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Kentucky	123043, 2019-2020	30-Apr-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Carolina	624-2019	31-Dec-2019
North Dakota	R-193 2019-2020	30-Apr-2020
Oklahoma	2019-141	31-Aug-2020
Texas	TX104704231-19-23	30-Apr-2020

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Work Order: HS19090511

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS19090511-01	35AWW19_091119	Login	9/12/2019 12:27:15 PM	JML	WET111
HS19090511-01	35AWW19_091119	Login	9/12/2019 12:27:15 PM	JML	Sub
HS19090511-01	35AWW19_091119	Login	9/12/2019 12:27:15 PM	JML	Sub
HS19090511-01	35AWW19_091119	Login	9/12/2019 12:27:15 PM	JML	VOA257
HS19090511-01	35AWW19_091119	Login	9/12/2019 12:27:15 PM	JML	Sub
HS19090511-01	35AWW19_091119	Login	9/12/2019 12:27:15 PM	JML	Sub
HS19090511-02	35AWW20_091119	Login	9/12/2019 12:36:52 PM	JML	WET111
HS19090511-02	35AWW20_091119	Login	9/12/2019 12:36:52 PM	JML	Sub
HS19090511-02	35AWW20_091119	Login	9/12/2019 12:36:52 PM	JML	Sub
HS19090511-02	35AWW20_091119	Login	9/12/2019 12:36:52 PM	JML	VOA257
HS19090511-02	35AWW20_091119	Login	9/12/2019 12:36:52 PM	JML	Sub
HS19090511-02	35AWW20_091119	Login	9/12/2019 12:36:52 PM	JML	Sub
HS19090511-03	LHSMW07_091119	Login	9/12/2019 12:36:52 PM	JML	WET111
HS19090511-03	LHSMW07_091119	Login	9/12/2019 12:36:52 PM	JML	Sub
HS19090511-03	LHSMW07_091119	Login	9/12/2019 12:36:52 PM	JML	Sub
HS19090511-03	LHSMW07_091119	Login	9/12/2019 12:36:52 PM	JML	VOA257
HS19090511-03	LHSMW07_091119	Login	9/12/2019 12:36:52 PM	JML	Sub
HS19090511-03	LHSMW07_091119	Login	9/12/2019 12:36:52 PM	JML	Sub
HS19090511-04	35AWW06_091119	Login	9/12/2019 12:36:52 PM	JML	WET111
HS19090511-04	35AWW06_091119	Login	9/12/2019 12:36:52 PM	JML	Sub
HS19090511-04	35AWW06_091119	Login	9/12/2019 12:36:52 PM	JML	Sub
HS19090511-04	35AWW06_091119	Login	9/12/2019 12:36:52 PM	JML	VOA257
HS19090511-04	35AWW06_091119	Login	9/12/2019 12:36:52 PM	JML	Sub
HS19090511-04	35AWW06_091119	Login	9/12/2019 12:36:52 PM	JML	Sub
HS19090511-05	35AWW06_091119_a	Login	9/12/2019 12:36:52 PM	JML	WET111
HS19090511-05	35AWW06_091119_a	Login	9/12/2019 12:36:52 PM	JML	VOA257
HS19090511-05	35AWW06_091119_a	Login	9/12/2019 12:36:52 PM	JML	Sub
HS19090511-05	35AWW06_091119_a	Login	9/12/2019 12:36:52 PM	JML	Sub
HS19090511-06	35AWW23_091119	Login	9/12/2019 12:36:52 PM	JML	WET111
HS19090511-06	35AWW23_091119	Login	9/12/2019 12:36:52 PM	JML	Sub
HS19090511-06	35AWW23_091119	Login	9/12/2019 12:36:52 PM	JML	Sub
HS19090511-06	35AWW23_091119	Login	9/12/2019 12:36:52 PM	JML	VOA257
HS19090511-06	35AWW23_091119	Login	9/12/2019 12:36:52 PM	JML	Sub
HS19090511-06	35AWW23_091119	Login	9/12/2019 12:36:52 PM	JML	Sub
HS19090511-07	35AWW11_091119	Login	9/12/2019 12:36:52 PM	JML	WET111
HS19090511-07	35AWW11_091119	Login	9/12/2019 12:36:52 PM	JML	Sub
HS19090511-07	35AWW11_091119	Login	9/12/2019 12:36:52 PM	JML	Sub
HS19090511-07	35AWW11_091119	Login	9/12/2019 12:36:52 PM	JML	VOA257
HS19090511-07	35AWW11_091119	Login	9/12/2019 12:36:52 PM	JML	Sub

ALS Houston, US Date: 03-Oct-19

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Work Order: HS19090511

SAMPLE TRACKING

HS19090511-07	35AWW11_091119	Login	9/12/2019 12:36:52 PM	JML	Sub
HS19090511-08	Trip Blank	Login	9/12/2019 12:38:33 PM	JML	VOA257

ALS Houston, US Date: 03-Oct-19

Sample Receipt Checklist

Client Name: Bhate Environmental
Work Order: HS19090511
Date/Time Received: **12-Sep-2019 08:50**
Received by: **AC**

Checklist completed by: *Paresh M. Giga* 12-Sep-2019
eSignature | Date

Reviewed by: _____
eSignature | Date

Matrices: **GW/Water**
Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	1 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:None
Samplers name present on COC?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	1.8c U/c	IR25	
Cooler(s)/Kit(s):	43953		
Date/Time sample(s) sent to storage:	9/12/19 13:20		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Page: ____ of ____

Project/Phase No: NWO1312.0150

HS19090511

Bhate Environmental Associates, Inc.
LHAAP-58

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / LHAAP-58

Client Name:

Collected by: Scott Beesinger

Field Sample ID (30 Characters Max)	ERPIMS LOCID (15 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code [2]	Sample Number [3]	Sample Matrix [4]	Number of containers	Sample Analysis Requested [5] VOC	MEE	TDC	CO2	Anions				Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
35AWW19_09111	9	11Sep2019	0710	-	N		WG	10	X	X	X	X	X							
35AWW20_09111	9	11Sep2019	0810	-	N		WG	10	X	X	X	X	X							
35AWW20_09111	9_MS	11Sep2019	0810	-	MS		WG	10	X	X	X	X	X							
35AWW20_09111	9_MSD	11Sep2019	0810	-	SD		WG	10	X	X	X	X	X							
LHSmw07_09111	9	11Sep2019	0915	-	N		WG	10	X	X	X	X	X							
35AWW06_09111	9	11Sep2019	1015	-	N		WG	10	X	X	X	X	X							
35AWW06_09111	9_a	11Sep2019	1015	-	FD		WG	10	X	X	X	X	X							
35AWW23_09111	9	11Sep2019	1125	-	N		WG	10	X	X	X	X	X							
35AWW11_09111	9	11Sep2019	1235	-	N		WG	10	X	X	X	X	X							
TRIP BLANK		11Sep2019		-	TB		W	2	X											
				-																

COMMENTS: _____

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	9/11/19	1330	1. AC	09/12/19	08:50
2.			2.		
3.			3.		

VIC 1.8 IR#25 CF 0.0 43953

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped No.:

_____ Method of Shipment: _____

_____ Fed Ex _____ Airbill Number:

_____ Analytical Lab: ALS 10450 Stanciff Rd. Suite 210 Houston, TX 77099 (281) 530-5656

ATTN: SONIA WEST Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)

2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

43953

CUSTODY SEAL

Date: 9/11/19 Time: 1330
Name: Scott Beesinger
Company: BHATE

Seal Broken By: SM
Date: 09/12/19

43953 SEP 12

Must Deliver Next Business Day
Time and Tempature Sensitive!

43953

ORIGIN ID:SGRA (903) 930-6193
SCOTT BEESINER
BHATE ENVIRONMENTAL ASSOCIATES
1203-B EAST GRAND AVE. PMB202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 04SEP19
ACTWGT: 1.00 LB MAN
CAD: 300130/CAFE3211
DIMS: 26x14x14 IN

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
REF: WEST PLUM2-30 57486-CG

RMA:

FedEx Express

E

FedEx
TRK# 3221 4809 7837 5327

THU - 12 SEP 10:30A
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

110 162705 11SEP19 GGSA 568C1/9084/0C8A

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
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www.alsglobal.com

October 02, 2019

Analytical Report for Service Request No: K1909004

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: HS19090511

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory September 13, 2019
For your reference, these analyses have been assigned our service request number **K1909004.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy

Kelley Lovejoy
Project Manager

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Environmental
ALS Group USA, Corp
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www.alsglobal.com

Table of Contents

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Chain of Custody
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Raw Data
    General Chemistry

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS Environmental

Client: ALS Environmental - US
Project: HS19090511
Sample Matrix: Water

Service Request: K1909004
Date Received: 09/13/2019

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

One water sample was received for analysis at ALS Environmental on 09/13/2019. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The sample was stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by Kelley Lovejoy Date 10/02/2019

Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

K1908452 9004

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID:** **12161**

SUBCONTRACT TO:

ALS Environmental Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Phone: +1 360 501 3312

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: RJ Modashia
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: RJ.Modashia@alsglobal.com
Alternate Contact:
Email:

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS19090511
TSR: Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS19090511-02**	**35AWW20_091119**	**Groundwater**	**11 Sep 2019 08:10**
	TOC Analysis for DOD Level IV/Excel EDD			26 Sep 2019
2.	**HS19090511-03**	**LHSMW07_091119**	**Groundwater**	**11 Sep 2019 09:15**
	TOC Analysis for DOD Level IV/Excel EDD			26 Sep 2019
3.	**HS19090511-04**	**35AWW06_091119**	**Groundwater**	**11 Sep 2019 10:15**
	TOC Analysis for DOD Level IV/Excel EDD			26 Sep 2019
4.	**HS19090511-05**	**35AWW06_091119_a**	**Groundwater**	**11 Sep 2019 10:15**
	TOC Analysis for DOD Level IV/Excel EDD			26 Sep 2019
5.	**HS19090511-06**	**35AWW23_091119**	**Groundwater**	**11 Sep 2019 11:25**
	TOC Analysis for DOD Level IV/Excel EDD			26 Sep 2019
6.	**HS19090511-07**	**35AWW11_091119**	**Groundwater**	**11 Sep 2019 12:35**
	TOC Analysis for DOD Level IV/Excel EDD			26 Sep 2019

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.
HS19090511-02 MS/MSD

QC Level: DOD IV (DoD Data Package)

Received: C Graves ALS
Cody Graves 9/13/19
1000

9004
KH084552

Subcontract Chain of Custody

SAMPLING STATE: **Texas**

COC ID: **12161**

Relinquished By: _____ Date/Time: 9/12/19 1800.

Received By: _____ Date/Time: 9/13/19 1000

Cooler ID(s): _____ Temperature(s): _____

ALS

9004 PC KL

Cooler Receipt and Preservation Form

Client ALS Houston Service Request K19 08452

Received: 9/13/19 Opened: 9/13/19 By: CG Unloaded: 9/13/19 By: CG

1. Samples were received via? *USPS* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 2 Front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
-0.5	-0.4	0.8	0.9	+0.1	360	12161	4809 7831 8755	

4. Packing material: *Inserts* *Baggies* (*Bubble Wrap*) *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA (Y) N
   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
11. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: Received 2 vials for HS1909051I-01 (35AWW19_091119) collected 9/11/19 @ 0710. Not listed on COC.

General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K1909004
Project:	HS19090511	**Date Collected:**	09/11/19
Sample Matrix:	Water	**Date Received:**	09/13/19
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Carbon, Total Organic

Sample Name	Lab Code	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
35AWW19_091119	K1909004-001	**1.19**	0.50	0.20	0.07	1	09/29/19 02:07	
Method Blank	K1909004-MB	ND U	0.50	0.20	0.07	1	09/28/19 23:46	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project HS19090511
Sample Matrix: Water

Service Request: K1909004
Date Collected: 09/11/19
Date Received: 09/13/19
Date Analyzed: 09/29/19

Replicate Sample Summary
General Chemistry Parameters

Sample Name: 35AWW19_091119
Lab Code: K1909004-001

Units: mg/L
Basis: NA

Analyte Name	Analysis Method	LOQ	LOD	MDL	Sample Result	Duplicate Sample K1909004-001DUP Result	Average	RPD	RPD Limit
Carbon, Total Organic	SM 5310 C	0.50	0.20	0.07	1.19	1.14	1.17	4	10

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K1909004
Project:	HS19090511	**Date Analyzed:**	09/29/19
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	653373

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1909004-LCS	24.4	25.0	98	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K1909004
Project: HS19090511

Continuing Calibration Verification (CCV) Summary

Carbon, Total Organic

Analysis Method: SM 5310 C **Units:** mg/L

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	653373	KQ1913973-01	09/28/19 14:30	25.0	24.5	98	90-110
CCV2	653373	KQ1913973-02	09/28/19 18:33	25.0	24.1	97	90-110
CCV3	653373	KQ1913973-03	09/28/19 23:17	25.0	23.9	96	90-110
CCV4	653373	KQ1913973-04	09/29/19 04:00	25.0	23.5	94	90-110
CCV5	653373	KQ1913973-25	09/29/19 12:37	25.0	23.7	95	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:**K1909004
Project: HS19090511

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic

Analysis Method: SM 5310 C **Units:**mg/L

	Analysis Lot	Lab Code	Date Analyzed	LOQ	LOD	MDL	Result	Q
CCB1	653373	KQ1913973-05	09/28/19 14:45	0.50	0.20	0.07	ND	U
CCB2	653373	KQ1913973-06	09/28/19 18:47	0.50	0.20	0.07	ND	U
CCB3	653373	KQ1913973-07	09/28/19 23:31	0.50	0.20	0.07	ND	U
CCB4	653373	KQ1913973-08	09/29/19 04:14	0.50	0.20	0.07	ND	U
CCB5	653373	KQ1913973-26	09/29/19 12:52	0.50	0.20	0.07	ND	U

Raw Data

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General Chemistry

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8714, 8802
IV IV

Work Request # (Original) T1901580, K1908491, 8525, 8546, 8565, 8683, 8707, 8754

Tier: IV II III II I II IV II

Date Analyzed: 9 10/1/19 QB 10/1/19 9004 IV

Analyst: QB for BCD

Run # DOC: 653372, 653374 TOC: 653373, 653375

Analysis: TOC/DOC

DATA QUALITY REPORT
INORGANICS

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

1.	Is the method name and number correct and appropriate?	yes/no/NA
2.	Holding times met for all analyses and for all samples?	yes/no/NA
3.	Are calculations correct?	yes/no/NA
4.	Is the reporting basis correct? (Dry Weight)	yes/no/NA
5.	All quality control criteria met?	yes/no
6.	Is the calibration curve correlation coefficient ≥ 0.995?	yes/no/NA
7.	MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency?	yes/no/NA
8.	Are ICVs, CCVs, and CCBs all within acceptance limits?	yes/no/NA
9.	Are results for methods blanks all ND?	yes/no/NA
10.	Are all QC samples within acceptance criteria? (LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.)	yes/no/NA
11.	Are all exceptions explained?	yes/no/NA
12.	Have all applicable service requests been reviewed?	yes/no/NA
13.	Are all samples labeled correctly?	yes/no/NA
14.	Have all instructions on the service request been followed? (e.g. Special MRLs, QC on a specific sample, Form V)	yes/no/NA
15.	Are detection limits and units reported correctly?	yes/no/NA
16.	Is the unused space on the benchsheet crossed out?	yes/no/NA
17.	Was analysis turned in by the due date? (n-2) (If not record SR#)	yes/no/NA

COMMENTS:

10. K1908683-1 lidup RPD is 11%
- sample concentration is less than 5x MRL

17. T1901580 was due 9/30/19
K1908525 was due 10/1/19
K1908546 was due 9/30/19

Final Approved by: [signature] Date: 10/01/19

DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 653372 **Method/Testcode:** SM 5310 C/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1913972-01	Carbon, Dissolved Organic (DOC)	CCV		Water	24.45 mg/L	10 mL	24.5 mg/L	1					9/28/19 14:30:00	N	IV
KQ1913972-02	Carbon, Dissolved Organic (DOC)	CCV		Water	24.15 mg/L	10 mL	24.1 mg/L	1					9/28/19 18:33:00	N	IV
KQ1913972-03	Carbon, Dissolved Organic (DOC)	CCV		Water	23.92 mg/L	10 mL	23.9 mg/L	1					9/28/19 23:17:00	N	IV
KQ1913972-04	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			9/28/19 14:45:00	N	IV
KQ1913972-05	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			9/28/19 18:47:00	N	IV
KQ1913972-06	Carbon, Dissolved Organic (DOC)	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			9/28/19 23:31:00	N	IV
KQ1913972-07	Carbon, Dissolved Organic (DOC)	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			9/28/19 14:59:00	N	IV
KQ1913972-08	Carbon, Dissolved Organic (DOC)	LCS		Water	25.08 mg/L	10 mL	25.1 mg/L	1	0.07	0.50	100		9/28/19 15:14:00	N	IV
KQ1913972-09	Carbon, Dissolved Organic (DOC)	MS	T1901580-097	Water	29.96 mg/L	10 mL	30.0 mg/L	1	0.07	0.50	106		9/28/19 17:08:00	N	IV
KQ1913972-10	Carbon, Dissolved Organic (DOC)	DUP	T1901580-097	Water	3.54 mg/L	10 mL	3.54 mg/L	1	0.07	0.50		<1	9/28/19 16:40:00	N	IV
KQ1913972-11	Carbon, Dissolved Organic (DOC)	DUP	T1901580-098	Water	3.39 mg/L	10 mL	3.39 mg/L	1	0.07	0.50		1	9/28/19 17:37:00	N	IV
KQ1913972-12	Carbon, Dissolved Organic (DOC)	DUP	T1901580-099	Water	3.38 mg/L	10 mL	3.38 mg/L	1	0.07	0.50		<1	9/28/19 18:05:00	N	IV
KQ1913972-13	Carbon, Dissolved Organic (DOC)	DUP	T1901580-100	Water	2.43 mg/L	10 mL	2.43 mg/L	1	0.07	0.50		5	9/28/19 19:02:00	N	IV
KQ1913972-14	Carbon, Dissolved Organic (DOC)	DUP	T1901580-101	Water	3.35 mg/L	10 mL	3.35 mg/L	1	0.07	0.50		1	9/28/19 19:30:00	N	IV
KQ1913972-15	Carbon, Dissolved Organic (DOC)	DUP	T1901580-102	Water	2.95 mg/L	10 mL	2.95 mg/L	1	0.07	0.50		2	9/28/19 19:58:00	N	IV
KQ1913972-16	Carbon, Dissolved Organic (DOC)	DUP	T1901580-103	Water	3.41 mg/L	10 mL	3.41 mg/L	1	0.07	0.50		1	9/28/19 20:26:00	N	IV
KQ1913972-17	Carbon, Dissolved Organic (DOC)	DUP	T1901580-104	Water	3.41 mg/L	10 mL	3.41 mg/L	1	0.07	0.50		1	9/28/19 20:55:00	N	IV
T1901580-097	Carbon, Dissolved Organic (DOC)	N/A		Water	3.54 mg/L	10 mL	3.54 mg/L	1	0.07	0.50			9/28/19 16:40:00	N	IV
T1901580-098	Carbon, Dissolved Organic (DOC)	N/A		Water	3.43 mg/L	10 mL	3.43 mg/L	1	0.07	0.50			9/28/19 17:37:00	N	IV
T1901580-099	Carbon, Dissolved Organic (DOC)	N/A		Water	3.39 mg/L	10 mL	3.39 mg/L	1	0.07	0.50			9/28/19 18:05:00	N	IV
T1901580-100	Carbon, Dissolved Organic (DOC)	N/A		Water	2.54 mg/L	10 mL	2.54 mg/L	1	0.07	0.50			9/28/19 19:02:00	N	IV
T1901580-101	Carbon, Dissolved Organic (DOC)	N/A		Water	3.31 mg/L	10 mL	3.31 mg/L	1	0.07	0.50			9/28/19 19:30:00	N	IV
T1901580-102	Carbon, Dissolved Organic (DOC)	N/A		Water	2.90 mg/L	10 mL	2.90 mg/L	1	0.07	0.50			9/28/19 19:58:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

10/01/19

AB for BCD 10/1/19

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 653372 **Method/Testcode:** SM 5310 C/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
T1901580-103	Carbon, Dissolved Organic (DOC)	N/A		Water	3.36 mg/L	10 mL	3.36 mg/L	1	0.07	0.50			9/28/19 20:26:00	N	IV
T1901580-104	Carbon, Dissolved Organic (DOC)	N/A		Water	3.36 mg/L	10 mL	3.36 mg/L	1	0.07	0.50			9/28/19 20:55:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

00999146

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 653373 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K1908491-003	Carbon, Total Organic	N/A		Water	6.14 mg/L	10 mL	614 mg/L	100	7	50			9/29/19 02:35:00	N	II
K1908491-004	Carbon, Total Organic	N/A		Water	4.83 mg/L	10 mL	483 mg/L	100	7	50			9/29/19 03:03:00	N	II
K1908491-005	Carbon, Total Organic	N/A		Water	4.60 mg/L	10 mL	460 mg/L	100	7	50			9/29/19 03:32:00	N	II
K1908525-009	Carbon, Total Organic	N/A		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			9/28/19 21:23:00	N	III
K1908546-001	Carbon, Total Organic	N/A		Water	3.11 mg/L	10 mL	3.11 mg/L	1	0.07	0.50			9/28/19 22:06:00	N	II
K1908546-002	Carbon, Total Organic	N/A		Water	1.63 mg/L	10 mL	1.63 mg/L	1	0.07	0.50			9/28/19 22:20:00	N	II
K1908565-001	Carbon, Total Organic	N/A		Reagent Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			9/28/19 15:43:00	N	I
K1908565-002	Carbon, Total Organic	N/A		Reagent Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			9/28/19 16:11:00	N	I
K1908683-001	Carbon, Total Organic	N/A		Water	1.30 mg/L	10 mL	1.30 mg/L	1	0.07	0.50			9/29/19 00:15:00	N	II
K1908683-002	Carbon, Total Organic	N/A		Water	1.97 mg/L	10 mL	1.97 mg/L	1	0.07	0.50			9/29/19 00:43:00	N	II
K1908707-001	Carbon, Total Organic	N/A		Water	1.14 mg/L	10 mL	1.14 mg/L	1	0.07	0.50			9/29/19 01:39:00	N	IV
K1908754-001	Carbon, Total Organic	N/A		Water	1.35 mg/L	10 mL	1.35 mg/L	1	0.07	0.50			9/29/19 04:29:00	N	II
K1909004-001	Carbon, Total Organic	N/A		Water	1.19 mg/L	10 mL	1.19 mg/L	1	0.07	0.50			9/29/19 02:07:00	N	IV
KQ1913973-01	Carbon, Total Organic	CCV		Reagent Water	24.45 mg/L	10 mL	24.5 mg/L	1					9/28/19 14:30:00	N	I
KQ1913973-02	Carbon, Total Organic	CCV		Reagent Water	24.15 mg/L	10 mL	24.1 mg/L	1					9/28/19 18:33:00	N	I
KQ1913973-03	Carbon, Total Organic	CCV		Reagent Water	23.92 mg/L	10 mL	23.9 mg/L	1					9/28/19 23:17:00	N	I
KQ1913973-04	Carbon, Total Organic	CCV		Reagent Water	23.54 mg/L	10 mL	23.5 mg/L	1					9/29/19 04:00:00	N	I
KQ1913973-05	Carbon, Total Organic	CCB		Reagent Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			9/28/19 14:45:00	N	I
KQ1913973-06	Carbon, Total Organic	CCB		Reagent Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			9/28/19 18:47:00	N	I
KQ1913973-07	Carbon, Total Organic	CCB		Reagent Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			9/28/19 23:31:00	N	I
KQ1913973-08	Carbon, Total Organic	CCB		Reagent Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			9/29/19 04:14:00	N	I
KQ1913973-09	Carbon, Total Organic	MB		Reagent Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			9/28/19 23:46:00	N	I
KQ1913973-10	Carbon, Total Organic	LCS		Reagent Water	24.39 mg/L	10 mL	24.4 mg/L	1	0.07	0.50	98		9/29/19 00:01:00	N	I
KQ1913973-11	Carbon, Total Organic	MS	K1908525-009	Water	25.07 mg/L	10 mL	25.1 mg/L	1	0.07	0.50	100		9/28/19 21:51:00	N	III
KQ1913973-12	Carbon, Total Organic	DUP	K1908565-001	Reagent Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	9/28/19 15:43:00	N	I
KQ1913973-13	Carbon, Total Organic	DUP	K1908565-002	Reagent Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	9/28/19 16:11:00	N	I
KQ1913973-14	Carbon, Total Organic	DUP	K1908525-009	Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	9/28/19 21:23:00	N	III
KQ1913973-15	Carbon, Total Organic	DUP	K1908546-001	Water	3.12 mg/L	10 mL	3.12 mg/L	1	0.07	0.50		<1	9/28/19 22:06:00	N	II
KQ1913973-16	Carbon, Total Organic	DUP	K1908546-002	Water	1.67 mg/L	10 mL	1.67 mg/L	1	0.07	0.50		2	9/28/19 22:20:00	N	II

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

10/01/19

QB for BCD 10/1/19

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Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 653373 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1913973-17	Carbon, Total Organic	DUP	K1908683-001	Water	1.17 mg/L	10 mL	1.17 mg/L	1	0.07	0.50		11*	9/29/19 00:15:00	N	II
KQ1913973-18	Carbon, Total Organic	DUP	K1908683-002	Water	2.02 mg/L	10 mL	2.02 mg/L	1	0.07	0.50		2	9/29/19 00:43:00	N	II
KQ1913973-19	Carbon, Total Organic	DUP	K1908707-001	Water	1.18 mg/L	10 mL	1.18 mg/L	1	0.07	0.50		4	9/29/19 01:39:00	N	IV
KQ1913973-20	Carbon, Total Organic	DUP	K1909004-001	Water	1.14 mg/L	10 mL	1.14 mg/L	1	0.07	0.50		4	9/29/19 02:07:00	N	IV
KQ1913973-21	Carbon, Total Organic	DUP	K1908491-003	Water	6.20 mg/L	10 mL	620 mg/L	100	7	50		<1	9/29/19 02:35:00	N	II
KQ1913973-22	Carbon, Total Organic	DUP	K1908491-004	Water	4.77 mg/L	10 mL	477 mg/L	100	7	50		1	9/29/19 03:03:00	N	II
KQ1913973-23	Carbon, Total Organic	DUP	K1908491-005	Water	4.60 mg/L	10 mL	460 mg/L	100	7	50		<1	9/29/19 03:32:00	N	II
KQ1913973-24	Carbon, Total Organic	DUP	K1908754-001	Water	1.38 mg/L	10 mL	1.38 mg/L	1	0.07	0.50		2	9/29/19 04:29:00	N	II
KQ1913973-25	Carbon, Total Organic	CCV		Reagent Water	23.67 mg/L	10 mL	23.7 mg/L	1					9/29/19 12:37:00	N	I
KQ1913973-26	Carbon, Total Organic	CCB		Reagent Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			9/29/19 12:52:00	N	I

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

QA for BCD
10/1/19

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 653374 **Method/Testcode:** 9060A/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K1908714-022	Carbon, Dissolved Organic (DOC)	N/A		Pore Water	2.01 mg/L	10 mL	2.01 mg/L	1		0.50			9/29/19 04:57:00	N	IV
K1908714-023	Carbon, Dissolved Organic (DOC)	N/A		Pore Water	9.11 mg/L	10 mL	9.11 mg/L	1		0.50			9/29/19 07:03:00	N	IV
K1908714-024	Carbon, Dissolved Organic (DOC)	N/A		Pore Water	0.60 mg/L	10 mL	0.60 mg/L	1		0.50			9/29/19 07:59:00	N	IV
K1908714-026	Carbon, Dissolved Organic (DOC)	N/A		Pore Water	4.50 mg/L	10 mL	4.50 mg/L	1		0.50			9/29/19 08:54:00	N	IV
K1908714-027	Carbon, Dissolved Organic (DOC)	N/A		Pore Water	1.17 mg/L	10 mL	1.17 mg/L	1		0.50			9/29/19 09:50:00	N	IV
K1908802-001	Carbon, Dissolved Organic (DOC)	N/A		Pore Water	4.08 mg/L	10 mL	4.08 mg/L	1		0.50			9/29/19 10:46:00	N	IV
K1908802-002	Carbon, Dissolved Organic (DOC)	N/A		Pore Water	7.87 mg/L	10 mL	7.87 mg/L	1		0.50			9/29/19 11:42:00	N	IV
K1908802-003	Carbon, Dissolved Organic (DOC)	N/A		Pore Water	1.00 mg/L	10 mL	1.00 mg/L	1		0.50			9/29/19 14:58:00	N	IV
K1908802-004	Carbon, Dissolved Organic (DOC)	N/A		Pore Water	0.67 mg/L	10 mL	0.67 mg/L	1		0.50			9/29/19 15:54:00	N	IV
K1908802-005	Carbon, Dissolved Organic (DOC)	N/A		Pore Water	0.69 mg/L	10 mL	0.69 mg/L	1		0.50			9/29/19 16:50:00	N	IV
K1908802-008	Carbon, Dissolved Organic (DOC)	N/A		Pore Water	0.60 mg/L	10 mL	0.60 mg/L	1		0.50			9/29/19 17:46:00	N	IV
K1908802-009	Carbon, Dissolved Organic (DOC)	N/A		Pore Water	3.75 mg/L	10 mL	3.75 mg/L	1		0.50			9/29/19 18:41:00	N	IV
K1908802-011	Carbon, Dissolved Organic (DOC)	N/A		Pore Water	0.77 mg/L	10 mL	0.77 mg/L	1		0.50			9/29/19 19:37:00	N	IV
K1908802-014	Carbon, Dissolved Organic (DOC)	N/A		Pore Water	0.83 mg/L	10 mL	0.83 mg/L	1		0.50			9/29/19 20:32:00	N	IV
K1908802-015	Carbon, Dissolved Organic (DOC)	N/A		Pore Water	0.82 mg/L	10 mL	0.82 mg/L	1		0.50			9/29/19 21:28:00	N	IV
K1908802-017	Carbon, Dissolved Organic (DOC)	N/A		Pore Water	0.75 mg/L	10 mL	0.75 mg/L	1		0.50			9/29/19 22:53:00	N	IV
K1908802-018	Carbon, Dissolved Organic (DOC)	N/A		Pore Water	1.08 mg/L	10 mL	1.08 mg/L	1		0.50			9/29/19 23:49:00	N	IV
K1908802-019	Carbon, Dissolved Organic (DOC)	N/A		Pore Water	0.48 mg/L	10 mL	0.50 mg/L U	1		0.50			9/30/19 00:45:00	N	IV
K1908802-020	Carbon, Dissolved Organic (DOC)	N/A		Pore Water	0.50 mg/L	10 mL	0.50 mg/L	1		0.50			9/30/19 01:40:00	N	IV
K1908802-022	Carbon, Dissolved Organic (DOC)	N/A		Pore Water	1.36 mg/L	10 mL	1.36 mg/L	1		0.50			9/30/19 02:36:00	N	IV
KQ1913974-01	Carbon, Dissolved Organic (DOC)	CCV		Pore Water	23.54 mg/L	10 mL	23.5 mg/L	1					9/29/19 04:00:00	N	IV
KQ1913974-02	Carbon, Dissolved Organic (DOC)	CCV		Pore Water	23.67 mg/L	10 mL	23.7 mg/L	1					9/29/19 12:37:00	N	IV
KQ1913974-03	Carbon, Dissolved Organic (DOC)	CCV		Pore Water	23.09 mg/L	10 mL	23.1 mg/L	1					9/29/19 22:24:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Printed 10/1/19 11:01

Results Summary 10/01/19

AB for BCD 10/1/19

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 653374 **Method/Testcode:** 9060A/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1913974-04	Carbon, Dissolved Organic (DOC)	CCV		Pore Water	22.84 mg/L	10 mL	22.8 mg/L	1					9/30/19 07:29:00	N	IV
KQ1913974-05	Carbon, Dissolved Organic (DOC)	CCB		Pore Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			9/29/19 04:14:00	N	IV
KQ1913974-06	Carbon, Dissolved Organic (DOC)	CCB		Pore Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			9/29/19 12:52:00	N	IV
KQ1913974-07	Carbon, Dissolved Organic (DOC)	CCB		Pore Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			9/29/19 22:38:00	N	IV
KQ1913974-08	Carbon, Dissolved Organic (DOC)	CCB		Pore Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			9/30/19 07:44:00	N	IV
KQ1913974-09	Carbon, Dissolved Organic (DOC)	MB		Pore Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			9/29/19 13:06:00	N	IV
KQ1913974-10	Carbon, Dissolved Organic (DOC)	LCS		Pore Water	24.32 mg/L	10 mL	24.3 mg/L	1		0.50	97		9/29/19 14:02:00	N	IV
KQ1913974-11	Carbon, Dissolved Organic (DOC)	MS	K1908714-022	Pore Water	24.82 mg/L	10 mL	99.3 mg/L	4		2.0	97		9/29/19 05:53:00	N	IV
KQ1913974-12	Carbon, Dissolved Organic (DOC)	MS	K1908714-022	Pore Water	25.07 mg/L	10 mL	100 mg/L	4		2.0	98		9/29/19 05:53:00	N	IV
KQ1913974-13	Carbon, Dissolved Organic (DOC)	MS	K1908714-022	Pore Water	25.08 mg/L	10 mL	100 mg/L	4		2.0	98		9/29/19 05:53:00	N	IV
KQ1913974-14	Carbon, Dissolved Organic (DOC)	MS	K1908714-022	Pore Water	24.97 mg/L	10 mL	99.9 mg/L	4		2.0	98		9/29/19 05:53:00	N	IV
KQ1913974-15	Carbon, Dissolved Organic (DOC)	DUP	K1908714-022	Pore Water	2.15 mg/L	10 mL	2.15 mg/L	1		0.50		7	9/29/19 04:57:00	N	IV
KQ1913974-16	Carbon, Dissolved Organic (DOC)	TRP	K1908714-022	Pore Water	2.21 mg/L	10 mL	2.21 mg/L	1		0.50		5	9/29/19 04:57:00	N	IV
KQ1913974-17	Carbon, Dissolved Organic (DOC)	QUAD	K1908714-022	Pore Water	2.27 mg/L	10 mL	2.27 mg/L	1		0.50		5	9/29/19 04:57:00	N	IV
KQ1913974-18	Carbon, Dissolved Organic (DOC)	DUP	K1908714-023	Pore Water	9.08 mg/L	10 mL	9.08 mg/L	1		0.50		<1	9/29/19 07:03:00	N	IV
KQ1913974-19	Carbon, Dissolved Organic (DOC)	TRP	K1908714-023	Pore Water	9.10 mg/L	10 mL	9.10 mg/L	1		0.50		<1	9/29/19 07:03:00	N	IV
KQ1913974-20	Carbon, Dissolved Organic (DOC)	QUAD	K1908714-023	Pore Water	9.12 mg/L	10 mL	9.12 mg/L	1		0.50		<1	9/29/19 07:03:00	N	IV
KQ1913974-21	Carbon, Dissolved Organic (DOC)	DUP	K1908714-024	Pore Water	0.55 mg/L	10 mL	0.55 mg/L	1		0.50		9	9/29/19 07:59:00	N	IV
KQ1913974-22	Carbon, Dissolved Organic (DOC)	TRP	K1908714-024	Pore Water	0.56 mg/L	10 mL	0.56 mg/L	1		0.50		5	9/29/19 07:59:00	N	IV
KQ1913974-23	Carbon, Dissolved Organic (DOC)	QUAD	K1908714-024	Pore Water	0.52 mg/L	10 mL	0.52 mg/L	1		0.50		6	9/29/19 07:59:00	N	IV
KQ1913974-24	Carbon, Dissolved Organic (DOC)	DUP	K1908714-026	Pore Water	4.46 mg/L	10 mL	4.46 mg/L	1		0.50		<1	9/29/19 08:54:00	N	IV
KQ1913974-25	Carbon, Dissolved Organic (DOC)	TRP	K1908714-026	Pore Water	4.47 mg/L	10 mL	4.47 mg/L	1		0.50		<1	9/29/19 08:54:00	N	IV
KQ1913974-26	Carbon, Dissolved Organic (DOC)	QUAD	K1908714-026	Pore Water	4.54 mg/L	10 mL	4.54 mg/L	1		0.50		<1	9/29/19 08:54:00	N	IV

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QB for BCD
10/1/19

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 653374 **Method/Testcode:** 9060A/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1913974-27	Carbon, Dissolved Organic (DOC)	DUP	K1908714-027	Pore Water	1.15 mg/L	10 mL	1.15 mg/L	1		0.50		2	9/29/19 09:50:00	N	IV
KQ1913974-28	Carbon, Dissolved Organic (DOC)	TRP	K1908714-027	Pore Water	1.14 mg/L	10 mL	1.14 mg/L	1		0.50		1	9/29/19 09:50:00	N	IV
KQ1913974-29	Carbon, Dissolved Organic (DOC)	QUAD	K1908714-027	Pore Water	1.12 mg/L	10 mL	1.12 mg/L	1		0.50		2	9/29/19 09:50:00	N	IV
KQ1913974-30	Carbon, Dissolved Organic (DOC)	DUP	K1908802-001	Pore Water	4.08 mg/L	10 mL	4.08 mg/L	1		0.50		<1	9/29/19 10:46:00	N	IV
KQ1913974-31	Carbon, Dissolved Organic (DOC)	TRP	K1908802-001	Pore Water	4.16 mg/L	10 mL	4.16 mg/L	1		0.50		1	9/29/19 10:46:00	N	IV
KQ1913974-32	Carbon, Dissolved Organic (DOC)	QUAD	K1908802-001	Pore Water	4.18 mg/L	10 mL	4.18 mg/L	1		0.50		1	9/29/19 10:46:00	N	IV
KQ1913974-33	Carbon, Dissolved Organic (DOC)	DUP	K1908802-002	Pore Water	7.90 mg/L	10 mL	7.90 mg/L	1		0.50		<1	9/29/19 11:42:00	N	IV
KQ1913974-34	Carbon, Dissolved Organic (DOC)	TRP	K1908802-002	Pore Water	7.95 mg/L	10 mL	7.95 mg/L	1		0.50		<1	9/29/19 11:42:00	N	IV
KQ1913974-35	Carbon, Dissolved Organic (DOC)	QUAD	K1908802-002	Pore Water	8.00 mg/L	10 mL	8.00 mg/L	1		0.50		<1	9/29/19 11:42:00	N	IV
KQ1913974-36	Carbon, Dissolved Organic (DOC)	DUP	K1908802-003	Pore Water	0.97 mg/L	10 mL	0.97 mg/L	1		0.50		4	9/29/19 14:58:00	N	IV
KQ1913974-37	Carbon, Dissolved Organic (DOC)	TRP	K1908802-003	Pore Water	0.95 mg/L	10 mL	0.95 mg/L	1		0.50		3	9/29/19 14:58:00	N	IV
KQ1913974-38	Carbon, Dissolved Organic (DOC)	QUAD	K1908802-003	Pore Water	0.94 mg/L	10 mL	0.94 mg/L	1		0.50		3	9/29/19 14:58:00	N	IV
KQ1913974-39	Carbon, Dissolved Organic (DOC)	DUP	K1908802-004	Pore Water	0.66 mg/L	10 mL	0.66 mg/L	1		0.50		1	9/29/19 15:54:00	N	IV
KQ1913974-40	Carbon, Dissolved Organic (DOC)	TRP	K1908802-004	Pore Water	0.73 mg/L	10 mL	0.73 mg/L	1		0.50		5	9/29/19 15:54:00	N	IV
KQ1913974-41	Carbon, Dissolved Organic (DOC)	QUAD	K1908802-004	Pore Water	0.72 mg/L	10 mL	0.72 mg/L	1		0.50		5	9/29/19 15:54:00	N	IV
KQ1913974-42	Carbon, Dissolved Organic (DOC)	DUP	K1908802-005	Pore Water	0.71 mg/L	10 mL	0.71 mg/L	1		0.50		3	9/29/19 16:50:00	N	IV
KQ1913974-43	Carbon, Dissolved Organic (DOC)	TRP	K1908802-005	Pore Water	0.71 mg/L	10 mL	0.71 mg/L	1		0.50		2	9/29/19 16:50:00	N	IV
KQ1913974-44	Carbon, Dissolved Organic (DOC)	QUAD	K1908802-005	Pore Water	0.65 mg/L	10 mL	0.65 mg/L	1		0.50		4	9/29/19 16:50:00	N	IV
KQ1913974-45	Carbon, Dissolved Organic (DOC)	DUP	K1908802-008	Pore Water	0.58 mg/L	10 mL	0.58 mg/L	1		0.50		4	9/29/19 17:46:00	N	IV
KQ1913974-46	Carbon, Dissolved Organic (DOC)	TRP	K1908802-008	Pore Water	0.62 mg/L	10 mL	0.62 mg/L	1		0.50		4	9/29/19 17:46:00	N	IV
KQ1913974-47	Carbon, Dissolved Organic (DOC)	QUAD	K1908802-008	Pore Water	0.60 mg/L	10 mL	0.60 mg/L	1		0.50		3	9/29/19 17:46:00	N	IV
KQ1913974-48	Carbon, Dissolved Organic (DOC)	DUP	K1908802-009	Pore Water	3.80 mg/L	10 mL	3.80 mg/L	1		0.50		2	9/29/19 18:41:00	N	IV
KQ1913974-49	Carbon, Dissolved Organic (DOC)	TRP	K1908802-009	Pore Water	3.85 mg/L	10 mL	3.85 mg/L	1		0.50		1	9/29/19 18:41:00	N	IV

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# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

QB for BCD
10/1/19

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 653374 **Method/Testcode:** 9060A/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1913974-50	Carbon, Dissolved Organic (DOC)	QUAD	K1908802-009	Pore Water	3.81 mg/L	10 mL	3.81 mg/L	1		0.50		1	9/29/19 18:41:00	N	IV
KQ1913974-51	Carbon, Dissolved Organic (DOC)	DUP	K1908802-011	Pore Water	0.76 mg/L	10 mL	0.76 mg/L	1		0.50		2	9/29/19 19:37:00	N	IV
KQ1913974-52	Carbon, Dissolved Organic (DOC)	TRP	K1908802-011	Pore Water	0.74 mg/L	10 mL	0.74 mg/L	1		0.50		2	9/29/19 19:37:00	N	IV
KQ1913974-53	Carbon, Dissolved Organic (DOC)	QUAD	K1908802-011	Pore Water	0.73 mg/L	10 mL	0.73 mg/L	1		0.50		2	9/29/19 19:37:00	N	IV
KQ1913974-54	Carbon, Dissolved Organic (DOC)	DUP	K1908802-014	Pore Water	0.80 mg/L	10 mL	0.80 mg/L	1		0.50		4	9/29/19 20:32:00	N	IV
KQ1913974-55	Carbon, Dissolved Organic (DOC)	TRP	K1908802-014	Pore Water	0.83 mg/L	10 mL	0.83 mg/L	1		0.50		2	9/29/19 20:32:00	N	IV
KQ1913974-56	Carbon, Dissolved Organic (DOC)	QUAD	K1908802-014	Pore Water	0.83 mg/L	10 mL	0.83 mg/L	1		0.50		2	9/29/19 20:32:00	N	IV
KQ1913974-57	Carbon, Dissolved Organic (DOC)	DUP	K1908802-015	Pore Water	0.88 mg/L	10 mL	0.88 mg/L	1		0.50		6	9/29/19 21:28:00	N	IV
KQ1913974-58	Carbon, Dissolved Organic (DOC)	TRP	K1908802-015	Pore Water	0.85 mg/L	10 mL	0.85 mg/L	1		0.50		3	9/29/19 21:28:00	N	IV
KQ1913974-59	Carbon, Dissolved Organic (DOC)	QUAD	K1908802-015	Pore Water	0.81 mg/L	10 mL	0.81 mg/L	1		0.50		3	9/29/19 21:28:00	N	IV
KQ1913974-60	Carbon, Dissolved Organic (DOC)	DUP	K1908802-017	Pore Water	0.74 mg/L	10 mL	0.74 mg/L	1		0.50		<1	9/29/19 22:53:00	N	IV
KQ1913974-61	Carbon, Dissolved Organic (DOC)	TRP	K1908802-017	Pore Water	0.74 mg/L	10 mL	0.74 mg/L	1		0.50		<1	9/29/19 22:53:00	N	IV
KQ1913974-62	Carbon, Dissolved Organic (DOC)	QUAD	K1908802-017	Pore Water	0.70 mg/L	10 mL	0.70 mg/L	1		0.50		3	9/29/19 22:53:00	N	IV
KQ1913974-63	Carbon, Dissolved Organic (DOC)	DUP	K1908802-018	Pore Water	1.13 mg/L	10 mL	1.13 mg/L	1		0.50		5	9/29/19 23:49:00	N	IV
KQ1913974-64	Carbon, Dissolved Organic (DOC)	TRP	K1908802-018	Pore Water	1.09 mg/L	10 mL	1.09 mg/L	1		0.50		3	9/29/19 23:49:00	N	IV
KQ1913974-65	Carbon, Dissolved Organic (DOC)	QUAD	K1908802-018	Pore Water	1.10 mg/L	10 mL	1.10 mg/L	1		0.50		2	9/29/19 23:49:00	N	IV
KQ1913974-66	Carbon, Dissolved Organic (DOC)	DUP	K1908802-019	Pore Water	0.48 mg/L	10 mL	0.50 mg/L U	1		0.50		NC	9/30/19 00:45:00	N	IV
KQ1913974-67	Carbon, Dissolved Organic (DOC)	TRP	K1908802-019	Pore Water	0.51 mg/L	10 mL	0.51 mg/L	1		0.50		NC	9/30/19 00:45:00	N	IV
KQ1913974-68	Carbon, Dissolved Organic (DOC)	QUAD	K1908802-019	Pore Water	0.51 mg/L	10 mL	0.51 mg/L	1		0.50		NC	9/30/19 00:45:00	N	IV
KQ1913974-69	Carbon, Dissolved Organic (DOC)	DUP	K1908802-020	Pore Water	0.53 mg/L	10 mL	0.53 mg/L	1		0.50		5	9/30/19 01:40:00	N	IV
KQ1913974-70	Carbon, Dissolved Organic (DOC)	TRP	K1908802-020	Pore Water	0.52 mg/L	10 mL	0.52 mg/L	1		0.50		3	9/30/19 01:40:00	N	IV
KQ1913974-71	Carbon, Dissolved Organic (DOC)	QUAD	K1908802-020	Pore Water	0.55 mg/L	10 mL	0.55 mg/L	1		0.50		4	9/30/19 01:40:00	N	IV
KQ1913974-72	Carbon, Dissolved Organic (DOC)	DUP	K1908802-022	Pore Water	1.43 mg/L	10 mL	1.43 mg/L	1		0.50		5	9/30/19 02:36:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 653374 **Method/Testcode:** 9060A/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1913974-73	Carbon, Dissolved Organic (DOC)	TRP	K1908802-022	Pore Water	1.41 mg/L	10 mL	1.41 mg/L	1		0.50		3	9/30/19 02:36:00	N	IV
KQ1913974-74	Carbon, Dissolved Organic (DOC)	QUAD	K1908802-022	Pore Water	1.41 mg/L	10 mL	1.41 mg/L	1		0.50		2	9/30/19 02:36:00	N	IV
KQ1913974-75	Carbon, Dissolved Organic (DOC)	MB		Pore Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			9/29/19 13:06:00	N	IV
KQ1913974-76	Carbon, Dissolved Organic (DOC)	MB		Pore Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			9/29/19 13:06:00	N	IV
KQ1913974-77	Carbon, Dissolved Organic (DOC)	MB		Pore Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			9/29/19 13:06:00	N	IV
KQ1913974-78	Carbon, Dissolved Organic (DOC)	LCS		Pore Water	24.06 mg/L	10 mL	24.1 mg/L	1		0.50	96		9/29/19 14:02:00	N	IV
KQ1913974-79	Carbon, Dissolved Organic (DOC)	LCS		Pore Water	24.11 mg/L	10 mL	24.1 mg/L	1		0.50	96		9/29/19 14:02:00	N	IV
KQ1913974-80	Carbon, Dissolved Organic (DOC)	LCS		Pore Water	24.23 mg/L	10 mL	24.2 mg/L	1		0.50	97		9/29/19 14:02:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

QA for BCD
10/1/19

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 653375 **Method/Testcode:** 9060A/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K1908714-022	Carbon, Total Organic (TOC)	N/A		Pore Water	2.40 mg/L	10 mL	2.40 mg/L	1		0.50			9/30/19 03:32:00	N	IV
K1908714-023	Carbon, Total Organic (TOC)	N/A		Pore Water	9.05 mg/L	10 mL	9.05 mg/L	1		0.50			9/30/19 05:38:00	N	IV
K1908714-024	Carbon, Total Organic (TOC)	N/A		Pore Water	0.50 mg/L	10 mL	0.50 mg/L	1		0.50			9/30/19 06:34:00	N	IV
K1908714-026	Carbon, Total Organic (TOC)	N/A		Pore Water	4.52 mg/L	10 mL	4.52 mg/L	1		0.50			9/30/19 09:50:00	N	IV
K1908714-027	Carbon, Total Organic (TOC)	N/A		Pore Water	1.00 mg/L	10 mL	1.00 mg/L	1		0.50			9/30/19 10:46:00	N	IV
K1908714-029	Carbon, Total Organic (TOC)	N/A		Pore Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			9/30/19 11:42:00	N	IV
K1908802-001	Carbon, Total Organic (TOC)	N/A		Pore Water	3.96 mg/L	10 mL	3.96 mg/L	1		0.50			9/30/19 12:38:00	N	IV
K1908802-002	Carbon, Total Organic (TOC)	N/A		Pore Water	7.91 mg/L	10 mL	7.91 mg/L	1		0.50			9/30/19 13:33:00	N	IV
K1908802-003	Carbon, Total Organic (TOC)	N/A		Pore Water	0.90 mg/L	10 mL	0.90 mg/L	1		0.50			9/30/19 14:29:00	N	IV
K1908802-004	Carbon, Total Organic (TOC)	N/A		Pore Water	0.56 mg/L	10 mL	0.56 mg/L	1		0.50			9/30/19 15:25:00	N	IV
K1908802-005	Carbon, Total Organic (TOC)	N/A		Pore Water	0.62 mg/L	10 mL	0.62 mg/L	1		0.50			9/30/19 16:20:00	N	IV
K1908802-008	Carbon, Total Organic (TOC)	N/A		Pore Water	0.59 mg/L	10 mL	0.59 mg/L	1		0.50			9/30/19 17:46:00	N	IV
K1908802-009	Carbon, Total Organic (TOC)	N/A		Pore Water	3.85 mg/L	10 mL	3.85 mg/L	1		0.50			9/30/19 18:42:00	N	IV
K1908802-010	Carbon, Total Organic (TOC)	N/A		Water	1.43 mg/L	10 mL	1.43 mg/L	1		0.50			9/30/19 19:37:00	N	IV
K1908802-011	Carbon, Total Organic (TOC)	N/A		Pore Water	0.69 mg/L	10 mL	0.69 mg/L	1		0.50			9/30/19 20:33:00	N	IV
K1908802-013	Carbon, Total Organic (TOC)	N/A		Pore Water	0.37 mg/L	10 mL	0.50 mg/L U	1		0.50			9/30/19 21:29:00	N	IV
K1908802-015	Carbon, Total Organic (TOC)	N/A		Pore Water	0.64 mg/L	10 mL	0.64 mg/L	1		0.50			9/30/19 22:24:00	N	IV
K1908802-017	Carbon, Total Organic (TOC)	N/A		Pore Water	0.67 mg/L	10 mL	0.67 mg/L	1		0.50			9/30/19 23:20:00	N	IV
K1908802-018	Carbon, Total Organic (TOC)	N/A		Pore Water	0.86 mg/L	10 mL	0.86 mg/L	1		0.50			10/1/19 00:16:00	N	IV
K1908802-019	Carbon, Total Organic (TOC)	N/A		Pore Water	0.44 mg/L	10 mL	0.50 mg/L U	1		0.50			10/1/19 01:11:00	N	IV
KQ1913975-01	Carbon, Total Organic (TOC)	CCV		Pore Water	23.09 mg/L	10 mL	23.1 mg/L	1					9/29/19 22:24:00	N	IV
KQ1913975-02	Carbon, Total Organic (TOC)	CCV		Pore Water	22.84 mg/L	10 mL	22.8 mg/L	1					9/30/19 07:29:00	N	IV
KQ1913975-03	Carbon, Total Organic (TOC)	CCV		Pore Water	23.68 mg/L	10 mL	23.7 mg/L	1					9/30/19 17:16:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Printed 10/1/19 11:21

Results Summary

10/01/19 AB for BCD 10/1/19

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 653375 **Method/Testcode:** 9060A/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1913975-04	Carbon, Total Organic (TOC)	CCV		Pore Water	22.84 mg/L	10 mL	22.8 mg/L	1					10/1/19 02:07:00	N	IV
KQ1913975-05	Carbon, Total Organic (TOC)	CCB		Pore Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			9/29/19 22:38:00	N	IV
KQ1913975-06	Carbon, Total Organic (TOC)	CCB		Pore Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			9/30/19 07:44:00	N	IV
KQ1913975-07	Carbon, Total Organic (TOC)	CCB		Pore Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			9/30/19 17:31:00	N	IV
KQ1913975-08	Carbon, Total Organic (TOC)	CCB		Pore Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			10/1/19 02:22:00	N	IV
KQ1913975-09	Carbon, Total Organic (TOC)	MB		Pore Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			9/30/19 07:59:00	N	IV
KQ1913975-10	Carbon, Total Organic (TOC)	LCS		Pore Water	23.28 mg/L	10 mL	23.3 mg/L	1		0.50	93		9/30/19 08:54:00	N	IV
KQ1913975-11	Carbon, Total Organic (TOC)	MB		Pore Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			9/30/19 07:59:00	N	IV
KQ1913975-12	Carbon, Total Organic (TOC)	MB		Pore Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			9/30/19 07:59:00	N	IV
KQ1913975-13	Carbon, Total Organic (TOC)	MB		Pore Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50			9/30/19 07:59:00	N	IV
KQ1913975-14	Carbon, Total Organic (TOC)	LCS		Pore Water	23.42 mg/L	10 mL	23.4 mg/L	1		0.50	94		9/30/19 08:54:00	N	IV
KQ1913975-15	Carbon, Total Organic (TOC)	LCS		Pore Water	23.37 mg/L	10 mL	23.4 mg/L	1		0.50	93		9/30/19 08:54:00	N	IV
KQ1913975-16	Carbon, Total Organic (TOC)	LCS		Pore Water	23.38 mg/L	10 mL	23.4 mg/L	1		0.50	94		9/30/19 08:54:00	N	IV
KQ1913975-17	Carbon, Total Organic (TOC)	MS	K1908714-022	Pore Water	24.93 mg/L	10 mL	99.7 mg/L	4		2.0	97		9/30/19 04:28:00	N	IV
KQ1913975-18	Carbon, Total Organic (TOC)	MS	K1908714-022	Pore Water	25.04 mg/L	10 mL	100 mg/L	4		2.0	98		9/30/19 04:28:00	N	IV
KQ1913975-19	Carbon, Total Organic (TOC)	MS	K1908714-022	Pore Water	25.03 mg/L	10 mL	100 mg/L	4		2.0	98		9/30/19 04:28:00	N	IV
KQ1913975-20	Carbon, Total Organic (TOC)	MS	K1908714-022	Pore Water	25.12 mg/L	10 mL	100 mg/L	4		2.0	98		9/30/19 04:28:00	N	IV
KQ1913975-21	Carbon, Total Organic (TOC)	DUP	K1908714-022	Pore Water	2.76 mg/L	10 mL	2.76 mg/L	1		0.50		14	9/30/19 03:32:00	N	IV
KQ1913975-22	Carbon, Total Organic (TOC)	TRP	K1908714-022	Pore Water	2.87 mg/L	10 mL	2.87 mg/L	1		0.50		9	9/30/19 03:32:00	N	IV
KQ1913975-23	Carbon, Total Organic (TOC)	QUAD	K1908714-022	Pore Water	2.91 mg/L	10 mL	2.91 mg/L	1		0.50		8	9/30/19 03:32:00	N	IV
KQ1913975-24	Carbon, Total Organic (TOC)	DUP	K1908714-023	Pore Water	8.94 mg/L	10 mL	8.94 mg/L	1		0.50		1	9/30/19 05:38:00	N	IV
KQ1913975-25	Carbon, Total Organic (TOC)	TRP	K1908714-023	Pore Water	9.00 mg/L	10 mL	9.00 mg/L	1		0.50		<1	9/30/19 05:38:00	N	IV
KQ1913975-26	Carbon, Total Organic (TOC)	QUAD	K1908714-023	Pore Water	9.02 mg/L	10 mL	9.02 mg/L	1		0.50		<1	9/30/19 05:38:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

AB for BCD
10/1/19

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 653375 **Method/Testcode:** 9060A/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1913975-27	Carbon, Total Organic (TOC)	DUP	K1908714-024	Pore Water	0.43 mg/L	10 mL	0.50 mg/L U	1		0.50		NC	9/30/19 06:34:00	N	IV
KQ1913975-28	Carbon, Total Organic (TOC)	TRP	K1908714-024	Pore Water	0.41 mg/L	10 mL	0.50 mg/L U	1		0.50		NC	9/30/19 06:34:00	N	IV
KQ1913975-29	Carbon, Total Organic (TOC)	QUAD	K1908714-024	Pore Water	0.38 mg/L	10 mL	0.50 mg/L U	1		0.50		NC	9/30/19 06:34:00	N	IV
KQ1913975-30	Carbon, Total Organic (TOC)	DUP	K1908714-026	Pore Water	4.38 mg/L	10 mL	4.38 mg/L	1		0.50		3	9/30/19 09:50:00	N	IV
KQ1913975-31	Carbon, Total Organic (TOC)	TRP	K1908714-026	Pore Water	4.48 mg/L	10 mL	4.48 mg/L	1		0.50		2	9/30/19 09:50:00	N	IV
KQ1913975-32	Carbon, Total Organic (TOC)	QUAD	K1908714-026	Pore Water	4.48 mg/L	10 mL	4.48 mg/L	1		0.50		1	9/30/19 09:50:00	N	IV
KQ1913975-33	Carbon, Total Organic (TOC)	DUP	K1908714-027	Pore Water	1.04 mg/L	10 mL	1.04 mg/L	1		0.50		4	9/30/19 10:46:00	N	IV
KQ1913975-34	Carbon, Total Organic (TOC)	TRP	K1908714-027	Pore Water	1.02 mg/L	10 mL	1.02 mg/L	1		0.50		2	9/30/19 10:46:00	N	IV
KQ1913975-35	Carbon, Total Organic (TOC)	QUAD	K1908714-027	Pore Water	1.03 mg/L	10 mL	1.03 mg/L	1		0.50		2	9/30/19 10:46:00	N	IV
KQ1913975-36	Carbon, Total Organic (TOC)	DUP	K1908714-029	Pore Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50		NC	9/30/19 11:42:00	N	IV
KQ1913975-37	Carbon, Total Organic (TOC)	TRP	K1908714-029	Pore Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50		NC	9/30/19 11:42:00	N	IV
KQ1913975-38	Carbon, Total Organic (TOC)	QUAD	K1908714-029	Pore Water	0.00 mg/L	10 mL	0.50 mg/L U	1		0.50		NC	9/30/19 11:42:00	N	IV
KQ1913975-39	Carbon, Total Organic (TOC)	DUP	K1908802-001	Pore Water	4.04 mg/L	10 mL	4.04 mg/L	1		0.50		2	9/30/19 12:38:00	N	IV
KQ1913975-40	Carbon, Total Organic (TOC)	TRP	K1908802-001	Pore Water	4.07 mg/L	10 mL	4.07 mg/L	1		0.50		1	9/30/19 12:38:00	N	IV
KQ1913975-41	Carbon, Total Organic (TOC)	QUAD	K1908802-001	Pore Water	4.08 mg/L	10 mL	4.08 mg/L	1		0.50		1	9/30/19 12:38:00	N	IV
KQ1913975-42	Carbon, Total Organic (TOC)	DUP	K1908802-002	Pore Water	7.93 mg/L	10 mL	7.93 mg/L	1		0.50		<1	9/30/19 13:33:00	N	IV
KQ1913975-43	Carbon, Total Organic (TOC)	TRP	K1908802-002	Pore Water	7.97 mg/L	10 mL	7.97 mg/L	1		0.50		<1	9/30/19 13:33:00	N	IV
KQ1913975-44	Carbon, Total Organic (TOC)	QUAD	K1908802-002	Pore Water	7.96 mg/L	10 mL	7.96 mg/L	1		0.50		<1	9/30/19 13:33:00	N	IV
KQ1913975-45	Carbon, Total Organic (TOC)	DUP	K1908802-003	Pore Water	0.93 mg/L	10 mL	0.93 mg/L	1		0.50		4	9/30/19 14:29:00	N	IV
KQ1913975-46	Carbon, Total Organic (TOC)	TRP	K1908802-003	Pore Water	0.90 mg/L	10 mL	0.90 mg/L	1		0.50		2	9/30/19 14:29:00	N	IV
KQ1913975-47	Carbon, Total Organic (TOC)	QUAD	K1908802-003	Pore Water	0.92 mg/L	10 mL	0.92 mg/L	1		0.50		2	9/30/19 14:29:00	N	IV
KQ1913975-48	Carbon, Total Organic (TOC)	DUP	K1908802-004	Pore Water	0.59 mg/L	10 mL	0.59 mg/L	1		0.50		5	9/30/19 15:25:00	N	IV
KQ1913975-49	Carbon, Total Organic (TOC)	TRP	K1908802-004	Pore Water	0.53 mg/L	10 mL	0.53 mg/L	1		0.50		5	9/30/19 15:25:00	N	IV

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# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

AG for BCD
10/1/19

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 653375 **Method/Testcode:** 9060A/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1913975-50	Carbon, Total Organic (TOC)	QUAD	K1908802-004	Pore Water	0.54 mg/L	10 mL	0.54 mg/L	1		0.50		4	9/30/19 15:25:00	N	IV
KQ1913975-51	Carbon, Total Organic (TOC)	DUP	K1908802-005	Pore Water	0.58 mg/L	10 mL	0.58 mg/L	1		0.50		6	9/30/19 16:20:00	N	IV
KQ1913975-52	Carbon, Total Organic (TOC)	TRP	K1908802-005	Pore Water	0.56 mg/L	10 mL	0.56 mg/L	1		0.50		5	9/30/19 16:20:00	N	IV
KQ1913975-53	Carbon, Total Organic (TOC)	QUAD	K1908802-005	Pore Water	0.57 mg/L	10 mL	0.57 mg/L	1		0.50		4	9/30/19 16:20:00	N	IV
KQ1913975-54	Carbon, Total Organic (TOC)	DUP	K1908802-008	Pore Water	0.59 mg/L	10 mL	0.59 mg/L	1		0.50		<1	9/30/19 17:46:00	N	IV
KQ1913975-55	Carbon, Total Organic (TOC)	TRP	K1908802-008	Pore Water	0.57 mg/L	10 mL	0.57 mg/L	1		0.50		2	9/30/19 17:46:00	N	IV
KQ1913975-56	Carbon, Total Organic (TOC)	QUAD	K1908802-008	Pore Water	0.54 mg/L	10 mL	0.54 mg/L	1		0.50		4	9/30/19 17:46:00	N	IV
KQ1913975-57	Carbon, Total Organic (TOC)	DUP	K1908802-009	Pore Water	3.87 mg/L	10 mL	3.87 mg/L	1		0.50		<1	9/30/19 18:42:00	N	IV
KQ1913975-58	Carbon, Total Organic (TOC)	TRP	K1908802-009	Pore Water	3.85 mg/L	10 mL	3.85 mg/L	1		0.50		<1	9/30/19 18:42:00	N	IV
KQ1913975-59	Carbon, Total Organic (TOC)	QUAD	K1908802-009	Pore Water	3.90 mg/L	10 mL	3.90 mg/L	1		0.50		<1	9/30/19 18:42:00	N	IV
KQ1913975-60	Carbon, Total Organic (TOC)	DUP	K1908802-010	Water	1.49 mg/L	10 mL	1.49 mg/L	1		0.50		4	9/30/19 19:37:00	N	IV
KQ1913975-61	Carbon, Total Organic (TOC)	TRP	K1908802-010	Water	1.41 mg/L	10 mL	1.41 mg/L	1		0.50		3	9/30/19 19:37:00	N	IV
KQ1913975-62	Carbon, Total Organic (TOC)	QUAD	K1908802-010	Water	1.41 mg/L	10 mL	1.41 mg/L	1		0.50		3	9/30/19 19:37:00	N	IV
KQ1913975-63	Carbon, Total Organic (TOC)	DUP	K1908802-011	Pore Water	0.67 mg/L	10 mL	0.67 mg/L	1		0.50		3	9/30/19 20:33:00	N	IV
KQ1913975-64	Carbon, Total Organic (TOC)	TRP	K1908802-011	Pore Water	0.67 mg/L	10 mL	0.67 mg/L	1		0.50		2	9/30/19 20:33:00	N	IV
KQ1913975-65	Carbon, Total Organic (TOC)	QUAD	K1908802-011	Pore Water	0.65 mg/L	10 mL	0.65 mg/L	1		0.50		2	9/30/19 20:33:00	N	IV
KQ1913975-66	Carbon, Total Organic (TOC)	DUP	K1908802-013	Pore Water	0.41 mg/L	10 mL	0.50 mg/L U	1		0.50		NC	9/30/19 21:29:00	N	IV
KQ1913975-67	Carbon, Total Organic (TOC)	TRP	K1908802-013	Pore Water	0.43 mg/L	10 mL	0.50 mg/L U	1		0.50		NC	9/30/19 21:29:00	N	IV
KQ1913975-68	Carbon, Total Organic (TOC)	QUAD	K1908802-013	Pore Water	0.40 mg/L	10 mL	0.50 mg/L U	1		0.50		NC	9/30/19 21:29:00	N	IV
KQ1913975-69	Carbon, Total Organic (TOC)	DUP	K1908802-015	Pore Water	0.69 mg/L	10 mL	0.69 mg/L	1		0.50		7	9/30/19 22:24:00	N	IV
KQ1913975-70	Carbon, Total Organic (TOC)	TRP	K1908802-015	Pore Water	0.67 mg/L	10 mL	0.67 mg/L	1		0.50		3	9/30/19 22:24:00	N	IV
KQ1913975-71	Carbon, Total Organic (TOC)	QUAD	K1908802-015	Pore Water	0.65 mg/L	10 mL	0.65 mg/L	1		0.50		3	9/30/19 22:24:00	N	IV
KQ1913975-72	Carbon, Total Organic (TOC)	DUP	K1908802-017	Pore Water	0.67 mg/L	10 mL	0.67 mg/L	1		0.50		1	9/30/19 23:20:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 653375 **Method/Testcode:** 9060A/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1913975-73	Carbon, Total Organic (TOC)	TRP	K1908802-017	Pore Water	0.68 mg/L	10 mL	0.68 mg/L	1		0.50		<1	9/30/19 23:20:00	N	IV
KQ1913975-74	Carbon, Total Organic (TOC)	QUAD	K1908802-017	Pore Water	0.64 mg/L	10 mL	0.64 mg/L	1		0.50		3	9/30/19 23:20:00	N	IV
KQ1913975-75	Carbon, Total Organic (TOC)	DUP	K1908802-018	Pore Water	0.88 mg/L	10 mL	0.88 mg/L	1		0.50		2	10/1/19 00:16:00	N	IV
KQ1913975-76	Carbon, Total Organic (TOC)	TRP	K1908802-018	Pore Water	0.93 mg/L	10 mL	0.93 mg/L	1		0.50		4	10/1/19 00:16:00	N	IV
KQ1913975-77	Carbon, Total Organic (TOC)	QUAD	K1908802-018	Pore Water	0.88 mg/L	10 mL	0.88 mg/L	1		0.50		3	10/1/19 00:16:00	N	IV
KQ1913975-78	Carbon, Total Organic (TOC)	DUP	K1908802-019	Pore Water	0.44 mg/L	10 mL	0.50 mg/L U	1		0.50		NC	10/1/19 01:11:00	N	IV
KQ1913975-79	Carbon, Total Organic (TOC)	TRP	K1908802-019	Pore Water	0.48 mg/L	10 mL	0.50 mg/L U	1		0.50		NC	10/1/19 01:11:00	N	IV
KQ1913975-80	Carbon, Total Organic (TOC)	QUAD	K1908802-019	Pore Water	0.47 mg/L	10 mL	0.50 mg/L U	1		0.50		NC	10/1/19 01:11:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

AB for BCD
10/1/19

DOC: 653372, 653374
TOC: 653373, 653375

Schedule: 09282019

Version: 7
Instrument: Fusion1
Last Saved by: Fusion1 (Fusion1)
Last Saved on: 2019/09/28 14:04 - Saturday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
(Clean)	Clean	Clean		1	True	Done
(Clean)	Clean	Clean		1	True	Done
(Clean)	Clean	Clean		1	True	Done
(Blank)	Blank	Reagent/Acid Blank		1	True	Running
D	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Pending
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
3	Sample	K1908565-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
4	Sample	K1908565-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
5	Sample	T1901580-097.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
6	Sample	T1901580-097.04 ms doc	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
7	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
8	Sample	T1901580-098.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
9	Sample	T1901580-099.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
10	Sample	T1901580-100.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
11	Sample	T1901580-101.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
12	Sample	T1901580-102.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
13	Sample	T1901580-103.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
14	Sample	T1901580-104.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
15	Sample	K1908525-009.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
16	Sample	K1908525-009.02 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
17	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
18	Sample	K1908546-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
19	Sample	K1908546-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
20	Sample	MB2	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
21	Sample	K1908683-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
22	Sample	K1908683-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
23	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
24	Sample	K1908707-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
25	Sample	K1909004-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
26	Sample	K1908491-003.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
27	Sample	K1908491-004.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
28	Sample	K1908491-005.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
29	Sample	K1908754-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
30	Sample	K1908714-022.09 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
31	Sample	K1908714-022.09 ms 4x doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
32	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
33	Sample	K1908714-023.09 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
34	Sample	K1908714-024.09 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
35	Sample	K1908714-026.09 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
36	Sample	K1908714-027.09 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
37	Sample	K1908802-001.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
38	Sample	K1908802-002.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready

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Schedule: 09282019

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
39	Sample	MB3	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
40	Sample	K1908802-003.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
41	Sample	K1908802-004.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
42	Sample	K1908802-005.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
43	Sample	K1908802-008.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
44	Sample	K1908802-009.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
45	Sample	K1908802-011.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
46	Sample	K1908802-014.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
47	Sample	K1908802-015.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
48	Sample	K1908802-017.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
49	Sample	K1908802-018.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
50	Sample	K1908802-019.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
51	Sample	K1908802-020.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
52	Sample	K1908802-022.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
53	Sample	K1908714-022.08	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
54	Sample	K1908714-022.08 ms 4x	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
55	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
56	Sample	K1908714-023.08	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
57	Sample	K1908714-024.08	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
58	Sample	MB4	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
59	Sample	K1908714-026.08	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
60	Sample	K1908714-027.08	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
61	Sample	K1908714-029.08	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
62	Sample	K1908802-001.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
63	Sample	K1908802-002.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
64	Sample	K1908802-003.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
65	Sample	K1908802-004.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
66	Sample	K1908802-005.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
67	Sample	K1908802-008.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
68	Sample	K1908802-009.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
69	Sample	K1908802-010.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
70	Sample	K1908802-011.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
71	Sample	K1908802-013.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
72	Sample	K1908802-015.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
73	Sample	K1908802-017.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
74	Sample	K1908802-018.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
75	Sample	K1908802-019.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
					False	

Schedule: 09282019

Version: 7
Instrument: Fusion1
Last Saved by: Fusion1 (Fusion1)
Last Saved on: 2019/09/28 14:04 - Saturday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Blank)	Blank	Reagent/Acid Blank		1	True	Ready
D	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
3	Sample	K1908565-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
4	Sample	K1908565-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
5	Sample	T1901580-097.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
6	Sample	T1901580-097.04 ms doc	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
7	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
8	Sample	T1901580-098.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
9	Sample	T1901580-099.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
10	Sample	T1901580-100.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
11	Sample	T1901580-101.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
12	Sample	T1901580-102.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
13	Sample	T1901580-103.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
14	Sample	T1901580-104.04 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
15	Sample	K1908525-009.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
16	Sample	K1908525-009.02 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
17	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
18	Sample	K1908546-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
19	Sample	K1908546-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
20	Sample	MB2	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
21	Sample	K1908683-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
22	Sample	K1908683-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
23	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
24	Sample	K1908707-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
25	Sample	K1909004-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
26	Sample	K1908491-003.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
27	Sample	K1908491-004.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
28	Sample	K1908491-005.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
29	Sample	K1908754-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
30	Sample	K1908714-022.09 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
31	Sample	K1908714-022.09 ms 4x doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
32	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
33	Sample	K1908714-023.09 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
34	Sample	K1908714-024.09 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
35	Sample	K1908714-026.09 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
36	Sample	K1908714-027.09 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
37	Sample	K1908802-001.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
38	Sample	K1908802-002.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready

10/01/19

Schedule: 09282019

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
39	Sample	MB3	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
40	Sample	K1908802-003.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
41	Sample	K1908802-004.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
42	Sample	K1908802-005.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
43	Sample	K1908802-008.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
44	Sample	K1908802-009.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
45	Sample	K1908802-011.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
46	Sample	K1908802-014.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
47	Sample	K1908802-015.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
48	Sample	K1908802-017.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
49	Sample	K1908802-018.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
50	Sample	K1908802-019.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
51	Sample	K1908802-020.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
52	Sample	K1908802-022.04 doc	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
53	Sample	K1908714-022.08	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
54	Sample	K1908714-022.08 ms 4x	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
55	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
56	Sample	K1908714-023.08	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
57	Sample	K1908714-024.08	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
58	Sample	MB4	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
59	Sample	K1908714-026.08	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
60	Sample	K1908714-027.08	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
61	Sample	K1908714-029.08	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
62	Sample	K1908802-001.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
63	Sample	K1908802-002.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
64	Sample	K1908802-003.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
65	Sample	K1908802-004.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
66	Sample	K1908802-005.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
67	Sample	K1908802-008.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
68	Sample	K1908802-009.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
69	Sample	K1908802-010.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
70	Sample	K1908802-011.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
71	Sample	K1908802-013.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
72	Sample	K1908802-015.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
73	Sample	K1908802-017.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
74	Sample	K1908802-018.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
75	Sample	K1908802-019.03	CAS_salt_010711 (CAS_salt_010711)	4	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
					False	

Fusion Report - 09282019
Saturday, September 28, 2019 12:01 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2019/10/01 09:46 - Tuesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	09282019	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v2) Fusion1 (Fusion1) (v3) Fusion1 (Fusion1) (v5) Fusion1 (Fusion1) (v6) Fusion1 (Fusion1) (v7)		
Comment:			

Report Results

10/01/19

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2019/09/28 12:01

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	12.19	15.92	3.73	49.84	05:24
2	TC Clean	6.36	10.01	3.65	50.23	04:02
3	TC Clean	2.60	6.22	3.62	50.31	03:46
4	TC Clean	1.70	5.38	3.68	50.29	03:47

Sample Type: Clean — From Schedule Version 3

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2019/09/28 12:36

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	10.77	14.18	3.42	49.89	05:10
2	TC Clean	8.79	12.05	3.26	50.18	04:03
3	TC Clean	6.35	9.83	3.48	50.25	03:48

4	TC Clean	3.76	7.30	3.54	50.27	03:56

Sample Type: Clean From Schedule Version 5

	Pos	Analysis Type	Sample ID	Start Time
◈	(clean)		Clean	2019/09/28 12:59

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	10.42	14.05	3.63	49.56	05:20
2	TC Clean	9.36	13.06	3.70	50.16	04:02
3	TC Clean	4.96	8.55	3.59	50.27	03:57
4	TC Clean	2.72	6.22	3.50	50.26	03:55

Sample Type: Blank (Creating v1300) From Schedule Version 6

	Pos	Analysis Type	Sample ID	Start Time
◈	(blank)		Reagent/Acid Blank	2019/09/28 13:42

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	10.59	14.02	3.43	49.80	05:19
2	TC Clean	8.52	11.95	3.42	50.11	04:02
3	TC Clean	3.33	6.95	3.62	50.16	03:47
4	TC Clean	2.12	5.54	3.42	50.22	03:44
5	Reagent Blank	5.24	8.83	3.59	50.13	05:03
6	Acid Blank	1.29	4.83	3.54	49.86	05:30

Sample Type: Sample From Schedule Version 7

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	D	TOC	RB	0.4730 ppm	0.0000 ppm	0.0000%	2019/09/28 14:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4730	4.7299	12.08	15.66	3.58	50.30	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 7

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	24.4545 ppm (PASS)	0.0000 ppm	0%	2019/09/28 14:30

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.4545	244.5447	175.46	179.08	3.62	50.29	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 7

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2019/09/28 14:45

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	8.38	12.09	3.71	50.30	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample From Schedule Version 7

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	1	TOC	MB1	0.0000 ppm	0.0000 ppm	0.0000%	2019/09/28 14:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.81	11.44	3.63	50.32	10:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> LCS From Schedule Version 7

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	25.0753 ppm (PASS)	0.0000 ppm	0%	2019/09/28 15:14

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	25.0753	250.7528	179.67	183.23	3.55	50.30	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	25 ppmC

Sample Type: Sample From Schedule Version 7

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	2	TOC	ICS	0.2501 ppm	0.0000 ppm	0.0000%	2019/09/28 15:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2501	2.5009	10.56	14.23	3.66	50.30	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	3	TOC	K1908565-001.01	0.0000 ppm	0.0000 ppm	0.0000%	2019/09/28 15:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.58	11.26	3.69	50.29	10:29
2	TOC	0.0000	0.0000	7.41	11.00	3.59	50.27	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	4	TOC	K1908565-002.01	0.0000 ppm	0.0000 ppm	0.0000%	2019/09/28 16:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.02	10.62	3.60	50.29	10:28
2	TOC	0.0000	0.0000	7.67	11.32	3.65	50.28	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	5	TOC	T1901580-097.04 doc	3.5395 ppm	0.0058 ppm	0.1600%	2019/09/28 16:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.5353	35.3533	32.86	36.21	3.34	50.27	10:27
2	TOC	3.5436	35.4358	32.92	36.49	3.57	50.28	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	6	TOC	T1901580-097.04 ms doc	29.9600 ppm	0.0000 ppm	0.0000%	2019/09/28 17:08

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	29.9600	299.5999	212.23	215.66	3.43	50.26	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	7	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2019/09/28 17:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.17	11.65	3.48	50.24	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	8	TOC	T1901580-098.04 doc	3.4118 ppm	0.0286 ppm	0.8400%	2019/09/28 17:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.4321	34.3206	32.16	35.43	3.27	50.26	10:29
2	TOC	3.3915	33.9155	31.89	35.44	3.55	50.26	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	9	TOC	T1901580-099.04 doc	3.3888 ppm	0.0070 ppm	0.2100%	2019/09/28 18:05

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.3938	33.9376	31.90	35.31	3.41	50.25	10:30
2	TOC	3.3839	33.8389	31.83	35.40	3.57	50.27	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 7

	Pos	BAT	Concentration	Dil	Sample ID	Min / Max	Result	Std. Dev.	RSD	Start Time

			(ppm)			(% dev)				
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	24.1483 ppm (PASS)	0.0000 ppm	0%	2019/09/28 18:33

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.1483	241.4834	173.38	176.96	3.58	50.28	10:30

Completion State: Success - Criteria met.
Success Action: Do Nothing
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)
STD Conc - Pos B: 50 ppmC

Sample Type: Check Standard --> CCB — From Schedule Version 7

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2019/09/28 18:47

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.59	11.12	3.53	50.30	10:31

Completion State: Success - Criteria met.
Success Action: Do Nothing
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)
STD Conc - Pos D: 0 ppmC

Sample Type: Sample — From Schedule Version 7

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	10	TOC	T1901580-100.04 doc	2.4845 ppm	0.0829 ppm	3.3400%	2019/09/28 19:02

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.5431	25.4313	26.13	29.79	3.66	50.30	10:31
2	TOC	2.4259	24.2586	25.33	28.94	3.61	50.30	10:26

Dilution: 1:10
Blank Contribution: (TC) 8.8654 (IC) (v1300)
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	11	TOC	T1901580-101.04 doc	3.3329 ppm	0.0285 ppm	0.8600%	2019/09/28 19:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.3127	33.1273	31.35	34.97	3.62	50.34	10:24
2	TOC	3.3531	33.5310	31.63	35.15	3.53	50.36	10:29

Dilution: 1:10
Blank Contribution: (TC) 8.8654 (IC)
Method: CAS_salt_010711
Calibration: CAS_salt_010711

(v1300) (v4) (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	12	TOC	T1901580-102.04 doc	2.9232 ppm	0.0321 ppm	1.1000%	2019/09/28 19:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.9005	29.0053	28.55	31.99	3.44	50.37	10:27
2	TOC	2.9459	29.4590	28.86	32.36	3.49	50.40	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	13	TOC	T1901580-103.04 doc	3.3879 ppm	0.0334 ppm	0.9900%	2019/09/28 20:26

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.3643	33.6429	31.70	35.28	3.58	50.41	10:29
2	TOC	3.4116	34.1158	32.02	35.57	3.55	50.43	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	14	TOC	T1901580-104.04 doc	2.9933 ppm	0.0016 ppm	0.0500%	2019/09/28 20:55

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.9944	29.9437	29.19	32.78	3.59	50.45	10:30
2	TOC	2.9922	29.9216	29.18	32.89	3.71	50.46	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	15	TOC	K1908525-009.02	0.0000 ppm	0.0000 ppm	0.0000%	2019/09/28 21:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.26	10.88	3.62	50.48	10:32
2	TOC	0.0000	0.0000	7.40	10.98	3.58	50.49	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	16	TOC	K1908525-009.02 ms	25.0660 ppm	0.0000 ppm	0.0000%	2019/09/28 21:51

Rep	Base	ppm	µg	Adjusted	NDIR (Abs)	Baseline	Pressure	Run

#	Analysis Type			(Abs)		(Abs)	(psig)	Time
1	TOC	25.0660	250.6602	179.01	182.61	3.59	50.50	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	17	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2019/09/28 22:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.43	11.11	3.67	50.54	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	18	TOC	K1908546-001.01	3.1128 ppm	0.0052 ppm	0.1700%	2019/09/28 22:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.1091	31.0914	29.97	33.54	3.57	50.54	10:30
2	TOC	3.1165	31.1650	30.02	33.56	3.54	50.55	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	19	TOC	K1908546-002.01	1.6535 ppm	0.0289 ppm	1.7500%	2019/09/28 22:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6331	16.3314	19.95	23.34	3.39	50.57	10:30
2	TOC	1.6739	16.7394	20.23	23.70	3.47	50.57	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 7

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	23.9163 ppm (PASS)	0.0000 ppm	0%	2019/09/28 23:17

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	23.9163	239.1631	171.80	175.48	3.67	50.58	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 7

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2019/09/28 23:31

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.13	10.65	3.51	50.59	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample From Schedule Version 7

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	20	TOC	MB2	0.0000 ppm	0.0000 ppm	0.0000%	2019/09/28 23:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.25	9.82	3.57	50.61	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> LCS From Schedule Version 7

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	24.3882 ppm (PASS)	0.0000 ppm	0%	2019/09/29 00:01

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.3882	243.8818	175.01	178.50	3.49	50.60	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	25 ppmC

Sample Type: Sample From Schedule Version 7

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	21	TOC	K1908683-001.01	1.2332 ppm	0.0922 ppm	7.4800%	2019/09/29 00:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2984	12.9842	17.68	21.23	3.55	50.61	10:29
2	TOC	1.1680	11.6805	16.79	20.43	3.64	50.60	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	22	TOC	K1908683-002.01	1.9951 ppm	0.0313 ppm	1.5700%	2019/09/29 00:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9730	19.7300	22.26	25.92	3.66	50.58	10:28
2	TOC	2.0172	20.1720	22.56	26.05	3.49	50.54	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	23	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2019/09/29 01:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.99	9.67	3.68	50.50	10:29
2	TOC	0.0000	0.0000	6.19	9.74	3.55	50.49	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	24	TOC	K1908707-001.01	1.1622 ppm	0.0303 ppm	2.6100%	2019/09/29 01:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1408	11.4079	16.61	20.06	3.45	50.49	10:26
2	TOC	1.1837	11.8366	16.90	20.37	3.47	50.48	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	25	TOC	K1909004-001.01	1.1686 ppm	0.0335 ppm	2.8700%	2019/09/29 02:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1924	11.9235	16.96	20.41	3.45	50.48	10:30

2	TOC	1.1449	11.4492	16.64	20.28	3.64	50.47	10:26

Dilution 1:10 | **Blank Contribution** (TC) 8.8654 (IC) (v1300) | **Method** CAS_salt_010711 (v4) | **Calibration** CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	26	TOC	K1908491-003.01 100x	6.1668 ppm	0.0399 ppm	0.6500%	2019/09/29 02:35

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	6.1386	61.3863	50.53	54.19	3.66	50.55	10:27
2	TOC	6.1950	61.9505	50.92	54.49	3.58	50.48	10:25

Dilution 1:10 | **Blank Contribution** (TC) 8.8654 (IC) (v1300) | **Method** CAS_salt_010711 (v4) | **Calibration** CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	27	TOC	K1908491-004.01 100x	4.8006 ppm	0.0439 ppm	0.9100%	2019/09/29 03:03

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.8316	48.3160	41.66	45.40	3.74	50.51	10:27
2	TOC	4.7696	47.6958	41.24	44.88	3.64	50.53	10:24

Dilution 1:10 | **Blank Contribution** (TC) 8.8654 (IC) (v1300) | **Method** CAS_salt_010711 (v4) | **Calibration** CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	28	TOC	K1908491-005.01 100x	4.5981 ppm	0.0017 ppm	0.0400%	2019/09/29 03:32

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.5993	45.9928	40.08	43.61	3.52	50.55	10:28
2	TOC	4.5969	45.9692	40.07	43.68	3.61	50.55	10:24

Dilution 1:10 | **Blank Contribution** (TC) 8.8654 (IC) (v1300) | **Method** CAS_salt_010711 (v4) | **Calibration** CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm — From Schedule Version 7

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	23.5411 ppm (PASS)	0.0000 ppm	0%	2019/09/29 04:00

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	23.5411	235.4109	169.26	172.83	3.58	50.54	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 7

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2019/09/29 04:14

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.96	10.49	3.53	50.57	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample From Schedule Version 7

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	29	TOC	K1908754-001.01	1.3679 ppm	0.0216 ppm	1.5800%	2019/09/29 04:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.3526	13.5264	18.05	21.74	3.69	50.60	10:26
2	TOC	1.3831	13.8313	18.25	21.85	3.60	50.61	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	30	TOC	K1908714-022.09 doc	2.1610 ppm	0.1135 ppm	5.2500%	2019/09/29 04:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.0088	20.0880	22.50	26.11	3.60	50.61	10:31
2	TOC	2.1485	21.4846	23.45	26.98	3.53	50.65	10:27
3	TOC	2.2134	22.1343	23.89	27.49	3.60	50.63	10:25
4	TOC	2.2732	22.7324	24.30	27.82	3.53	50.61	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	31	TOC	K1908714-022.09 ms 4x doc	24.9857 ppm	0.1246 ppm	0.5000%	2019/09/29 05:53

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	24.9650	249.6495	178.33	181.93	3.61	50.63	10:25
2	TOC	25.0775	250.7751	179.09	182.83	3.74	50.62	10:27
3	TOC	25.0827	250.8266	179.12	182.77	3.65	50.63	10:27
4	TOC	24.8175	248.1749	177.32	181.08	3.76	50.65	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	32	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2019/09/29 06:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.83	11.43	3.60	50.65	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	33	TOC	K1908714-023.09 doc	9.1032 ppm	0.0162 ppm	0.1800%	2019/09/29 07:03

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	9.1086	91.0860	70.69	74.31	3.62	50.64	10:27
2	TOC	9.0812	90.8120	70.51	74.15	3.64	50.66	10:28
3	TOC	9.1033	91.0329	70.66	74.35	3.69	50.67	10:28
4	TOC	9.1198	91.1979	70.77	74.41	3.64	50.67	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	34	TOC	K1908714-024.09 doc	0.5584 ppm	0.0322 ppm	5.7700%	2019/09/29 07:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6006	6.0057	12.94	16.53	3.59	50.68	10:27
2	TOC	0.5505	5.5048	12.60	16.22	3.62	50.68	10:28
3	TOC	0.5599	5.5991	12.67	16.30	3.63	50.67	10:28
4	TOC	0.5228	5.2278	12.41	15.88	3.47	50.66	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	35	TOC	K1908714-026.09 doc	4.4932 ppm	0.0342 ppm	0.7600%	2019/09/29 08:54

Rep	Base			Adjusted		Baseline	Pressure	Run

#	Analysis Type	ppm	µg	(Abs)	NDIR (Abs)	(Abs)	(psig)	Time
1	TOC	4.4995	44.9954	39.41	42.82	3.42	50.67	10:30
2	TOC	4.4624	44.6242	39.16	42.71	3.56	50.67	10:28
3	TOC	4.4721	44.7214	39.22	42.90	3.67	50.66	10:31
4	TOC	4.5387	45.3873	39.67	43.22	3.55	50.66	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	36	TOC	K1908714-027.09 doc	1.1416 ppm	0.0208 ppm	1.8200%	2019/09/29 09:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1670	11.6701	16.79	20.40	3.61	50.68	10:28
2	TOC	1.1458	11.4580	16.64	20.24	3.60	50.67	10:27
3	TOC	1.1368	11.3681	16.58	20.23	3.65	50.66	10:28
4	TOC	1.1169	11.1693	16.45	20.06	3.61	50.66	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	37	TOC	K1908802-001.04 doc	4.1264 ppm	0.0500 ppm	1.2100%	2019/09/29 10:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.0834	40.8336	36.58	40.28	3.70	50.66	10:30
2	TOC	4.0840	40.8395	36.59	40.11	3.52	50.64	10:30
3	TOC	4.1594	41.5938	37.10	40.73	3.63	50.65	10:28
4	TOC	4.1790	41.7897	37.23	40.95	3.72	50.64	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	38	TOC	K1908802-002.04 doc	7.9303 ppm	0.0575 ppm	0.7300%	2019/09/29 11:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	7.8655	78.6551	62.26	65.80	3.54	50.64	10:28
2	TOC	7.9047	79.0470	62.52	66.18	3.65	50.62	10:29
3	TOC	7.9535	79.5346	62.85	66.64	3.79	50.70	10:23
4	TOC	7.9977	79.9766	63.15	66.89	3.73	50.63	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 7

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	23.6660 ppm (PASS)	0.0000 ppm	0%	2019/09/29 12:37

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	23.6660	236.6602	170.11	173.63	3.52	50.61	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 7

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2019/09/29 12:52

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.76	10.37	3.60	50.60	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample From Schedule Version 7

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	39	TOC	MB3	0.0000 ppm	0.0000 ppm	0.0000%	2019/09/29 13:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.96	9.51	3.55	50.61	10:29
2	TOC	0.0000	0.0000	6.34	10.00	3.66	50.59	10:27
3	TOC	0.0000	0.0000	5.80	9.43	3.63	50.59	10:28
4	TOC	0.0000	0.0000	6.23	9.55	3.33	50.58	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> LCS From Schedule Version 7

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈										

	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.1799 ppm (PASS)	0.1223 ppm	0.51%	2019/09/29 14:02

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.3247	243.2468	174.58	178.00	3.43	50.58	10:27
C	TOC	25.0 ppm	2	24.0557	240.5568	172.75	176.37	3.62	50.58	10:27
C	TOC	25.0 ppm	3	24.1052	241.0518	173.09	176.77	3.69	50.58	10:28
C	TOC	25.0 ppm	4	24.2339	242.3393	173.96	177.71	3.75	50.57	10:29

Completion State: Success - Criteria met.
Success Action: Do Nothing
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)
STD Conc - Pos C: 25 ppmC

Sample Type: Sample

From Schedule Version 7

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	40	TOC	K1908802-003.04 doc	0.9652 ppm	0.0272 ppm	2.8200%	2019/09/29 14:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0030	10.0305	15.67	19.13	3.45	50.57	10:28
2	TOC	0.9653	9.6533	15.42	19.00	3.58	50.56	10:25
3	TOC	0.9516	9.5163	15.32	18.95	3.62	50.58	10:30
4	TOC	0.9407	9.4073	15.25	18.93	3.68	50.55	10:24

Dilution: 1:10
Blank Contribution: (TC) 8.8654 (IC) (v1300)
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	41	TOC	K1908802-004.04 doc	0.6956 ppm	0.0325 ppm	4.6700%	2019/09/29 15:54

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6717	6.7172	13.42	17.11	3.68	50.56	10:26
2	TOC	0.6638	6.6377	13.37	17.02	3.65	50.56	10:28
3	TOC	0.7268	7.2682	13.80	17.34	3.54	50.56	10:30
4	TOC	0.7202	7.2019	13.75	17.33	3.57	50.54	10:30

Dilution: 1:10
Blank Contribution: (TC) 8.8654 (IC) (v1300)
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	42	TOC	K1908802-005.04 doc	0.6900 ppm	0.0253 ppm	3.6700%	2019/09/29 16:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6887	6.8867	13.54	17.14	3.60	50.54	10:29
2	TOC	0.7088	7.0885	13.68	17.30	3.63	50.54	10:29

3	TOC	0.7077	7.0767	13.67	17.17	3.50	50.55	10:27
4	TOC	0.6546	6.5464	13.31	16.92	3.61	50.56	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	43	TOC	K1908802-008.04 doc	0.5987 ppm	0.0174 ppm	2.9000%	2019/09/29 17:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5989	5.9895	12.93	16.51	3.58	50.59	10:27
2	TOC	0.5774	5.7744	12.78	16.43	3.65	50.59	10:25
3	TOC	0.6200	6.2002	13.07	16.64	3.57	50.58	10:25
4	TOC	0.5985	5.9851	12.93	16.52	3.59	50.61	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	44	TOC	K1908802-009.04 doc	3.8040 ppm	0.0438 ppm	1.1500%	2019/09/29 18:41

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.7457	37.4571	34.29	37.96	3.67	50.61	10:29
2	TOC	3.8048	38.0478	34.69	38.29	3.59	50.62	10:29
3	TOC	3.8516	38.5163	35.01	38.47	3.46	50.63	10:28
4	TOC	3.8139	38.1391	34.75	38.37	3.62	50.62	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	45	TOC	K1908802-011.04 doc	0.7525 ppm	0.0185 ppm	2.4600%	2019/09/29 19:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7743	7.7426	14.12	17.65	3.52	50.65	10:30
2	TOC	0.7595	7.5953	14.02	17.57	3.55	50.65	10:24
3	TOC	0.7449	7.4494	13.92	17.55	3.62	50.68	10:25
4	TOC	0.7314	7.3139	13.83	17.45	3.62	50.69	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	46	TOC	K1908802-014.04 doc	0.8208 ppm	0.0164 ppm	2.0000%	2019/09/29 20:32

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time

1	TOC	0.8280	8.2803	14.49	18.17	3.68	50.71	10:29
2	TOC	0.7964	7.9636	14.27	17.86	3.58	50.71	10:29
3	TOC	0.8267	8.2671	14.48	18.12	3.64	50.73	10:25
4	TOC	0.8320	8.3201	14.51	17.94	3.43	50.73	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	47	TOC	K1908802-015.04 doc	0.8409 ppm	0.0286 ppm	3.4000%	2019/09/29 21:28

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8246	8.2464	14.46	18.10	3.64	50.77	10:26
2	TOC	0.8777	8.7768	14.82	18.37	3.55	50.75	10:28
3	TOC	0.8484	8.4836	14.62	17.99	3.37	50.79	10:28
4	TOC	0.8130	8.1300	14.38	17.93	3.54	50.81	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 7

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	23.0947 ppm (PASS)	0.0000 ppm	0%	2019/09/29 22:24

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	23.0947	230.9471	166.23	169.88	3.66	50.84	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 7

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2019/09/29 22:38

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.64	9.32	3.68	50.85	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria	Do Nothing	CAS_salt_010711	CAS_salt_010711	0 ppmC

met.	(v4)	(v30)

Sample Type: Sample From Schedule Version 7

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	48	TOC	K1908802-017.04 doc	0.7321 ppm	0.0239 ppm	3.2700%	2019/09/29 22:53

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7461	7.4612	13.93	17.48	3.55	50.85	10:29
2	TOC	0.7446	7.4465	13.92	17.45	3.53	50.87	10:27
3	TOC	0.7413	7.4126	13.90	17.60	3.71	50.88	10:26
4	TOC	0.6963	6.9633	13.59	17.20	3.60	50.88	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	49	TOC	K1908802-018.04 doc	1.1014 ppm	0.0232 ppm	2.1100%	2019/09/29 23:49

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0780	10.7803	16.18	19.75	3.57	50.91	10:30
2	TOC	1.1328	11.3284	16.56	19.95	3.40	50.90	10:31
3	TOC	1.0922	10.9218	16.28	19.73	3.45	50.92	10:28
4	TOC	1.1026	11.0264	16.35	19.78	3.43	50.91	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	50	TOC	K1908802-019.04 doc	0.4967 ppm	0.0174 ppm	3.5000%	2019/09/30 00:45

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4812	4.8124	12.13	15.67	3.53	50.91	10:30
2	TOC	0.4821	4.8212	12.14	15.77	3.63	50.90	10:24
3	TOC	0.5131	5.1306	12.35	15.79	3.45	50.93	10:29
4	TOC	0.5104	5.1041	12.33	15.87	3.54	50.95	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	51	TOC	K1908802-020.04 doc	0.5235 ppm	0.0193 ppm	3.6800%	2019/09/30 01:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5004	5.0039	12.26	15.78	3.52	50.96	10:29

2	TOC	0.5287	5.2868	12.45	16.05	3.60	50.95	10:30
3	TOC	0.5185	5.1851	12.39	15.89	3.50	50.99	10:29
4	TOC	0.5465	5.4650	12.58	16.16	3.59	50.97	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	52	TOC	K1908802-022.04 doc	1.4025 ppm	0.0300 ppm	2.1400%	2019/09/30 02:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.3615	13.6148	18.11	21.68	3.58	51.00	10:27
2	TOC	1.4337	14.3366	18.60	22.14	3.54	51.03	10:26
3	TOC	1.4079	14.0788	18.42	21.95	3.53	51.03	10:29
4	TOC	1.4070	14.0700	18.42	21.99	3.57	51.04	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	53	TOC	K1908714-022.08	2.7362 ppm	0.2302 ppm	8.4100%	2019/09/30 03:32

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.4038	24.0377	25.18	28.89	3.70	51.04	10:28
2	TOC	2.7628	27.6279	27.62	31.01	3.39	51.04	10:27
3	TOC	2.8664	28.6635	28.32	31.84	3.52	51.05	10:29
4	TOC	2.9119	29.1187	28.63	32.15	3.52	51.04	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	54	TOC	K1908714-022.08 ms 4x	25.0279 ppm	0.0798 ppm	0.3200%	2019/09/30 04:28

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	25.1201	251.2008	179.38	183.00	3.62	51.05	10:31
2	TOC	25.0293	250.2933	178.76	182.32	3.56	51.04	10:28
3	TOC	25.0370	250.3699	178.82	182.57	3.76	51.04	10:24
4	TOC	24.9253	249.2532	178.06	181.67	3.61	51.03	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	55	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2019/09/30 05:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.74	10.29	3.55	51.07	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	56	TOC	K1908714-023.08	9.0020 ppm	0.0441 ppm	0.4900%	2019/09/30 05:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	9.0472	90.4717	70.28	73.90	3.63	51.05	10:28
2	TOC	8.9424	89.4242	69.57	73.11	3.55	51.06	10:30
3	TOC	9.0005	90.0047	69.96	73.63	3.67	51.06	10:29
4	TOC	9.0178	90.1785	70.08	73.83	3.75	51.08	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	57	TOC	K1908714-024.08	0.4320 ppm	0.0507 ppm	11.7500%	2019/09/30 06:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5025	5.0245	12.28	15.88	3.60	51.08	10:28
2	TOC	0.4298	4.2982	11.78	15.33	3.55	51.08	10:26
3	TOC	0.4124	4.1244	11.66	15.30	3.64	51.09	10:29
4	TOC	0.3833	3.8327	11.47	15.11	3.65	51.18	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 7

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	22.8404 ppm (PASS)	0.0000 ppm	0%	2019/09/30 07:29

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	22.8404	228.4043	164.50	168.07	3.57	51.09	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 7

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2019/09/30 07:44

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.62	9.30	3.67	51.07	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample From Schedule Version 7

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	58	TOC	MB4	0.0000 ppm	0.0000 ppm	0.0000%	2019/09/30 07:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	4.75	8.43	3.68	51.07	10:27
2	TOC	0.0000	0.0000	5.35	9.01	3.66	51.08	10:25
3	TOC	0.0000	0.0000	4.96	8.66	3.70	51.07	10:27
4	TOC	0.0000	0.0000	4.80	8.54	3.74	51.04	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> LCS From Schedule Version 7

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	23.3622 ppm (PASS)	0.0567 ppm	0.24%	2019/09/30 08:54

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	23.2831	232.8313	167.51	171.16	3.65	51.05	10:27
C	TOC	25.0 ppm	2	23.4162	234.1616	168.41	171.98	3.57	51.04	10:27
C	TOC	25.0 ppm	3	23.3655	233.6548	168.07	171.75	3.69	51.02	10:26
C	TOC	25.0 ppm	4	23.3840	233.8404	168.19	171.80	3.61	51.00	10:26

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	25 ppmC

Sample Type: Sample From Schedule Version 7

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	59	TOC	K1908714-026.08	4.4625 ppm	0.0605 ppm	1.3600%	2019/09/30 09:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.5178	45.1781	39.53	43.16	3.63	50.99	10:27
2	TOC	4.3762	43.7624	38.57	42.25	3.68	50.97	10:27
3	TOC	4.4807	44.8069	39.28	42.82	3.54	50.96	10:26
4	TOC	4.4752	44.7523	39.24	42.72	3.48	50.93	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	60	TOC	K1908714-027.08	1.0228 ppm	0.0174 ppm	1.7000%	2019/09/30 10:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0000	9.9995	15.65	19.30	3.65	50.91	10:30
2	TOC	1.0416	10.4165	15.94	19.38	3.45	50.91	10:29
3	TOC	1.0218	10.2176	15.80	19.21	3.41	50.89	10:32
4	TOC	1.0278	10.2780	15.84	19.37	3.53	50.87	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	61	TOC	K1908714-029.08	0.0000 ppm	0.0000 ppm	0.0000%	2019/09/30 11:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.10	9.68	3.58	50.85	10:26
2	TOC	0.0000	0.0000	6.11	9.61	3.51	50.84	10:28
3	TOC	0.0000	0.0000	6.11	9.66	3.55	50.84	10:31
4	TOC	0.0000	0.0000	6.16	9.50	3.35	50.83	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	62	TOC	K1908802-001.03	4.0381 ppm	0.0567 ppm	1.4000%	2019/09/30 12:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.9571	39.5711	35.73	39.31	3.58	50.79	10:25
2	TOC	4.0418	40.4182	36.30	39.90	3.60	50.80	10:26
3	TOC	4.0697	40.6966	36.49	39.93	3.44	50.78	10:27
4	TOC	4.0837	40.8366	36.58	40.08	3.50	50.77	10:29

Dilution	Blank Contribution	Method	Calibration

1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	63	TOC	K1908802-002.03	7.9429 ppm	0.0271 ppm	0.3400%	2019/09/30 13:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	7.9100	79.1000	62.56	66.07	3.52	50.75	10:31
2	TOC	7.9328	79.3284	62.71	66.38	3.67	50.73	10:29
3	TOC	7.9716	79.7158	62.98	66.41	3.44	50.70	10:28
4	TOC	7.9570	79.5700	62.88	66.41	3.53	50.67	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	64	TOC	K1908802-003.03	0.9130 ppm	0.0177 ppm	1.9400%	2019/09/30 14:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8979	8.9786	14.96	18.49	3.53	50.65	10:27
2	TOC	0.9331	9.3307	15.20	18.77	3.57	50.61	10:26
3	TOC	0.8983	8.9830	14.96	18.50	3.54	50.59	10:24
4	TOC	0.9226	9.2261	15.13	18.56	3.43	50.58	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	65	TOC	K1908802-004.03	0.5541 ppm	0.0231 ppm	4.1600%	2019/09/30 15:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5577	5.5770	12.65	16.12	3.47	50.57	10:26
2	TOC	0.5850	5.8495	12.84	16.31	3.47	50.57	10:27
3	TOC	0.5324	5.3236	12.48	16.04	3.56	50.57	10:27
4	TOC	0.5415	5.4149	12.54	16.10	3.56	50.56	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	66	TOC	K1908802-005.03	0.5819 ppm	0.0248 ppm	4.2700%	2019/09/30 16:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6175	6.1751	13.06	16.42	3.36	50.56	10:26
2	TOC	0.5804	5.8039	12.81	16.32	3.51	50.56	10:24
3	TOC	0.5642	5.6418	12.70	16.29	3.59	50.55	10:25

4	TOC	0.5657	5.6565	12.70	16.27	3.56	50.56	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 7

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	23.6831 ppm (PASS)	0.0000 ppm	0%	2019/09/30 17:16

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	23.6831	236.8310	170.22	173.76	3.53	50.56	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 7

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2019/09/30 17:31

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.56	9.14	3.58	50.55	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample From Schedule Version 7

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	67	TOC	K1908802-008.03	0.5729 ppm	0.0236 ppm	4.1200%	2019/09/30 17:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5913	5.9129	12.88	16.52	3.65	50.56	10:29
2	TOC	0.5901	5.9011	12.87	16.45	3.58	50.56	10:30
3	TOC	0.5695	5.6948	12.73	16.15	3.42	50.55	10:28
4	TOC	0.5409	5.4090	12.54	16.20	3.66	50.57	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC)	CAS_salt_010711	CAS_salt_010711

(v1300) (v4) (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	68	TOC	K1908802-009.03	3.8658 ppm	0.0240 ppm	0.6200%	2019/09/30 18:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.8482	38.4824	34.99	38.59	3.61	50.56	10:30
2	TOC	3.8665	38.6651	35.11	38.67	3.56	50.57	10:25
3	TOC	3.8490	38.4898	34.99	38.61	3.62	50.58	10:26
4	TOC	3.8995	38.9951	35.34	38.88	3.54	50.60	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	69	TOC	K1908802-010.03	1.4332 ppm	0.0359 ppm	2.5000%	2019/09/30 19:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4273	14.2733	18.55	22.16	3.61	50.62	10:28
2	TOC	1.4855	14.8552	18.95	22.52	3.57	50.64	10:27
3	TOC	1.4076	14.0759	18.42	22.14	3.72	50.65	10:24
4	TOC	1.4123	14.1230	18.45	22.05	3.60	50.68	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	70	TOC	K1908802-011.03	0.6701 ppm	0.0152 ppm	2.2600%	2019/09/30 20:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6894	6.8940	13.55	17.16	3.61	50.69	10:29
2	TOC	0.6720	6.7202	13.43	16.98	3.55	50.71	10:25
3	TOC	0.6661	6.6613	13.39	16.82	3.44	50.72	10:29
4	TOC	0.6529	6.5287	13.30	16.83	3.54	50.74	10:23

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	71	TOC	K1908802-013.03	0.4016 ppm	0.0235 ppm	5.8600%	2019/09/30 21:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3734	3.7340	11.40	15.11	3.71	50.75	10:25
2	TOC	0.4079	4.0787	11.63	15.03	3.40	50.77	10:27
3	TOC	0.4297	4.2968	11.78	15.17	3.38	50.78	10:28
4	TOC	0.3954	3.9535	11.55	15.11	3.56	50.81	10:30

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	72	TOC	K1908802-015.03	0.6605 ppm	0.0201 ppm	3.0500%	2019/09/30 22:24

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6428	6.4285	13.23	16.85	3.63	50.83	10:28
2	TOC	0.6863	6.8631	13.52	16.94	3.41	50.84	10:25
3	TOC	0.6666	6.6657	13.39	16.78	3.39	50.83	10:26
4	TOC	0.6462	6.4624	13.25	16.72	3.47	50.86	10:23

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	73	TOC	K1908802-017.03	0.6642 ppm	0.0170 ppm	2.5600%	2019/09/30 23:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6658	6.6583	13.38	16.87	3.48	50.88	10:28
2	TOC	0.6736	6.7364	13.44	17.04	3.60	50.89	10:31
3	TOC	0.6775	6.7747	13.46	17.06	3.59	50.89	10:24
4	TOC	0.6398	6.3976	13.21	16.74	3.54	50.91	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	74	TOC	K1908802-018.03	0.8862 ppm	0.0305 ppm	3.4400%	2019/10/01 00:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8621	8.6206	14.72	18.27	3.55	50.91	10:25
2	TOC	0.8758	8.7576	14.81	18.43	3.62	50.93	10:29
3	TOC	0.9309	9.3086	15.18	18.63	3.44	50.92	10:27
4	TOC	0.8762	8.7620	14.81	18.45	3.63	50.95	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	75	TOC	K1908802-019.03	0.4572 ppm	0.0202 ppm	4.4100%	2019/10/01 01:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4381	4.3807	11.84	15.43	3.59	50.96	10:28
2	TOC	0.4419	4.4191	11.86	15.46	3.59	50.97	10:28

3	TOC	0.4781	4.7815	12.11	15.47	3.36	50.97	10:28
4	TOC	0.4706	4.7063	12.06	15.50	3.44	50.97	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.8654 (IC) (v1300)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 7

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	22.8422 ppm (PASS)	0.0000 ppm	0%	2019/10/01 02:07

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	22.8422	228.4220	164.51	168.00	3.49	50.99	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 7

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2019/10/01 02:22

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.09	8.59	3.50	51.00	10:27

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1299	1.0837	0.9200	0.0000	0.0000	0.0000	2019/09/26 14:18	Fusion1 (Fusion1)
v1300	1.7457	1.2940	0.0000	0.0000	0.0000	2019/09/28 14:15	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version:	v30	Calibration curve formula:	TOC: y = 6.788x + 9.463
Ver Creation:	2019/03/05 17:42	r^2 value:	TOC: r^2 = 0.99963
Comment:			
Operator:	Fusion1 (Fusion1)		
Basic Analysis Type	TOC		

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	7.8970	0.0000		2019/03/05 16:15
0.500 ppm	11.5280	0.5000		2019/03/05 16:29
1.0 ppm	14.9760	1.0000		2019/03/05 16:44
5.0 ppm	43.6500	5.0000		2019/03/05 16:58
10 ppm	79.6020	10.0000		2019/03/05 17:12
25 ppm	183.3580	25.0000		2019/03/05 17:26
50 ppm	346.3230	50.0000		2019/03/05 17:40

Methods

Name: CAS_salt_010711 (TOC)

Version:	v4	Operator:	Fusion1 (Fusion1)
Ver Creation:	2019/02/21 17:57		
Comment:			

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml
UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml
BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min

SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2019/10/01 02:37

September 26, 2019 Service Request No:R1908938

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: LHAAP

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory September 13, 2019
For your reference, these analyses have been assigned our service request number **R1908938.**

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Meghan Pedro for
Janice Jaeger
Project Manager

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

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1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
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1565 Jefferson Rd, Building 300, Rochester, NY 14623 | 585-288-5380 | www.alsglobal.com

Client: ALS Environmental - US
Project: LHAAP
Sample Matrix: Water

Service Request: R1908938
Date Received: 09/13/2019

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Seven water samples were received for analysis at ALS Environmental on 09/13/2019. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivoa GC:

No significant anomalies were noted with this analysis.

Approved by _____ Date 09/26/2019

SAMPLE DETECTION SUMMARY

CLIENT ID: 35AWW06-091119_a			Lab ID: R1908938-005			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Acetic Acid	36		0.56	1.0	mg/L	Organic Acids
Propionic Acid	170		0.19	1.0	mg/L	Organic Acids

CLIENT ID: 35AWW23-091119			Lab ID: R1908938-006			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Acetic Acid	250		5.6	10	mg/L	Organic Acids
Butanoic Acid (Butyric Acid)	180		3.2	20	mg/L	Organic Acids
Propionic Acid	1100		1.9	10	mg/L	Organic Acids

CLIENT ID: 35AWW119-091119			Lab ID: R1908938-007			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Acetic Acid	54		0.56	1.0	mg/L	Organic Acids
Propionic Acid	31		0.19	1.0	mg/L	Organic Acids

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: ALS Environmental - US **Service Request:**R1908938
Project: LHAAP

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R1908938-001	35AWW19-091119	9/11/2019	0710
R1908938-002	35AWW20-091119	9/11/2019	0810
R1908938-003	LHSMW07-091119	9/11/2019	0915
R1908938-005	35AWW06-091119_a	9/11/2019	1015
R1908938-006	35AWW23-091119	9/11/2019	1125
R1908938-007	35AWW119-091119	9/11/2019	1235

bhate
ENVIRONMENTAL CONSTRUCTION & SERVICES

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Page: ____ of ____

Project/Phase No: NWO1312.0150

COC Number(1): ____

UMS Number: ____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / LHAAP-58

Client Name:

Collected by: Scott Beesinger

Field Sample ID (20 Characters Max)	ERPIMS LOCID (15 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code (2)	Sample Number (3)	Sample Matrix (4)	Number of containers	VFA										Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
35AMW19_091119		11Sep2019	0710	-	N		WG	1	X													
35AMW20_091119		11Sep2019	0810	-	N		WG	1	X													
35AMW20_091119_MS		11Sep2019	0810	-	MS		WG	1	X													
35AMW20_091119_MSD		11Sep2019	0810		SD		WG	1	X													
LHSMW07_091119		11Sep2019	0915		N		WG	1	X													
35AMW06_091119		11Sep2019	1015	-	N		WG	1	X													
35AMW06_091119_D		11Sep2019	1015	-	FD		WG	1	X													
35AMW23_091119		11Sep2019	1125	-	N		WG	1	X													
35AMW31_091119		11Sep2019	1235	-	N		WG	1	X													
				-																		
				-																		

Sample Analysis Requested (5)

Quality Assurance Samples (6)

COMMENTS: ____

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Scott Beesinger	9/11/19	1330			
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: ____ Shipped No.:

Method of Shipment: ____

Fed Ex ____ Airbill Number:

Analytical Lab: ALS 10450 Stancliff Rd. Suite 210 Houston, TX 77099 (281) 530-5656

ATTN: SONIA WEST Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)

2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-b) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank

R1908938 5
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LHAAP

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Cooler Receipt and Preservation Check Form

Project/Client Bhats Folder Number

Cooler received on 9/13/19 by: [illegible] COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y N	5a	**Perchlorate** samples have required headspace?	Y N NA
2	**Custody papers** properly completed (ink, signed)?	Y N	5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	Y N NA
3	Did all bottles arrive in good **condition** (unbroken)?	Y N	6	Where did the bottles originate?	ALS/ROC CLIENT
4	Circle: **Wet Ice** **Dry Ice** **Gel packs** present?	Y N	7	Soil VOA received as: Bulk Encore 5035set	NA

8. Temperature Readings Date: 9/13/19 Time: 0938 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	7.9						
Correction Factor (°C)	—						
Corrected Temp (°C)	7.9						
Temp from:Type of bottle	—						
Within 0-6°C?	Y N	Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: Ice melted Poorly Packed (described below) Same Day Rule

&Client Approval to Run Samples: Standing Approval Client aware at drop-off Client notified by:

All samples held in storage location: R-002 by e on 9/13/19 at 0940
5035 samples placed in storage location: by on at

Cooler Breakdown/Preservation Check**: Date: 9/16/19 Time: 1730 by: [illegible]

9. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? YES NO
10. Did all bottle labels and tags agree with custody papers? YES NO
11. Were correct containers used for the tests indicated? YES NO
12. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO N/A
13. Air Samples: Cassettes / Tubes Intact with MS? Canisters Pressurized Tedlar® Bags Inflated N/A

pH	Lot of test paper	Reagent	Preserved? Yes	Preserved? No	Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
≥12		NaOH								
≤2		HNO_3								
≤2		H_2SO_4								
<4		$NaHSO_4$								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522			If +, contact PM to add $Na_2S_2O_3$ (625, 608, CN), ascorbic (phenol).					
		$Na_2S_2O_3$								
		ZnAcetate	-	-						
		HCl	**	**						

**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).

Bottle lot numbers: 061719-1BMC

Explain all Discrepancies/ Other Comments:

Rec'd broken: MSD WW06 Cracked caps. - MS - 35AWW19

COC wet and destroyed

CLRES	BULK
DO	FLDT
HPROD	HGFB
HTR	LL3541
PH	SUB
SO3	MARRS
ALS	REV

Labels secondary reviewed by: [illegible]

PC Secondary Review: [illegible] 9/17/19 *significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
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ALS Environmental

REPORT QUALIFIERS AND DEFINITIONS

U Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.

J Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).

B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.

E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.

E Organics- Concentration has exceeded the calibration range for that specific analysis.

D Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.

* Indicates that a quality control parameter has exceeded laboratory limits. Under the ñNotesò column of the Form I, this qualifier denotes analysis was performed out of Holding Time.

H Analysis was performed out of hold time for tests that have an ñimmediateò hold time criteria.

Spike was diluted out.

\+ Correlation coefficient for MSA is <0.995.

N Inorganics- Matrix spike recovery was outside laboratory limits.

N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.

S Concentration has been determined using Method of Standard Additions (MSA).

W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.

P Concentration >40% difference between the two GC columns.

C Confirmed by GC/MS

Q DoD reports: indicates a pesticide/Aroclor is not confirmed (Ó100% Difference between two GC columns).

X See Case Narrative for discussion.

MRL Method Reporting Limit. Also known as:
LOQ Limit of Quantitation (LOQ)
The lowest concentration at which the method analyte may be reliably quantified under the method conditions.

MDL Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).

LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.

ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

ACCREDITED IN ACCORDANCE WITH nelac

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

[1] Analyses were performed according to our laboratoryôs NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: ALS Environmental - US
Project: LHAAP/

Service Request: R1908938

Sample Name: 35AWW19-091119
Lab Code: R1908938-001
Sample Matrix: Water

Date Collected: 09/11/19
Date Received: 09/13/19

Analysis Method	Extracted/Digested By	Analyzed By
Organic Acids		BALLGEIER

Sample Name: 35AWW20-091119
Lab Code: R1908938-002
Sample Matrix: Water

Date Collected: 09/11/19
Date Received: 09/13/19

Analysis Method	Extracted/Digested By	Analyzed By
Organic Acids		BALLGEIER

Sample Name: LHSMW07-091119
Lab Code: R1908938-003
Sample Matrix: Water

Date Collected: 09/11/19
Date Received: 09/13/19

Analysis Method	Extracted/Digested By	Analyzed By
Organic Acids		BALLGEIER

Sample Name: 35AWW06-091119_a
Lab Code: R1908938-005
Sample Matrix: Water

Date Collected: 09/11/19
Date Received: 09/13/19

Analysis Method	Extracted/Digested By	Analyzed By
Organic Acids		BALLGEIER

Sample Name: 35AWW23-091119
Lab Code: R1908938-006
Sample Matrix: Water

Date Collected: 09/11/19
Date Received: 09/13/19

Analysis Method	Extracted/Digested By	Analyzed By
Organic Acids		BALLGEIER

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client:	ALS Environmental - US	**Service Request:**	R1908938
Project:	LHAAP/		

Sample Name:	35AWW119-091119	**Date Collected:**	09/11/19
Lab Code:	R1908938-007	**Date Received:**	09/13/19
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
Organic Acids		BALLGEIER

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.

Sample Results

ALS Environmental—Rochester Laboratory
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Semivolatile Organic Compounds by GC

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Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	R1908938
Project:	LHAAP	**Date Collected:**	09/11/19 07:10
Sample Matrix:	Water	**Date Received:**	09/13/19 09:40
Sample Name:	35AWW19-091119	**Units:**	mg/L
Lab Code:	R1908938-001	**Basis:**	NA

Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Analysis Method: Organic Acids

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Pyruvic Acid	ND U	0.50	0.016	1	09/25/19 19:38	
Acetic Acid	ND U	1.0	0.56	1	09/25/19 19:38	
Butanoic Acid (Butyric Acid)	ND U	2.0	0.32	1	09/25/19 19:38	
Lactic Acid	ND U	1.0	0.14	1	09/25/19 19:38	
Propionic Acid	ND U	1.0	0.19	1	09/25/19 19:38	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	R1908938
Project:	LHAAP	**Date Collected:**	09/11/19 08:10
Sample Matrix:	Water	**Date Received:**	09/13/19 09:40
Sample Name:	35AWW20-091119	**Units:**	mg/L
Lab Code:	R1908938-002	**Basis:**	NA

Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Analysis Method: Organic Acids

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Pyruvic Acid	ND U	0.50	0.016	1	09/25/19 20:11	
Acetic Acid	ND U	1.0	0.56	1	09/25/19 20:11	
Butanoic Acid (Butyric Acid)	ND U	2.0	0.32	1	09/25/19 20:11	
Lactic Acid	ND U	1.0	0.14	1	09/25/19 20:11	
Propionic Acid	ND U	1.0	0.19	1	09/25/19 20:11	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	R1908938
Project:	LHAAP	**Date Collected:**	09/11/19 09:15
Sample Matrix:	Water	**Date Received:**	09/13/19 09:40
Sample Name:	LHSMW07-091119	**Units:**	mg/L
Lab Code:	R1908938-003	**Basis:**	NA

Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Analysis Method: Organic Acids

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Pyruvic Acid	ND U	0.50	0.016	1	09/25/19 21:50	
Acetic Acid	ND U	1.0	0.56	1	09/25/19 21:50	
Butanoic Acid (Butyric Acid)	ND U	2.0	0.32	1	09/25/19 21:50	
Lactic Acid	ND U	1.0	0.14	1	09/25/19 21:50	
Propionic Acid	ND U	1.0	0.19	1	09/25/19 21:50	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	R1908938
Project:	LHAAP	**Date Collected:**	09/11/19 10:15
Sample Matrix:	Water	**Date Received:**	09/13/19 09:40
Sample Name:	35AWW06-091119_a	**Units:**	mg/L
Lab Code:	R1908938-005	**Basis:**	NA

Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Analysis Method: Organic Acids

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Pyruvic Acid	ND U	0.50	0.016	1	09/25/19 22:23	
Acetic Acid	**36**	1.0	0.56	1	09/25/19 22:23	
Butanoic Acid (Butyric Acid)	ND U	2.0	0.32	1	09/25/19 22:23	
Lactic Acid	ND U	1.0	0.14	1	09/25/19 22:23	
Propionic Acid	**170**	1.0	0.19	1	09/25/19 22:23	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	R1908938
Project:	LHAAP	**Date Collected:**	09/11/19 11:25
Sample Matrix:	Water	**Date Received:**	09/13/19 09:40
Sample Name:	35AWW23-091119	**Units:**	mg/L
Lab Code:	R1908938-006	**Basis:**	NA

Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Analysis Method: Organic Acids

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Pyruvic Acid	ND U	5.0	0.16	10	09/26/19 12:13	
Acetic Acid	**250**	10	5.6	10	09/26/19 12:13	
Butanoic Acid (Butyric Acid)	**180**	20	3.2	10	09/26/19 12:13	
Lactic Acid	ND U	10	1.4	10	09/26/19 12:13	
Propionic Acid	**1100**	10	1.9	10	09/26/19 12:13	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	R1908938
Project:	LHAAP	**Date Collected:**	09/11/19 12:35
Sample Matrix:	Water	**Date Received:**	09/13/19 09:40
Sample Name:	35AWW119-091119	**Units:**	mg/L
Lab Code:	R1908938-007	**Basis:**	NA

Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Analysis Method: Organic Acids

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Pyruvic Acid	ND U	0.50	0.016	1	09/26/19 00:02	
Acetic Acid	**54**	1.0	0.56	1	09/26/19 00:02	
Butanoic Acid (Butyric Acid)	ND U	2.0	0.32	1	09/26/19 00:02	
Lactic Acid	ND U	1.0	0.14	1	09/26/19 00:02	
Propionic Acid	**31**	1.0	0.19	1	09/26/19 00:02	

QC Summary Forms

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	R1908938
Project:	LHAAP	**Date Collected:**	09/11/19
Sample Matrix:	Water	**Date Received:**	09/13/19
		Date Analyzed:	09/25/19

Duplicate Matrix Spike Summary
Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Sample Name:	35AWW20-091119	**Units:**	mg/L
Lab Code:	R1908938-002	**Basis:**	NA
Analysis Method:	Organic Acids		

		Matrix Spike RQ1910951-04			Duplicate Matrix Spike RQ1910951-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Pyruvic Acid	ND U	2.09	2.02	103	2.09	2.02	103	39-130	<1	30
Acetic Acid	ND U	19.1	20.1	95	19.1	20.1	95	10-179	<1	30
Butanoic Acid (Butyric Acid)	ND U	19.0	19.9	95	18.4	19.9	92	39-161	3	30
Lactic Acid	ND U	18.3	19.9	92	18.4	19.9	92	48-147	<1	30
Propionic Acid	ND U	17.9	20.3	88	18.5	20.3	91	49-162	4	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	R1908938
Project:	LHAAP	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	mg/L
Lab Code:	RQ1910951-01	**Basis:**	NA

Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Analysis Method: Organic Acids

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Pyruvic Acid	ND U	0.50	0.016	1	09/25/19 18:00	
Acetic Acid	ND U	1.0	0.56	1	09/25/19 18:00	
Butanoic Acid (Butyric Acid)	ND U	2.0	0.32	1	09/25/19 18:00	
Lactic Acid	ND U	1.0	0.14	1	09/25/19 18:00	
Propionic Acid	ND U	1.0	0.19	1	09/25/19 18:00	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: LHAAP
Sample Matrix: Water

Service Request: R1908938
Date Analyzed: 09/25/19

Duplicate Lab Control Sample Summary
Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Units:mg/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ1910951-02			RQ1910951-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Pyruvic Acid	Organic Acids	2.13	2.02	105	2.11	2.02	104	73-122	<1	30
Acetic Acid	Organic Acids	19.0	20.1	94	19.1	20.1	95	80-130	<1	30
Butanoic Acid (Butyric Acid)	Organic Acids	18.7	19.9	94	18.2	19.9	91	86-128	3	30
Lactic Acid	Organic Acids	19.2	19.9	96	19.0	19.9	96	75-125	<1	30
Propionic Acid	Organic Acids	18.6	20.3	92	18.5	20.3	91	63-153	<1	30

LABORATORY REPORT

October 3, 2019

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road Suite 210
Houston, TX 77099-4338

RE: HS19090511

Dear RJ:

Enclosed are the results of the samples submitted to our laboratory on September 13, 2019. For your reference, these analyses have been assigned our service request number P1905493.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Hayden Akers at 9:56 am, Oct 03, 2019

Hayden Akers
Project Manager

Client: ALS Laboratory Group Service Request No: P1905493
Project: HS19090511

CASE NARRATIVE

The samples were received intact under chain of custody on September 13, 2019 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Carbon Dioxide Analysis

The samples were analyzed for carbon dioxide using a gas chromatograph equipped with a thermal conductivity detector (TCD). A known amount of liquid was displaced by injecting 8.0 milliliters of helium creating a headspace in the sample vial. Each sample vial was agitated using a sonic disrupter for fifteen minutes and then allowed to equilibrate for at least four hours. A volume of the headspace was withdrawn using a gas-tight syringe and analyzed using a manual injection technique. The amount of dissolved gases (carbon dioxide) in the original sample was calculated using Henry's Law. This method was performed with guidance from RSK 175 as described in laboratory SOP VOA-DISGAS. This analyte is included on the laboratory's NELAP and DoD-ELAP scope of accreditation.

Manual integrations were performed on the following sample(s) and analyte(s). Refer to the raw data for additional information.

Sample Identification(s)	Analyte(s)
P1905493-002MS	carbon dioxide
P1905493-002MSD	carbon dioxide
P1905493-004	carbon dioxide

The recovery and relative percent difference were outside of the DoD control limits for carbon dioxide for the matrix spike and its duplicate. However all quality control parameters were met for the laboratory control sample and its duplicate.

Client: ALS Laboratory Group Service Request No: P1905493
Project: HS19090511

CASE NARRATIVE

Methane, Ethene and Ethane Analysis

The samples were also analyzed for methane, ethene, and ethane using a gas chromatograph equipped with a flame ionization detector (FID). A known amount of liquid was displaced by injecting 8.0 milliliters of helium creating a headspace in the sample vial. Each sample vial was agitated using a sonic disrupter for fifteen minutes and then allowed to equilibrate for at least two hours. A volume of the headspace was withdrawn using a gas-tight syringe and analyzed using a manual injection technique. The amount of dissolved gases (methane, ethene and ethane) in the original sample was calculated using Henry's Law. This method was performed with guidance from RSK 175. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the laboratory's NELAP or DoD-ELAP accreditation.

Manual integrations were performed on the following sample(s) and analyte(s). Refer to the raw data for additional information.

Sample Identification(s)	Analyte(s)
P1905493-002	ethane
P1905493-003	ethane

The recovery for methane were outside of the DoD control limits for the matrix spike and its duplicate due to matrix interference. The recovery for ethane was outside of the DoD control limits for the matrix spike duplicate. However all quality control parameters were met for the laboratory control sample and its duplicate.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1521096
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-006
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413-19-10
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272019-10
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: ALS Laboratory Group
Project ID: HS19090511

Service Request: P1905493

Date Received: 9/13/2019
Time Received: 09:15

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	RSK 175 - CO2	RSK 175 - Gases
35AWW19_091119	P1905493-001	Water	9/11/2019	07:10	X	X
35AWW20_091119	P1905493-002	Water	9/11/2019	08:10	X	X
LHSMW07_091119	P1905493-003	Water	9/11/2019	09:15	X	X
35AWW06_091119	P1905493-004	Water	9/11/2019	10:15	X	X
35AWW06_091119_a	P1905493-005	Water	9/11/2019	10:15	X	X
35AWW23_091119	P1905493-006	Water	9/11/2019	11:25	X	X
35AWW11_091119	P1905493-007	Water	9/11/2019	12:35	X	X

P1905493

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID:** **12162**

SUBCONTRACT TO:

ALS Environmental
2655 Park Center Drive, Suite A
Simi Valley, CA 93065

Phone: +1 805 526 7161

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS19090511
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS19090511-01**	**35AWW19_091119**	**Groundwater**	**11 Sep 2019 07:10**
	MEE plus CO2 Sub to ALS SimiValley			26 Sep 2019
2.	**HS19090511-02**	**35AWW20_091119**	**Groundwater**	**11 Sep 2019 08:10**
	MEE plus CO2 Sub to ALS SimiValley			26 Sep 2019
3.	**HS19090511-03**	**LHSMW07_091119**	**Groundwater**	**11 Sep 2019 09:15**
	MEE plus CO2 Sub to ALS SimiValley			26 Sep 2019
4.	**HS19090511-04**	**35AWW06_091119**	**Groundwater**	**11 Sep 2019 10:15**
	MEE plus CO2 Sub to ALS SimiValley			26 Sep 2019
5.	**HS19090511-05**	**35AWW06_091119_a**	**Groundwater**	**11 Sep 2019 10:15**
	MEE plus CO2 Sub to ALS SimiValley			26 Sep 2019
6.	**HS19090511-06**	**35AWW23_091119**	**Groundwater**	**11 Sep 2019 11:25**
	MEE plus CO2 Sub to ALS SimiValley			26 Sep 2019
7.	**HS19090511-07**	**35AWW11_091119**	**Groundwater**	**11 Sep 2019 12:35**
	MEE plus CO2 Sub to ALS SimiValley			26 Sep 2019

Comments:

RIGHT SOLUTIONS | RIGHT PARTNER

P1905493

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID:** **12162**

Please analyze for the analysis listed above.
Send report to the emails shown above.
3 Neat vials & 3 HCL vials
HS19090511-02 MS/MSD

QC Level: DOD IV (DoD Data Package)

Relinquished By:	[signature]	Date/Time:	9/12/19 1800
Received By:	[signature]	Date/Time:	9/13/19 0915 PC
Cooler ID(s):		Temperature(s):	

ALS Environmental
Sample Acceptance Check Form

Client: ALS Laboratory Group Work order: P1905493

Project: HS19090511

Sample(s) received on: 09/13/19 Date opened: 09/13/19 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☒	☐	☐
	Cooler Temperature: 1° C Blank Temperature: ° C Thermometer ID T-111 Wet Ic			
8	Were **custody seals** on outside of cooler/Box/Container?	☒	☐	☐
	Location of seal(s)? Cooler lid. Sealing Lid?	☒	☐	☐
	Were signature and date included?	☒	☐	☐
	Were seals intact?	☒	☐	☐
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☒	☐	☐
	Is there a client indication that the submitted samples are **pH** preserved?	☒	☐	☐
	Were **VOA vials** checked for presence/absence of air bubbles?	☒	☐	☐
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☒	☐
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1905493-001.01	40mL VOA NP		7		A	wh 9/20/19
P1905493-001.02	40mL VOA NP				A	
P1905493-001.04	40ml VOA HCL		1		A	wh 9/19/19
P1905493-001.05	40ml VOA HCL				A	
P1905493-002.01	40mL VOA NP		7		A	wh 9/20/19
P1905493-002.02	40mL VOA NP				A	
P1905493-002.04	40ml VOA HCL		1		A	wh 9/19/19
P1905493-002.05	40ml VOA HCL				A	
P1905493-002.06	40mL VOA NP		7		A	wh 9/20/19
P1905493-002.07	40mL VOA NP		7		A	wh 9/20/19
P1905493-002.08	40mL VOA NP		7		A	wh 9/20/19
P1905493-002.09	40mL VOA NP				A	
P1905493-002.10	40ml VOA HCL		1		A	wh 9/19/19
P1905493-002.11	40ml VOA HCL		1		A	wh 9/19/19
P1905493-002.12	40ml VOA HCL		1		A	wh 9/19/19

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS Environmental
Sample Acceptance Check Form

Client: ALS Laboratory Group Work order: P1905493

Project: HS19090511

Sample(s) received on: 09/13/19 Date opened: 09/13/19 by: ADAVID

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1905493-002.13	40ml VOA HCL				A	
P1905493-003.01	40mL VOA NP		7		A	wh 9/20/19
P1905493-003.02	40mL VOA NP				A	
P1905493-003.04	40ml VOA HCL		1		A	wh 9/19/19
P1905493-003.05	40ml VOA HCL				A	
P1905493-004.01	40mL VOA NP		7		A	wh 9/20/19
P1905493-004.02	40mL VOA NP				A	
P1905493-004.04	40ml VOA HCL		1		A	wh 9/19/19
P1905493-004.05	40ml VOA HCL				A	
P1905493-005.01	40mL VOA NP		7		A	wh 9/20/19
P1905493-005.02	40mL VOA NP				A	
P1905493-005.04	40ml VOA HCL		1		A	wh 9/19/19
P1905493-005.05	40ml VOA HCL				A	
P1905493-006.01	40mL VOA NP		7		A	wh 9/20/19
P1905493-006.02	40mL VOA NP				A	
P1905493-006.04	40ml VOA HCL		1		A	wh 9/19/19
P1905493-006.05	40ml VOA HCL				A	
P1905493-007.01	40mL VOA NP		7		A	wh 9/20/19
P1905493-007.02	40mL VOA NP				A	
P1905493-007.04	40ml VOA HCL		1		A	wh 9/19/19
P1905493-007.05	40ml VOA HCL					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Project ID: **HS19090511** ALS Project ID: P1905493

Carbon Dioxide

Test Code: RSK 175
Instrument ID: HP5890A/GC10/TCD
Analyst: Wade Henton
Matrix: Water
Test Notes:

Date(s) Collected: 9/11/19
Date Received: 9/13/19
Date Analyzed: 9/20/19

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
35AWW19_091119	P1905493-001	0.050	**230,000**	2,000	1,700	740	**B**
35AWW20_091119	P1905493-002	0.050	**290,000**	2,000	1,700	740	**B**
LHSMW07_091119	P1905493-003	0.050	**340,000**	2,000	1,700	740	**B**
35AWW06_091119	P1905493-004	0.050	**320,000**	2,000	1,700	740	**B**
35AWW06_091119_a	P1905493-005	0.050	**350,000**	2,000	1,700	740	**B**
35AWW23_091119	P1905493-006	0.050	**590,000**	2,000	1,700	740	**B**
35AWW11_091119	P1905493-007	0.050	**690,000**	2,000	1,700	740	**B**
Method Control Sample	P190920-MB	0.10	**480**	1,000	860	370	**J**

The Method Control Sample is laboratory water carried through the entire analytical process.
U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and associated method control sample.

ALS ENVIRONMENTAL

MATRIX SPIKE / DUPLICATE MATRIX SPIKE SUMMARY

Client: **ALS Laboratory Group**
Client Sample ID: **35AWW20_091119**
Client Project ID: **HS19090511**

ALS Project ID: P1905493
ALS Sample ID: P1905493-002MS
P1905493-002DMS

Test Code: RSK 175
Instrument ID: HP5890A/GC10/TCD
Analyst: Wade Henton
Matrix: Water
Test Notes:

Date Collected: 09/11/19
Date Received: 09/13/19
Date Analyzed: 09/20/19
Volume(s) Analyzed: 0.050 ml(s)

CAS #	Compound	Spike Amount MS / DMS ug/L	Sample Amount ug/L	Result MS ug/L	Result DMS ug/L	% Recovery MS	% Recovery DMS	DOD Acceptance Limits	RPD	RPD Limit	Data Qualifier
124-38-9	Carbon Dioxide	45,800	294,000	357,000	328,000	**138**	**74**	80-122	60	30	**N, R**

N = The matrix spike recovery is not within control limits. See case narrative.
R = Duplicate precision not met.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **ALS Laboratory Group**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **HS19090511**

ALS Project ID: P1905493
ALS Sample ID: P190920-DLCS

Test Code: RSK 175
Instrument ID: HP5890A/GC10/TCD
Analyst: Wade Henton
Matrix: Water
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 9/20/19
Volume(s) Analyzed: NA ml(s)

CAS #	Compound	Spike Amount LCS / DLCS ug/L	Result$_1$ LCS ug/L	Result$_1$ DLCS ug/L	% Recovery LCS	% Recovery DLCS	DOD Acceptance Limits	RPD	RPD Limit	Data Qualifier
124-38-9	Carbon Dioxide	22,900	26,100	23,600	**114**	**103**	80-122	10	12	

$_1$ = The concentration shown includes a subtraction of the Method Control Sample value, even if the result is less than the MRL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **35AWW19_091119**
Client Project ID: **HS19090511**

ALS Project ID: P1905493
ALS Sample ID: P1905493-001

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Wade Henton
Matrix: Water
Test Notes:

Date Collected: 09/11/19
Date Received: 09/13/19
Date Analyzed: 09/19/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	**3.0**	1.3	1.0	0.51	
74-85-1	Ethene	0.55	1.0	0.55	0.24	**U**
74-84-0	Ethane	0.47	0.60	0.47	0.16	**U**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **35AWW20_091119**
Client Project ID: **HS19090511**

ALS Project ID: P1905493
ALS Sample ID: P1905493-002

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Wade Henton
Matrix: Water
Test Notes:

Date Collected: 09/11/19
Date Received: 09/13/19
Date Analyzed: 09/19/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	**640**	1.3	1.0	0.51	
74-85-1	Ethene	**5.9**	1.0	0.55	0.24	
74-84-0	Ethane	**0.24**	0.60	0.47	0.16	**J**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **LHSMW07_091119**
Client Project ID: **HS19090511**

ALS Project ID: P1905493
ALS Sample ID: P1905493-003

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Wade Henton
Matrix: Water
Test Notes:

Date Collected: 09/11/19
Date Received: 09/13/19
Date Analyzed: 09/19/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	**240**	1.3	1.0	0.51	
74-85-1	Ethene	**6.1**	1.0	0.55	0.24	
74-84-0	Ethane	**0.20**	0.60	0.47	0.16	**J**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **35AWW06_091119**
Client Project ID: **HS19090511**

ALS Project ID: P1905493
ALS Sample ID: P1905493-004

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Wade Henton
Matrix: Water
Test Notes:

Date Collected: 09/11/19
Date Received: 09/13/19
Date Analyzed: 09/19/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	**2,900**	1.3	1.0	0.51	
74-85-1	Ethene	0.55	1.0	0.55	0.24	**U**
74-84-0	Ethane	0.47	0.60	0.47	0.16	**U**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **35AWW06_091119_a**
Client Project ID: **HS19090511**

ALS Project ID: P1905493
ALS Sample ID: P1905493-005

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Wade Henton
Matrix: Water
Test Notes:

Date Collected: 09/11/19
Date Received: 09/13/19
Date Analyzed: 09/19/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	**3,300**	1.3	1.0	0.51	
74-85-1	Ethene	0.55	1.0	0.55	0.24	**U**
74-84-0	Ethane	0.47	0.60	0.47	0.16	**U**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **35AWW23_091119**
Client Project ID: **HS19090511**

ALS Project ID: P1905493
ALS Sample ID: P1905493-006

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Wade Henton
Matrix: Water
Test Notes:

Date Collected: 09/11/19
Date Received: 09/13/19
Date Analyzed: 09/19/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	**2,700**	1.3	1.0	0.51	
74-85-1	Ethene	0.55	1.0	0.55	0.24	**U**
74-84-0	Ethane	0.47	0.60	0.47	0.16	**U**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **35AWW11_091119**
Client Project ID: **HS19090511**

ALS Project ID: P1905493
ALS Sample ID: P1905493-007

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Wade Henton
Matrix: Water
Test Notes:

Date Collected: 09/11/19
Date Received: 09/13/19
Date Analyzed: 09/19/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	**1,300**	1.3	1.0	0.51	
74-85-1	Ethene	0.55	1.0	0.55	0.24	**U**
74-84-0	Ethane	0.47	0.60	0.47	0.16	**U**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **Method Control Sample**
Client Project ID: **HS19090511**

ALS Project ID: P1905493
ALS Sample ID: P190919-MB

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Wade Henton
Matrix: Water
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 9/19/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	1.0	1.3	1.0	0.51	**U**
74-85-1	Ethene	0.55	1.0	0.55	0.24	**U**
74-84-0	Ethane	0.47	0.60	0.47	0.16	**U**

The Method Control Sample is laboratory water carried through the entire analytical process.
U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

MATRIX SPIKE / DUPLICATE MATRIX SPIKE SUMMARY

Client: **ALS Laboratory Group**
Client Sample ID: **35AWW20_091119**
Client Project ID: **HS19090511**

ALS Project ID: P1905493
ALS Sample ID: P1905493-002MS
P1905493-002DMS

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Wade Henton
Matrix: Water
Test Notes:

Date Collected: 9/11/19
Date Received: 9/13/19
Date Analyzed: 9/19/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Spike Amount MS / DMS µg/L	Sample Amount µg/L	Result MS µg/L	Result DMS µg/L	% Recovery MS	% Recovery DMS	DOD Acceptance Limits	RPD	RPD Limit	Data Qualifier
74-82-8	Methane	169	638	679	633	**24**	**0**	73-125	200	30	**N, R**
74-85-1	Ethene	294	5.86	255	239	**85**	**79**	72-133	7	30	
74-84-0	Ethane	317	0.244	242	226	**76**	**71**	74-131	7	30	**N**

N = The matrix spike recovery is not within control limits. See case narrative.
R = Duplicate precision not met.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **ALS Laboratory Group**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **HS19090511**

ALS Project ID: P1905493
ALS Sample ID: P190919-LCS
P190919-DLCS

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Wade Henton
Matrix: Water
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 9/19/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Spike Amount LCS / DLCS µg/L	Result$_1$ LCS µg/L	Result$_1$ DLCS µg/L	% Recovery LCS	% Recovery DLCS	DOD Acceptance Limits	RPD	RPD Limit	Data Qualifier
74-82-8	Methane	2.52	2.58	2.52	**102**	**100**	73-125	2	26	
74-85-1	Ethene	4.40	5.04	4.93	**115**	**112**	72-133	3	11	
74-84-0	Ethane	4.72	4.80	4.76	**102**	**101**	74-131	1	10	

$_1$ = The concentration shown includes a subtraction of the Method Control Sample value, even if the result is less than the MRL.

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201907.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 14:35:21
Operator : WH
Sample : P1905493-001 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 14:47:35 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

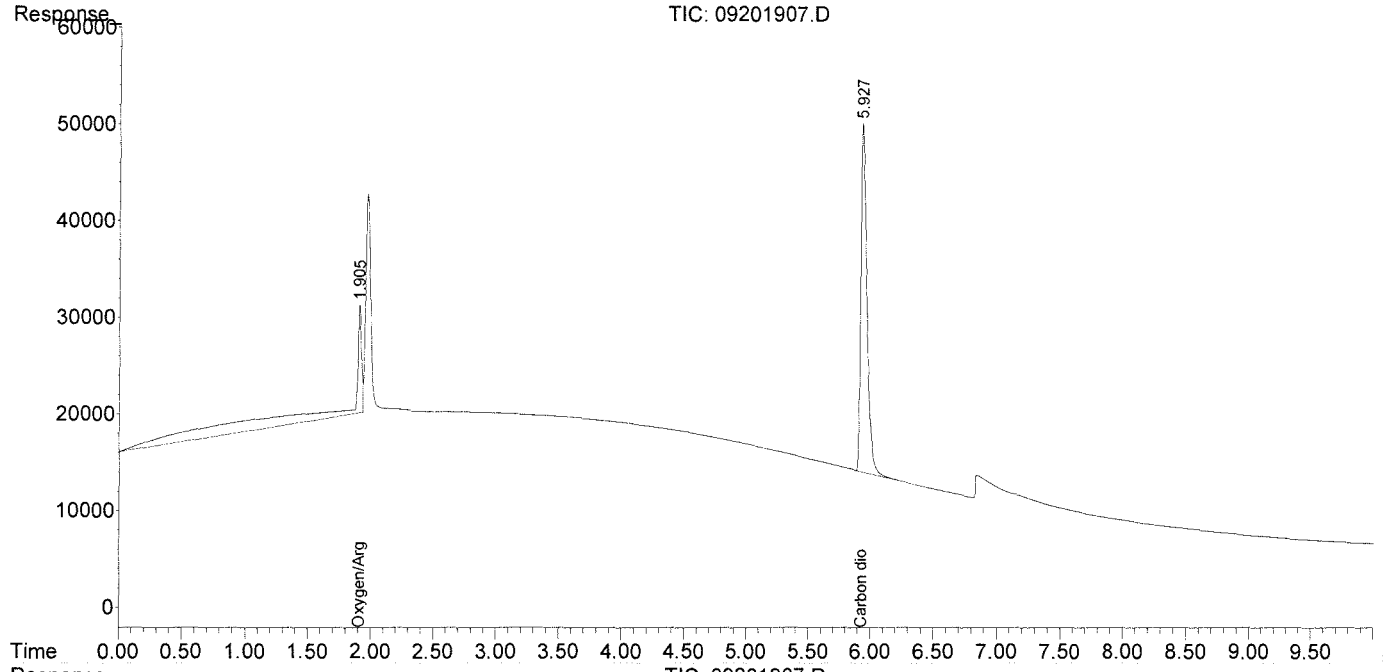
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.906f	1117321	0.235	ppm
2)	Carbon monoxide	1.906f	1117321	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	5.928f	1211350	5160.628	ppm
6)	Methane (FID)	0.000	0	N.D.	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

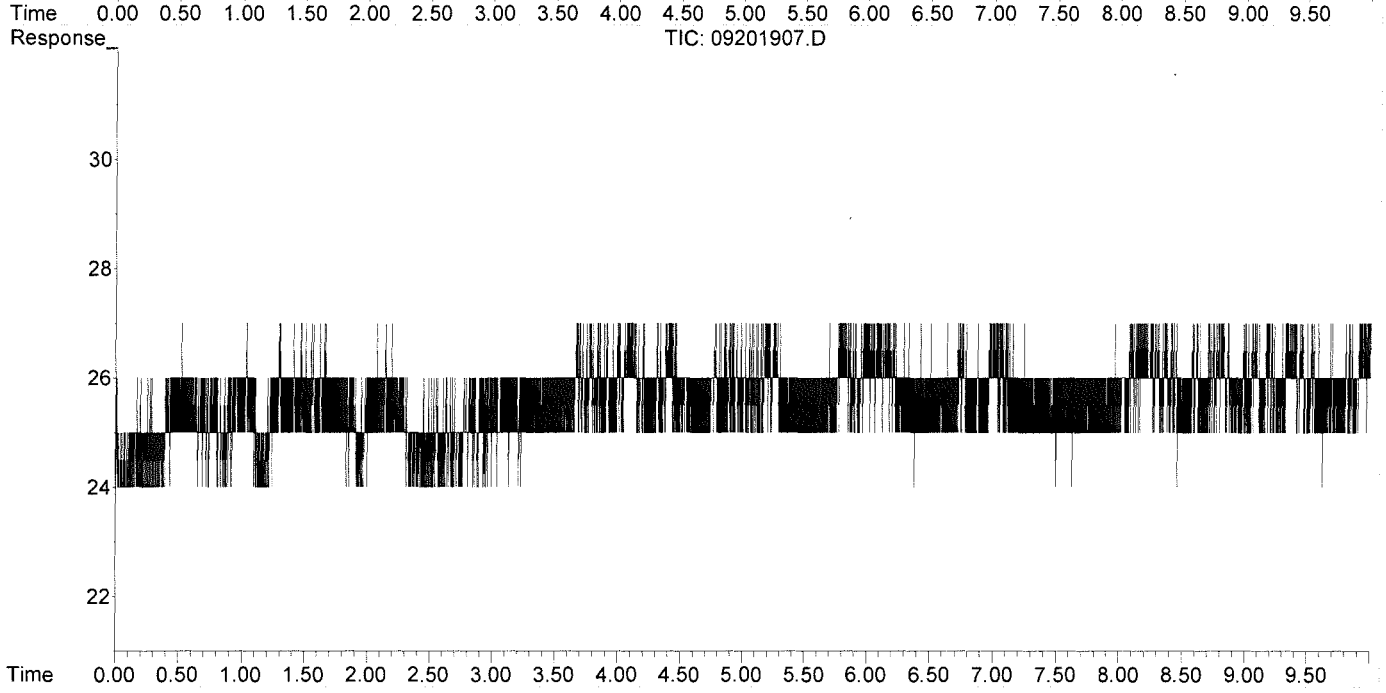
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201907.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 14:35:21
Operator : WH
Sample : P1905493-001 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 14:47:35 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201913.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 15:57:00
Operator : WH
Sample : P1905493-002 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 16:07:01 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

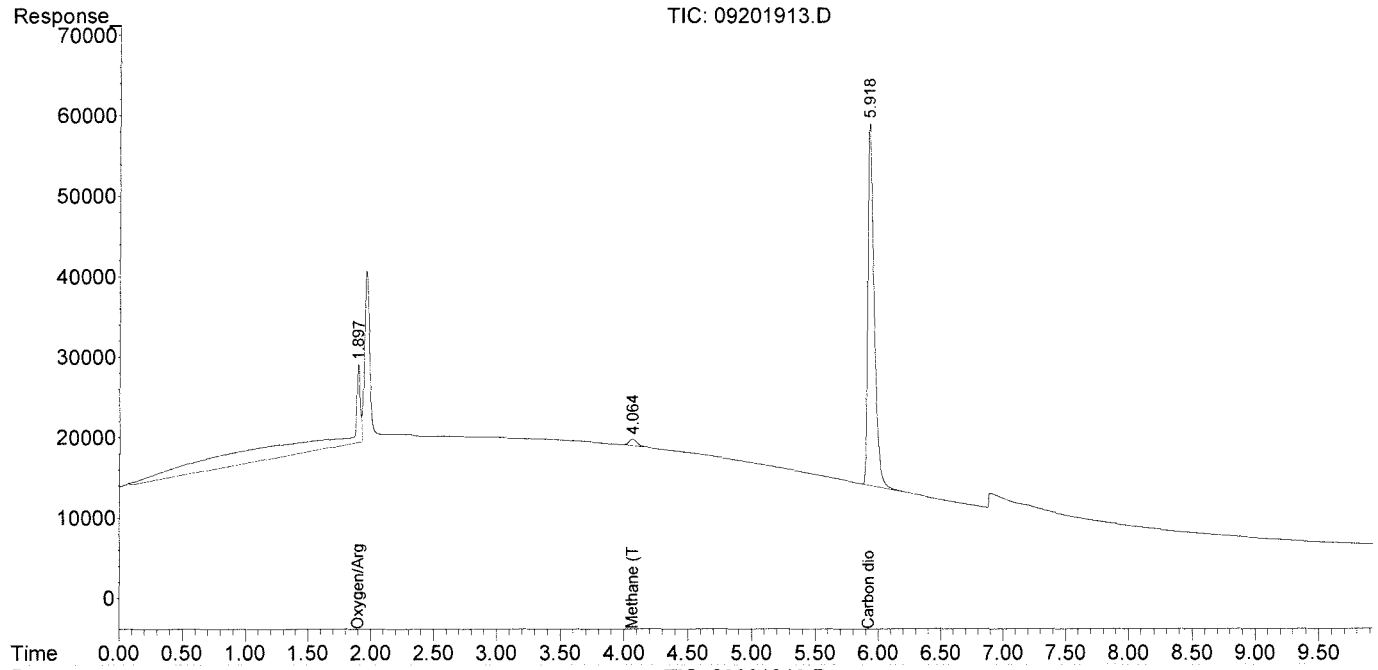
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.897	1448048	0.304	ppm
2)	Carbon monoxide	1.897	1448048	N.D.	ppm
3)	Methane (TCD)	4.064f	34416	3639.109	ppm
4)	Carbon dioxide	5.918f	1579465	6728.884	ppm
6)	Methane (FID)	0.000	0	N.D.	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

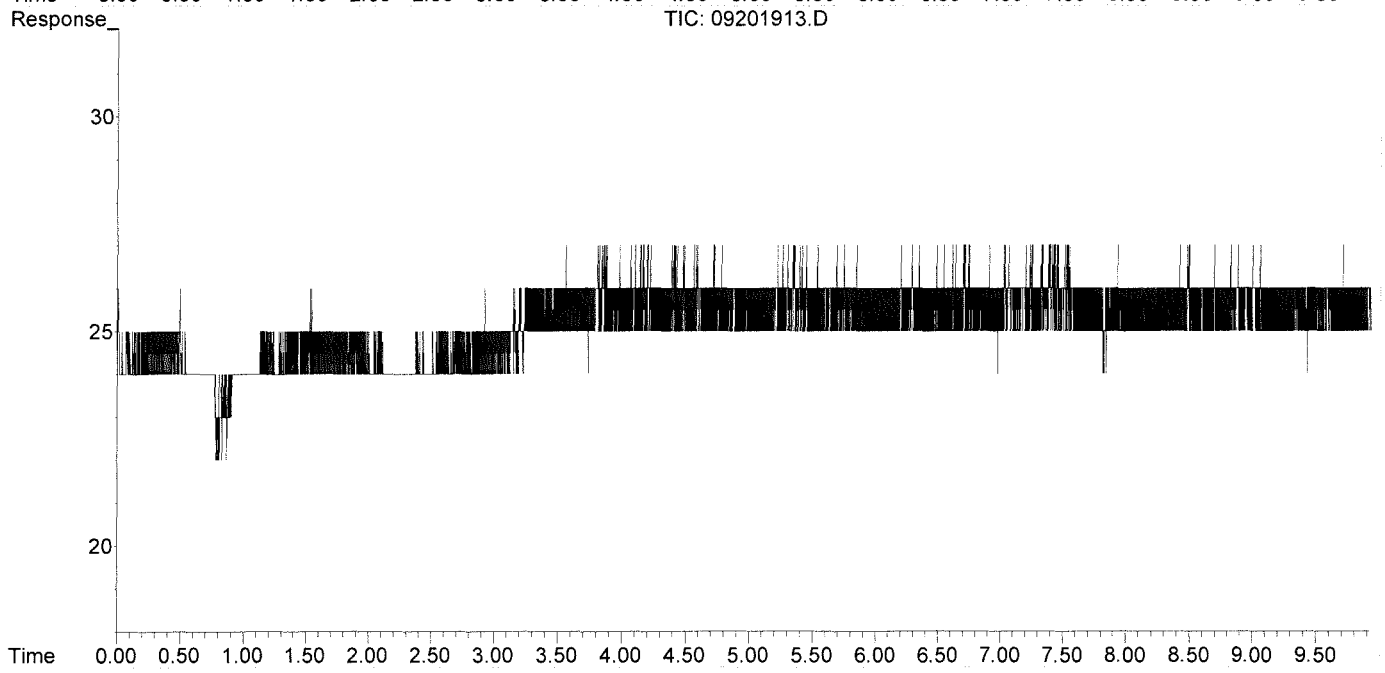
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201913.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 15:57:00
Operator : WH
Sample : P1905493-002 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 16:07:01 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201908.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 14:48:38
Operator : WH
Sample : P1905493-003 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 14:57:55 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

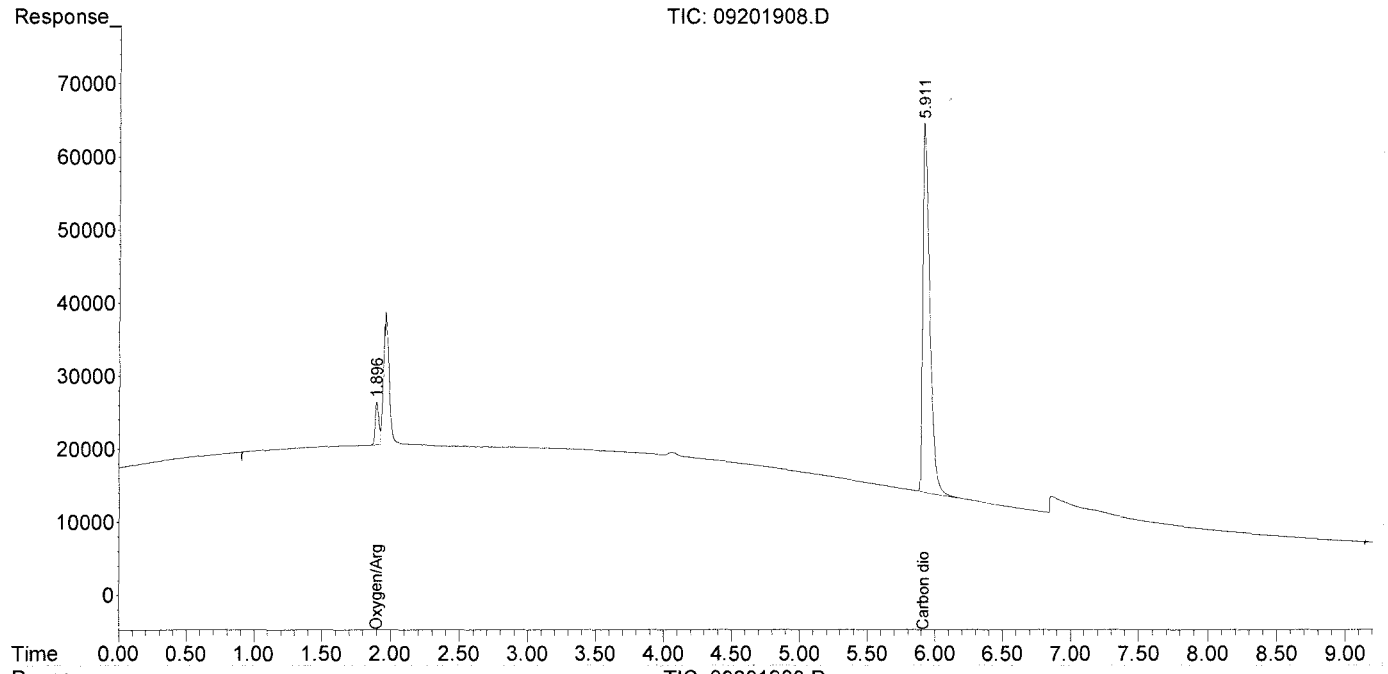
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.897	102410	0.022	ppm
2)	Carbon monoxide	1.897	102410	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	5.912f	1827285	7784.652	ppm
6)	Methane (FID)	0.000	0	N.D.	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

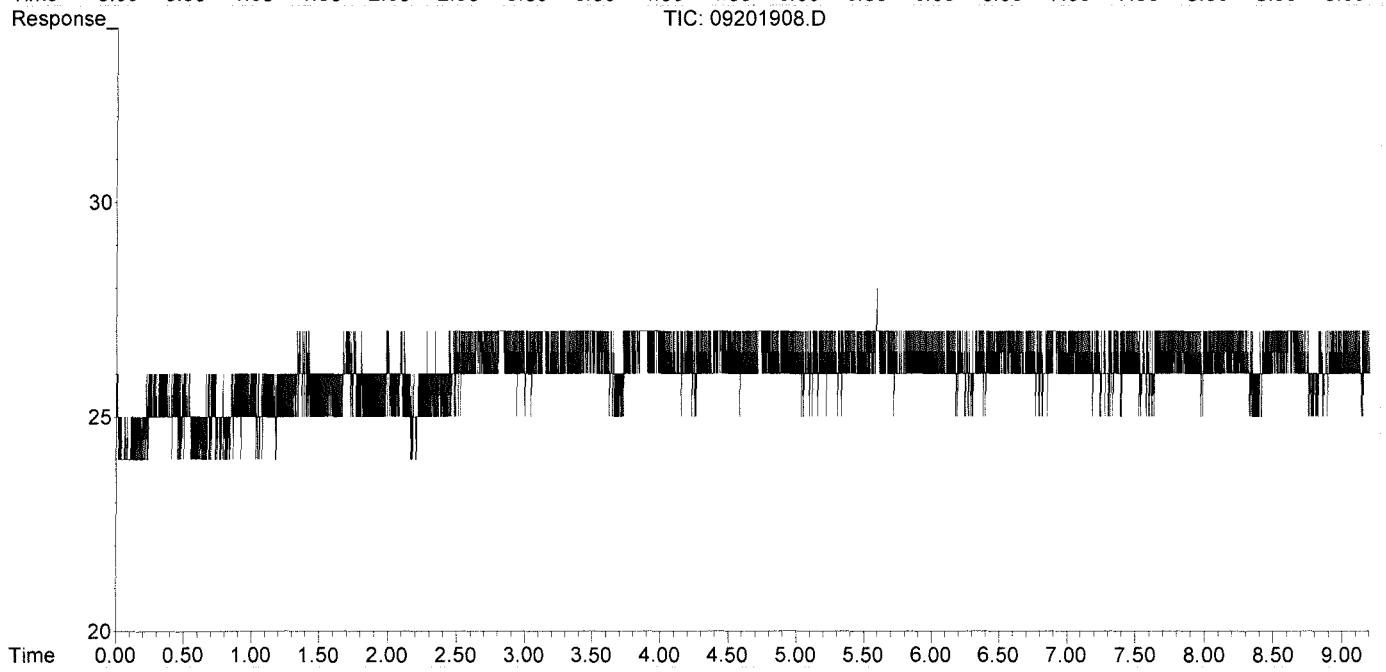
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201908.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 14:48:38
Operator : WH
Sample : P1905493-003 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 14:57:55 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201909.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 15:00:21
Operator : WH
Sample : P1905493-004 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 15:09:58 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

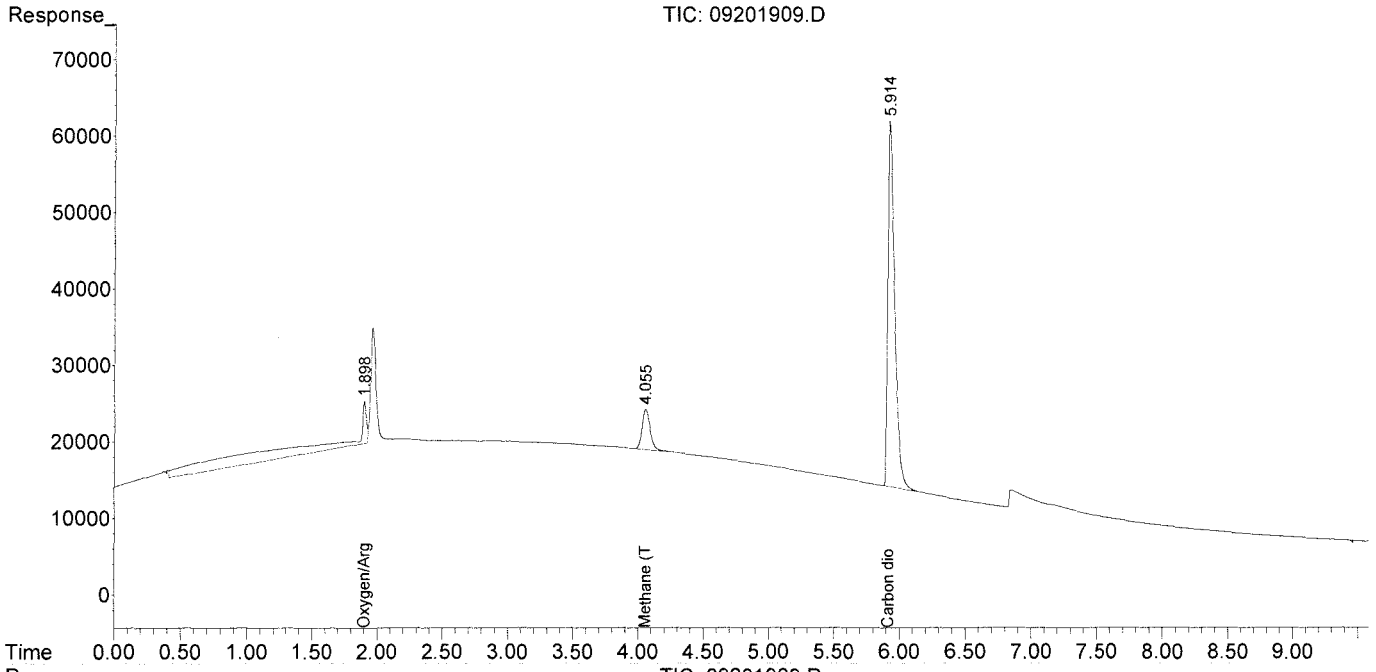
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.899	1031544	0.217	ppm	
2)	Carbon monoxide	1.899	1031544	N.D.	ppm	
3)	Methane (TCD)	4.055f	239703	25345.641	ppm	
4)	Carbon dioxide	5.914f	1707554	7274.572	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

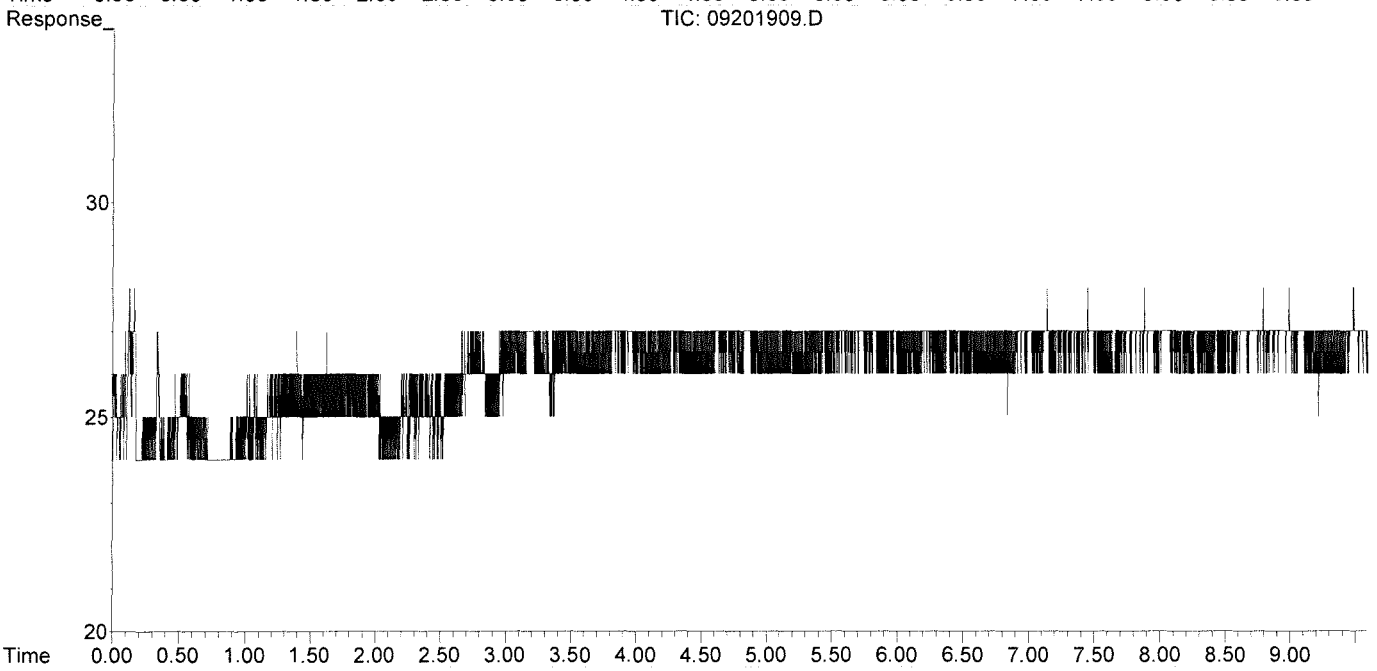
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201909.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 15:00:21
Operator : WH
Sample : P1905493-004 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 15:09:58 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

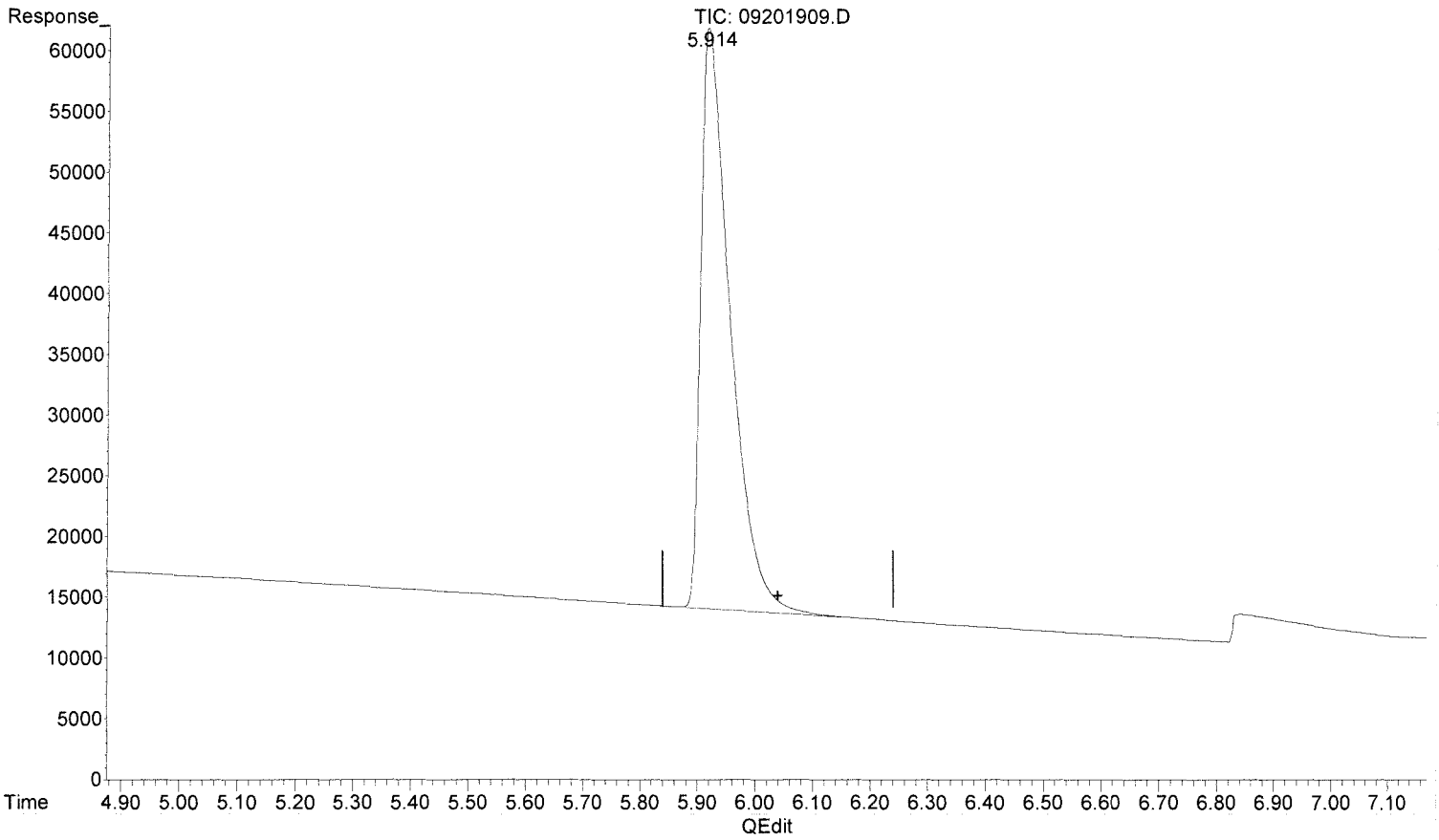




Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201909.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 15:00:21
Operator : WH
Sample : P1905493-004 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 15:09:58 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(4) Carbon dioxide

5.914min 7274.572 ppm m

response 1707554

(+) = Expected Retention Time

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201910.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 15:12:45
Operator : WH
Sample : P1905493-005 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 15:25:26 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

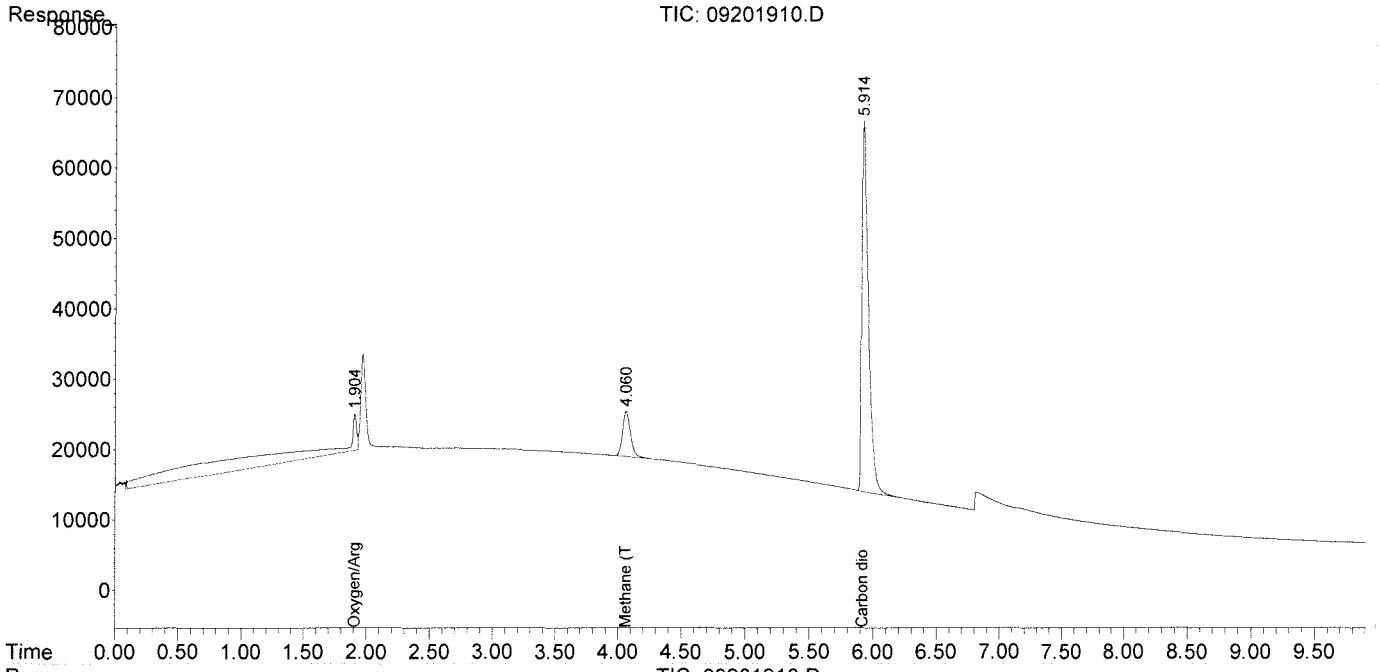
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.905f	1609794	0.338	ppm
2)	Carbon monoxide	1.905f	1609794	N.D.	ppm
3)	Methane (TCD)	4.061f	290586	30725.927	ppm
4)	Carbon dioxide	5.915f	1902241	8103.983	ppm
6)	Methane (FID)	0.000	0	N.D.	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

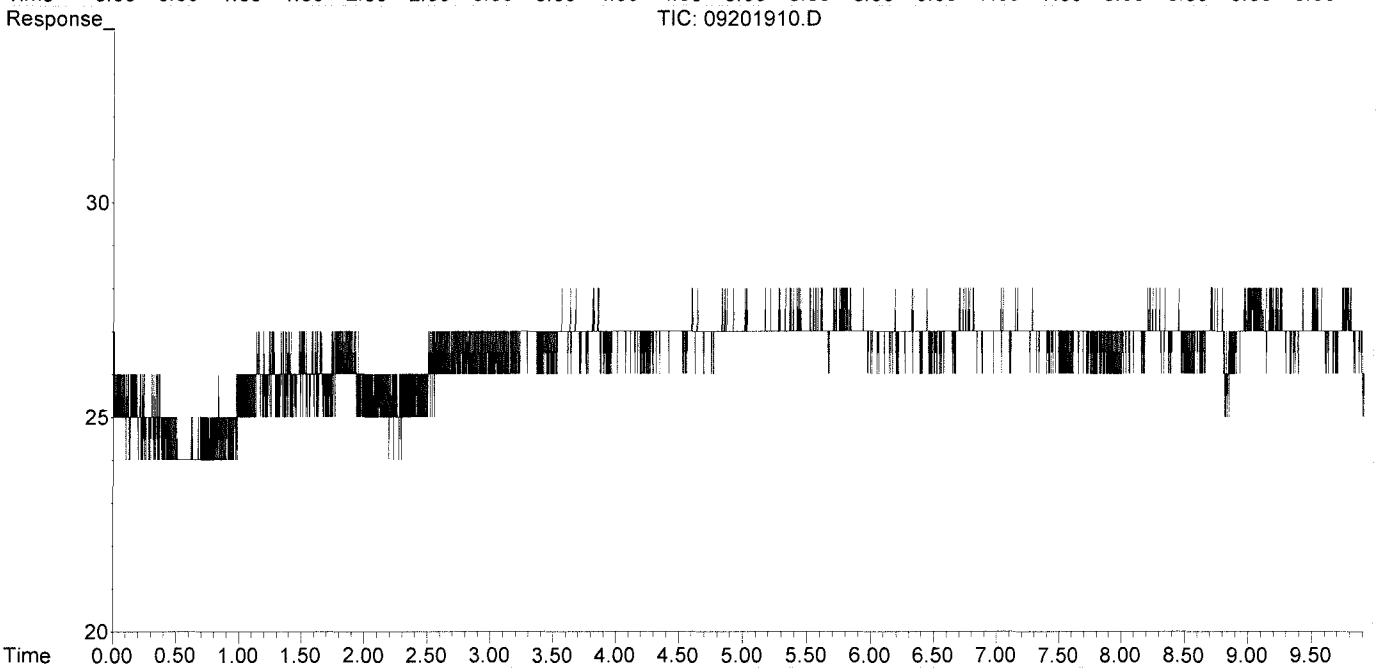
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201910.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 15:12:45
Operator : WH
Sample : P1905493-005 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 15:25:26 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201911.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 15:25:11
Operator : WH
Sample : P1905493-006 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 15:45:10 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

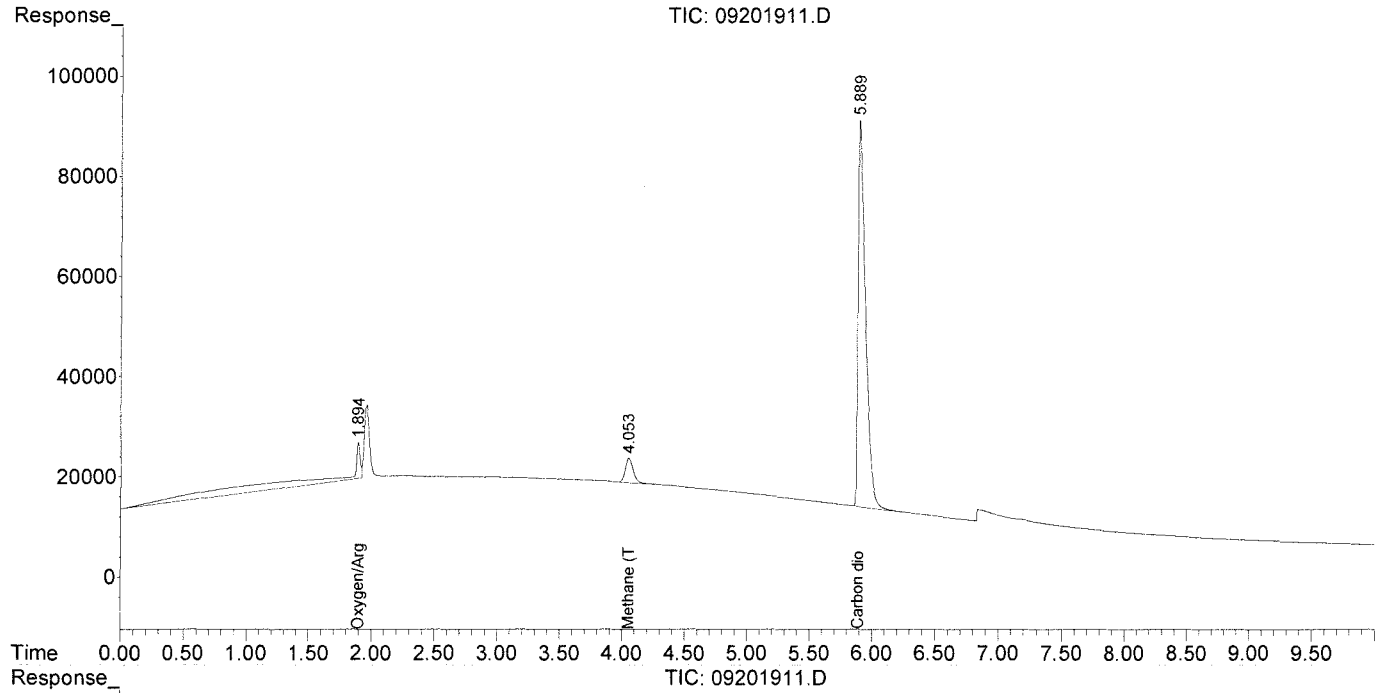
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.895	1211082	0.254	ppm
2)	Carbon monoxide	1.895	1211082	N.D.	ppm
3)	Methane (TCD)	4.053f	221153	23384.279	ppm
4)	Carbon dioxide	5.891f	3171830	13512.721	ppm
6)	Methane (FID)	0.000	0	N.D.	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

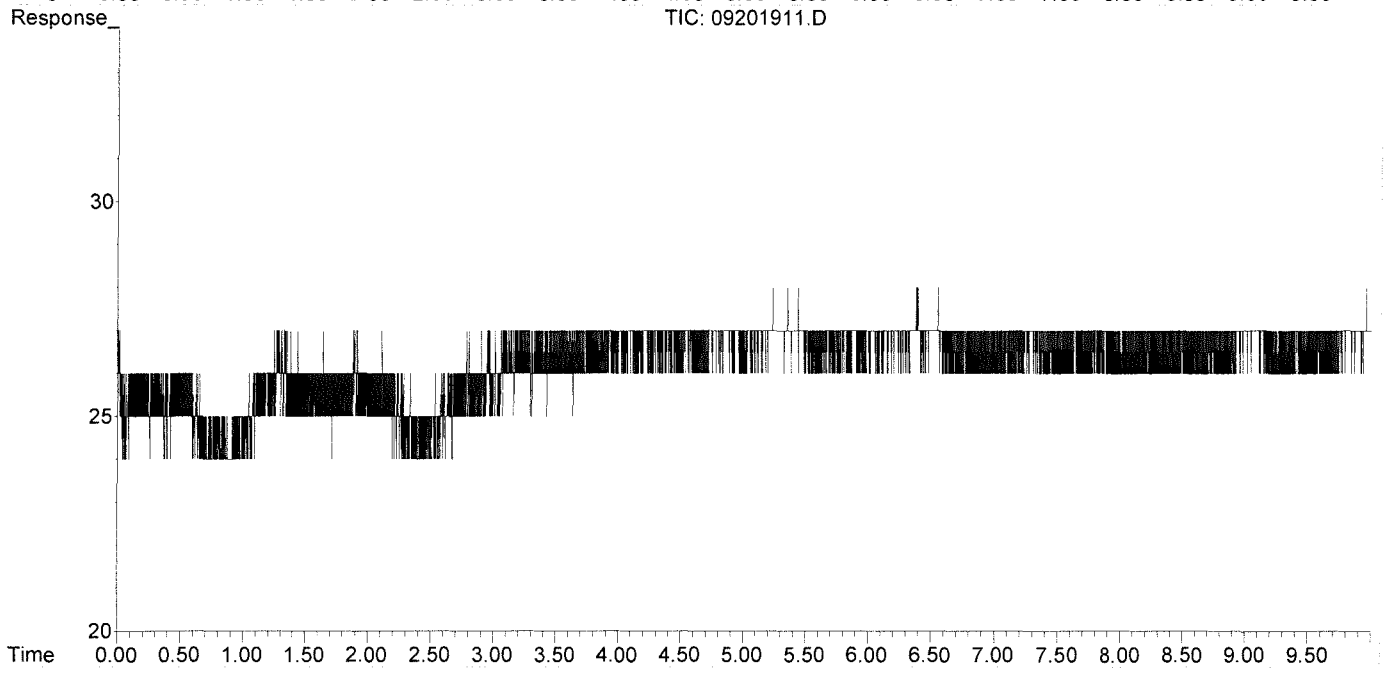
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201911.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 15:25:11
Operator : WH
Sample : P1905493-006 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 15:45:10 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201912.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 15:44:22
Operator : WH
Sample : P1905493-007 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 15:57:04 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

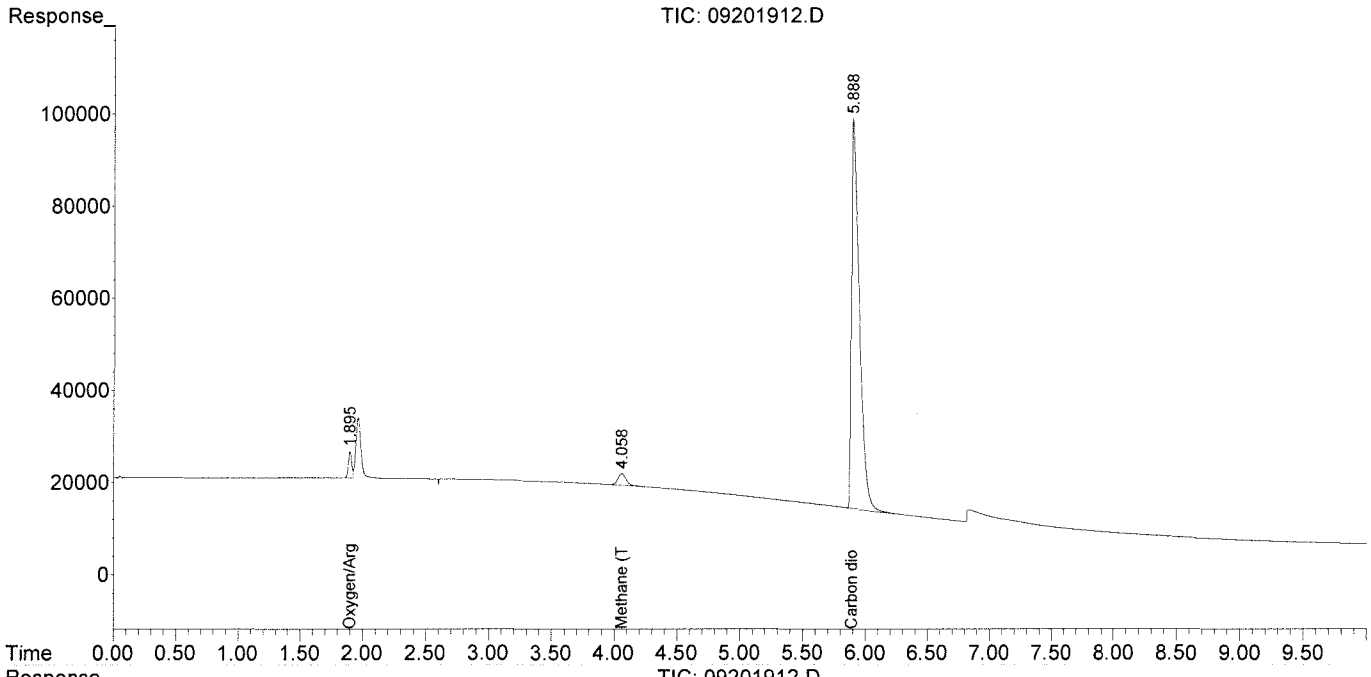
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.895	103586	0.022	ppm
2)	Carbon monoxide	1.895	103586	N.D.	ppm
3)	Methane (TCD)	4.058f	115536	12216.533	ppm
4)	Carbon dioxide	5.889f	3715224	15827.705	ppm
6)	Methane (FID)	0.000	0	N.D.	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

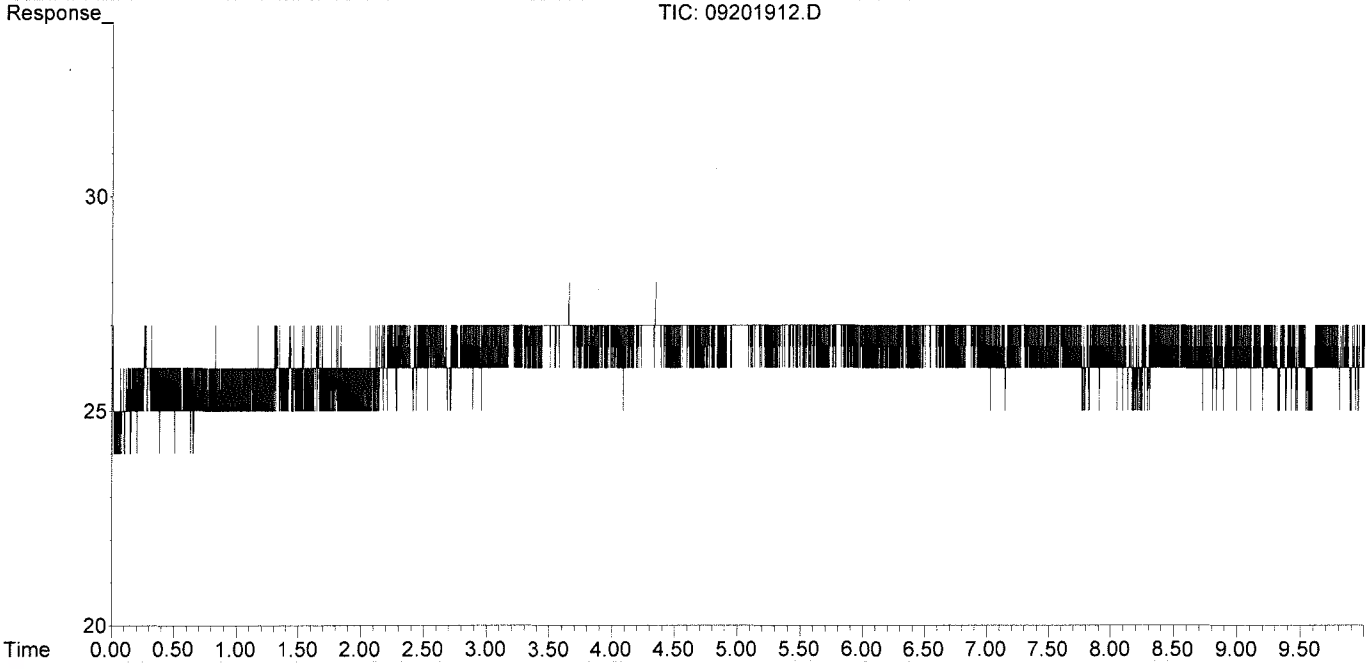
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201912.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 15:44:22
Operator : WH
Sample : P1905493-007 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 15:57:04 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201914.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 16:09:38
Operator : WH
Sample : P1905493-002MS 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 16:20:47 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

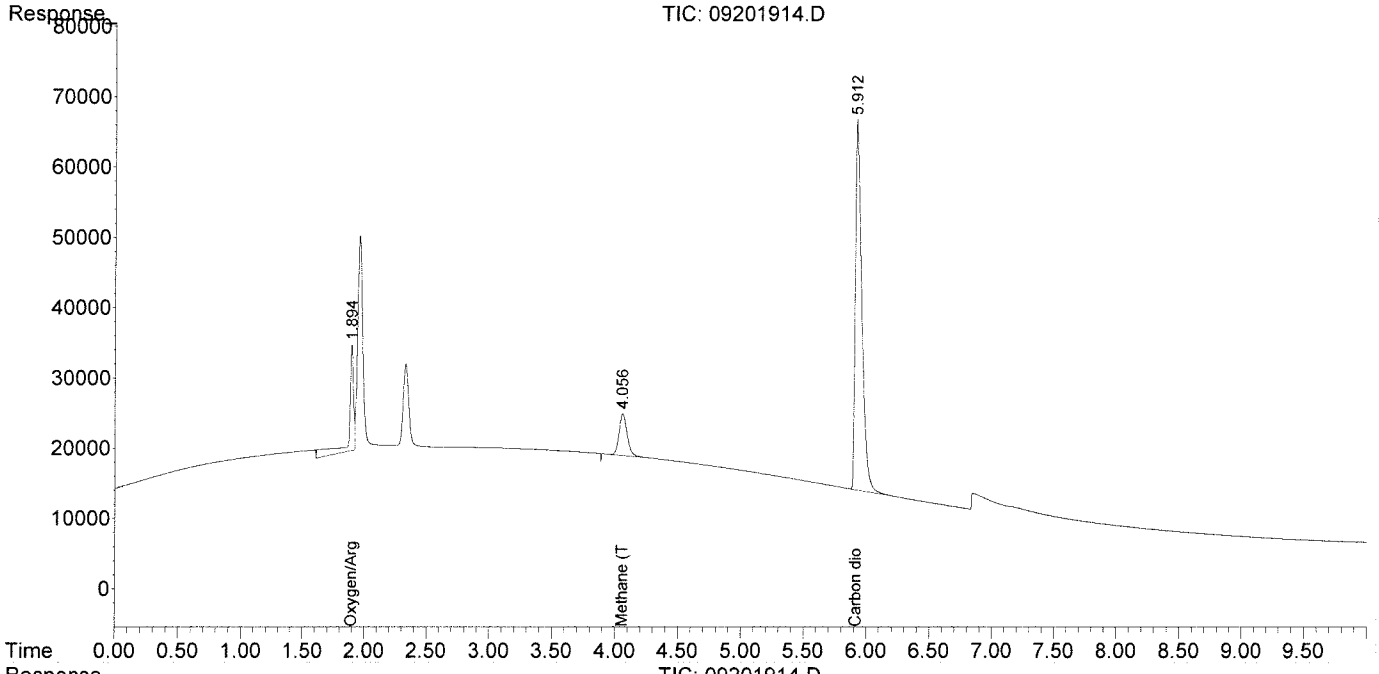
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.895	397517	0.084	ppm	
2)	Carbon monoxide	1.895	397517	N.D.	ppm	
3)	Methane (TCD)	4.057f	267540	28289.116	ppm	
4)	Carbon dioxide	5.912f	1919696	8178.342	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

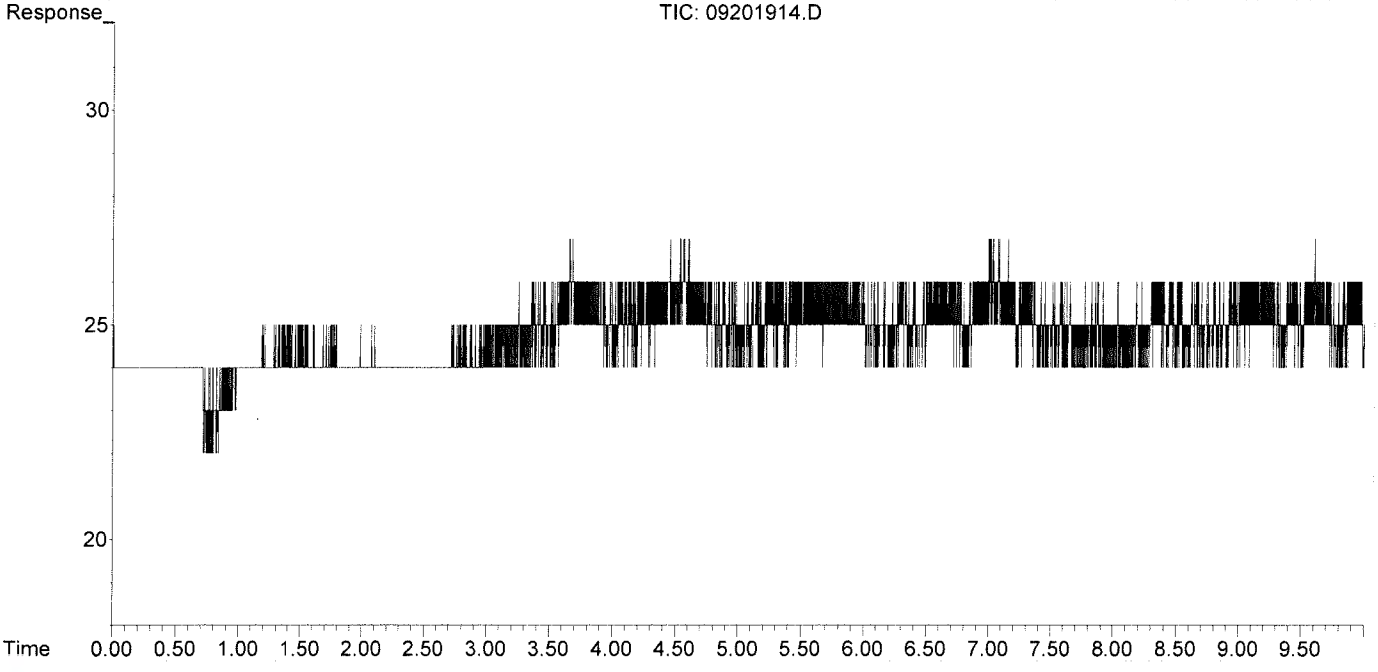
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201914.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 16:09:38
Operator : WH
Sample : P1905493-002MS 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 16:20:47 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

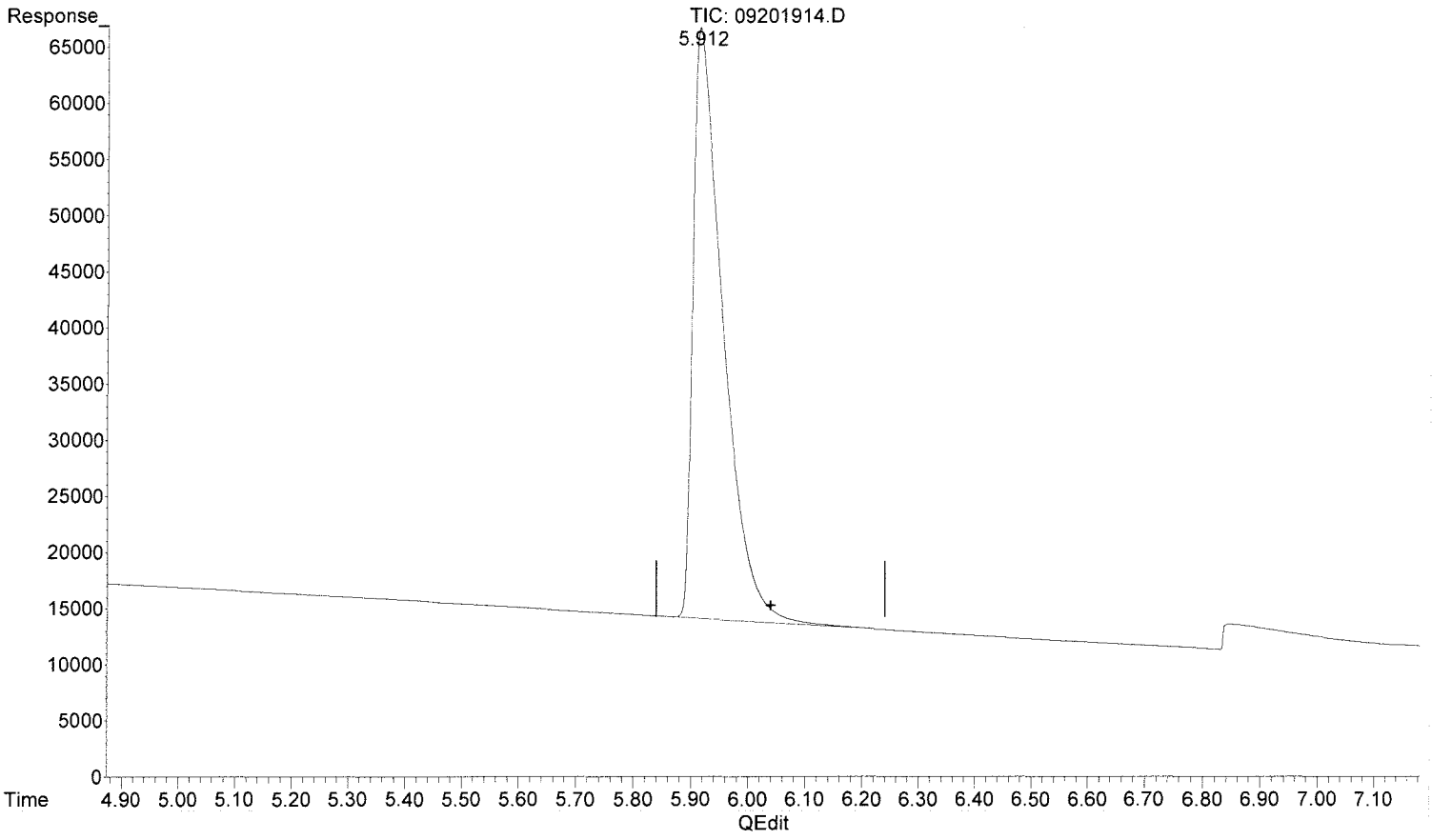




Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201914.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 16:09:38
Operator : WH
Sample : P1905493-002MS 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 16:20:47 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(4) Carbon dioxide

5.912min 8178.342 ppm m

response 1919696

MC 9/25/19

WM 9/27/19 Per no previous

(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201915.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 16:22:12
Operator : WH
Sample : P1905493-002MSD 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 16:41:11 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

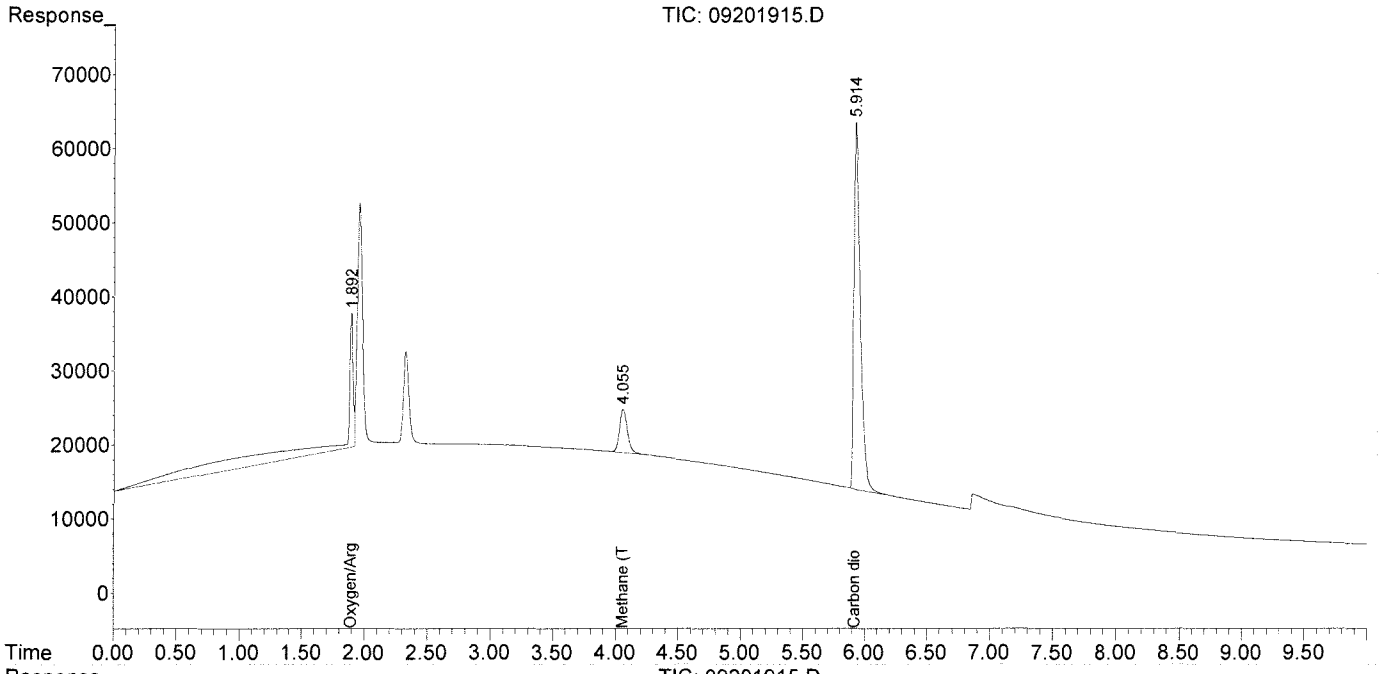
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.893	1434396	0.301	ppm	
2)	Carbon monoxide	1.893	1434396	N.D.	ppm	
3)	Methane (TCD)	4.056f	263827	27896.526	ppm	
4)	Carbon dioxide	5.914f	1761690	7505.204	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

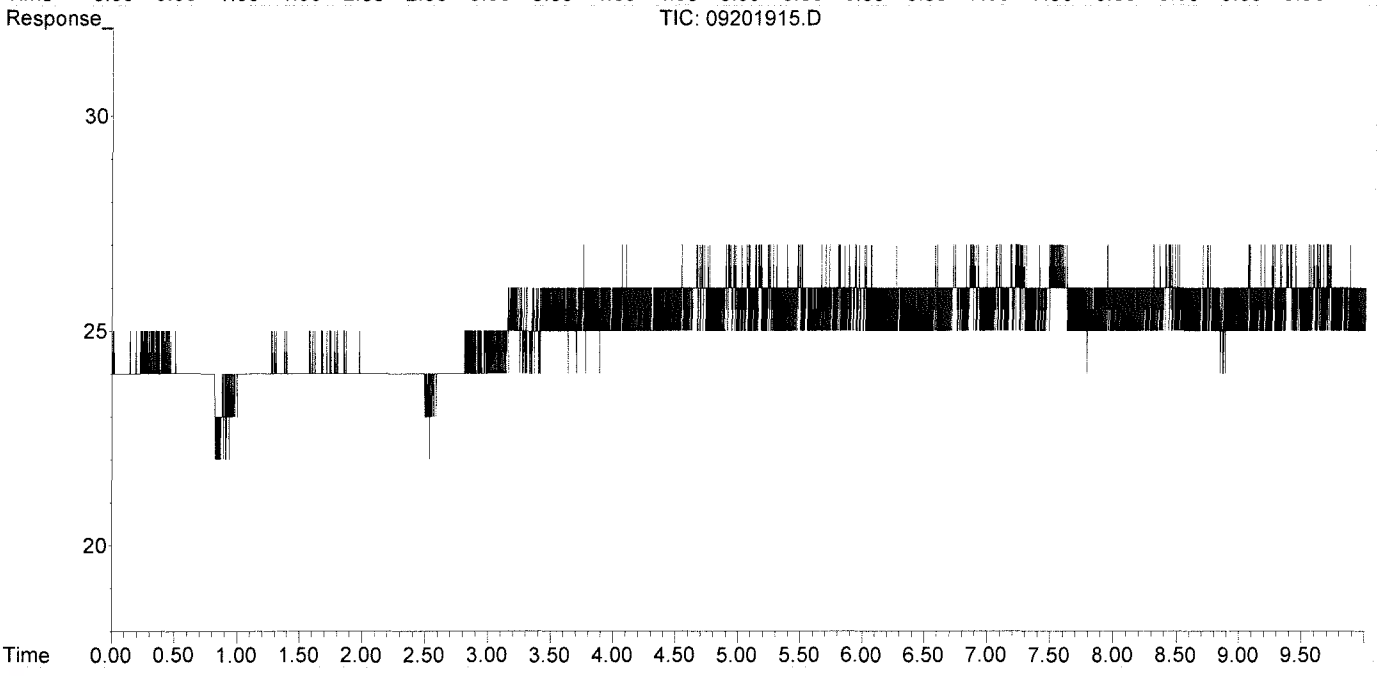
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201915.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 16:22:12
Operator : WH
Sample : P1905493-002MSD 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 16:41:11 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

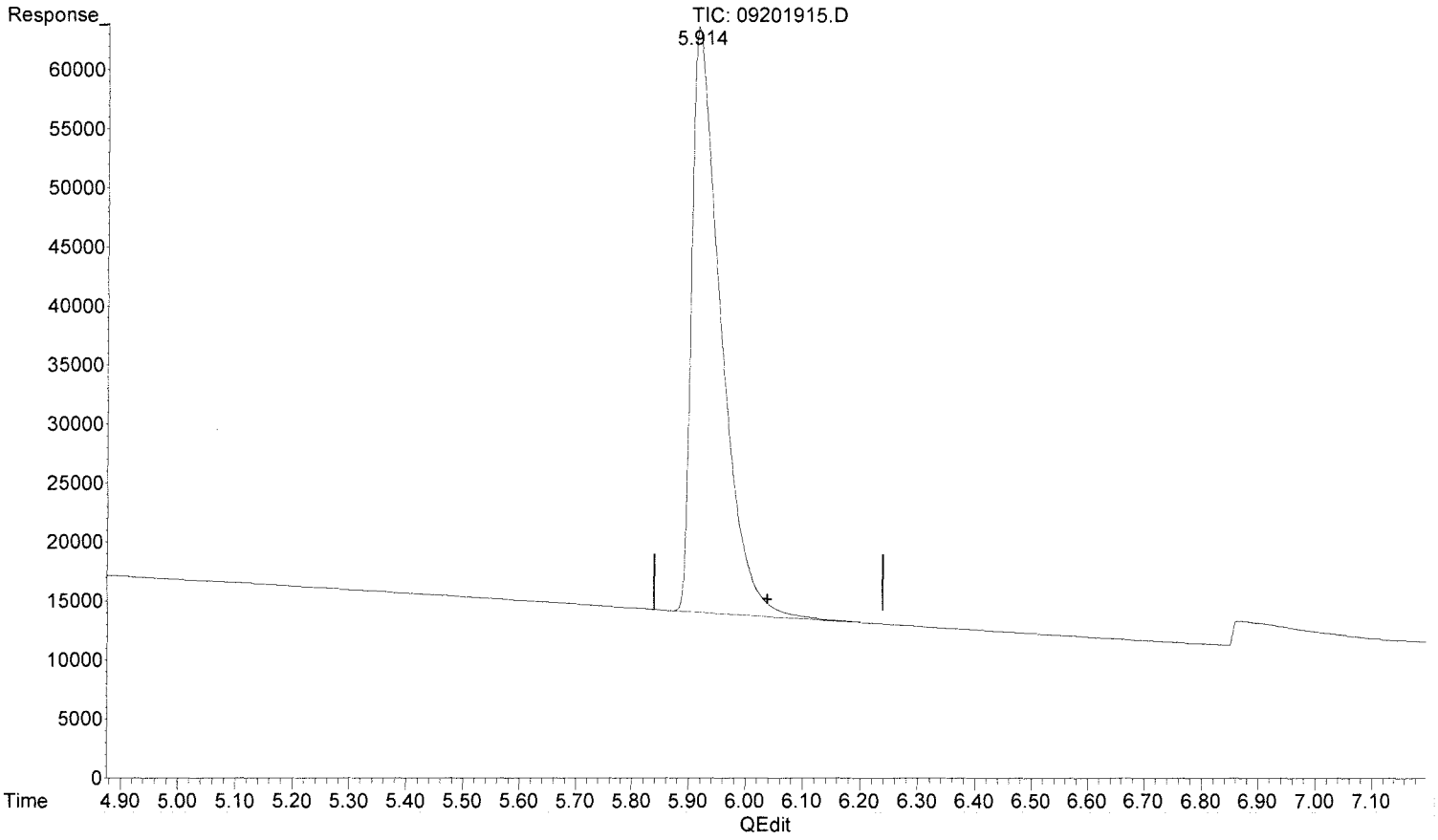




Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201915.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 16:22:12
Operator : WH
Sample : P1905493-002MSD 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 16:41:11 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(4) Carbon dioxide

5.914min 7505.204 ppm m

response 1761690

MK 9/25/19

Lm 9/25/19 Acc w previous

(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201903.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 13:13:38
Operator : WH
Sample : MCS 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 22 13:15:32 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

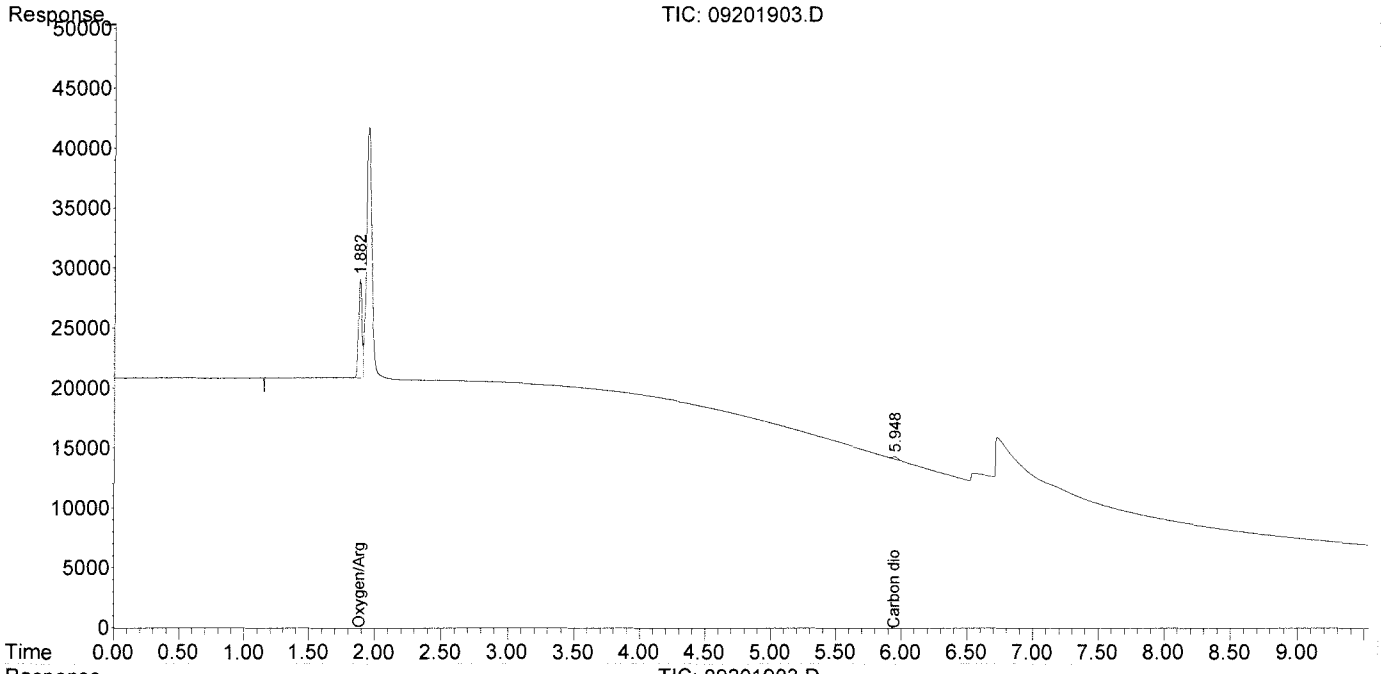
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.883	148361	0.031	ppm	
2)	Carbon monoxide	1.883	148361	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	
4)	Carbon dioxide	5.948	5142	21.905	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

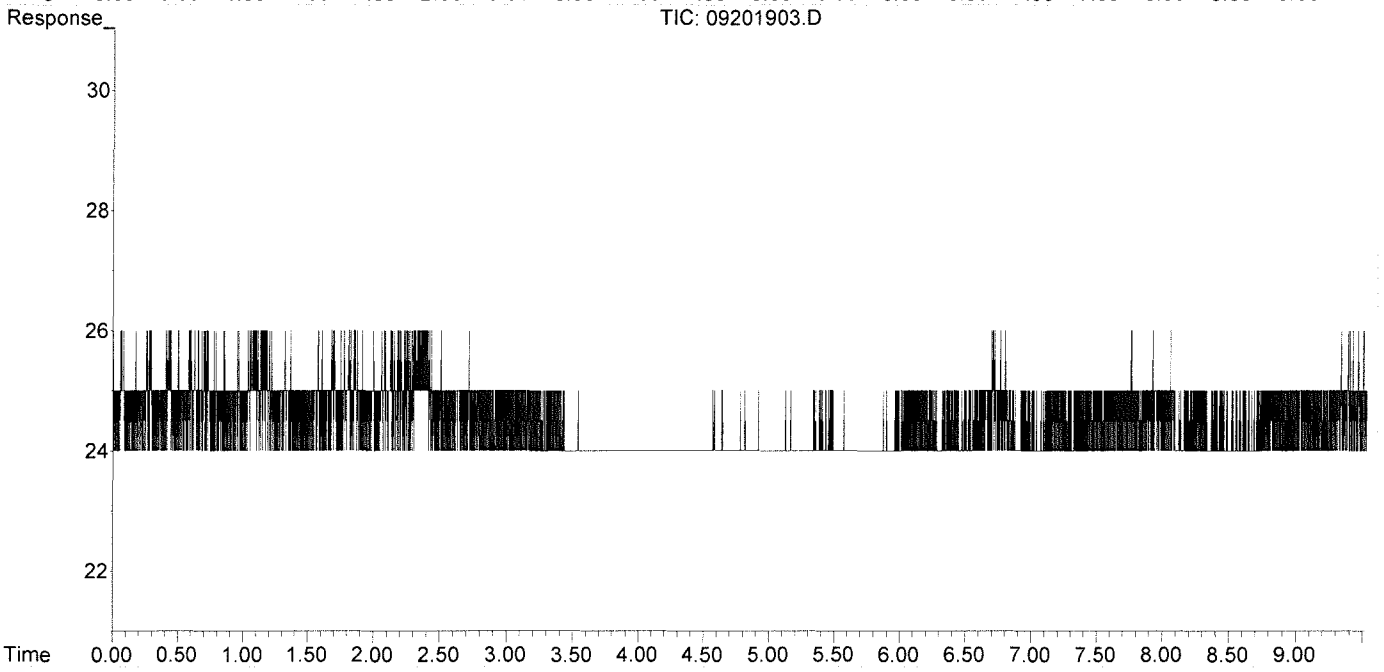
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201903.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 13:13:38
Operator : WH
Sample : MCS 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 22 13:15:32 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

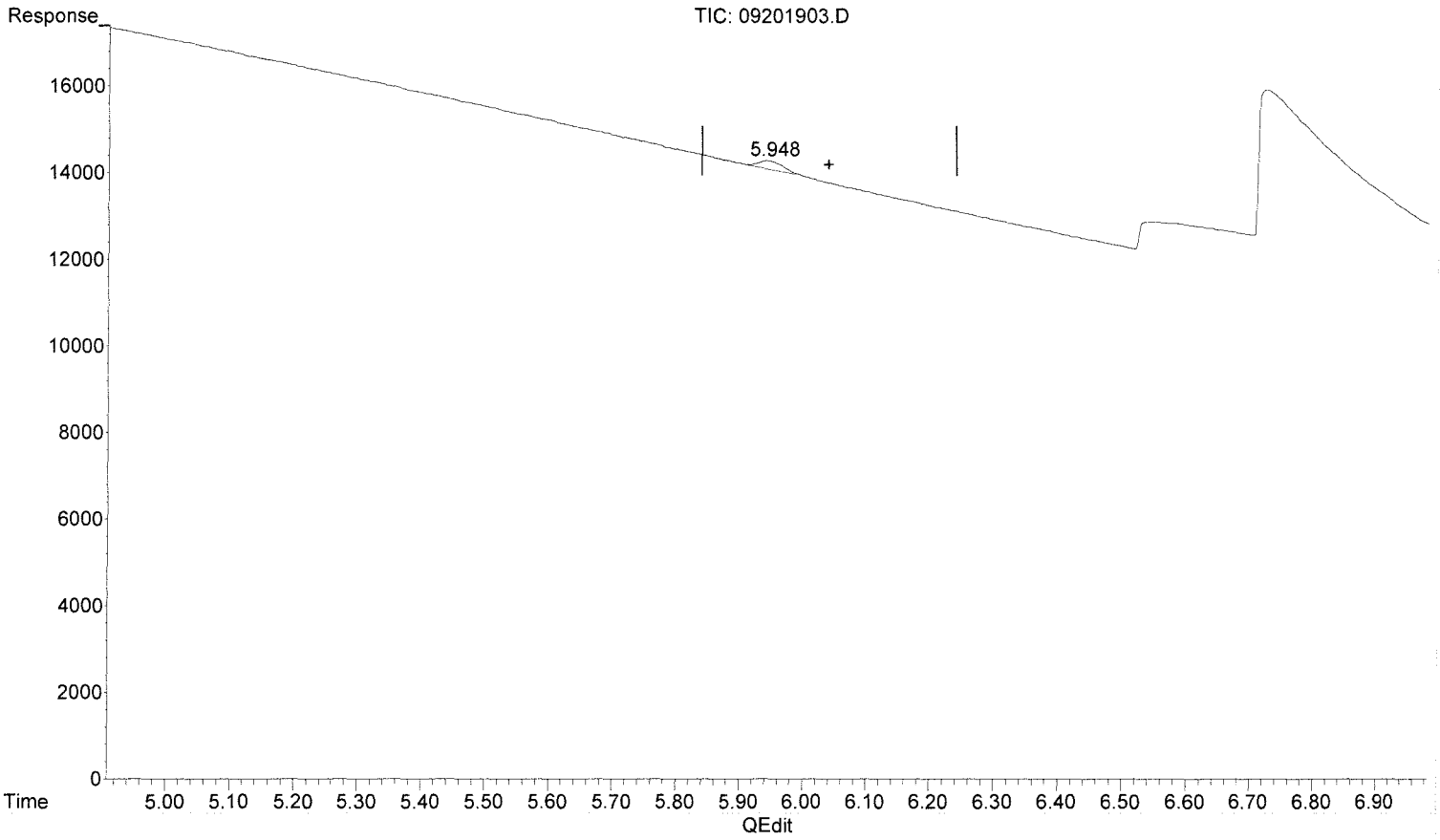




Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201903.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 13:13:38
Operator : WH
Sample : MCS 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 22 13:15:32 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(4) Carbon dioxide

5.948min 21.905 ppm m

response 5142

MK 9/25/19 Lm 9/27/19 MP no previous

(+) = Expected Retention Time

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201905.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 14:04:41
Operator : WH
Sample : LCS TCD
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 14:20:59 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

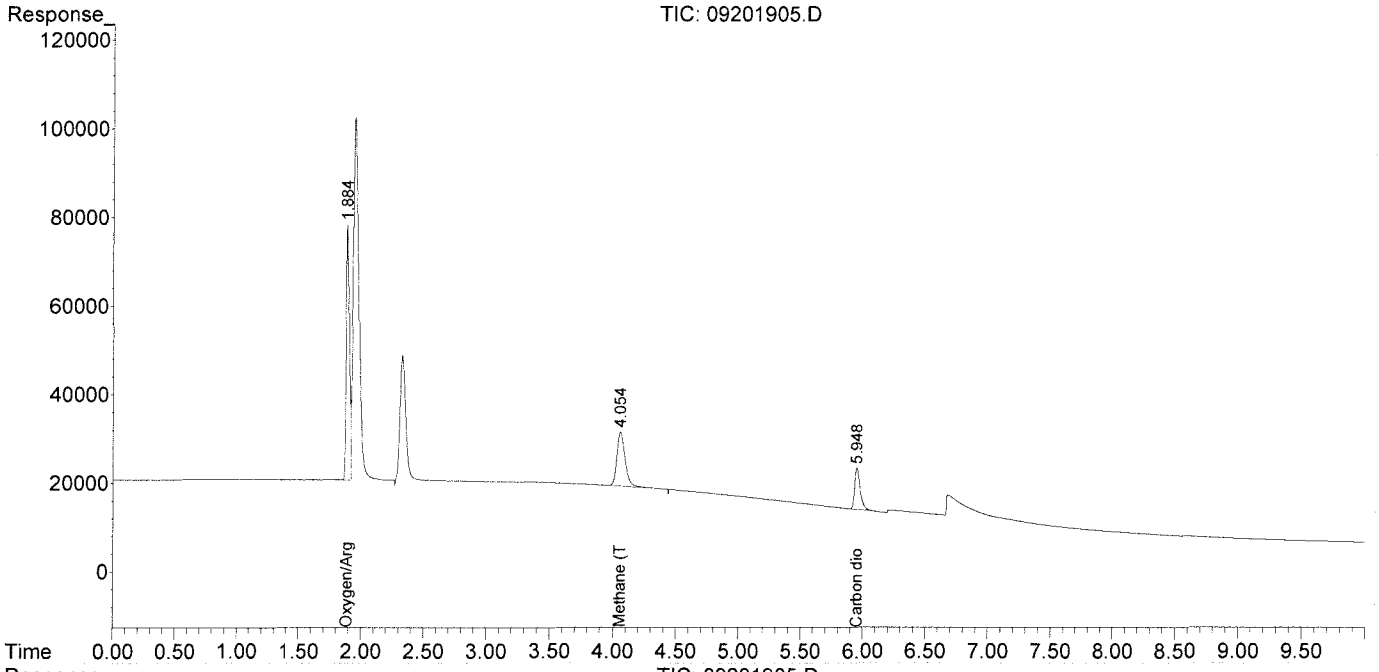
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.885	992919	0.209	ppm	
2)	Carbon monoxide	1.885	992919	N.D.	ppm	
3)	Methane (TCD)	4.054f	559012	59108.756	ppm	
4)	Carbon dioxide	5.948	285762	1217.411	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

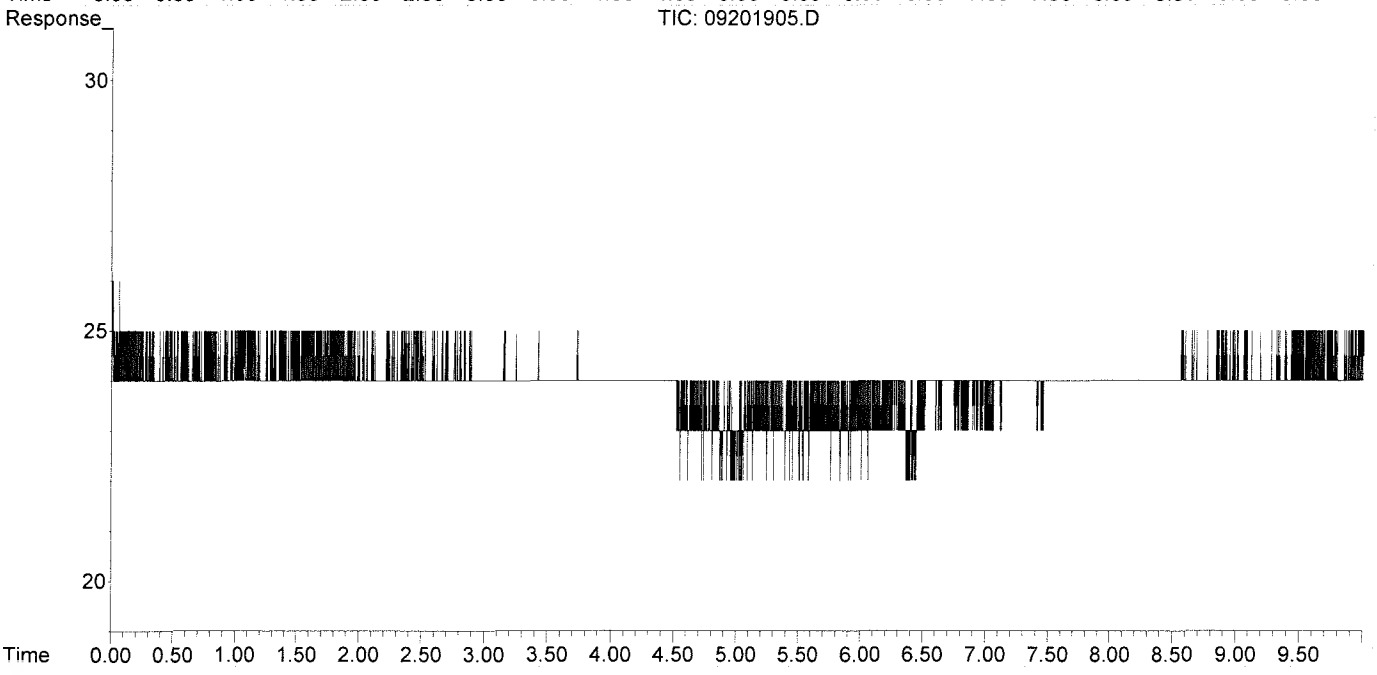
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201905.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 14:04:41
Operator : WH
Sample : LCS TCD
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 14:20:59 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

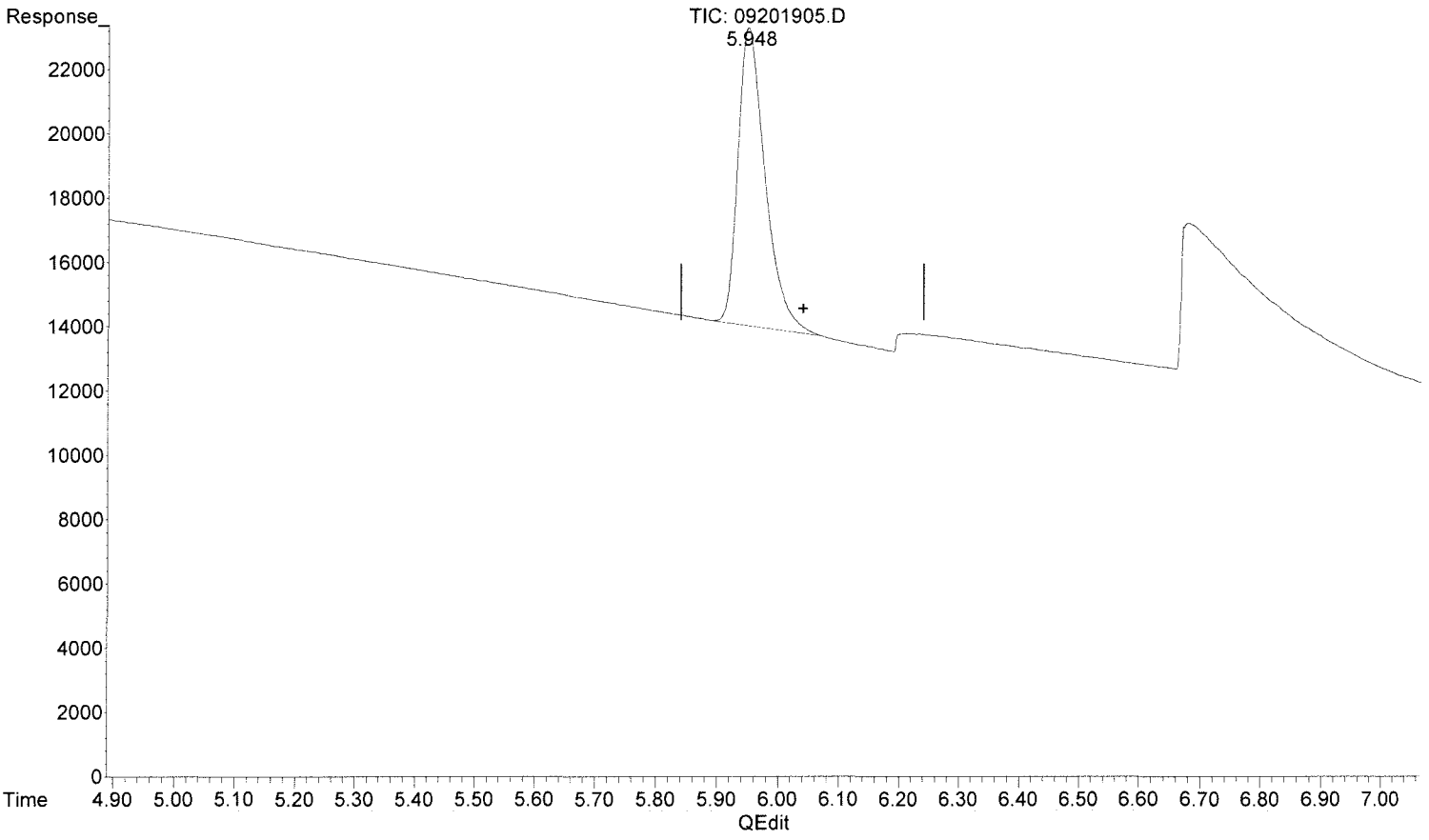




Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201905.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 14:04:41
Operator : WH
Sample : LCS TCD
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 14:20:59 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(4) Carbon dioxide

5.948min 1217.411 ppm m

response 285762

MK 9/25/19

Lm 9/25/19
BLC
no pressure

(+) = Expected Retention Time

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201906.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 14:22:48
Operator : WH
Sample : LCSD TCD
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 14:32:24 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

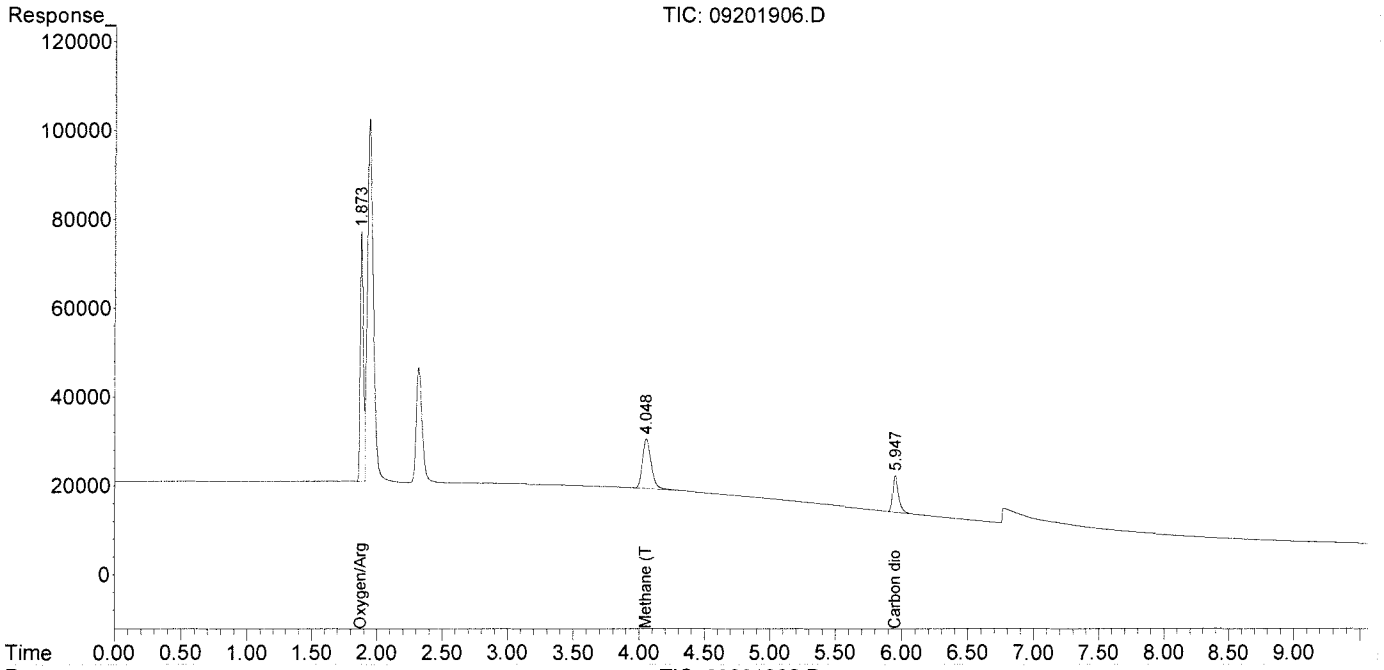
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.874	960850	0.202	ppm	
2)	Carbon monoxide	1.874	960850	N.D.	ppm	
3)	Methane (TCD)	4.049f	516053	54566.360	ppm	
4)	Carbon dioxide	5.947	258951	1103.192	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

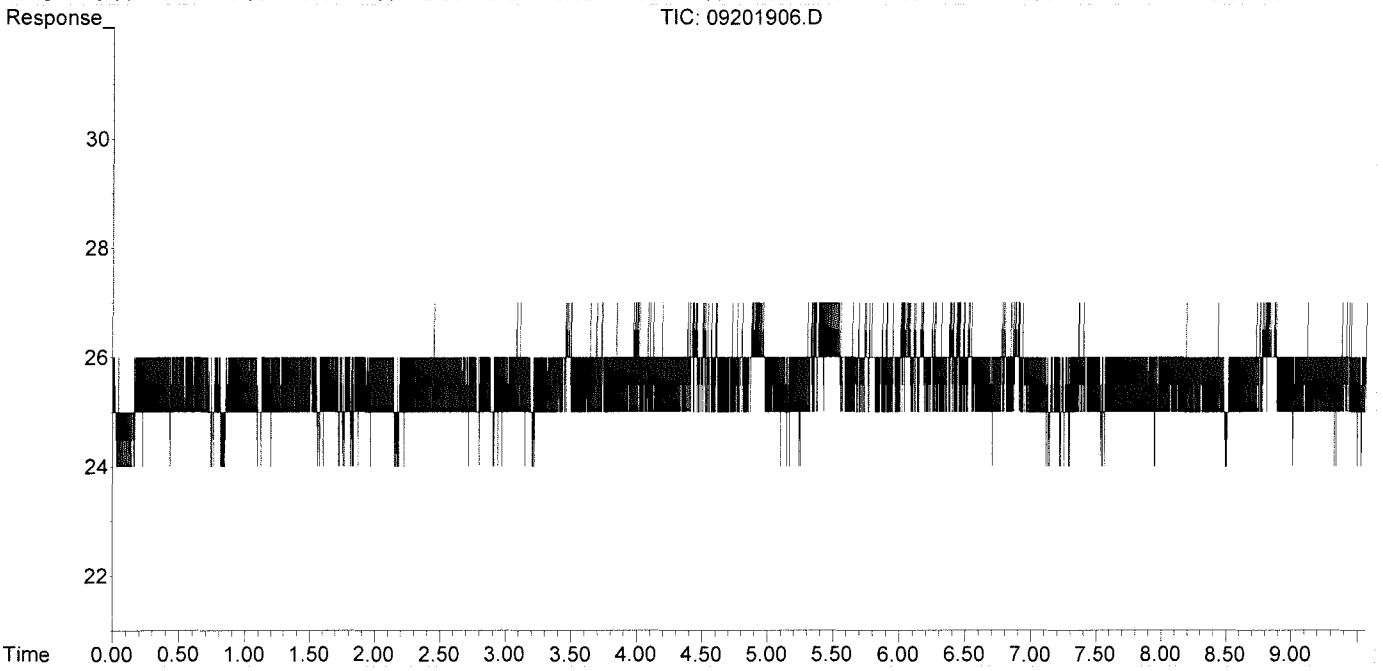
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201906.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 14:22:48
Operator : WH
Sample : LCSD TCD
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 14:32:24 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

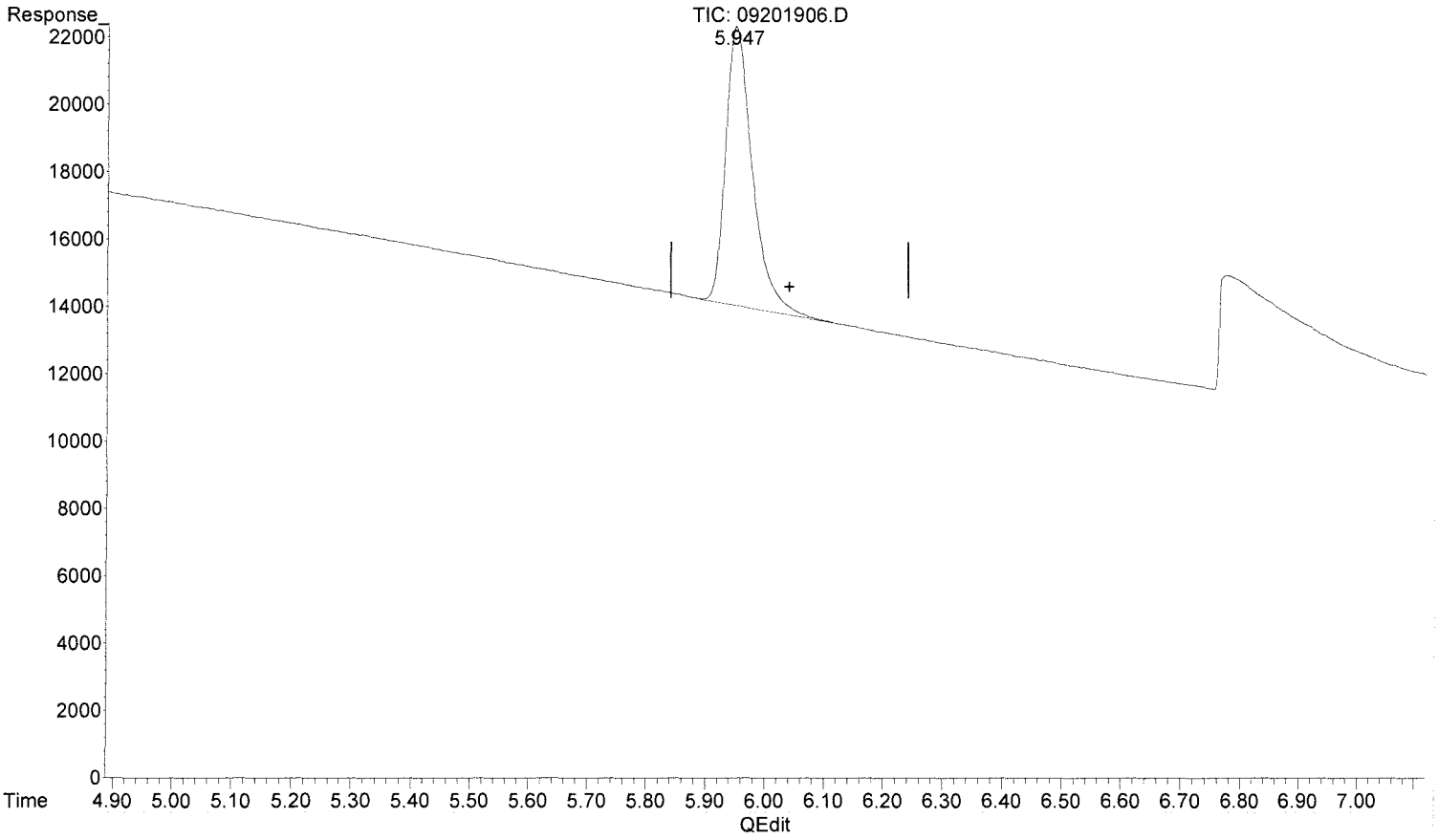




Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201906.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 14:22:48
Operator : WH
Sample : LCSD TCD
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 14:32:24 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(4) Carbon dioxide

5.947min 1103.192 ppm m

response 258951

MR 9/25/19

[illegible] 9/21/19 BLC no precision

(+) = Expected Retention Time

Response Factor Report HP5890

Method Path : I:\GC10\METHODS\
Method File : RS082817_CO2.M
Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
Last Update : Tue Aug 29 16:13:13 2017
Response Via : Initial Calibration

Calibration Files
1 =08291715.D 2 =08291716.D 3 =08291717.D
4 =08291719.D 5 =08291720.D 6 =08291721.D

	Compound	1	2	3	4	5	6	Avg		%RSD
1)	Oxygen/Argon	4.760						4.760	E6	0.00
2)	Carbon monoxide	2.775		1.066	0.043	0.033	0.027	0.657	E6	170.12
3)	Methane (TCD)							9.457		0.00
4)	Carbon dioxide	2.717	2.193	2.338	2.272	2.265	2.298	2.347	E2	7.99

Signal #2 Calibration Files
1 =08291715.D 2 =08291716.D 3 =08291717.D
4 =08291719.D 5 =08291720.D 6 =08291721.D

	Compound	1	2	3	4	5	6	Avg		%RSD
6)	Methane (FID)	1.253	1.160	1.005	0.927	0.848	0.848	0.945	E4	15.85
7)	Ethylene	1.677	1.605	1.900	1.749	1.597	1.579	1.684	E4	7.30
8)	Ethane	1.769	1.631	1.866	1.767	1.639	1.667	1.723	E4	5.40
9)	Propylene	2.402	2.309	2.767	2.551	2.331	2.333	2.449	E4	7.32
10)	Propane	2.906	2.737	2.817	2.639	2.410	2.420	2.655	E4	7.75
11)	Isobutylene							0.000		-1.00
12)	Isobutane							0.000		-1.00
13)	n-Butane							0.000		-1.00

(#) = Out of Range ### Number of calibration levels exceeded format ###

RS082817_CO2.M Wed Aug 30 13:24:19 2017

dit Compounds -- Compound #4 -- Carbon dioxide

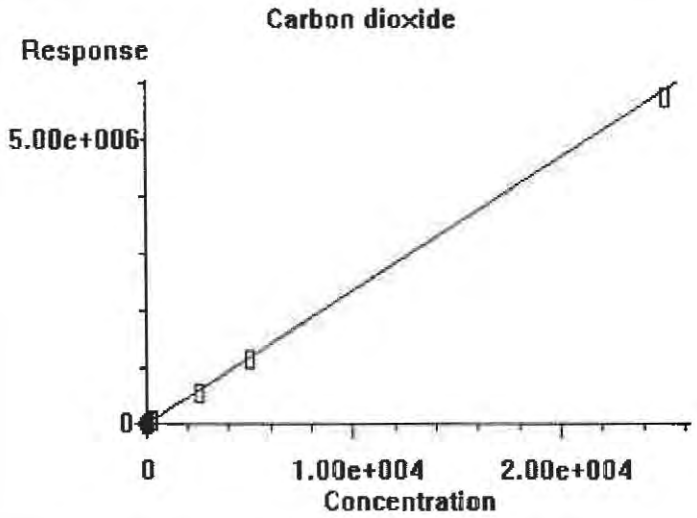
Search by: Ret Time | Name | Index | Find Compound

Compound Database
External Standard Compoun
- Oxygen/Argon
- Carbon monoxide
- Methane (TCD)
- Carbon dioxide
- Signal #2
- Methane (FID)
- Ethylene
- Ethane
- Propylene
- Propane
- Isobutylene
- Isobutane
- n-Butane

Identification | Calibration | User-Defined | Advanced | Reporting

Lvl ID	Concentration	Response
1	25.000000	6793.665186
2	100.000000	21932.418000
3	250.000000	58460.642510
4	2500.000000	568043.388750
5	5000.000000	1132363.215937
6	25000.000000	5744294.891563
7	25000.000000	
8	25000.000000	
9	2000.000000	
10	30000.000000	

Lvl ID	Concentration	Response



0.000e+000	Quadratic term
2.347e+002	Linear term
0.000e+000	Constant term
7.987%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

Calibration Status Report HP5890

Method Path : I:\GC10\METHODS\
Method File : RS082817_CO2.M
Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
Last Update : Tue Aug 29 16:13:13 2017
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	0	0	J:\GC10\DATA\RSK_FID\2017_08\29\08291715.D
2	2	0	0	J:\GC10\DATA\RSK_FID\2017_08\29\08291716.D
3	3	3	0	J:\GC10\DATA\RSK_FID\2017_08\29\08291717.D
4	4	10	0	J:\GC10\DATA\RSK_FID\2017_08\29\08291719.D
5	5	25	0	J:\GC10\DATA\RSK_FID\2017_08\29\08291720.D
6	6	125	0	J:\GC10\DATA\RSK_FID\2017_08\29\08291721.D
7	7	5000	0	J:\GC10\DATA\RSK_FID\2017_08\24\08241708.D
8	8	25000	0	J:\GC10\DATA\RSK_FID\2017_08\24\08241709.D
9	9	2000	0	J:\GC10\DATA\RSK_FID\2017_08\24\08241710.D
10	10	30000	0	J:\GC10\DATA\RSK_FID\2017_08\24\08241711.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	Aug 29 14:21 2017	Aug 29 14:20 2017	29-Aug-2017, 14:07
2	2	Aug 29 14:52 2017	Aug 29 14:51 2017	29-Aug-2017, 14:22
3	3	Aug 29 15:04 2017	Aug 29 15:04 2017	29-Aug-2017, 14:53
4	4	Aug 29 15:36 2017	Aug 29 15:36 2017	29-Aug-2017, 15:23
5	5	Aug 29 15:57 2017	Aug 29 15:57 2017	29-Aug-2017, 15:44
6	6	Aug 29 16:13 2017	Aug 29 16:13 2017	29-Aug-2017, 16:00
7	7	Aug 25 09:05 2017	Aug 24 16:00 2017	24-Aug-2017, 15:44
8	8	Aug 25 09:06 2017	Aug 24 16:13 2017	24-Aug-2017, 16:02
9	9	Aug 25 09:06 2017	Aug 24 16:31 2017	24-Aug-2017, 16:16
10	10	Aug 25 09:07 2017	Aug 24 16:42 2017	24-Aug-2017, 16:33

RS082817_CO2.M Wed Aug 30 13:24:30 2017

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291715.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:07
Operator : MC
Sample : 25ppm s32-08291701 0.25ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 14:20:06 2017
Quant Method : I:\GC10\METHODS\RS082417.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Fri Aug 25 09:19:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

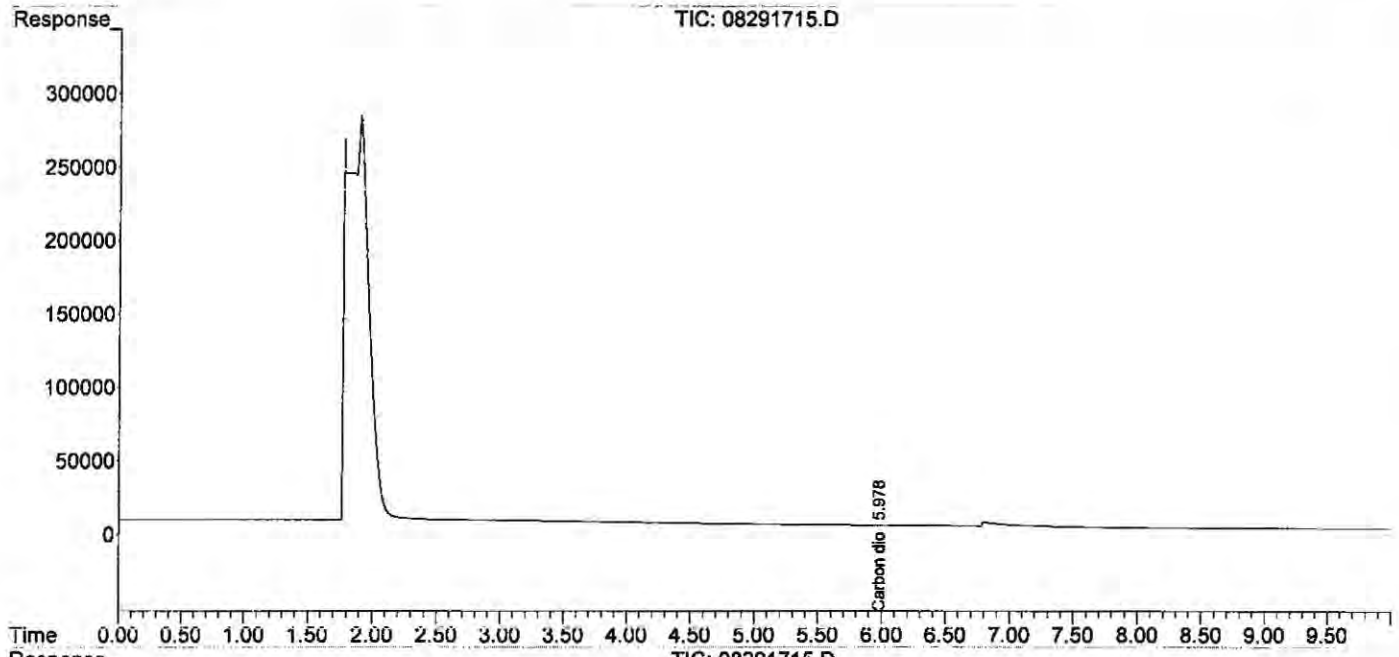
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	0.000	0	N.D.	ppm	d
2)	Carbon monoxide	1.776	277465	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	
4)	Carbon dioxide	5.978	6794	27.870	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	d
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

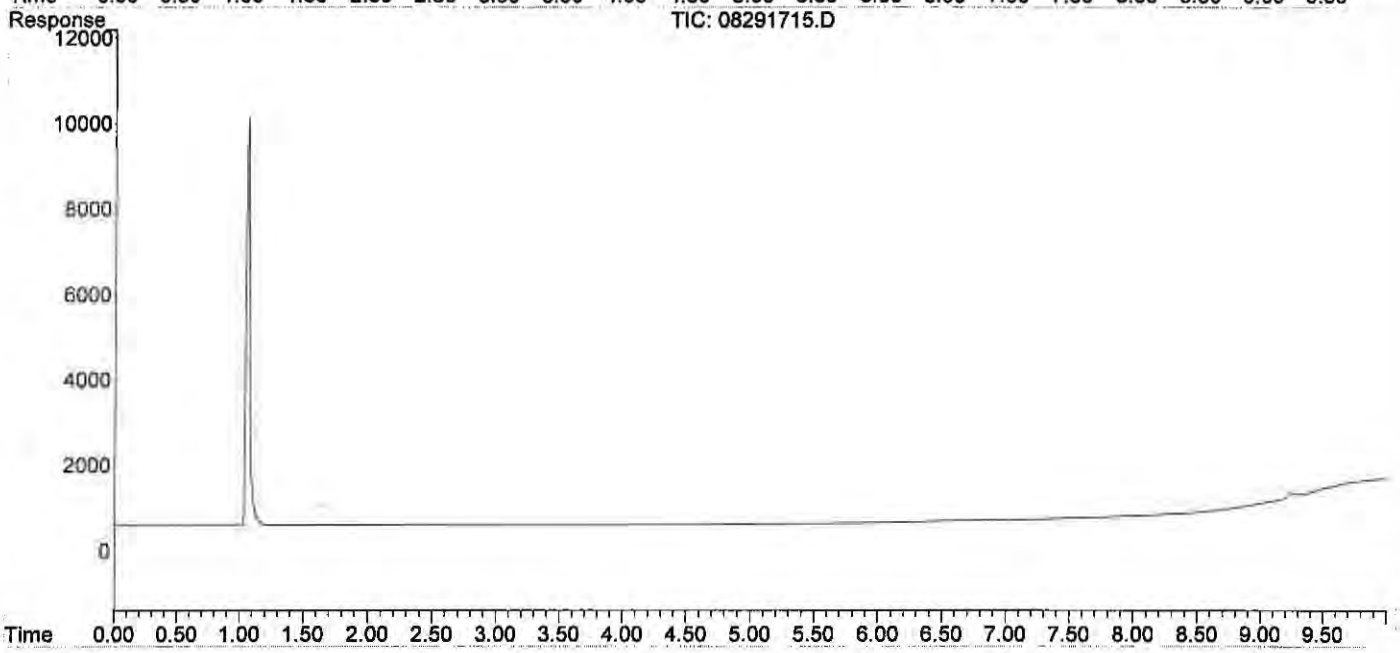
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291715.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:07
Operator : MC
Sample : 25ppm s32-08291701 0.25ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 14:20:06 2017
Quant Method : I:\GC10\METHODS\RS082417.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Fri Aug 25 09:19:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



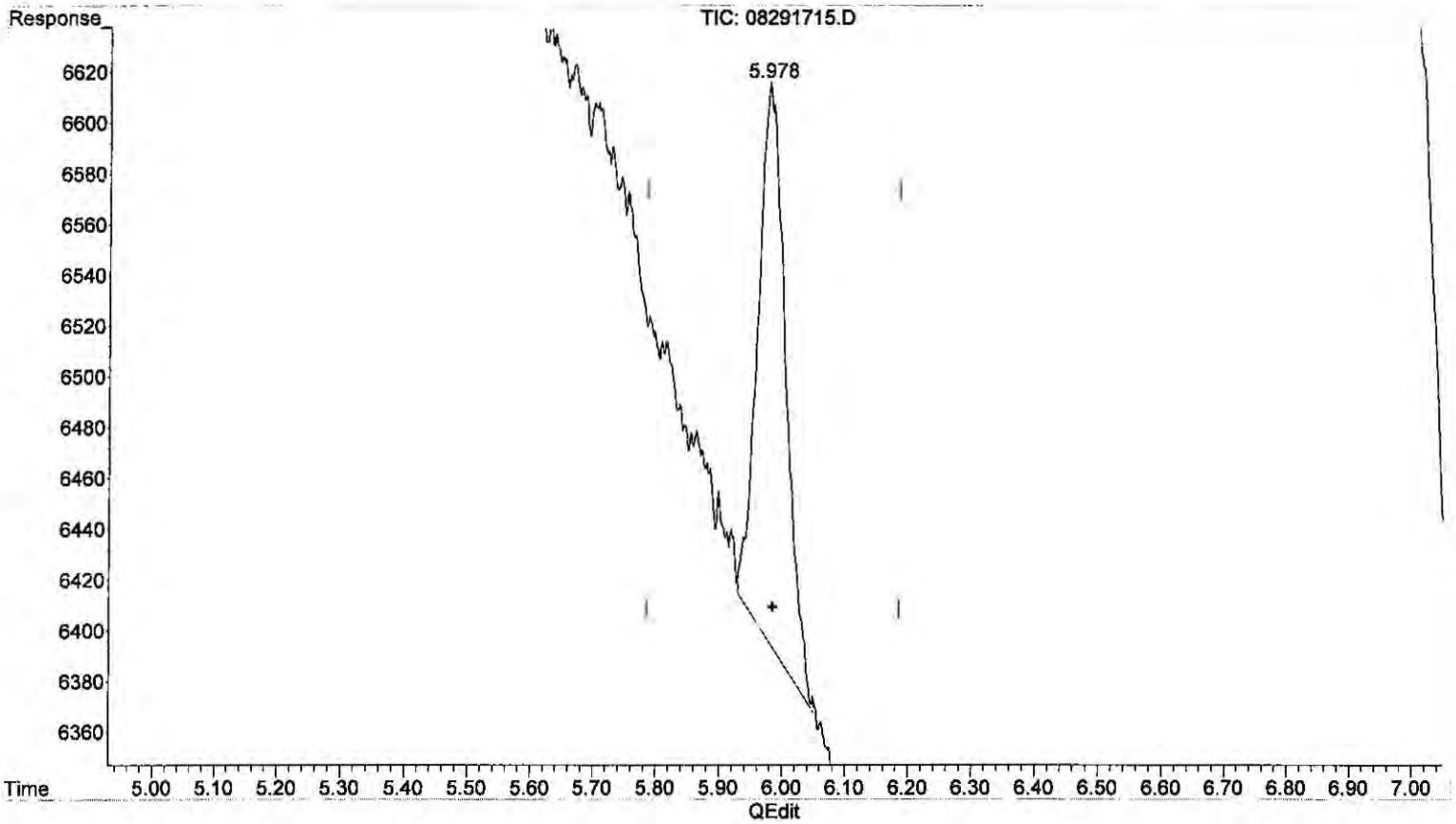


Quantitation Report (Qedit)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291715.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:07
Operator : MC
Sample : 25ppm s32-08291701 0.25ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 14:20:06 2017
Quant Method : I:\GC10\METHODS\RS082417.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Fri Aug 25 09:19:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(4) Carbon dioxide

5.978min 27.870 ppm m

response 6794

(+) = Expected Retention Time

RS082817_CO2.M Wed Aug 30 13:17:47 2017

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291716.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:22
Operator : MC
Sample : 100ppm s32-08291702 0.2ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 14:51:38 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 14:21:08 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

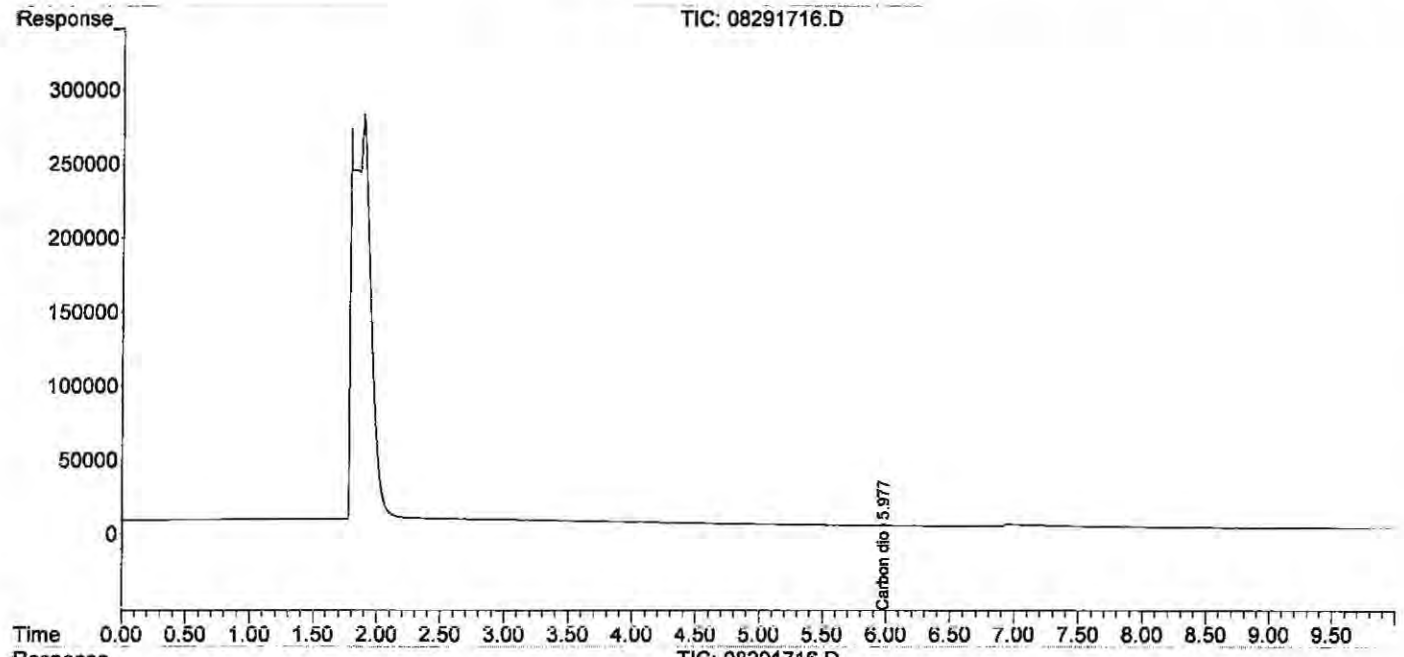
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.790	-598962	N.D.	ppm	
2)	Carbon monoxide	0.000	0	N.D.	ppm	d
3)	Methane (TCD)	0.000	0	N.D.	ppm	
4)	Carbon dioxide	5.978	21932	87.858	ppm	
6)	Methane (FID)	0.000	0	N.D.	ppm	d
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

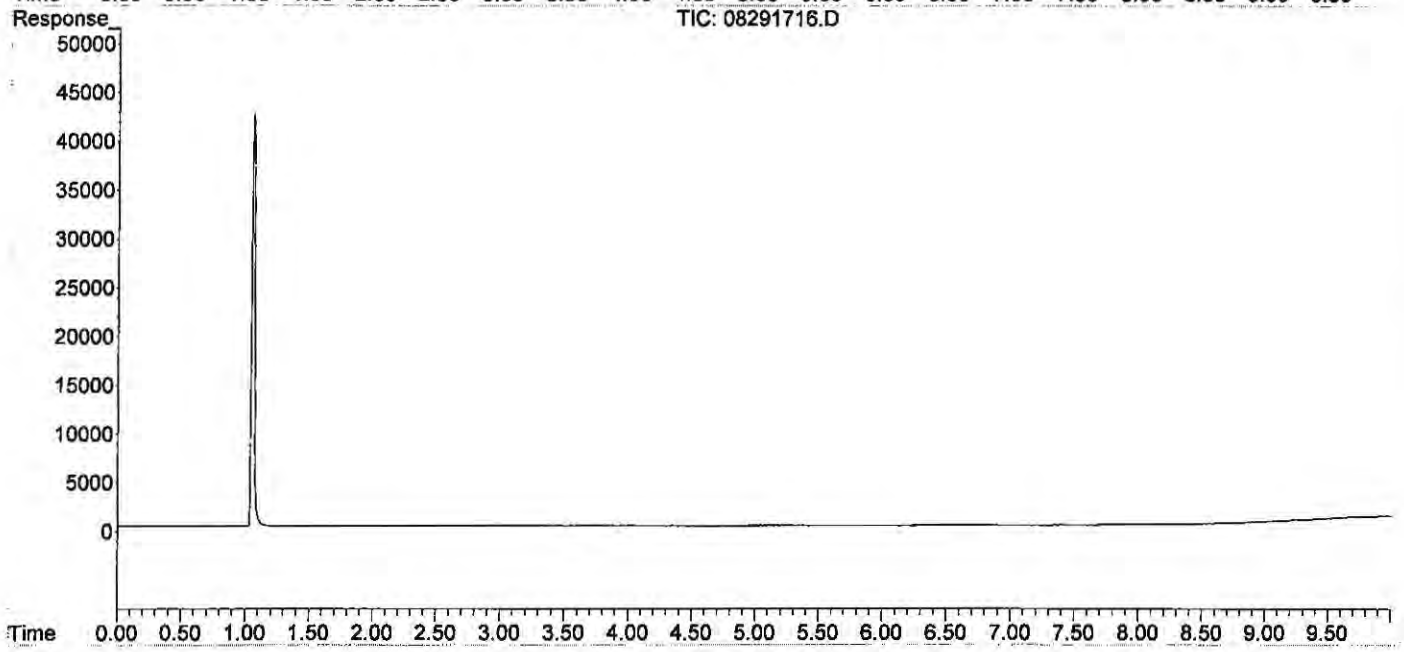
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291716.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:22
Operator : MC
Sample : 100ppm s32-08291702 0.2ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 14:51:38 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 14:21:08 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291717.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:53
Operator : MC
Sample : 250ppm s32-08291702 0.5ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 15:03:42 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 14:52:06 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

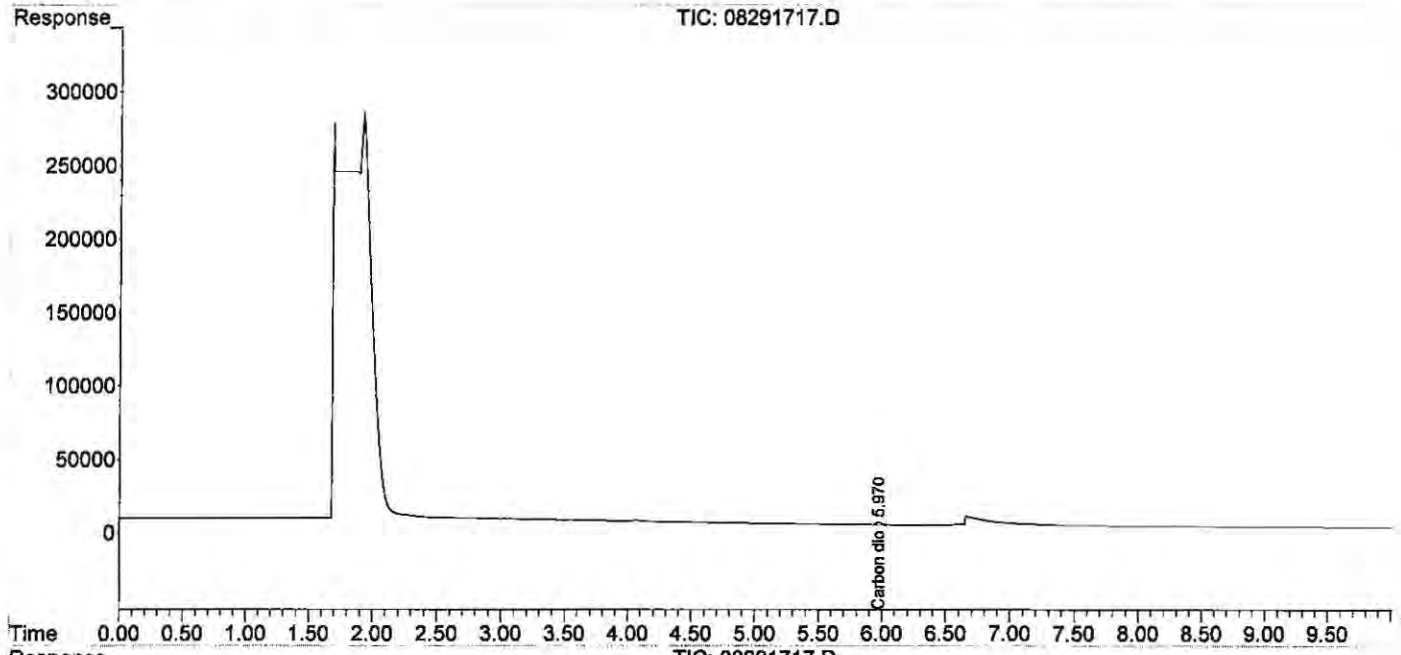
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.920f	-30716454	N.D.	ppm	
2)	Carbon monoxide	0.000	0	N.D.	ppm	d
3)	Methane (TCD)	0.000	0	N.D.	ppm	d
4)	Carbon dioxide	5.970	58461	240.204	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	d
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

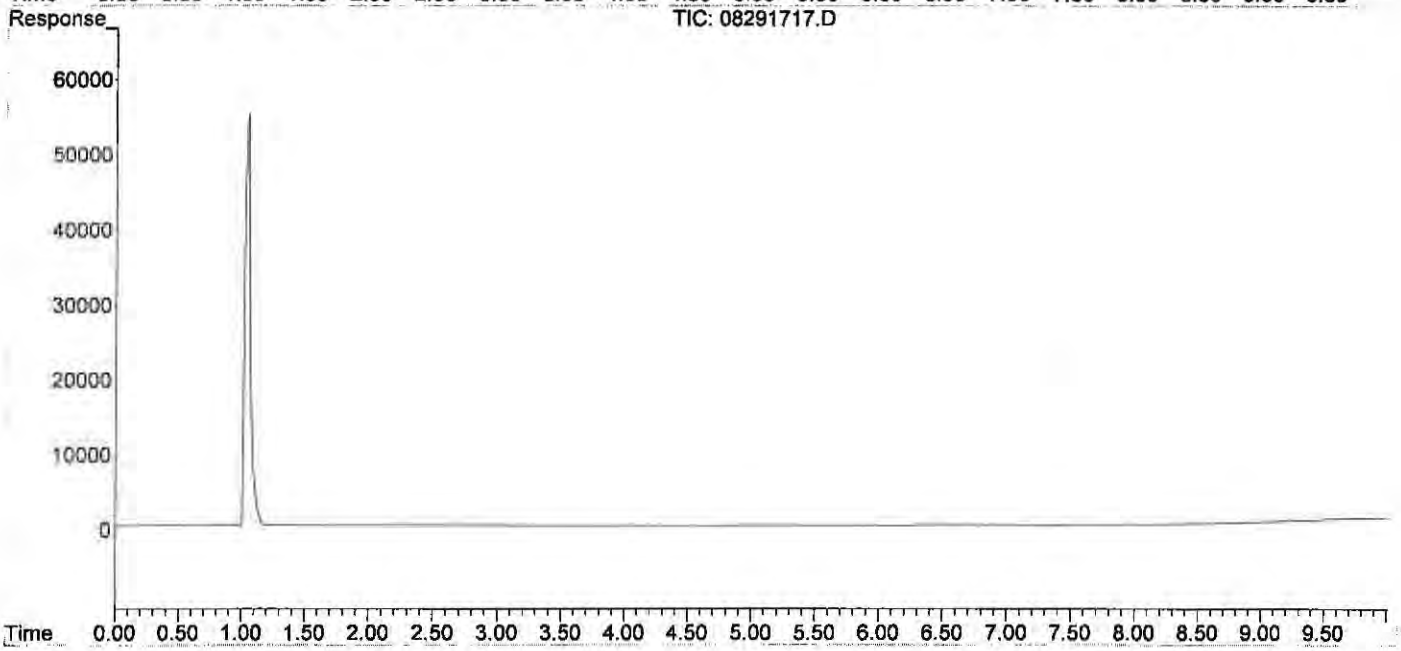
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291717.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:53
Operator : MC
Sample : 250ppm s32-08291702 0.5ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 15:03:42 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 14:52:06 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



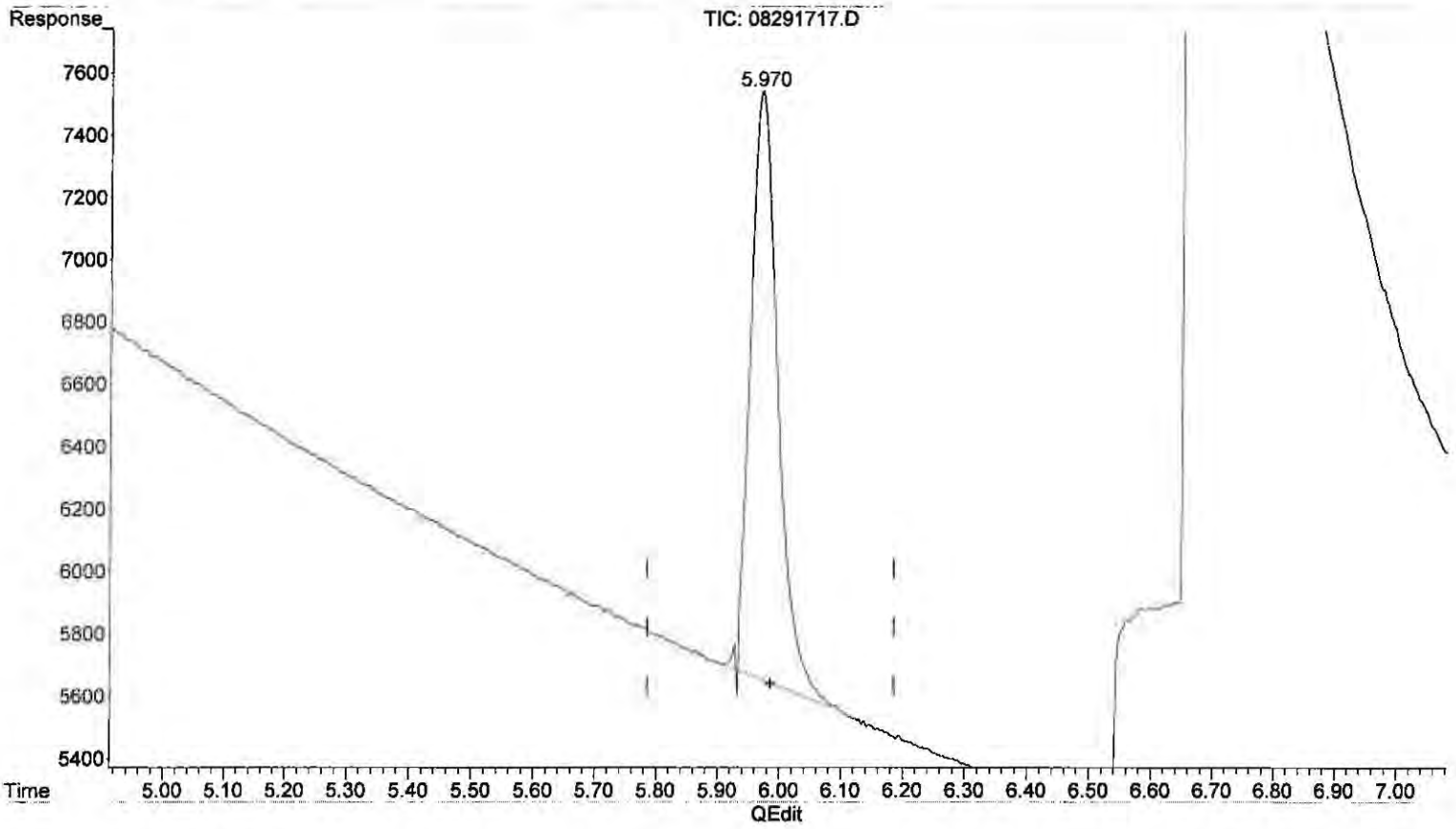


Quantitation Report (Qedit)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291717.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:53
Operator : MC
Sample : 250ppm s32-08291702 0.5ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 15:03:42 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 14:52:06 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(4) Carbon dioxide

5.970min 240.204 ppm m

response 58461

(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291719.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 15:23
Operator : MC
Sample : 2500ppm s32-08231701 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 15:35:50 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 15:04:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	0.000	0	N.D.	ppm	d
2)	Carbon monoxide	1.891	425113	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	d
4)	Carbon dioxide	5.962	568043	2369.673	ppm	
6)	Methane (FID)	0.000	0	N.D.	ppm	d
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

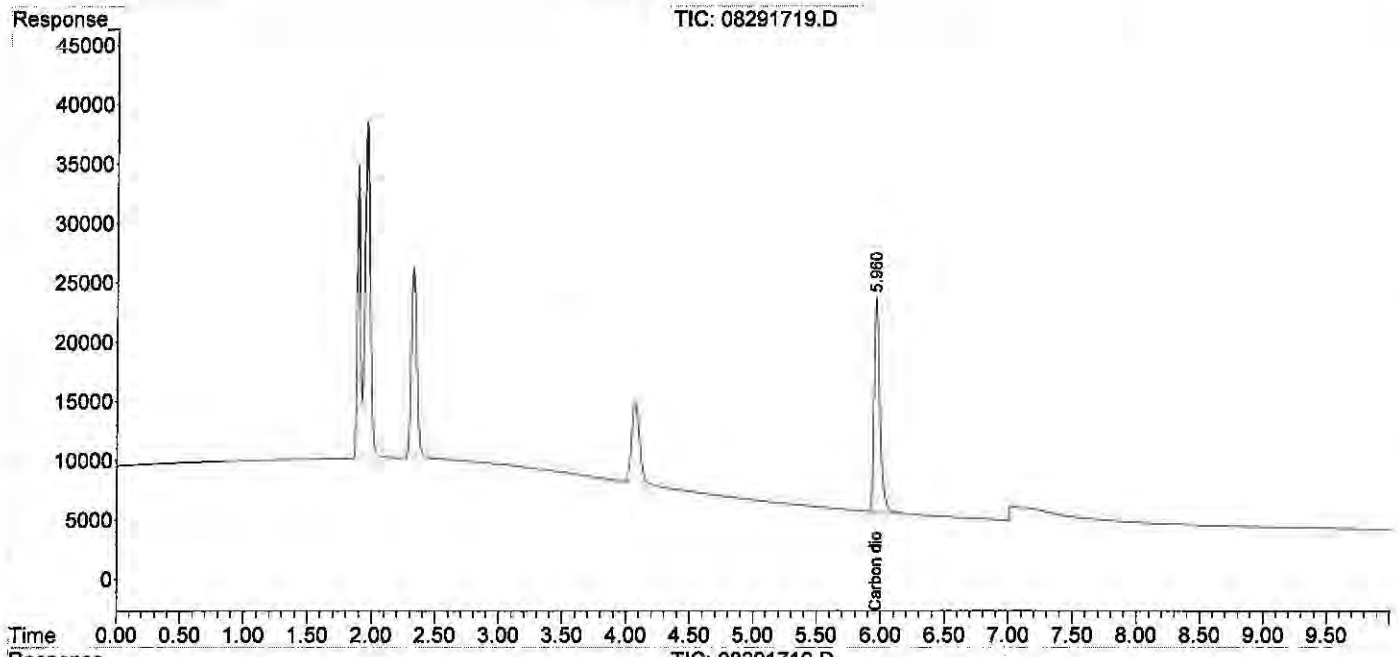
(f)=RT Delta > 1/2 Window (m)=manual int.

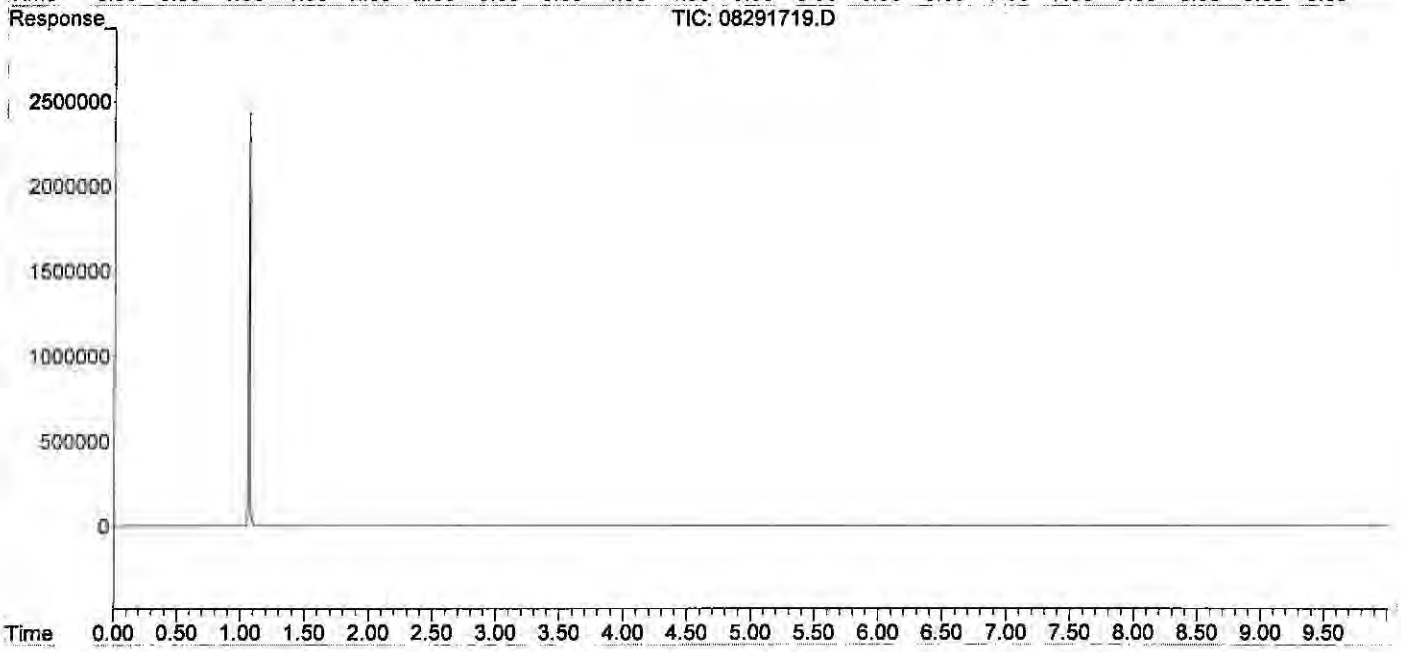
Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291719.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 15:23
Operator : MC
Sample : 2500ppm s32-08231701 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 15:35:50 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 15:04:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291720.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 15:44
Operator : MC
Sample : 5000ppm s32-08231701 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 15:57:17 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 15:36:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	0.000	0	N.D.	ppm	d
2)	Carbon monoxide	1.880	819221	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	d
4)	Carbon dioxide	5.948	1132363	4753.126	ppm	
6)	Methane (FID)	0.000	0	N.D.	ppm	d
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

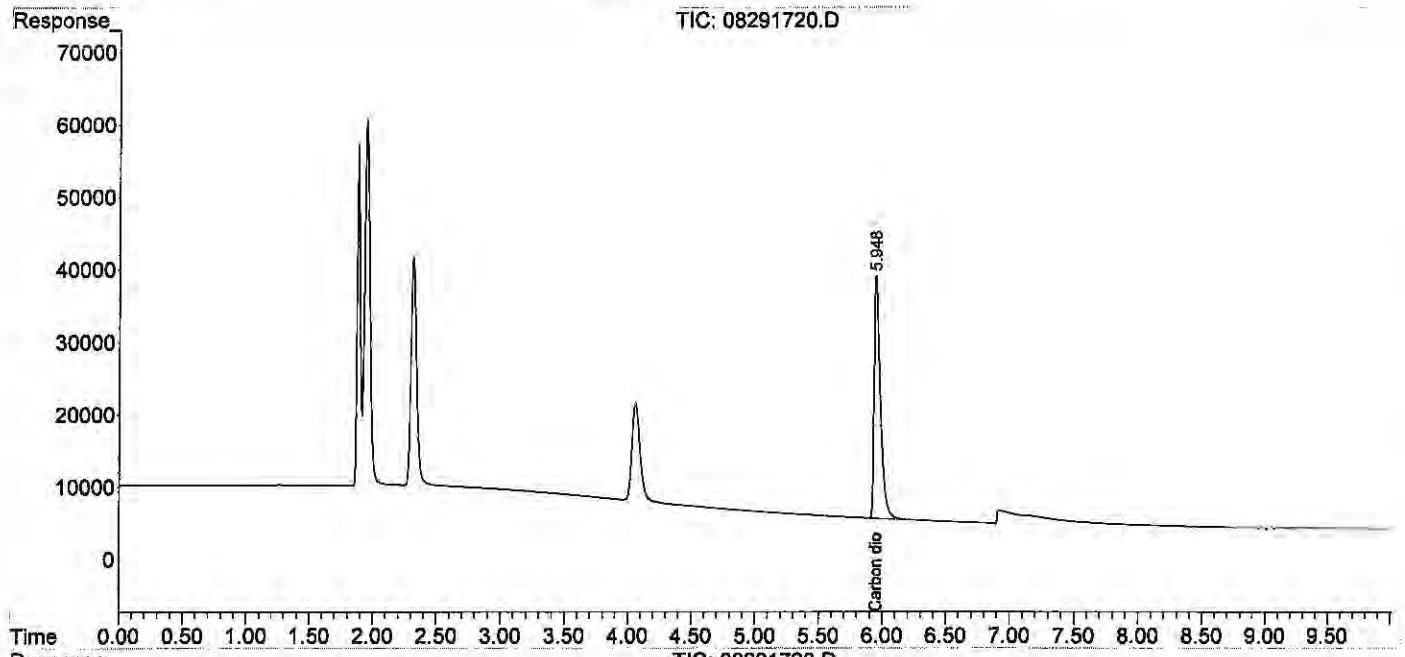
(f)=RT Delta > 1/2 Window (m)=manual int.

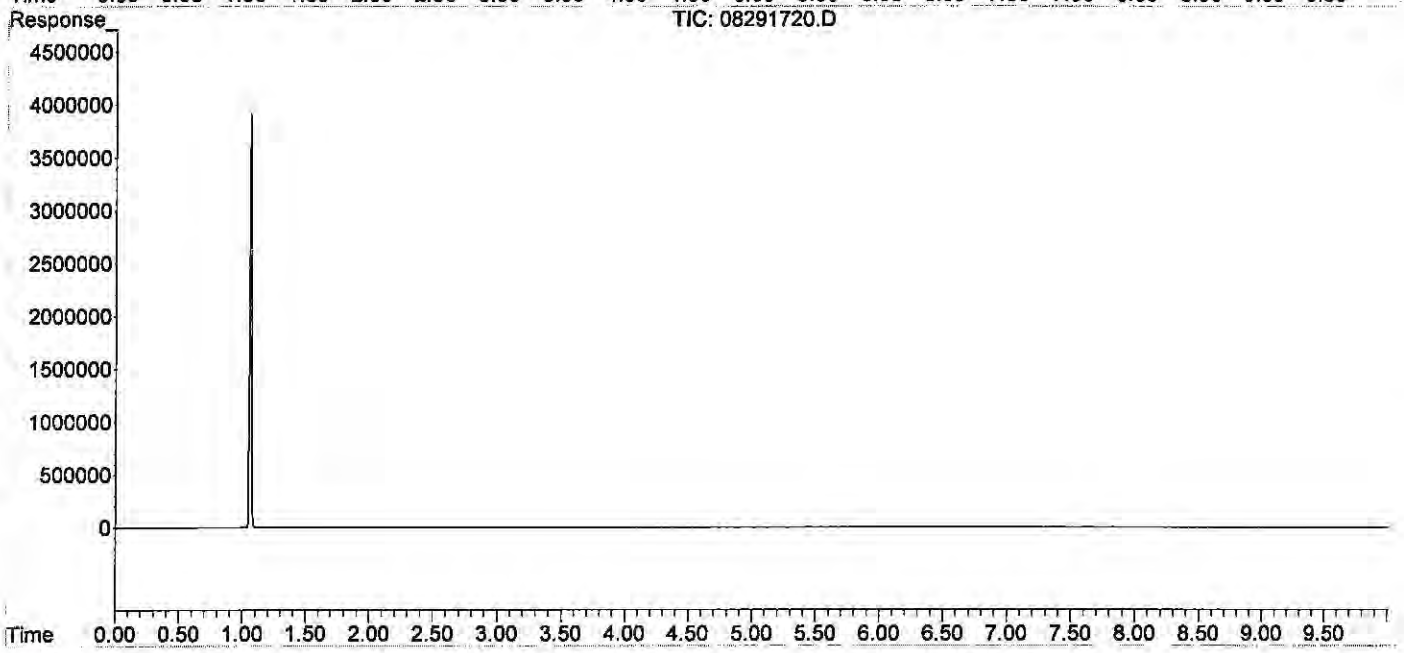
Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291720.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 15:44
Operator : MC
Sample : 5000ppm s32-08231701 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 15:57:17 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 15:36:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291721.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 16:00
Operator : MC
Sample : 25000ppm s32-08231701 0.5ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 16:12:53 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 15:57:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	0.000	0	N.D.	ppm	d
2)	Carbon monoxide	1.827	3325463	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	d
4)	Carbon dioxide	5.879f	5744295	24443.288	ppm	
6)	Methane (FID)	0.000	0	N.D.	ppm	d
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

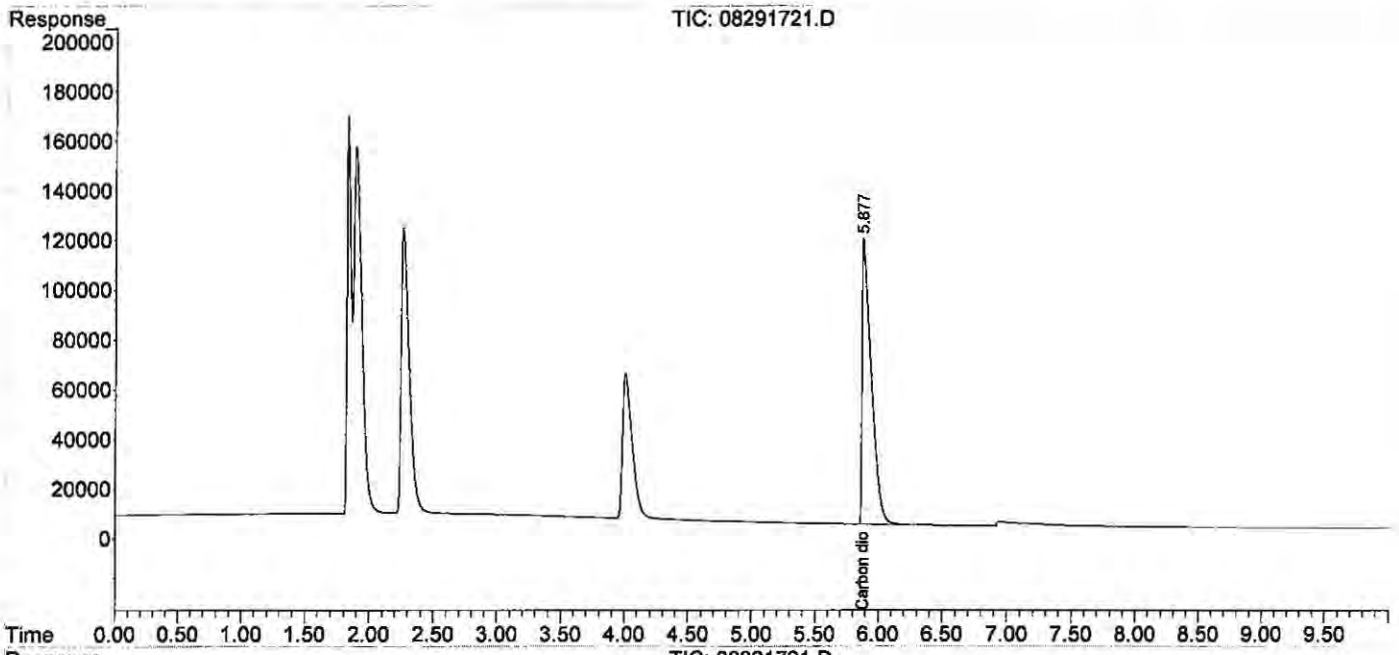
(f)=RT Delta > 1/2 Window (m)=manual int.

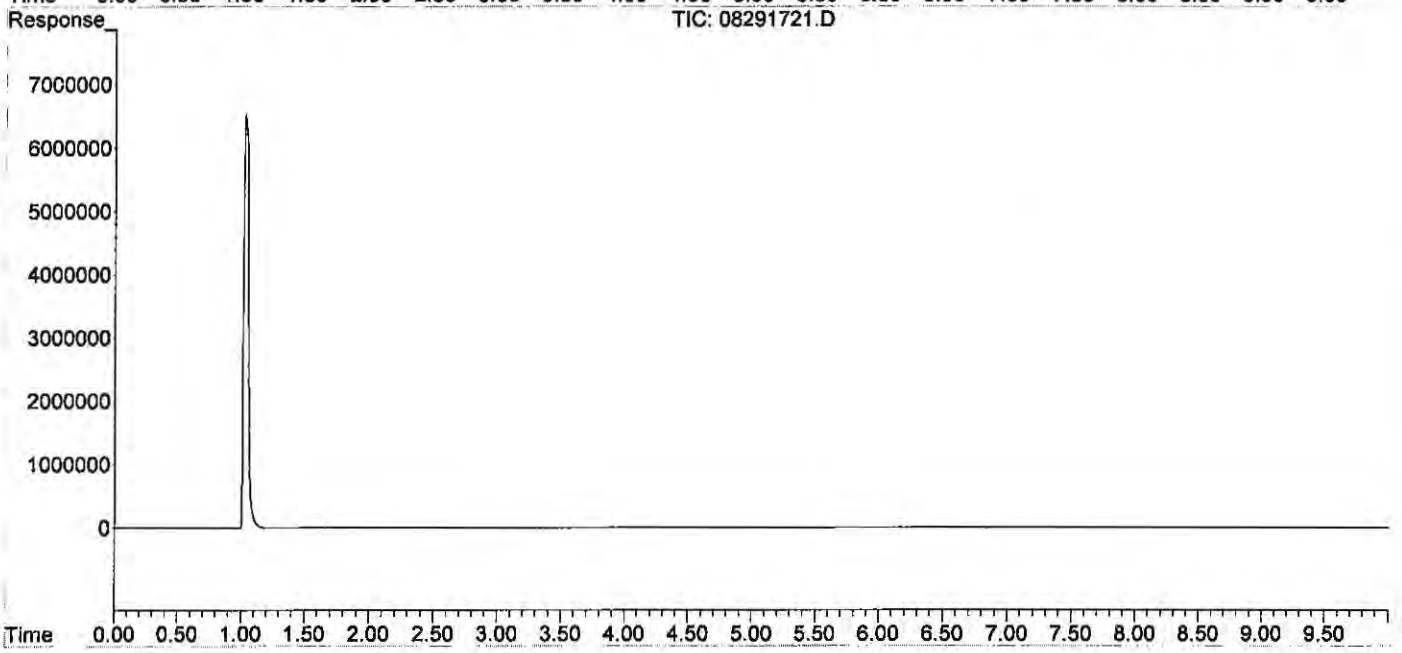
Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291721.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 16:00
Operator : MC
Sample : 25000ppm s32-08231701 0.5ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 16:12:53 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 15:57:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291723.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 16:35
Operator : MC
Sample : icv s30-07071701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 16:54:07 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.886	536422	0.113	ppm	actual %D
2)	Carbon monoxide	1.886	536422	N.D.	ppm	
3)	Methane (TCD)	4.059f	626500	66244.710	ppm	
4)	Carbon dioxide	5.947	1163775	4957.948	ppm	5000 99.16
6)	Methane (FID)	1.062	37290742	3947.023	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

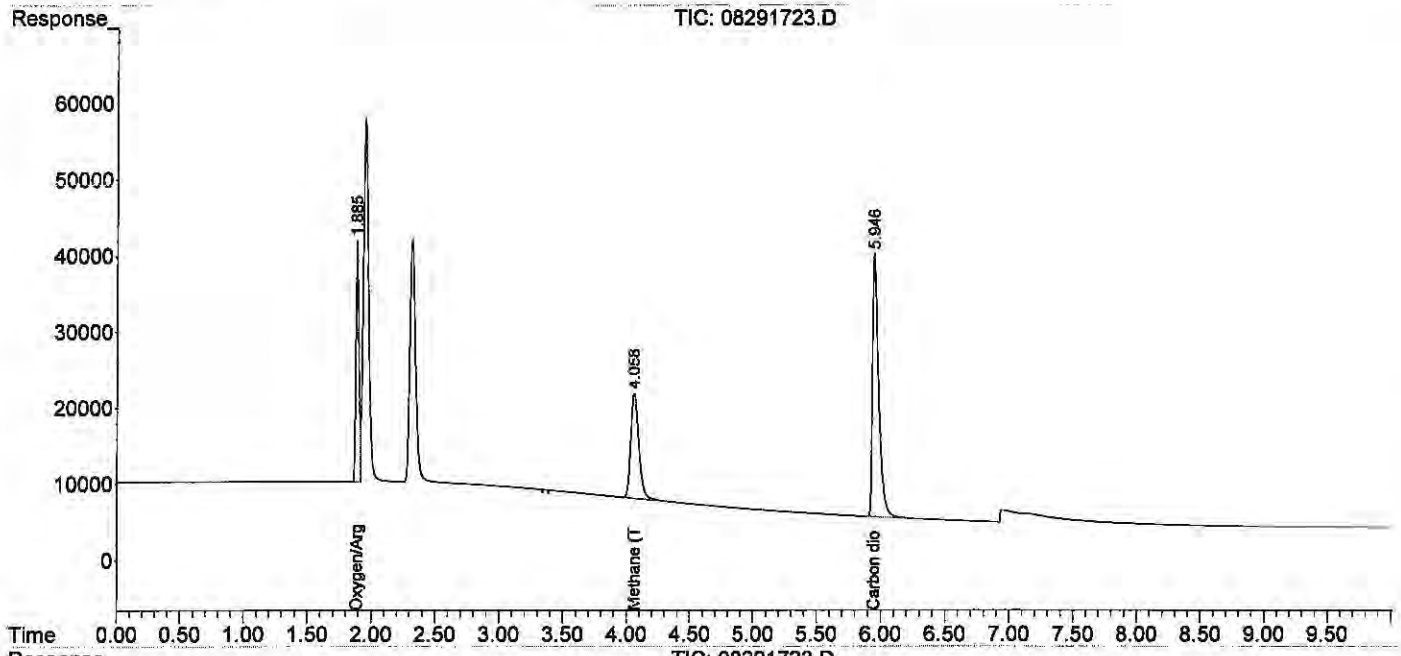
(f)=RT Delta > 1/2 Window (m)=manual int.

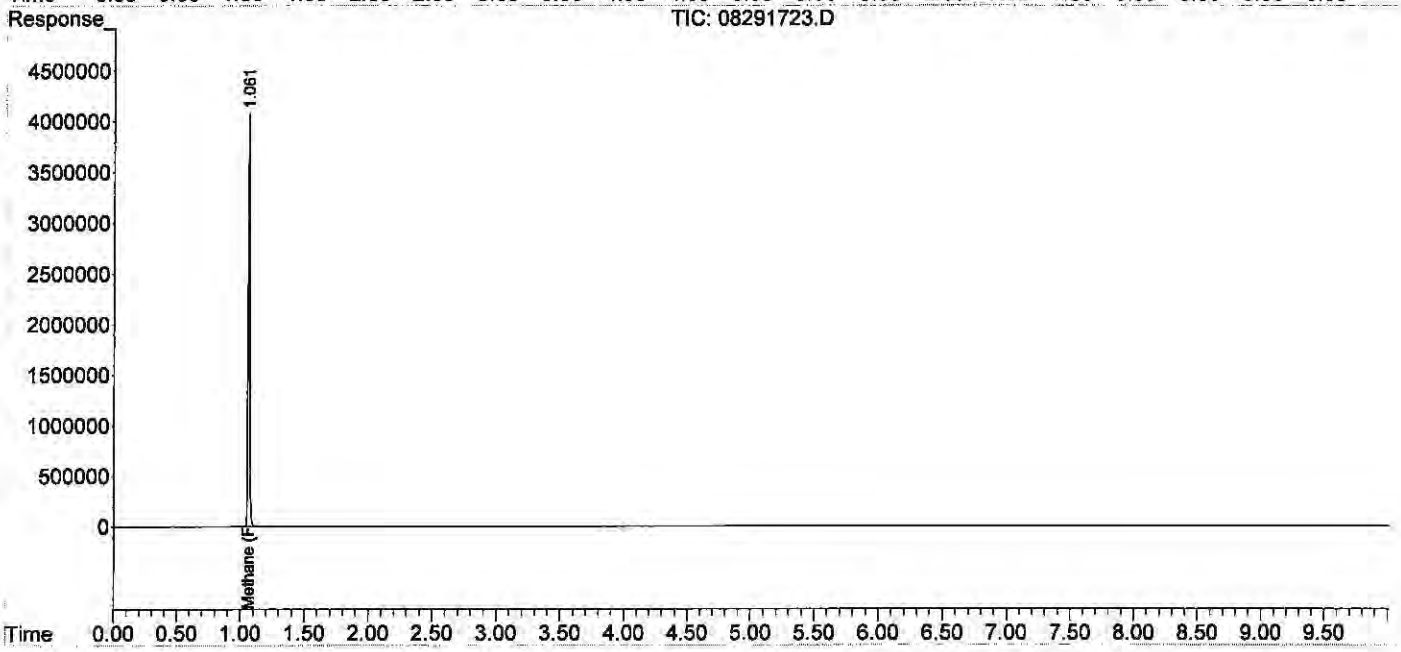
W 9/4/17

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291723.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 16:35
Operator : MC
Sample : icv s30-07071701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 16:54:07 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Dissolved Gases by RSK175

ALS Environmental

Method : RSK175 Headspace Method for Dissolved Hydrocarbon in Water by FID/TCD
Client : ALS Laboratory Group | Analyst : WH | Instrument : GC#10
Service Request: P1905493 | Date Analysis : 09/20/19 | Detector : FID#10, TCD#10
Sample Vol. (ml) : 32.00 ml | Head Space Vol.(ml) : 8.00 ml | Gas Constant : 24.05684 (20°C)

HEAD SPACE RESULT (ppm)

Sample ID	Inj. Vol.	Carbon Dioxide
std s32-06271901	0.100	4996.526
ACTUAL		5000.00
%Difference		0.1%
MCS 0.1ml	0.100	21.905
RB 0.1ml	0.100	0.000
LCS TCD	0.100	1217.411
LCSD TCD	0.100	1103.192
P1905493-001 50ul	0.050	5160.628
P1905493-002 50ul	0.050	6728.884
P1905493-003 50ul	0.050	7784.652
P1905493-004 50ul	0.050	7274.572
P1905493-005 50ul	0.050	8103.983
P1905493-006 50ul	0.050	13512.72
P1905493-007 50ul	0.050	15827.71
P1905493-002MS 50ul	0.050	8178.342
P1905493-002MSD 50ul	0.050	7505.204
std s32-06271901		5023.543
ACTUAL		5000.00
%Difference		0.5%

WWt.
HENRY'S CONSTANT
RL

FINAL HEAD SPACE RESULT (ppm)

	Carbon Dioxide
	44.10
	1.42E+03
	100.00
MCS 0.1ml	219.050
LCS TCD	12174.110
LCSD TCD	11031.920
P1905493-001 50ul	103212.56
P1905493-002 50ul	134577.68
P1905493-003 50ul	155693.04
P1905493-004 50ul	145491.44
P1905493-005 50ul	162079.66
P1905493-006 50ul	270254.42
P1905493-007 50ul	316554.10
P1905493-002MS 50ul	163566.84
P1905493-002MSD 50ul	150104.08

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201901.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 12:18:11
Operator : WH
Sample : std s32-06271901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 22 13:12:40 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

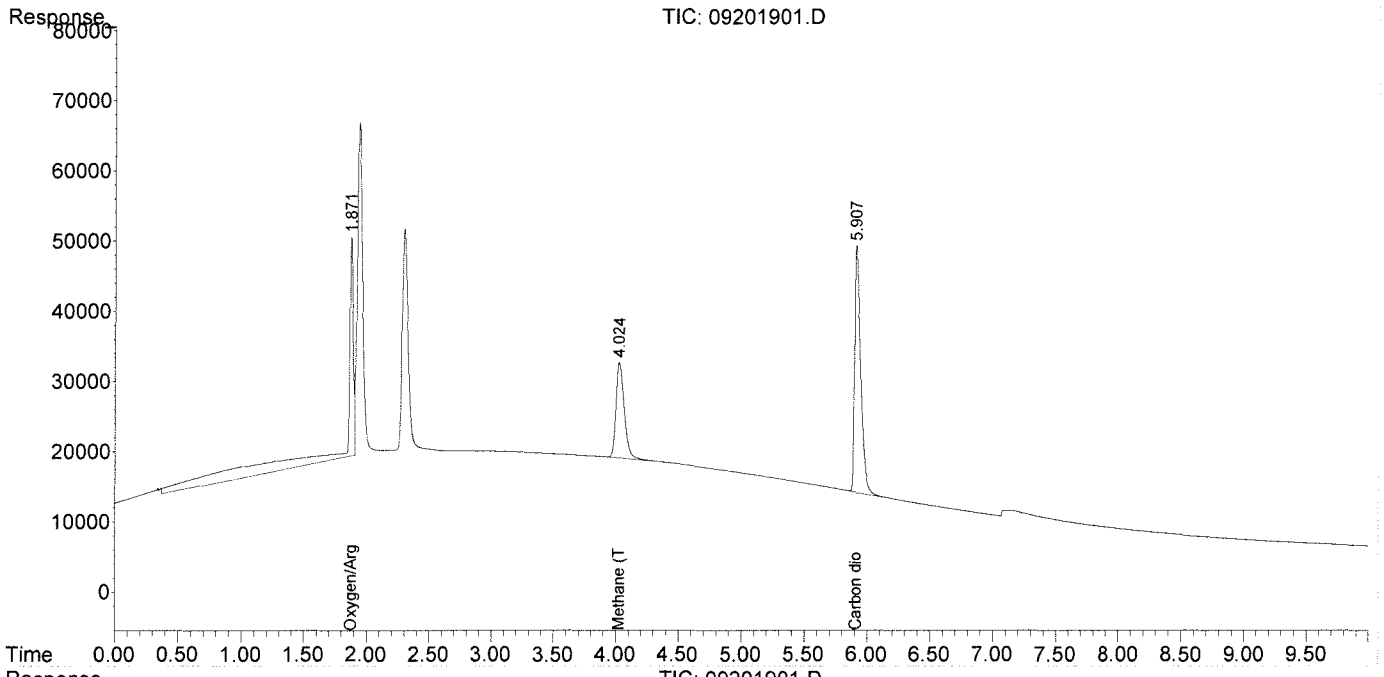
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.872	1577935	0.332	ppm	
2)	Carbon monoxide	1.872	1577935	N.D.	ppm	
3)	Methane (TCD)	4.025f	629333	66544.291	ppm	
4)	Carbon dioxide	5.907f	1172830	4996.526	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

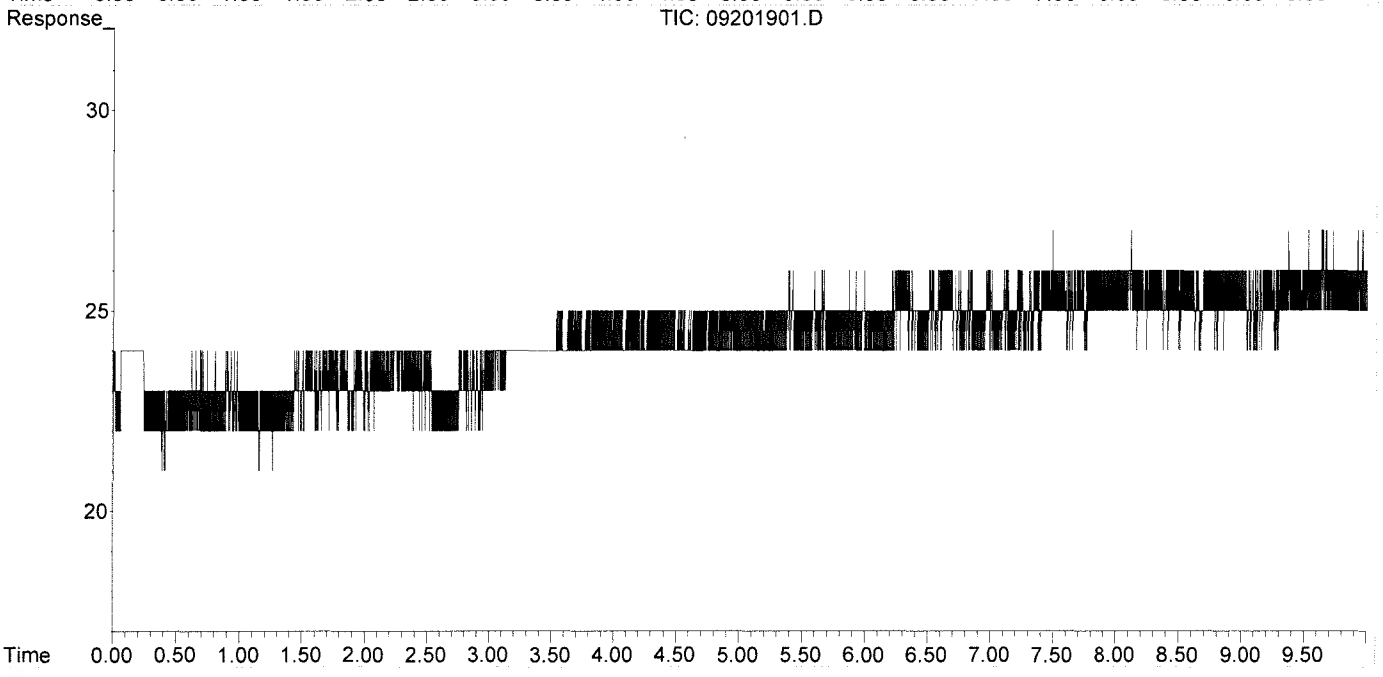
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201901.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 12:18:11
Operator : WH
Sample : std s32-06271901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 22 13:12:40 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

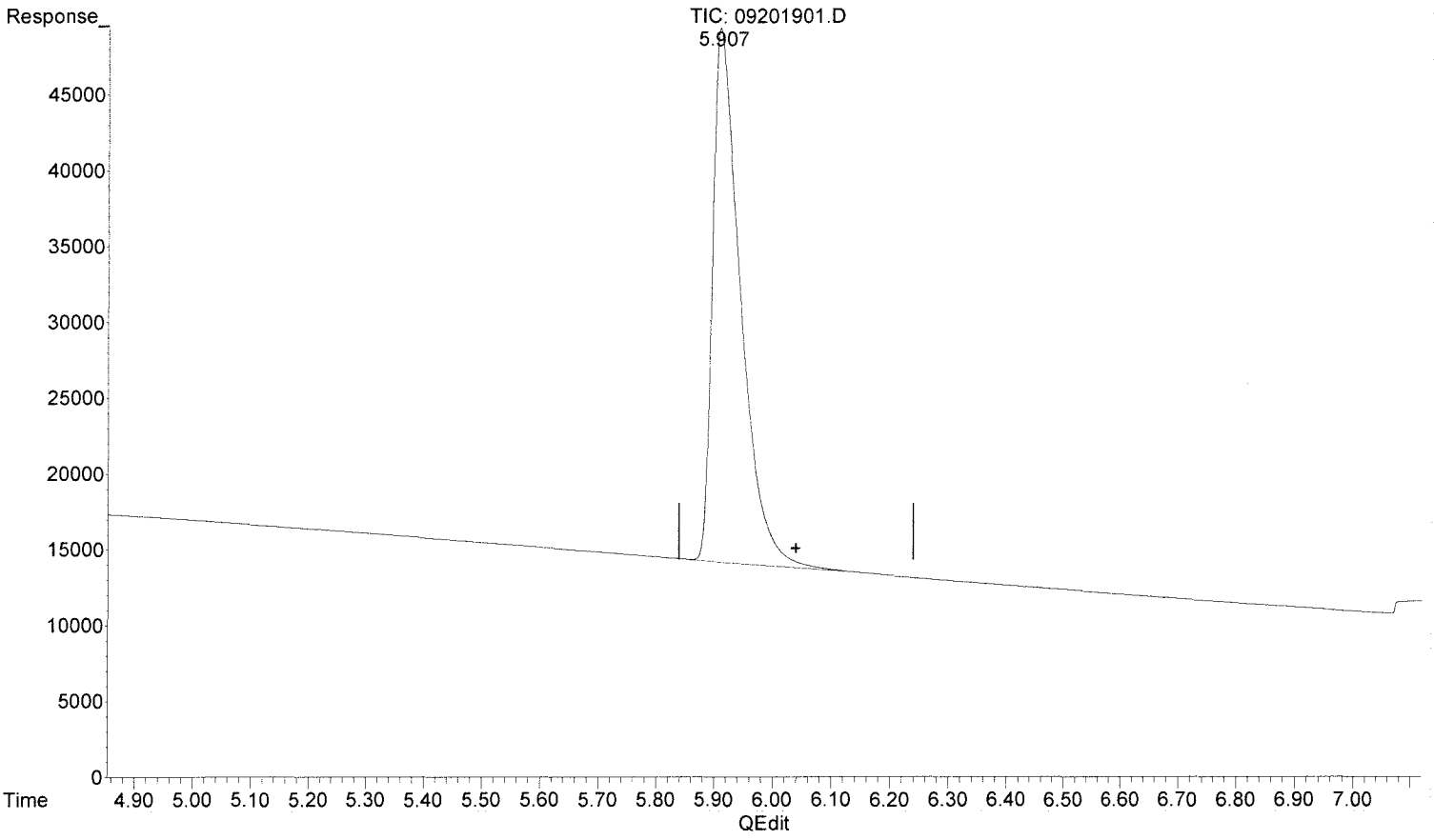




Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201901.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 12:18:11
Operator : WH
Sample : std s32-06271901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 22 13:12:40 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(4) Carbon dioxide

5.907min 4996.526 ppm m

response 1172830

MK 9/25/19

[illegible] 9/25/19
BCC
no previous

(+) = Expected Retention Time

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201916.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 16:43:12
Operator : WH
Sample : std s32-06271901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 16:57:36 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

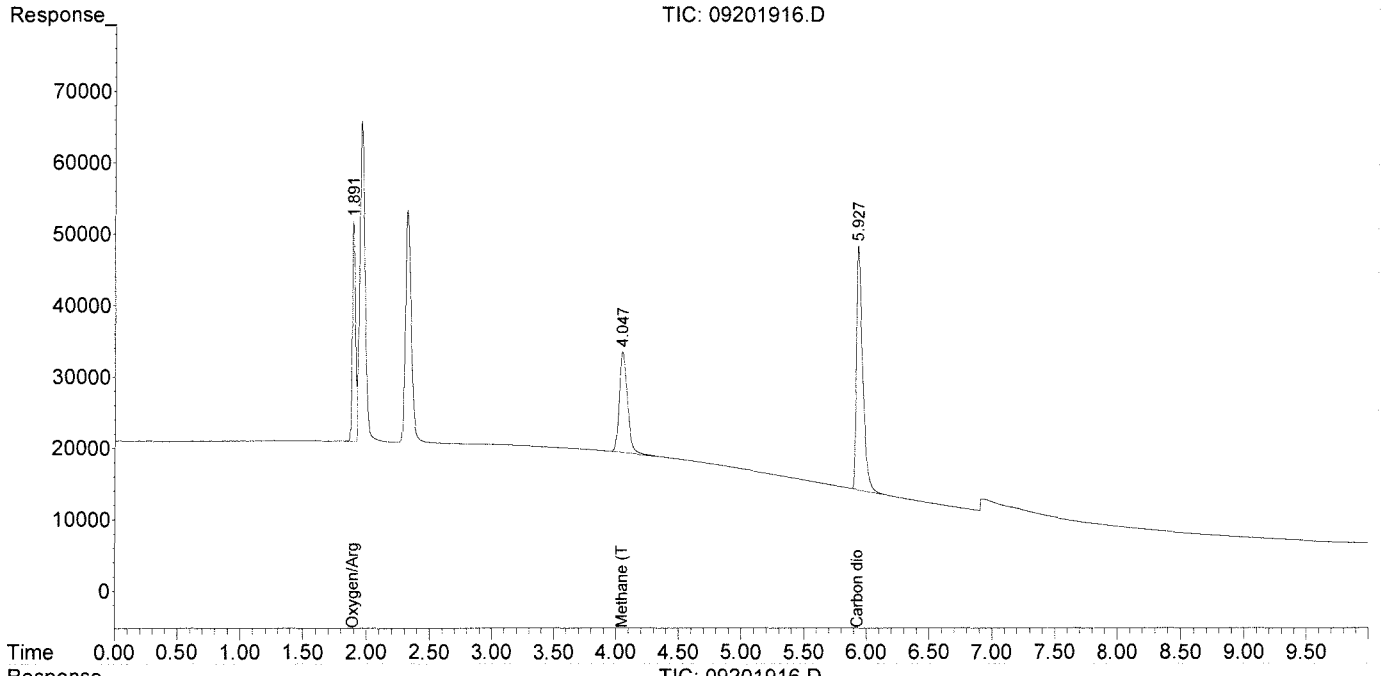
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.891	535387	0.112	ppm	
2)	Carbon monoxide	1.891	535387	N.D.	ppm	
3)	Methane (TCD)	4.048f	648884	68611.621	ppm	
4)	Carbon dioxide	5.927f	1179172	5023.543	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

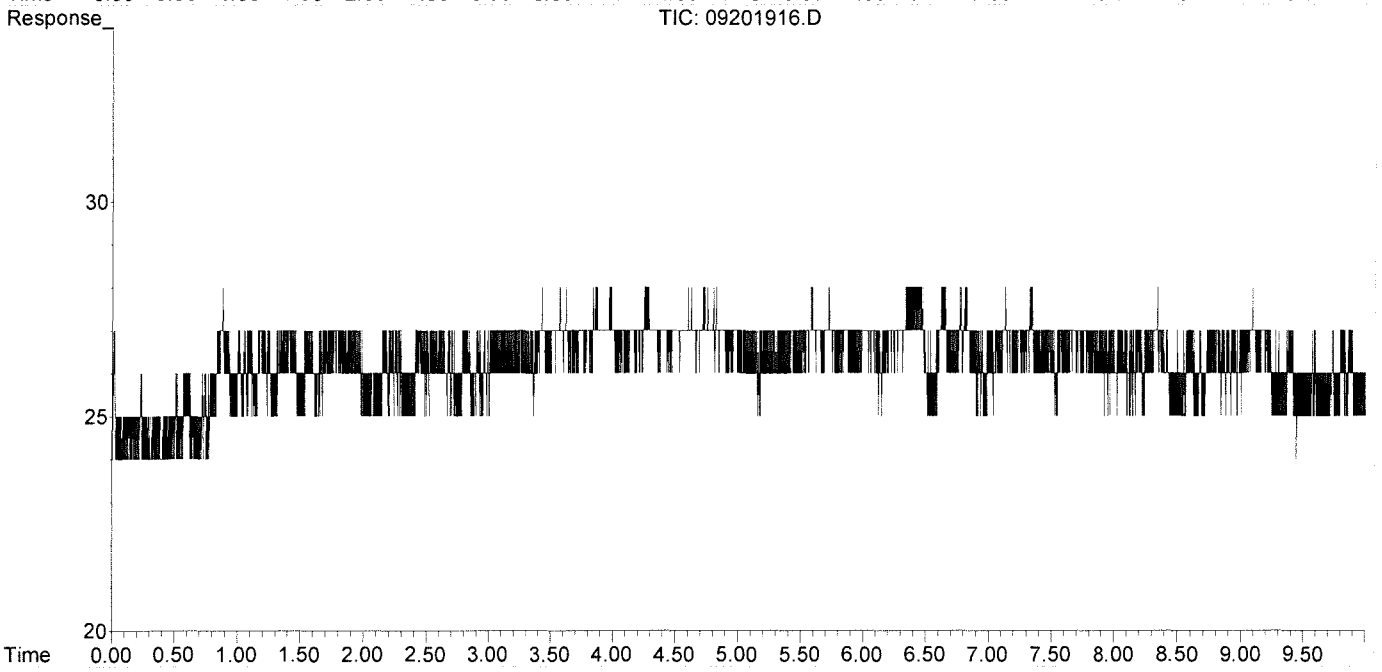
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201916.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 16:43:12
Operator : WH
Sample : std s32-06271901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 16:57:36 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

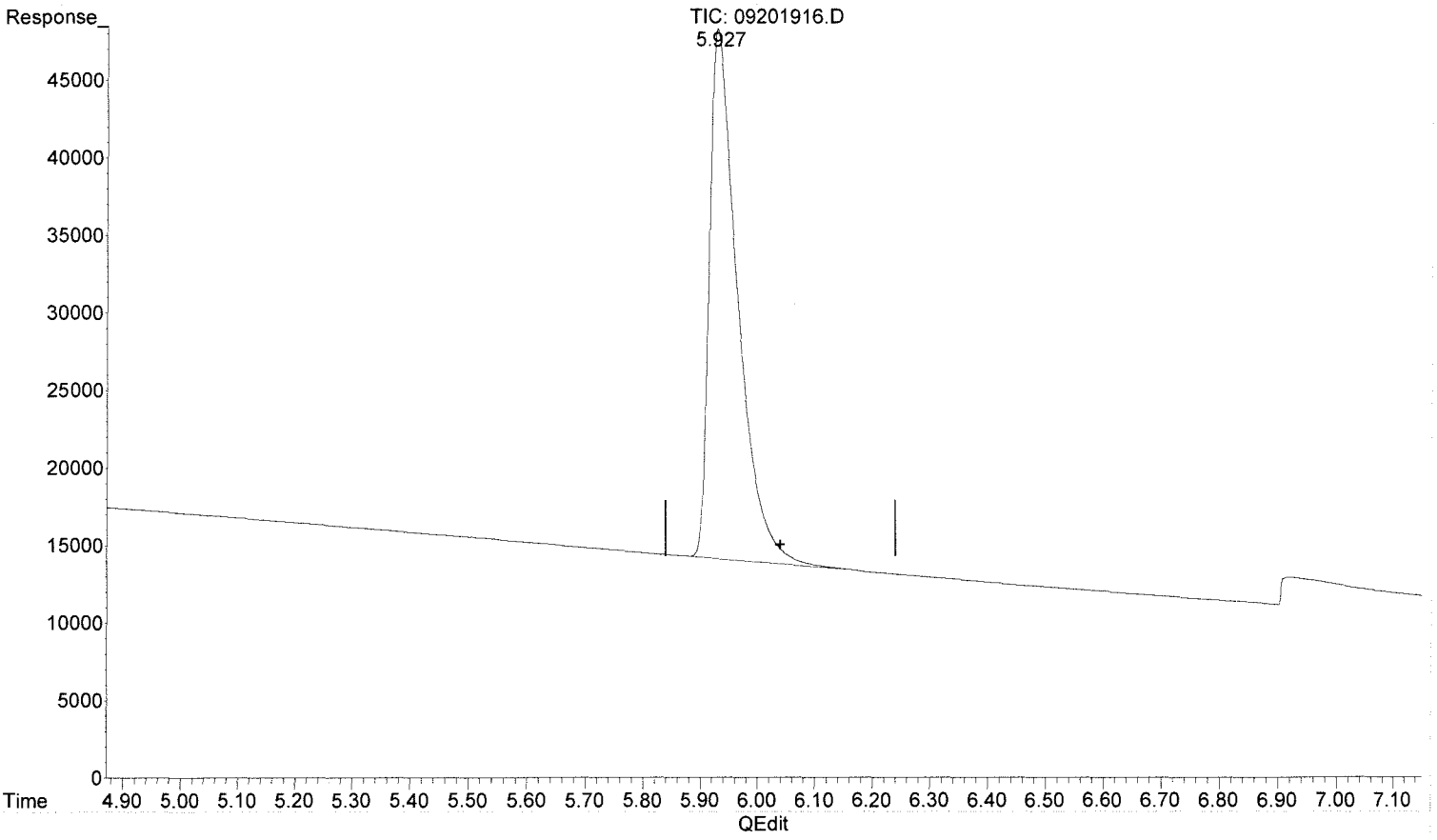




Data Path : J:\GC10\DATA\RSK_TCD\2019_09\20\
Data File : 09201916.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 20-Sep-2019, 16:43:12
Operator : WH
Sample : std s32-06271901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 20 16:57:36 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(4) Carbon dioxide

5.927min 5023.543 ppm m

response 1179172

MR 9/25/19

(+) = Expected Retention Time

Injection Log

Directory: I:\GC10\DATA\RSK_FID\2017_08\29\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	29-Aug-17, 07:58:00	08291701.D	std s30-06161601		MC	RSKBOTH.M	Pass
2	29-Aug-17, 08:11:02	08291702.D	mb 0.5ml		MC	RSKBOTH.M	Pass
3	29-Aug-17, 08:24:13	08291703.D	4089-001 0.5ml		MC	RSKBOTH.M	
4	29-Aug-17, 08:39:29	08291704.D	4089-002 0.5ml		MC	RSKBOTH.M	
5	29-Aug-17, 08:53:38	08291705.D	4089-003 0.5ml		MC	RSKBOTH.M	
6	29-Aug-17, 09:33:52	08291706.D	4089-004 0.5ml		MC	RSKBOTH.M	
7	29-Aug-17, 09:50:51	08291707.D	4089-005 0.5ml		MC	RSKBOTH.M	
8	29-Aug-17, 10:07:54	08291708.D	4089-006 0.5ml		MC	RSKBOTH.M	
9	29-Aug-17, 10:42:34	08291709.D	4089-007 0.5ml		MC	RSKBOTH.M	
10	29-Aug-17, 11:06:01	08291710.D	4089-008 0.5ml		MC	RSKBOTH.M	
11	29-Aug-17, 11:23:53	08291711.D	4089-009 0.5ml		MC	RSKBOTH.M	
12	29-Aug-17, 11:37:17	08291712.D	lcs s30-05241604		MC	RSKBOTH.M	Pass
13	29-Aug-17, 11:50:31	08291713.D	lcs s30-05241604		MC	RSKBOTH.M	Pass
14	29-Aug-17, 12:29:45	08291714.D	std s30-06161601		MC	RSKBOTH.M	Pass
15	29-Aug-17, 14:07:01	08291715.D	25ppm s32-08291701 0.25ml		MC	RSKBOTH.M	Curve
16	29-Aug-17, 14:22:12	08291716.D	100ppm s32-08291702 0.2ml		MC	RSKBOTH.M	Curve
17	29-Aug-17, 14:53:00	08291717.D	250ppm s32-08291702 0.5ml		MC	RSKBOTH.M	Curve
18	29-Aug-17, 15:07:43	08291718.D	mls inject		MC	RSKBOTH.M	
19	29-Aug-17, 15:23:21	08291719.D	2500ppm s32-08231701 50ul		MC	RSKBOTH.M	Curve
20	29-Aug-17, 15:44:54	08291720.D	5000ppm s32-08231701 0.1ml		MC	RSKBOTH.M	Curve
21	29-Aug-17, 16:00:09	08291721.D	25000ppm s32-08231701 0.5ml		MC	RSKBOTH.M	Curve
22	29-Aug-17, 16:15:43	08291722.D	mb 0.1ml		MC	RSKBOTH.M	Pass
23	29-Aug-17, 16:35:37	08291723.D	lcv s30-07071701		MC	RSKBOTH.M	Pass

Injection Log

Directory: I:\GC10\DATA\RSK_TCD\2019_09\20\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	20-Sep-19, 12:18:11	09201901.D	std s32-06271901		WH	RSKBOTH.M	
2	20-Sep-19, 12:41:55	09201902.D	RB 0.1ml		WH	RSKBOTH.M	
3	20-Sep-19, 13:13:38	09201903.D	MCS 0.1ml		WH	RSKBOTH.M	
4	20-Sep-19, 13:25:47	09201904.D	xLCS TCD		WH	RSKBOTH.M	
5	20-Sep-19, 14:04:41	09201905.D	LCS TCD		WH	RSKBOTH.M	
6	20-Sep-19, 14:22:48	09201906.D	LCSD TCD		WH	RSKBOTH.M	
7	20-Sep-19, 14:35:21	09201907.D	P1905493-001 50ul		WH	RSKBOTH.M	
8	20-Sep-19, 14:48:38	09201908.D	P1905493-003 50ul		WH	RSKBOTH.M	
9	20-Sep-19, 15:00:21	09201909.D	P1905493-004 50ul		WH	RSKBOTH.M	
10	20-Sep-19, 15:12:45	09201910.D	P1905493-005 50ul		WH	RSKBOTH.M	
11	20-Sep-19, 15:25:11	09201911.D	P1905493-006 50ul		WH	RSKBOTH.M	
12	20-Sep-19, 15:44:22	09201912.D	P1905493-007 50ul		WH	RSKBOTH.M	
13	20-Sep-19, 15:57:00	09201913.D	P1905493-002 50ul		WH	RSKBOTH.M	
14	20-Sep-19, 16:09:38	09201914.D	P1905493-002MS 50ul		WH	RSKBOTH.M	
15	20-Sep-19, 16:22:12	09201915.D	P1905493-002MSD 50ul		WH	RSKBOTH.M	
16	20-Sep-19, 16:43:12	09201916.D	std s32-06271901		WH	RSKBOTH.M	
17	20-Sep-19, 16:59:05	09201917.D	007 50UL		WH	RSKBOTH.M	
18	20-Sep-19, 17:10:43	09201918.D	006 50UL		WH	RSKBOTH.M	
19	20-Sep-19, 17:29:14	09201919.D	std s32-06271901		WH	RSKBOTH.M	

Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191904.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 11:40:59
Operator : WH
Sample : P1905493-001 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 22 12:49:28 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

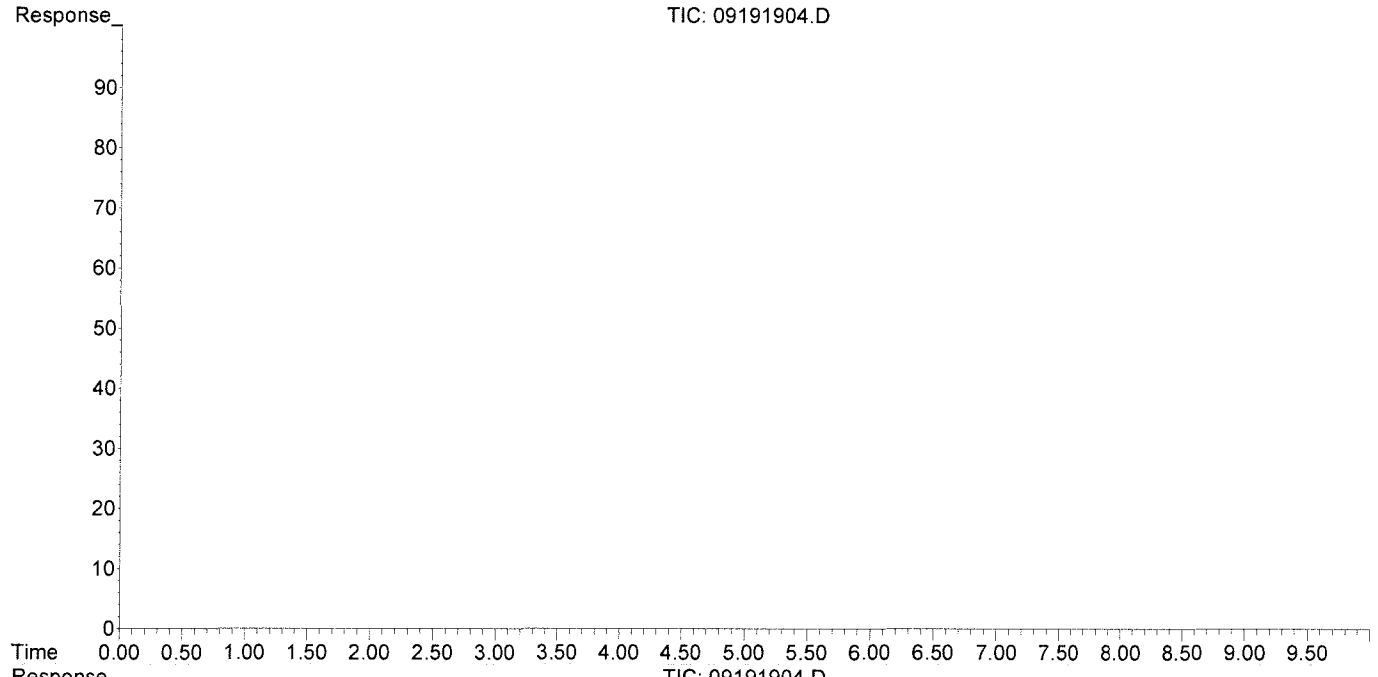
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.115	14375	1.585	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

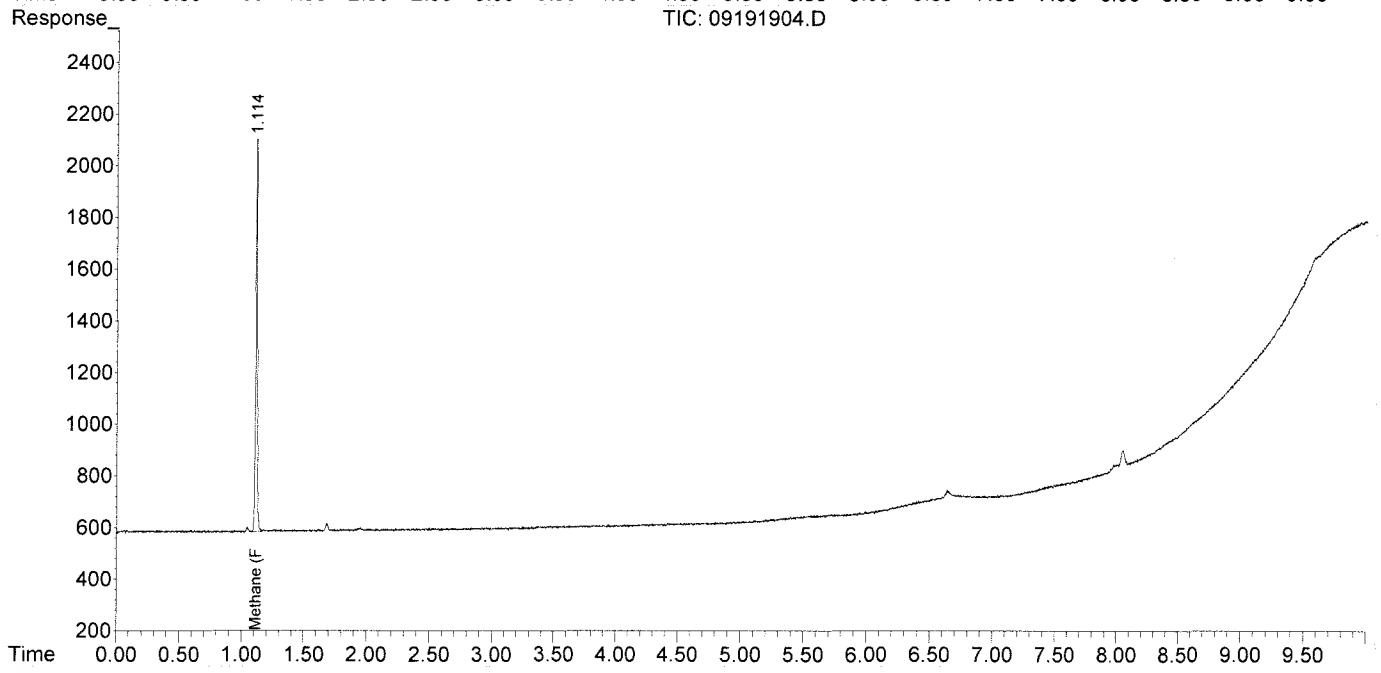
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191904.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 11:40:59
Operator : WH
Sample : P1905493-001 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 22 12:49:28 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191910.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 13:26:25
Operator : WH
Sample : P1905493-002 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 19 14:02:39 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

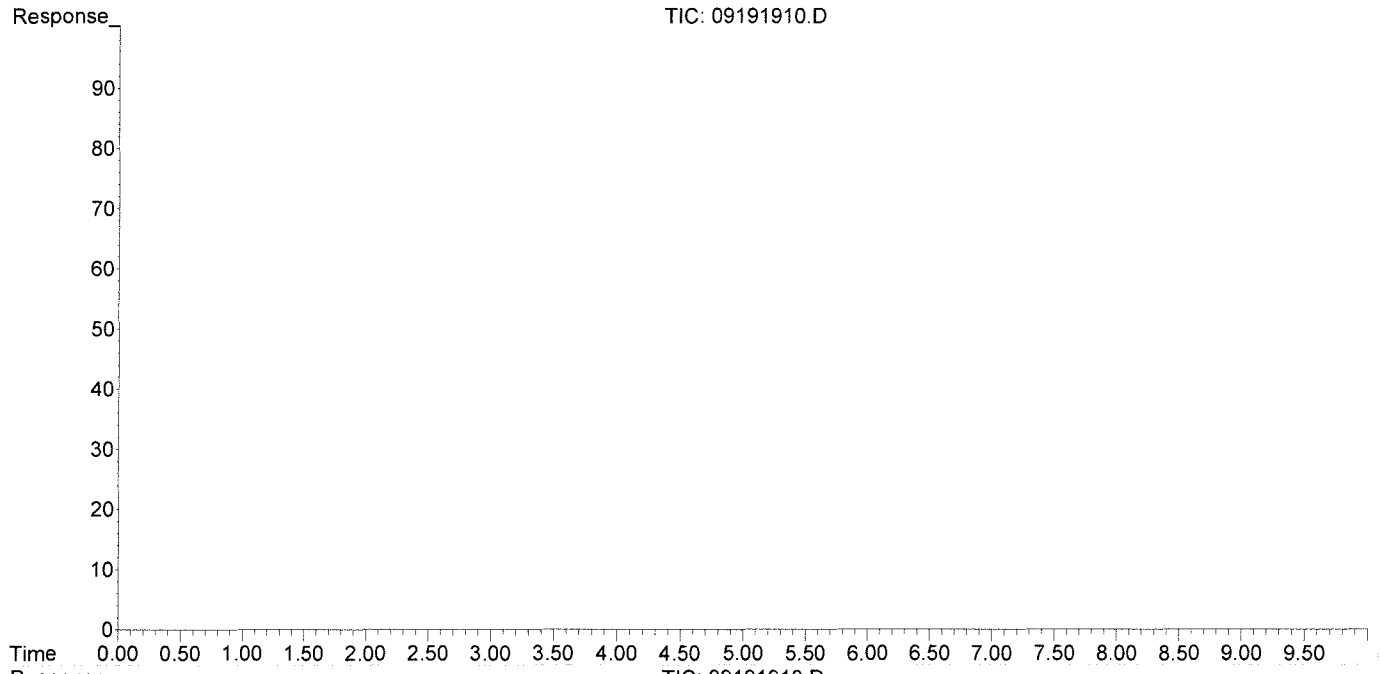
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	0.000	0	N.D.	ppm	
2)	Carbon monoxide	0.000	0	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	
4)	Carbon dioxide	0.000	0	N.D.	ppm	
6)	Methane (FID)	1.115	3039347	335.075	ppm	
7)	Ethylene	1.678	22096	1.320	ppm	
8)	Ethane	1.943	1104	0.065	ppm	m
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	6.204	4861	745.704	ppm	
12)	Isobutane	6.630f	36954	1.388	ppm	
13)	n-Butane	6.630f	36954	1.388	ppm	

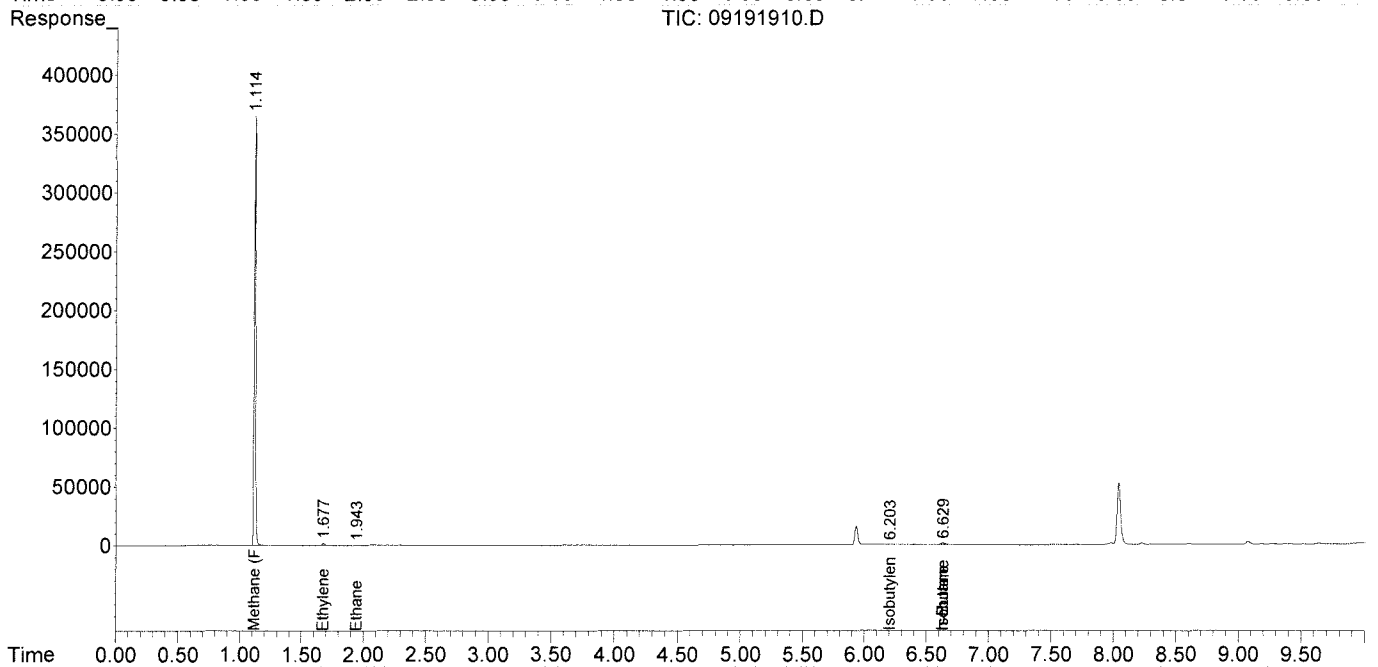
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191910.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 13:26:25
Operator : WH
Sample : P1905493-002 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 19 14:02:39 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

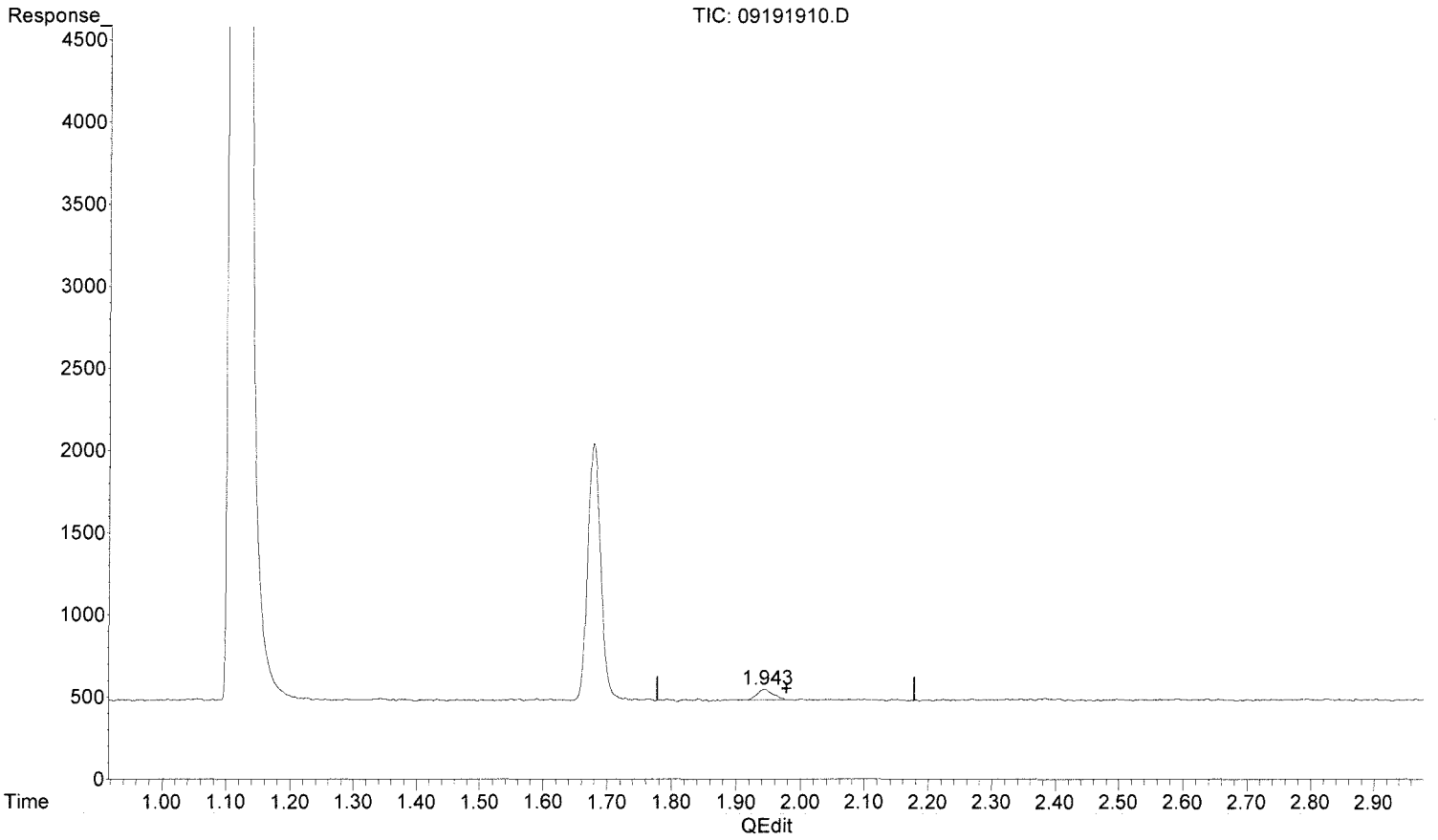




Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191910.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 13:26:25
Operator : WH
Sample : P1905493-002 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 19 14:02:39 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(8) Ethane

1.943min 0.065 ppm m

response 1104

MR 9/25/19

(+) = Expected Retention Time

Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191905.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 12:02:04
Operator : WH
Sample : P1905493-003 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 22 12:50:11 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

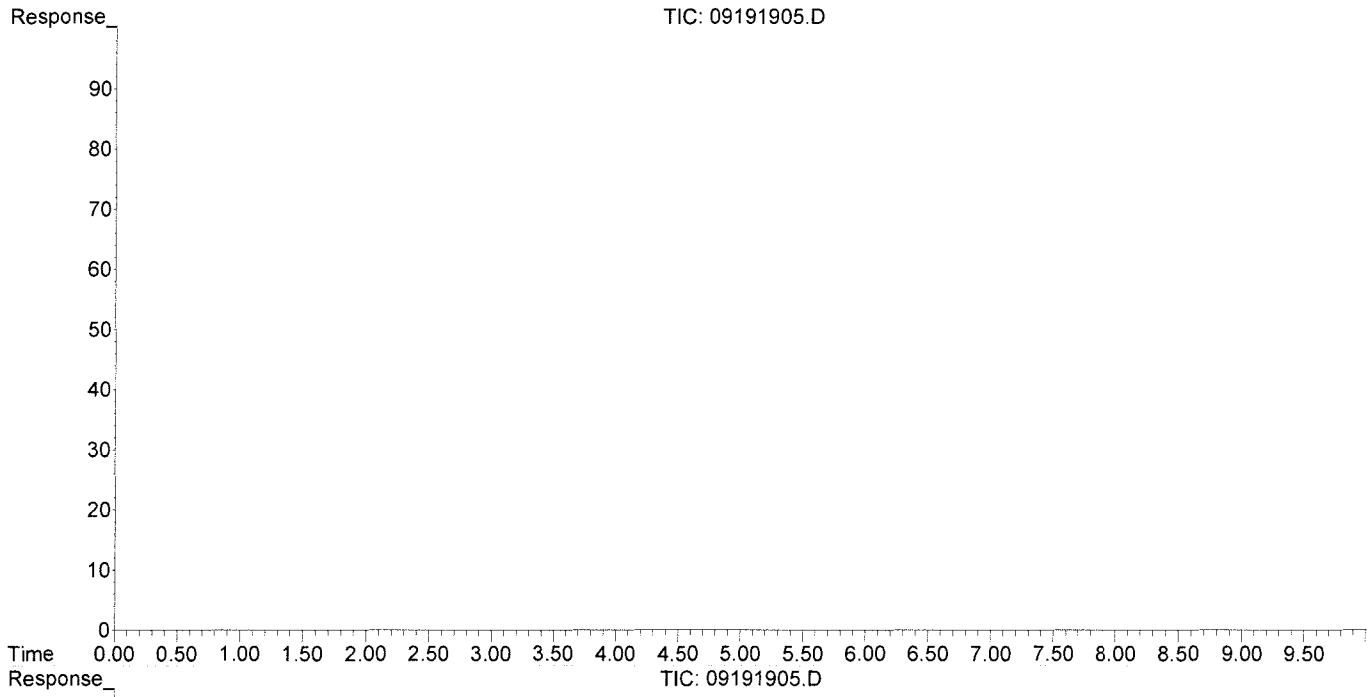
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	0.000	0	N.D.	ppm	
2)	Carbon monoxide	0.000	0	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	
4)	Carbon dioxide	0.000	0	N.D.	ppm	
6)	Methane (FID)	1.118	1128270	124.387	ppm	
7)	Ethylene	1.684	22851	1.366	ppm	
8)	Ethane	1.948	880	0.052	ppm	m
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	6.217	3965	608.257	ppm	
12)	Isobutane	6.635f	41138	1.546	ppm	
13)	n-Butane	6.635f	41138	1.546	ppm	

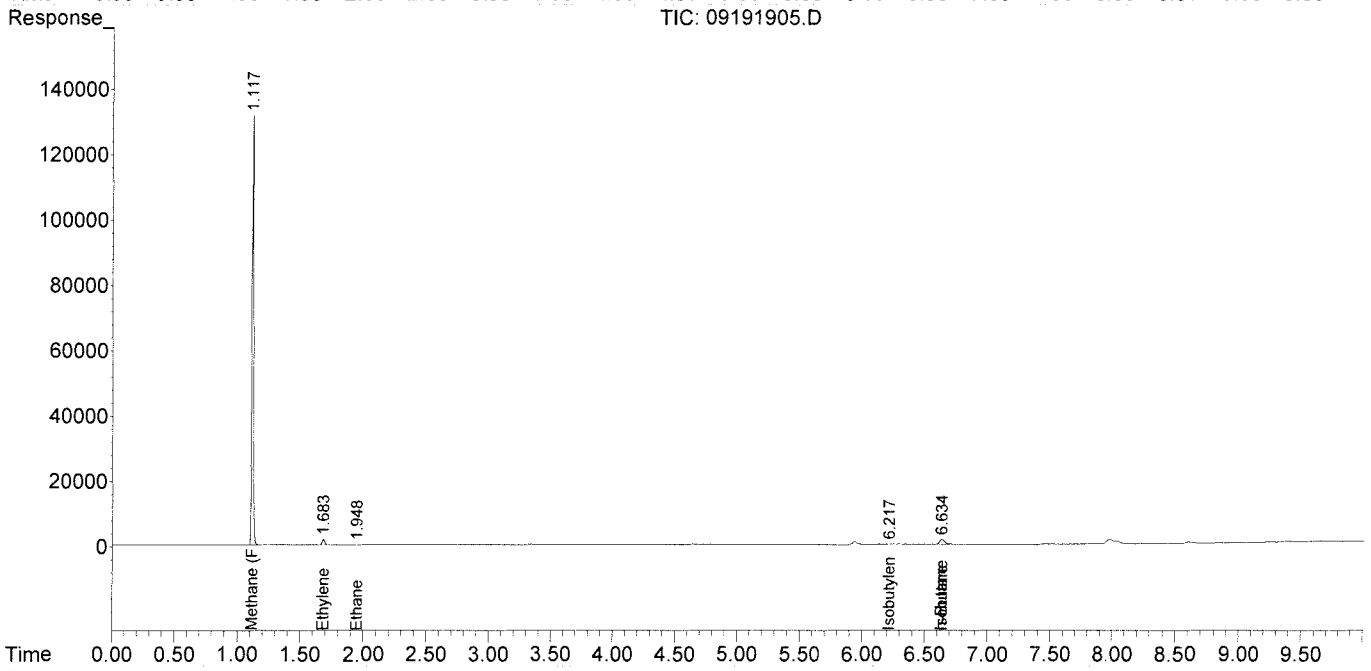
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191905.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 12:02:04
Operator : WH
Sample : P1905493-003 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 22 12:50:11 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

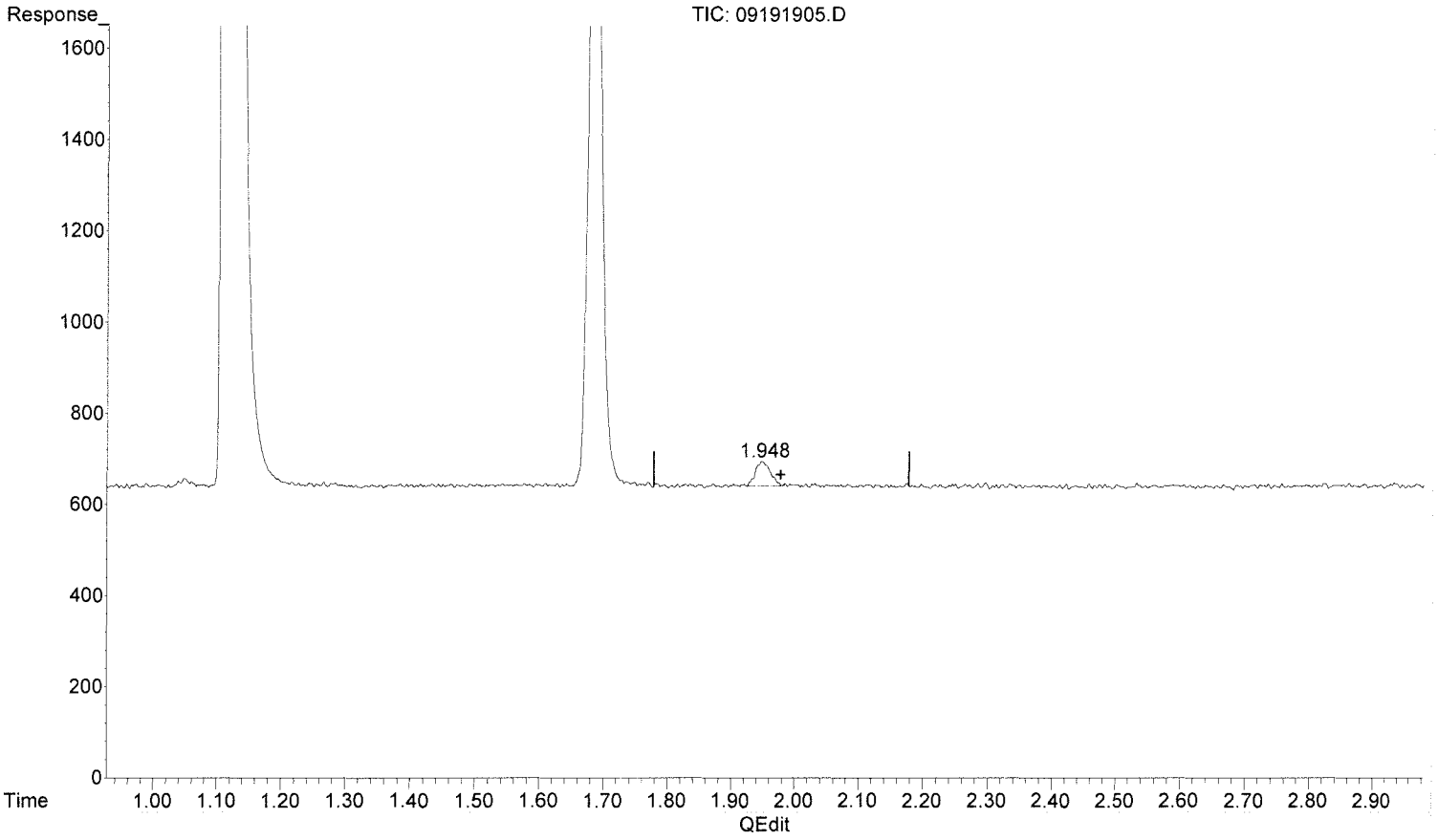




Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191905.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 12:02:04
Operator : WH
Sample : P1905493-003 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 22 12:50:11 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(8) Ethane

1.948min 0.052 ppm m

response 880

NR 9/25/19

WW 9/25/19 MP no previous

(+) = Expected Retention Time

Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191906.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 12:14:41
Operator : WH
Sample : P1905493-004 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 22 12:50:15 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

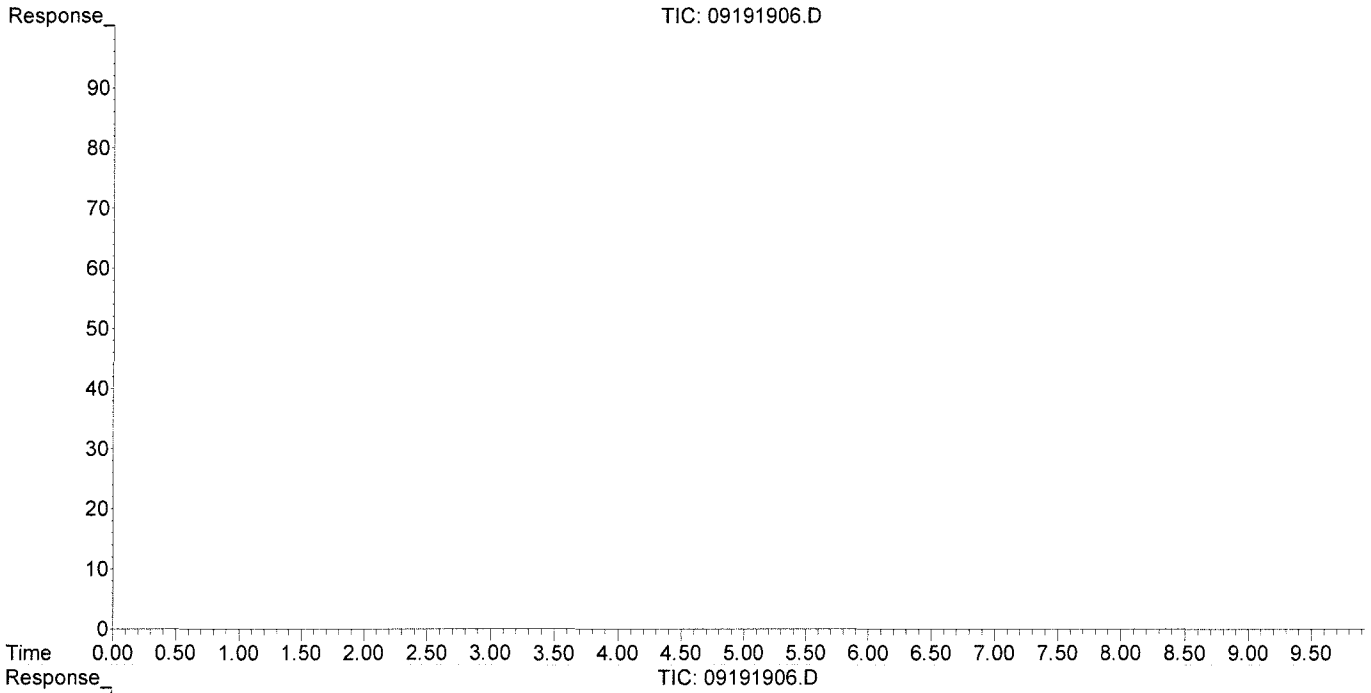
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.115	13628144	1502.445	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

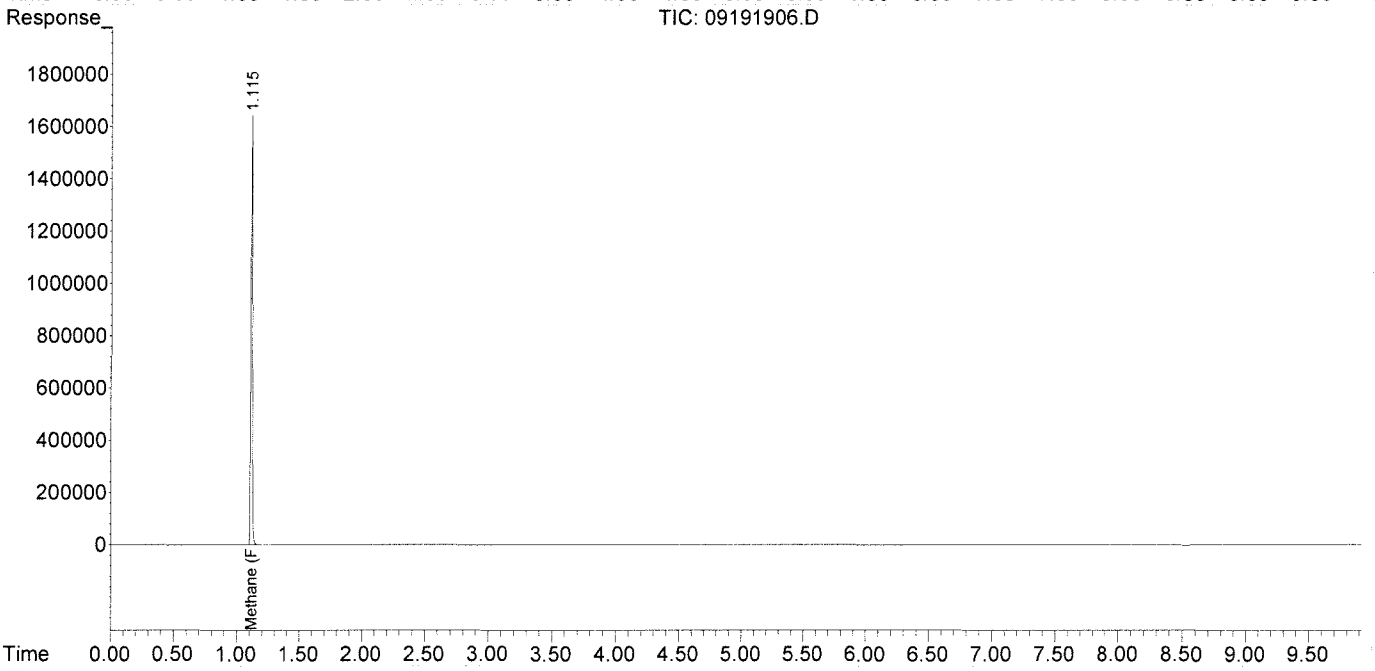
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191906.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 12:14:41
Operator : WH
Sample : P1905493-004 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 22 12:50:15 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191907.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 12:27:19
Operator : WH
Sample : P1905493-005 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 22 12:50:19 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

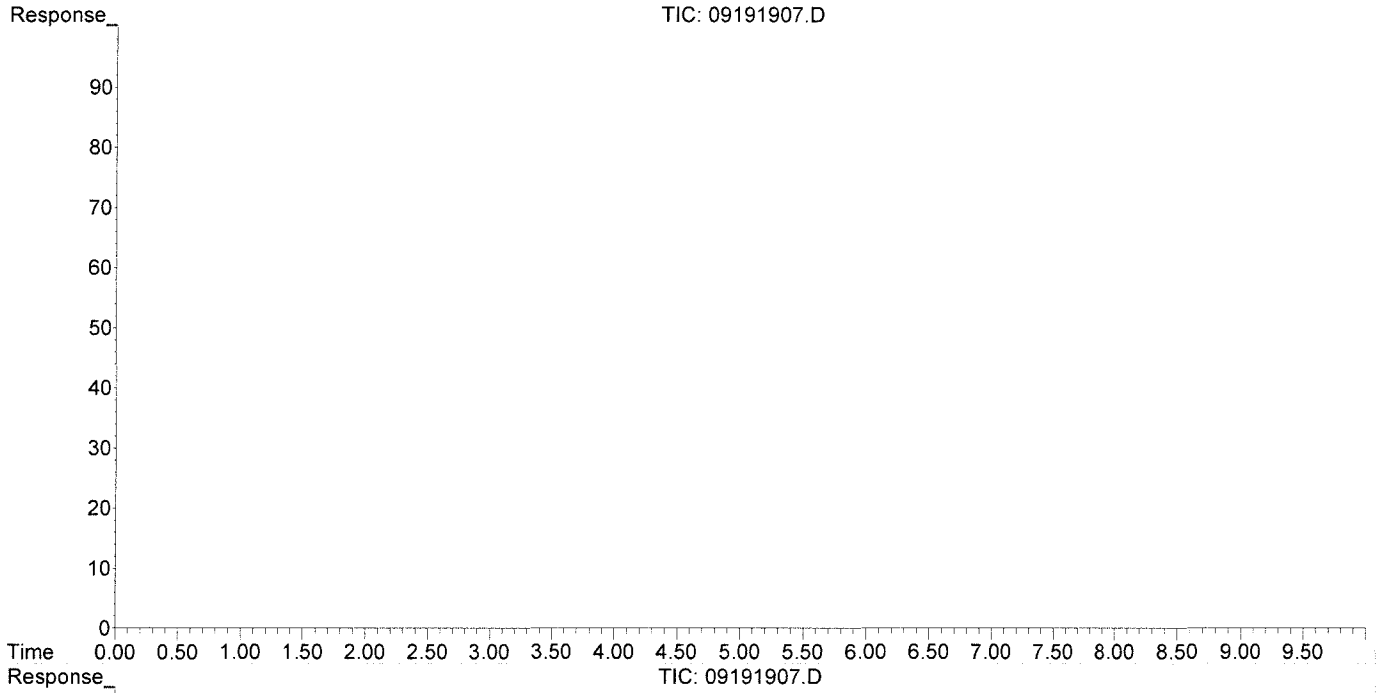
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.114	15809864	1742.971	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

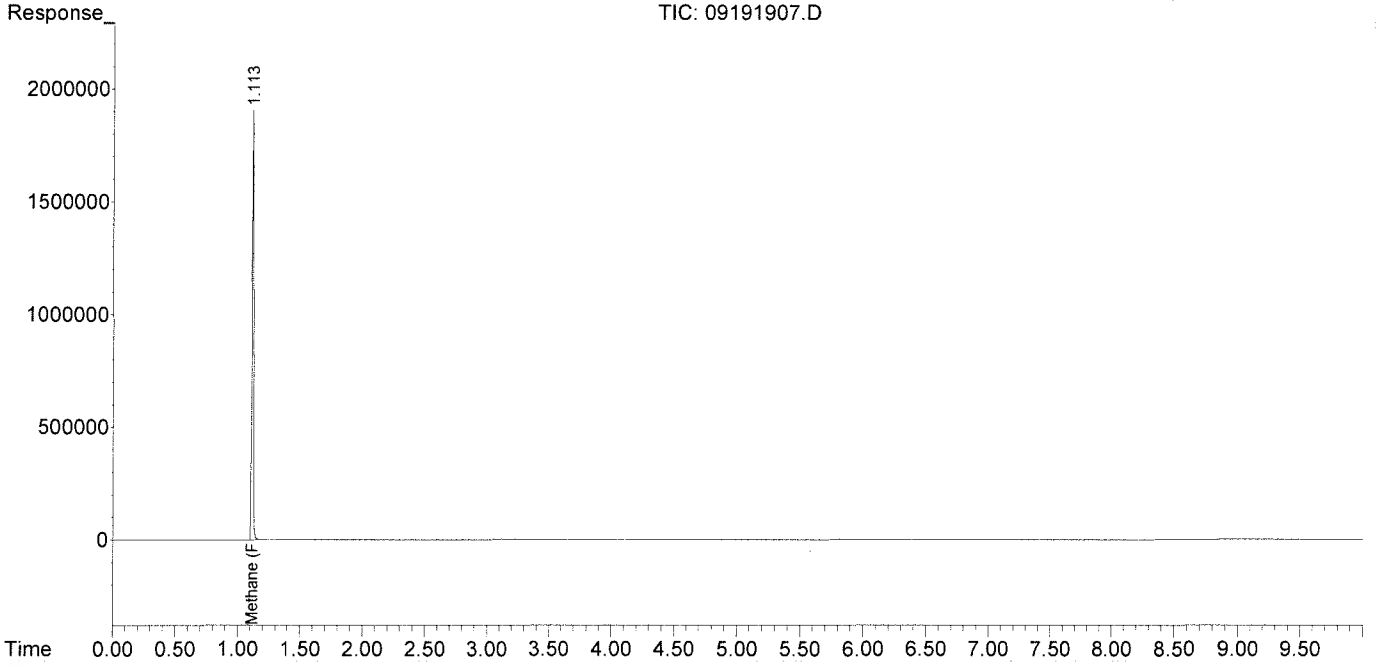
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191907.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 12:27:19
Operator : WH
Sample : P1905493-005 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 22 12:50:19 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191908.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 12:40:48
Operator : WH
Sample : P1905493-006 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 22 12:50:23 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

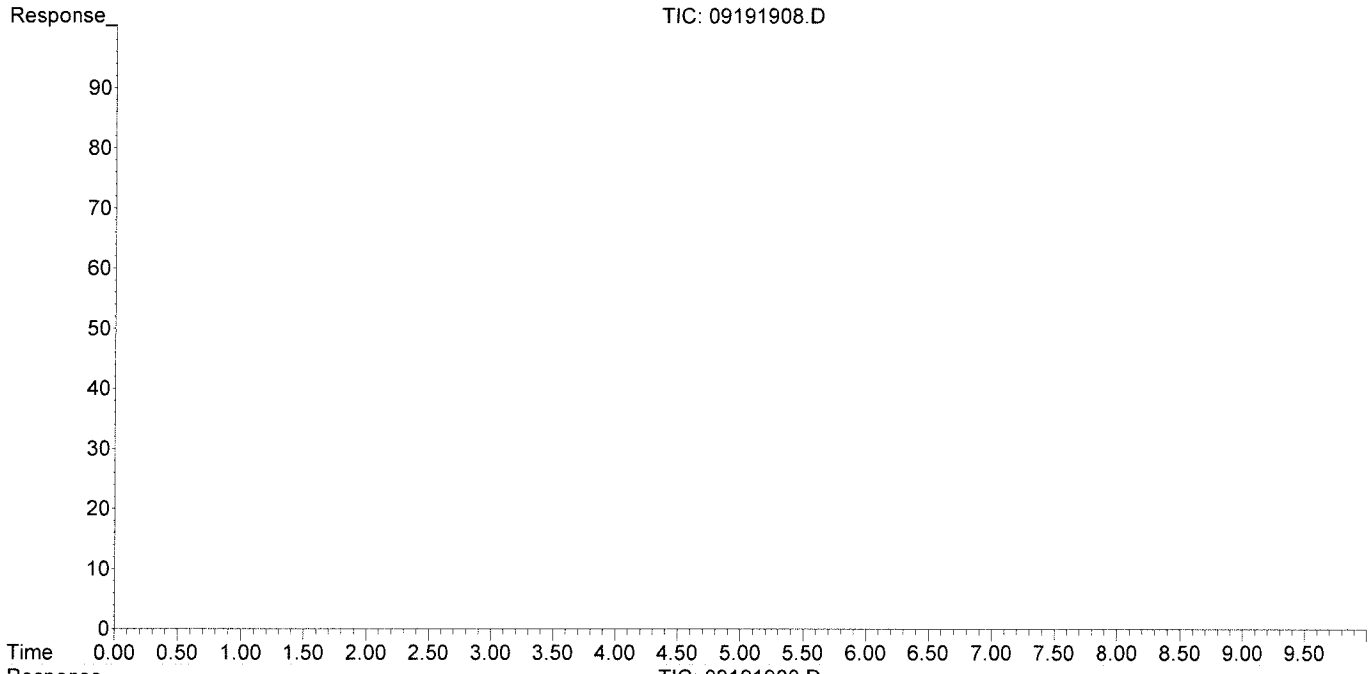
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.117	12775109	1408.402	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

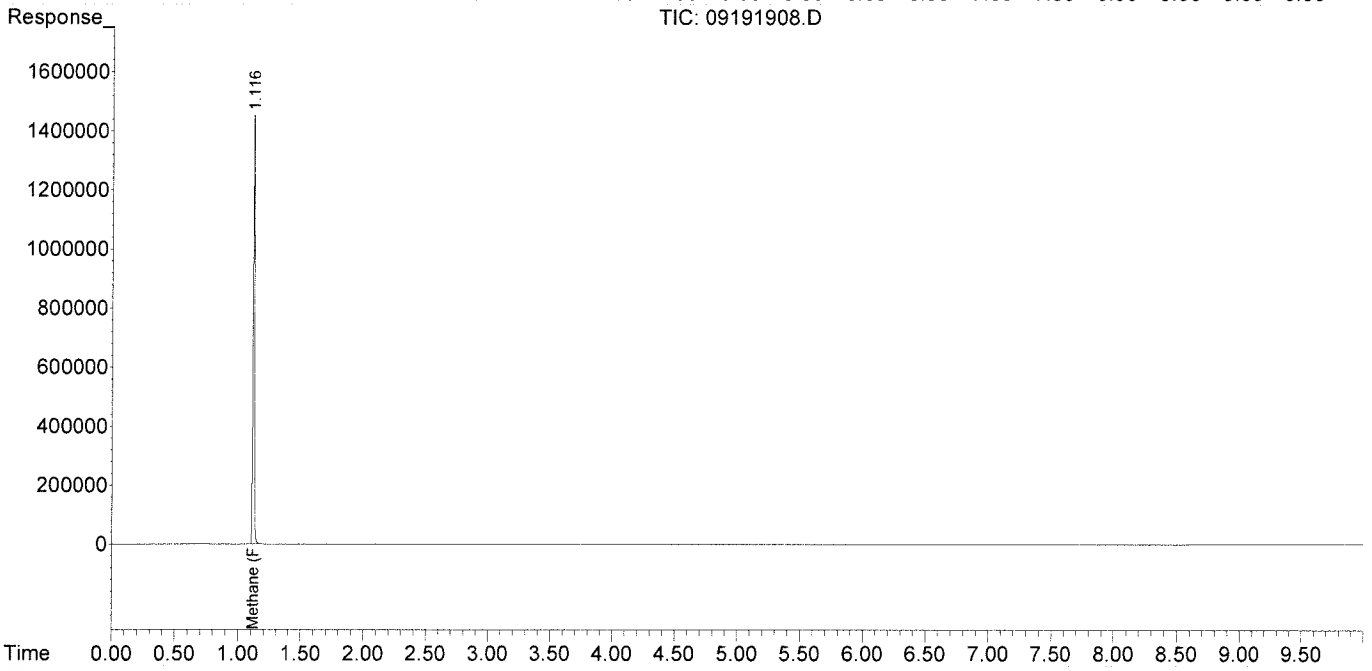
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191908.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 12:40:48
Operator : WH
Sample : P1905493-006 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 22 12:50:23 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191909.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 12:53:45
Operator : WH
Sample : P1905493-007 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 22 12:50:28 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

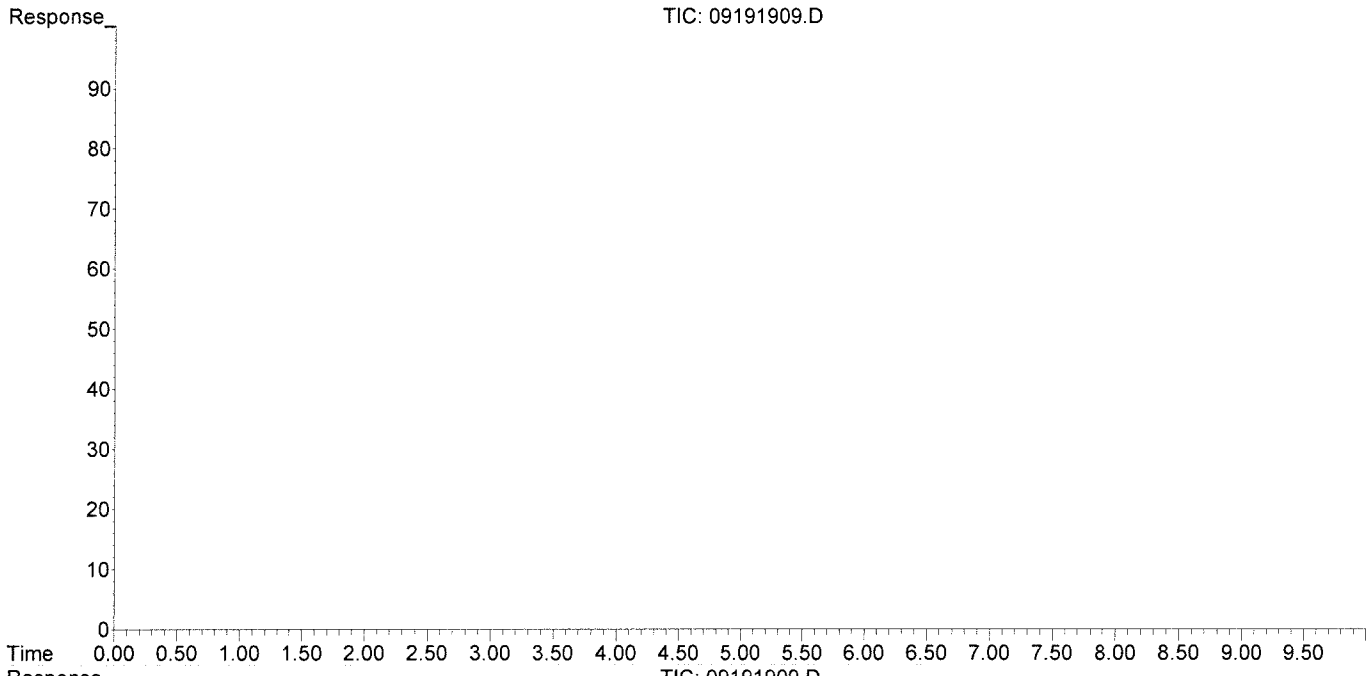
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.114	6291116	693.569	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

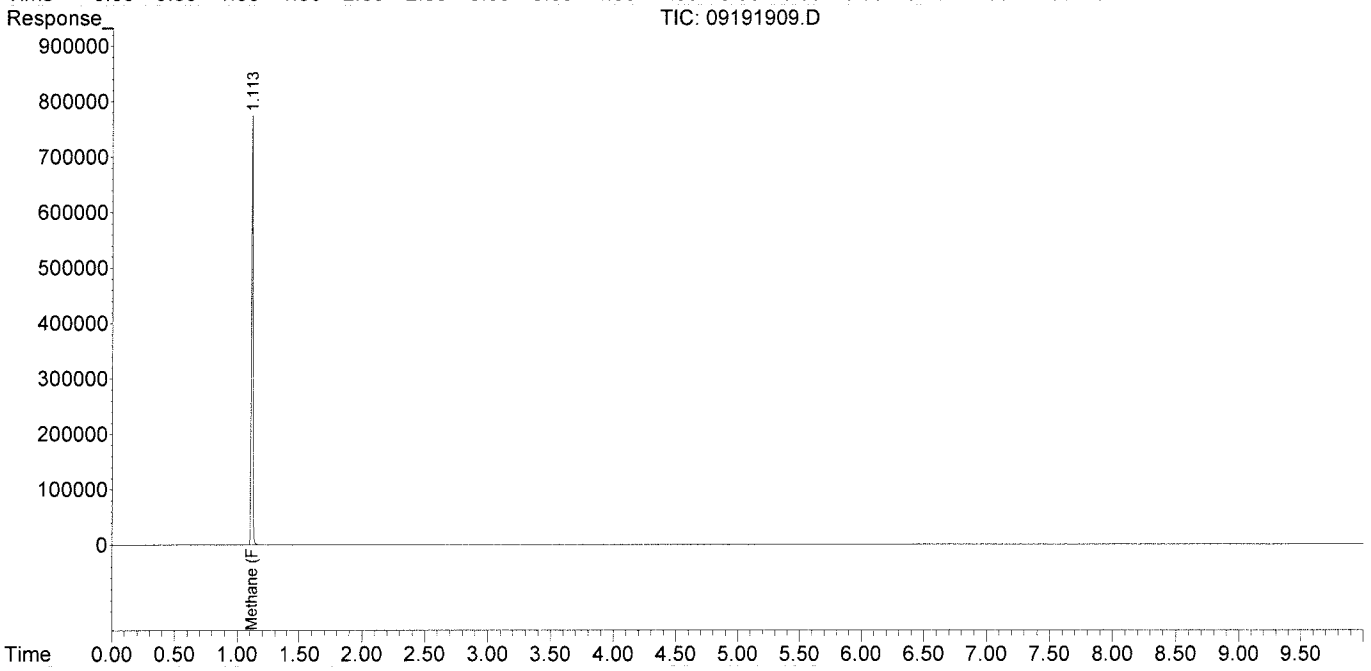
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191909.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 12:53:45
Operator : WH
Sample : P1905493-007 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 22 12:50:28 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191911.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 13:50:38
Operator : WH
Sample : P1905493-002MS 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 19 14:02:49 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

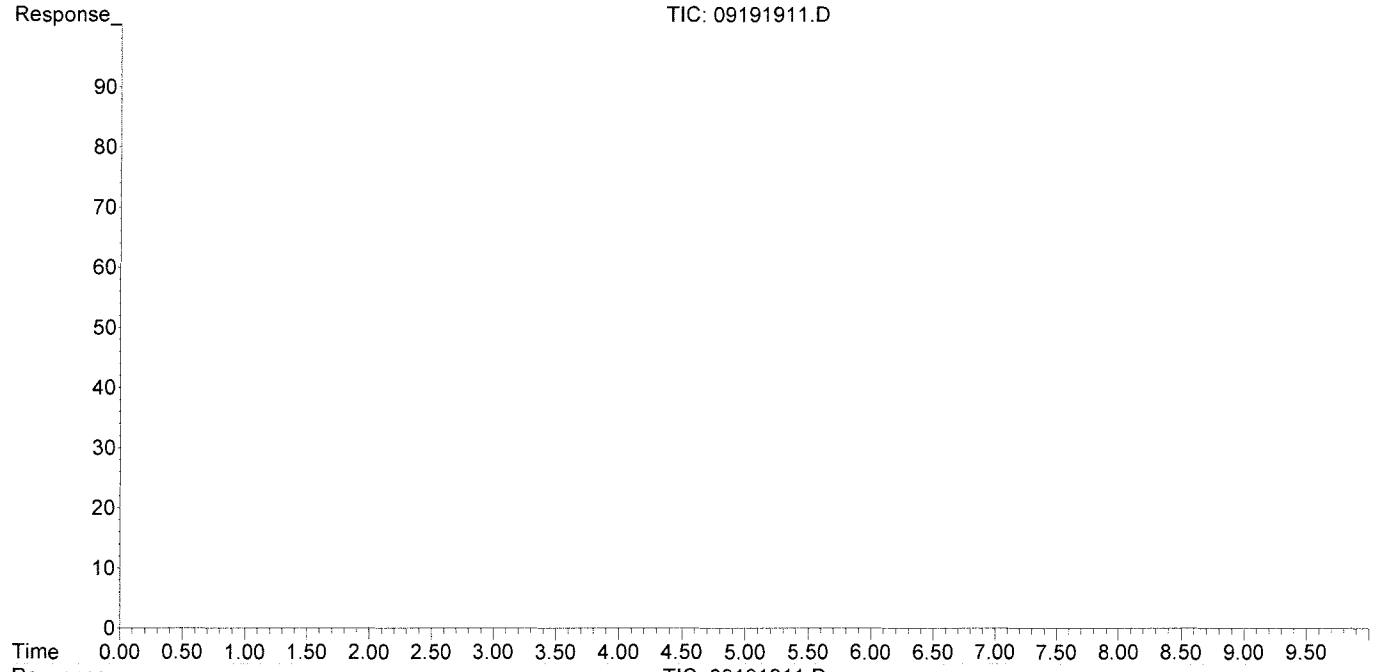
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.116	3237386	356.908	ppm
7)	Ethylene	1.679	962631	57.524	ppm
8)	Ethane	1.942	1089279	64.264	ppm
9)	Propylene	4.302	1354857	57.822	ppm
10)	Propane	4.425	1691464	67.984	ppm
11)	Isobutylene	6.197	3704	568.137	ppm
12)	Isobutane	6.630f	31793	1.194	ppm
13)	n-Butane	6.630f	31793	1.194	ppm

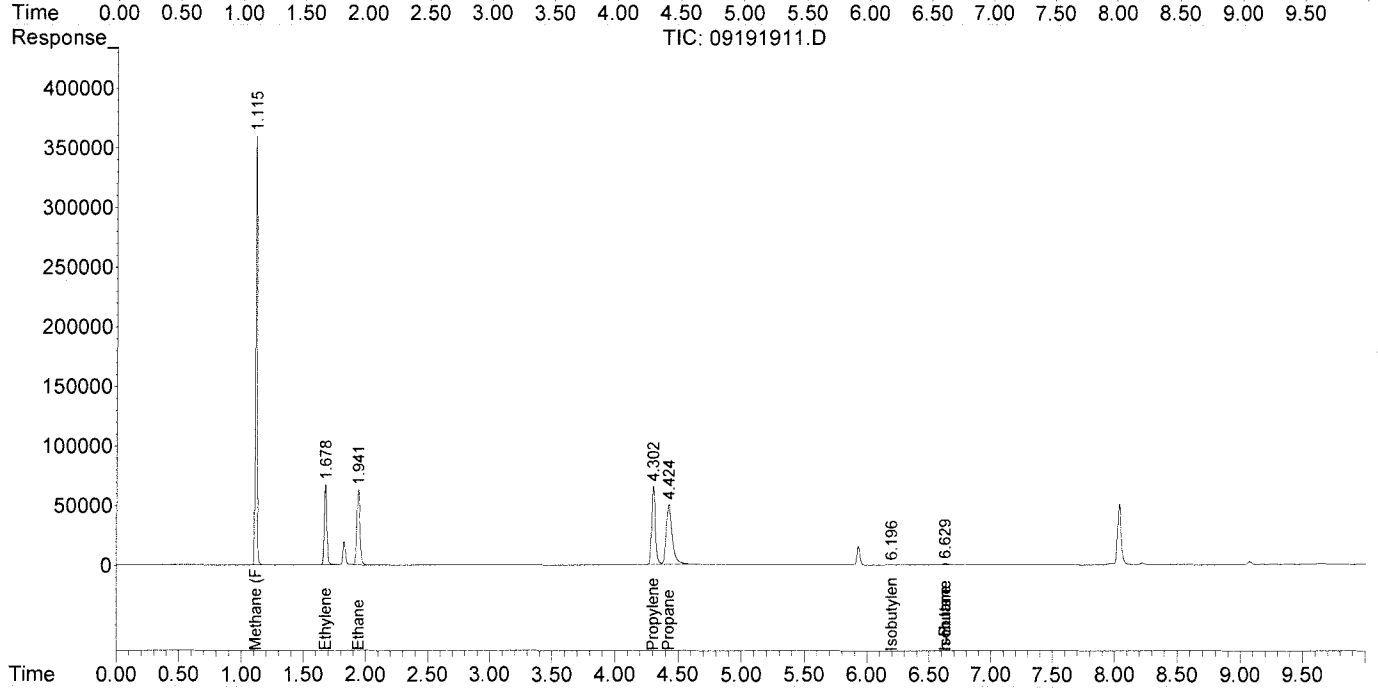
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191911.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 13:50:38
Operator : WH
Sample : P1905493-002MS 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 19 14:02:49 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191912.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 14:04:15
Operator : WH
Sample : P1905493-002MSD 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 19 14:21:57 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

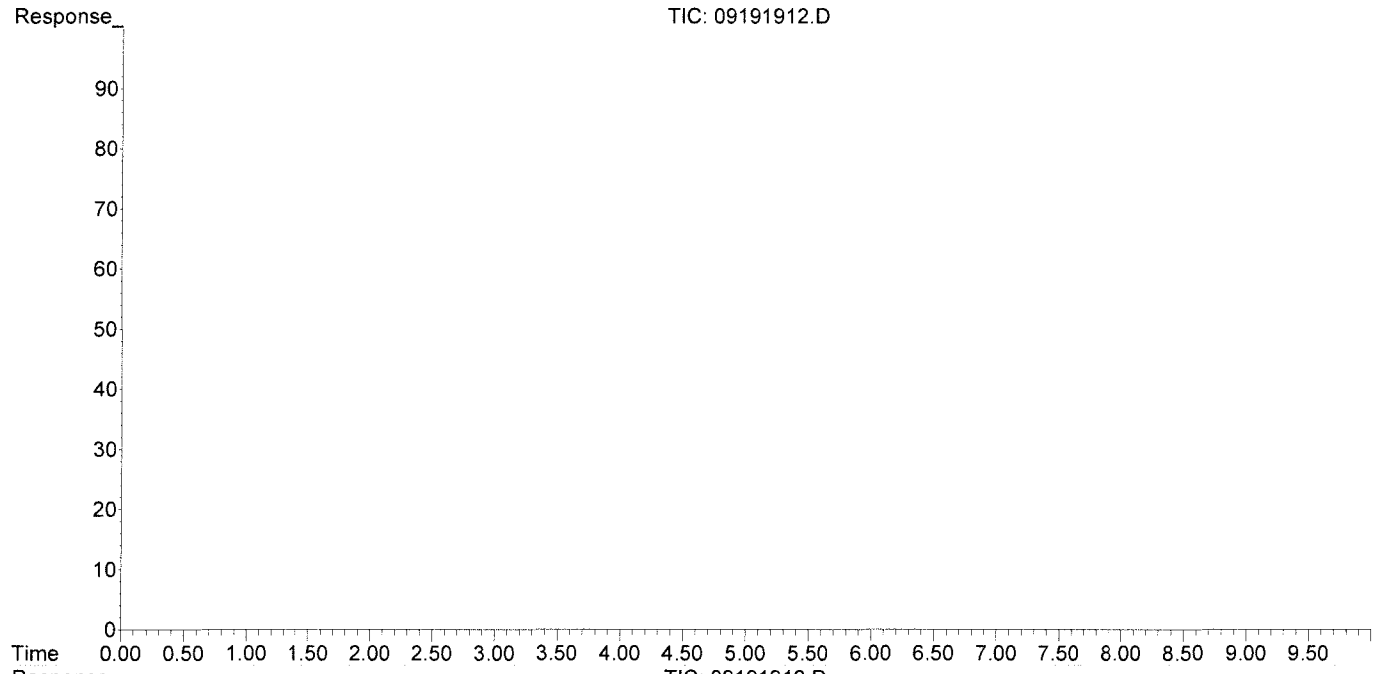
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.115	3018210	332.745	ppm
7)	Ethylene	1.678	899299	53.740	ppm
8)	Ethane	1.943	1017788	60.046	ppm
9)	Propylene	4.307	1267904	54.111	ppm
10)	Propane	4.429	1585351	63.719	ppm
11)	Isobutylene	6.205	3576	548.467	ppm
12)	Isobutane	6.632f	31406	1.180	ppm
13)	n-Butane	6.632f	31406	1.180	ppm

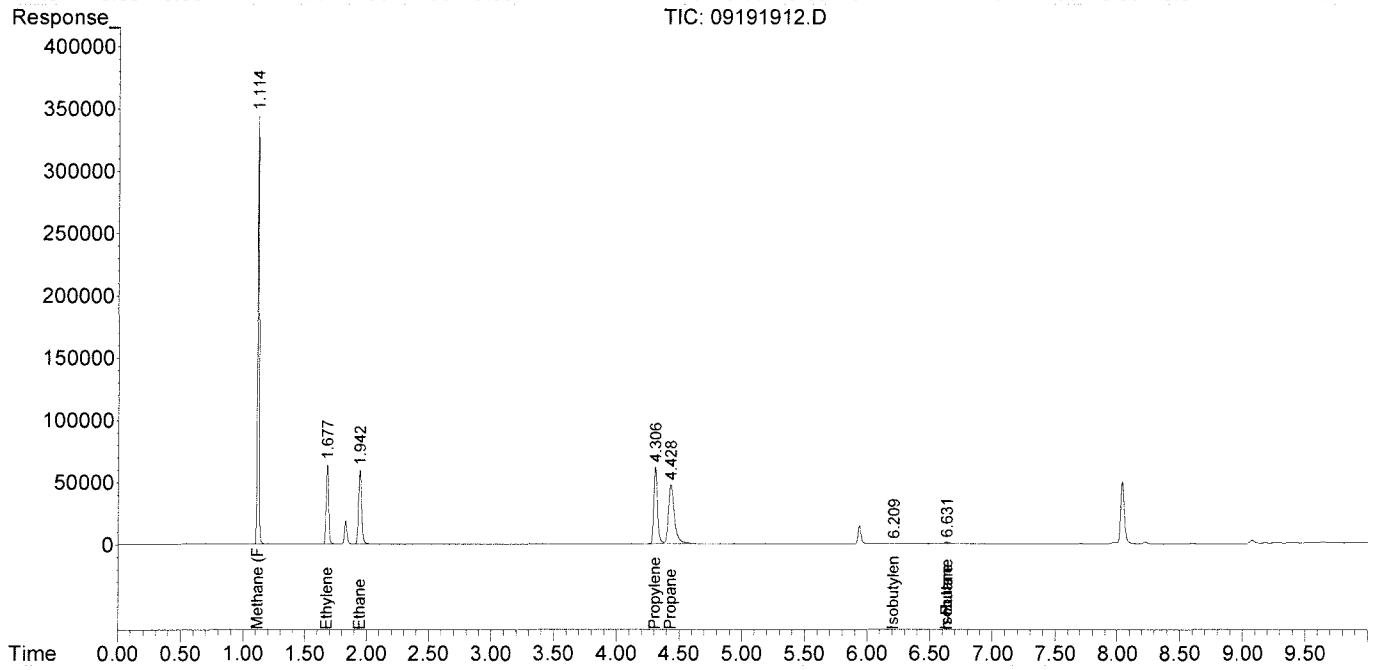
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191912.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 14:04:15
Operator : WH
Sample : P1905493-002MSD 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 19 14:21:57 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191903.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 11:28:04
Operator : WH
Sample : mcs 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 22 12:48:52 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

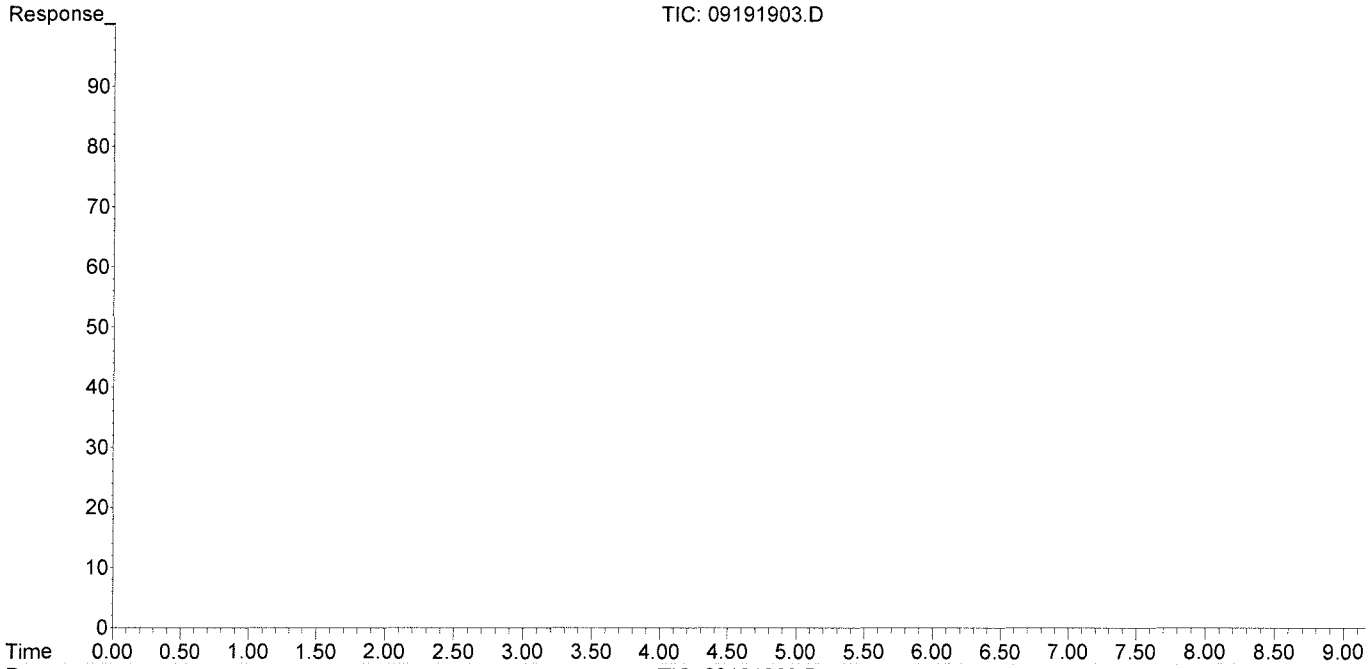
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	0.000	0	N.D.	ppm	
2)	Carbon monoxide	0.000	0	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	
4)	Carbon dioxide	0.000	0	N.D.	ppm	
6)	Methane (FID)	1.123	304	0.034	ppm	m
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

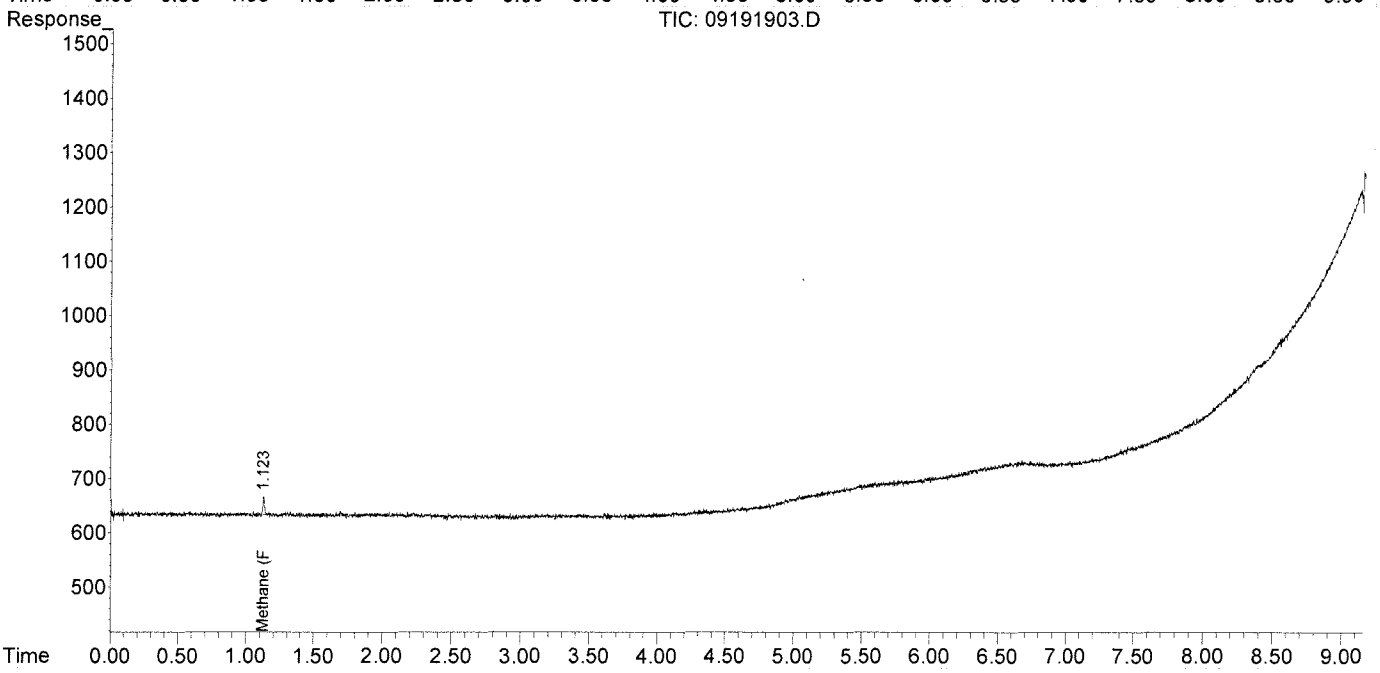
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191903.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 11:28:04
Operator : WH
Sample : mcs 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 22 12:48:52 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

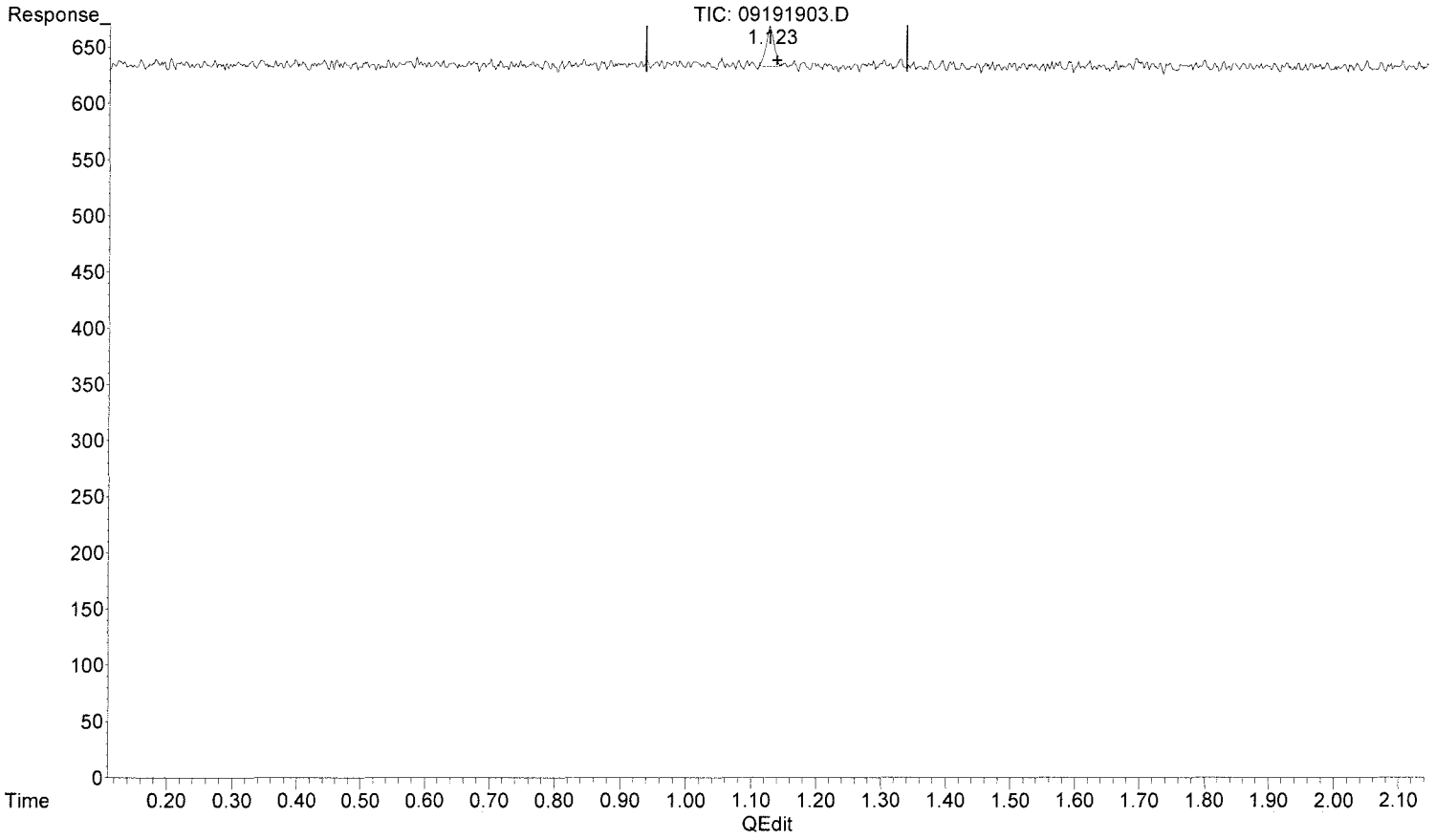




Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191903.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 11:28:04
Operator : WH
Sample : mcs 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 22 12:48:52 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(6) Methane (FID)

1.123min 0.034 ppm m

response 304

MR 9/25/19

[illegible] 9/25/19
mf
no previous

(+) = Expected Retention Time

Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191913.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 14:21:20
Operator : WH
Sample : LCS FID
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 19 14:40:01 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

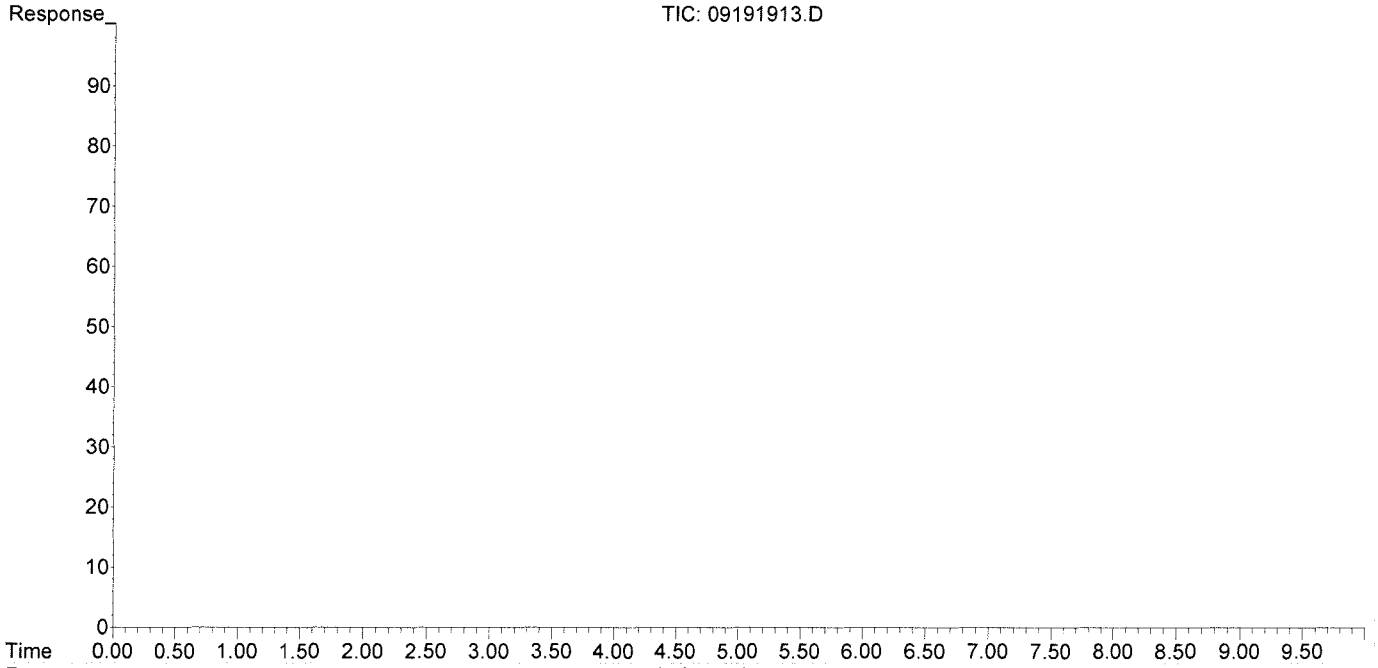
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.118	12617	1.391	ppm
7)	Ethylene	1.684	18991	1.135	ppm
8)	Ethane	1.948	21655	1.278	ppm
9)	Propylene	4.311	25552	1.090	ppm
10)	Propane	4.433	31795	1.278	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	6.633f	41844	1.572	ppm
13)	n-Butane	6.633f	41844	1.572	ppm

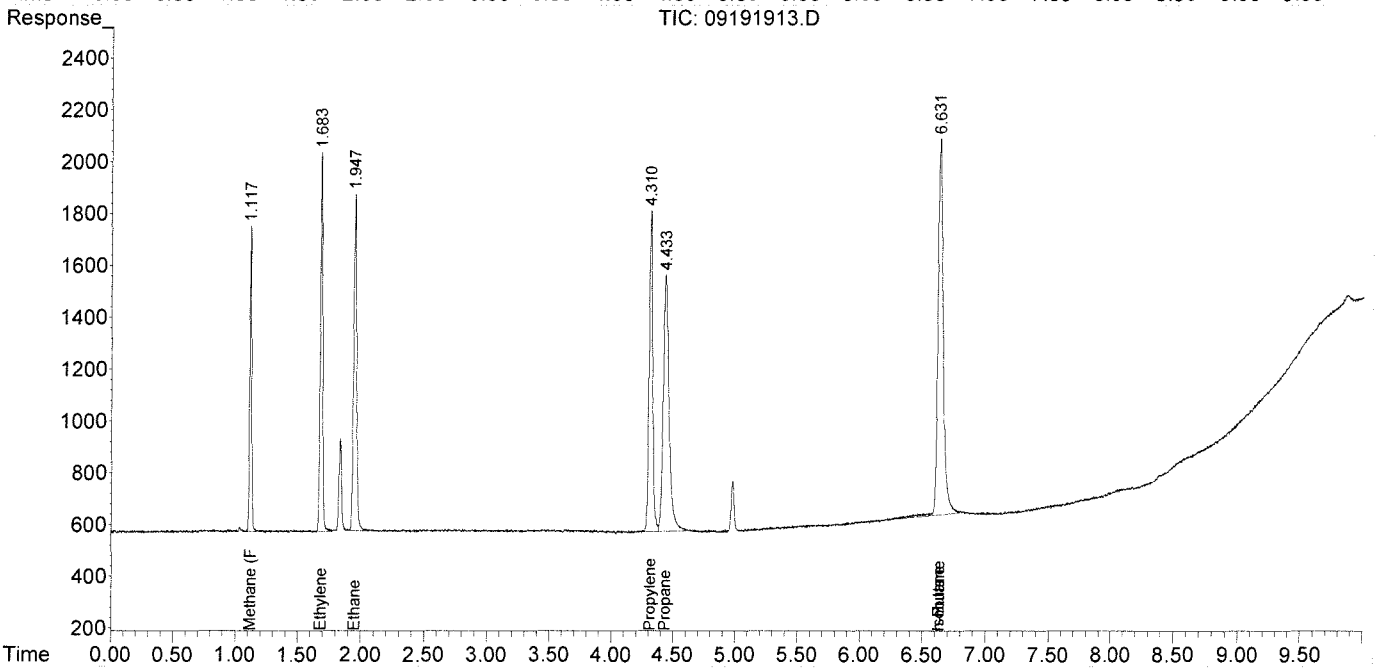
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191913.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 14:21:20
Operator : WH
Sample : LCS FID
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 19 14:40:01 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191914.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 14:38:42
Operator : WH
Sample : LCSD FID
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 19 14:54:51 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

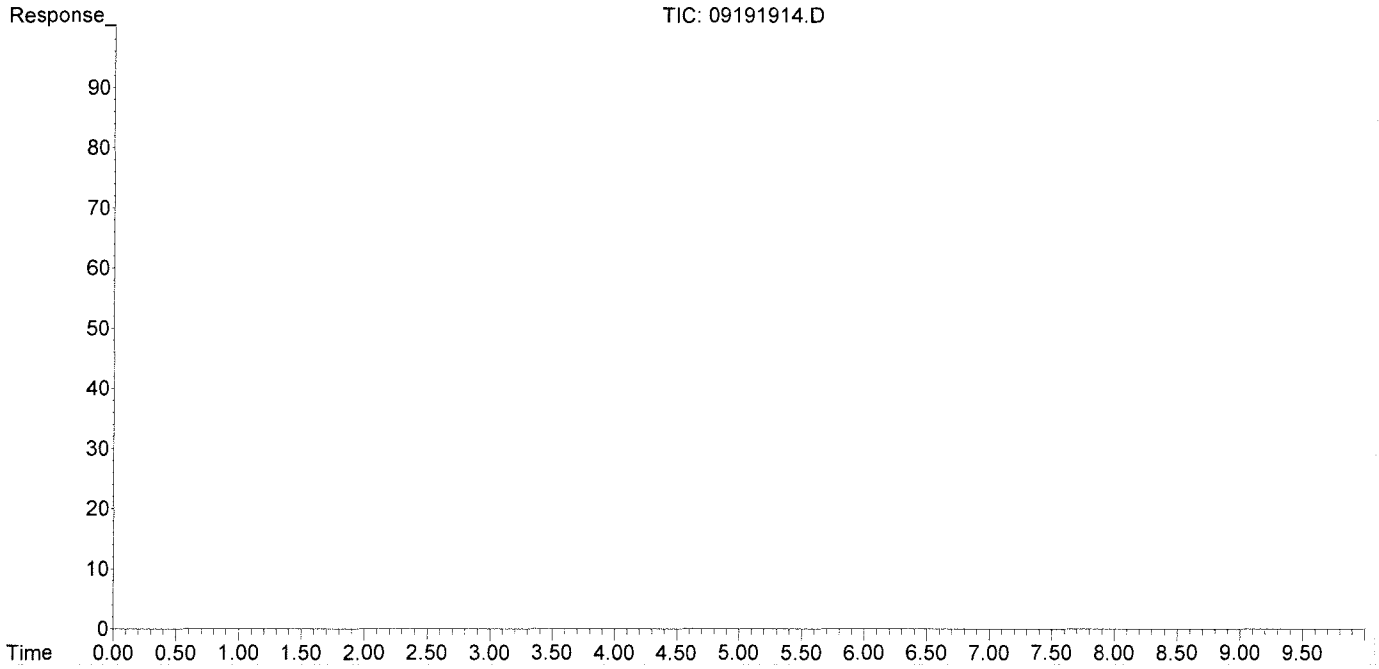
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.118	12333	1.360	ppm
7)	Ethylene	1.684	18581	1.110	ppm
8)	Ethane	1.948	21464	1.266	ppm
9)	Propylene	4.310	25576	1.092	ppm
10)	Propane	4.431	32275	1.297	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	6.631f	42525	1.598	ppm
13)	n-Butane	6.631f	42525	1.598	ppm

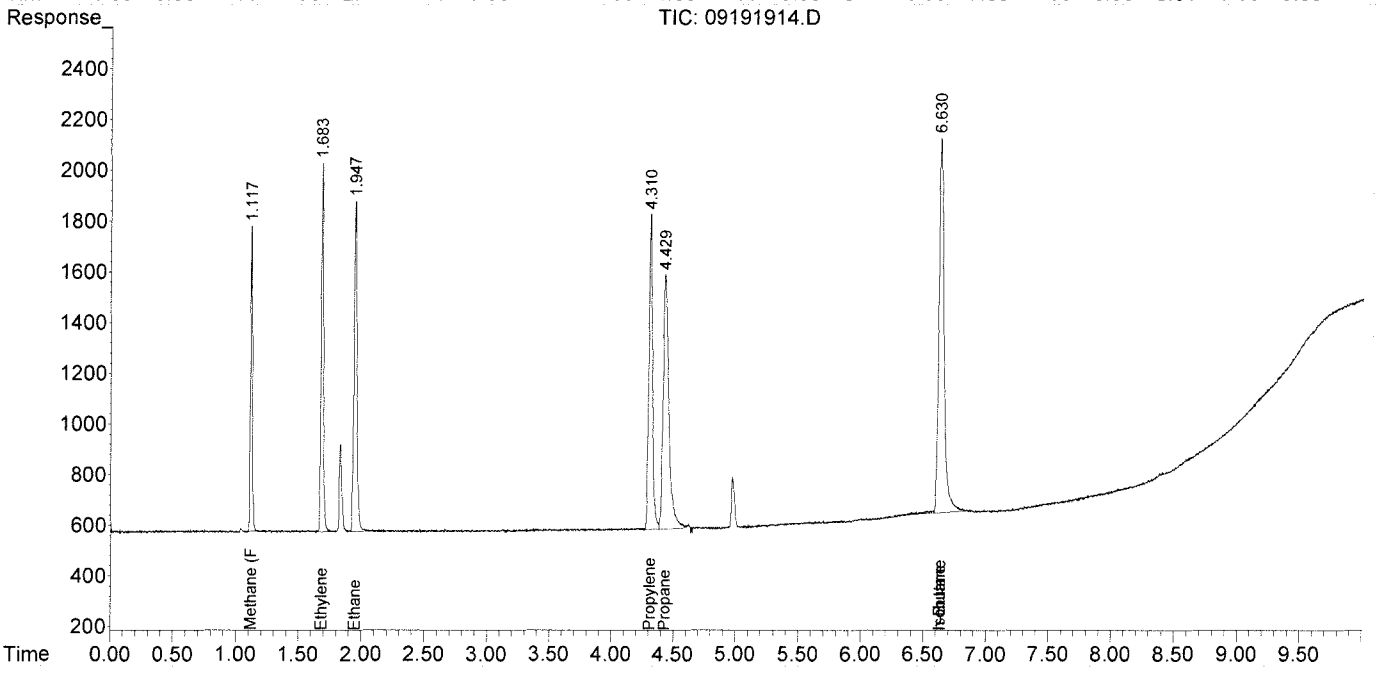
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191914.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 14:38:42
Operator : WH
Sample : LCSD FID
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 19 14:54:51 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Response Factor Report HP5890

Method Path : J:\GC10\METHODS\
Method File : RS091217_R.M
Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
Last Update : Wed Sep 13 11:14:47 2017
Response Via : Initial Calibration

Calibration Files
1 =09121702.D 2 =09121703.D 3 =09121704.D
4 =09121705.D 5 =09121706.D 6 =09121707.D

	Compound	1	2	3	4	5	6	Avg		%RSD
1)	Oxygen/Argon	3.739		1.014			0.001	0.793	E6	189.17
2)	Carbon monoxide	3.739		1.014			0.001	0.594	E6	221.92
3)	Methane (TCD)						2.161	0.951	E2	106.37
4)	Carbon dioxide	2.365	2.569	2.558	2.361	2.459	2.314	2.438	E2	4.44

Signal #2 Calibration Files
1 =09121702.D 2 =09121703.D 3 =09121704.D
4 =09121705.D 5 =09121706.D 6 =09121707.D

	Compound	1	2	3	4	5	6	Avg		%RSD
6)	Methane (FID)		1.180	0.975	0.908	0.870	0.868	0.907	E4	11.66
7)	Ethylene	1.736	1.638	1.780	1.720	1.628	1.670	1.673	E4	3.90
8)	Ethane	1.781	1.676	1.784	1.730	1.692	1.675	1.695	E4	3.83
9)	Propylene	2.505	2.296	2.592	2.480	2.346	2.252	2.343	E4	6.56
10)	Propane	2.439	2.283	2.645	2.555	2.433	2.522	2.488	E4	4.20
11)	Isobutylene							0.652	E1	138.46
12)	Isobutane	6.058	4.793	2.214	1.553	1.353		2.662	E4	86.17
13)	n-Butane	6.058	4.793	2.214	1.553	1.353		2.662	E4	86.17

(#) = Out of Range ### Number of calibration levels exceeded format ###

RS091217_R.M Wed Sep 13 15:11:48 2017

Edit Compounds -- Compound #6 -- Methane (FID)

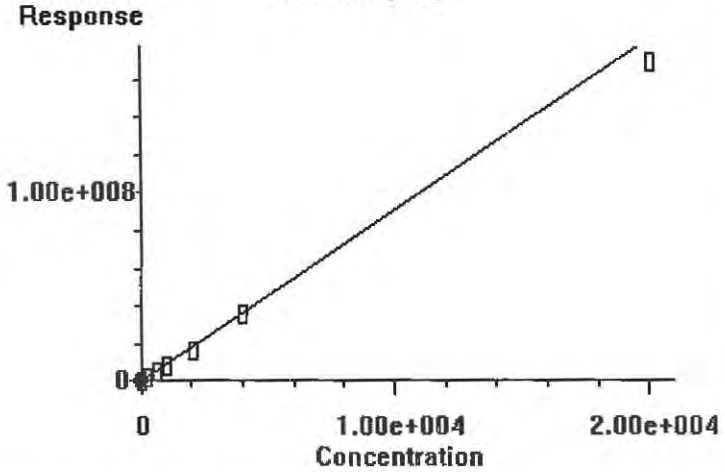
Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compoun
  - Oxygen/Argon
  - Carbon monoxide
  - Methane (TCD)
  - Carbon dioxide
  - Signal #2
  - Methane (FID)
  - Ethylene
  - Ethane
  - Propylene
  - Propane
  - Isobutylene
  - Isobutane
  - n-Butane

Identification | Calibration | User-Defined | Advanced | Reporting

Lvl ID	Concentration	Response
1	0.151000	
2	0.302000	3564.400000
3	1.510000	14725.268625
4	4.530000	41128.575000
5	10.570000	91966.784531
6	200.000000	1735997.497500
7	600.000000	5189848.900000
8	1000.000000	8598533.570000
9	2000.000000	16098209.390000
10	4000.000000	35776839.311362
11	20000.000000	169009160.49199

Methane (FID)



0.000e+000	Quadratic term
9.071e+003	Linear term
0.000e+000	Constant term
11.657%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

Edit Compounds -- Compound #7 -- Ethylene

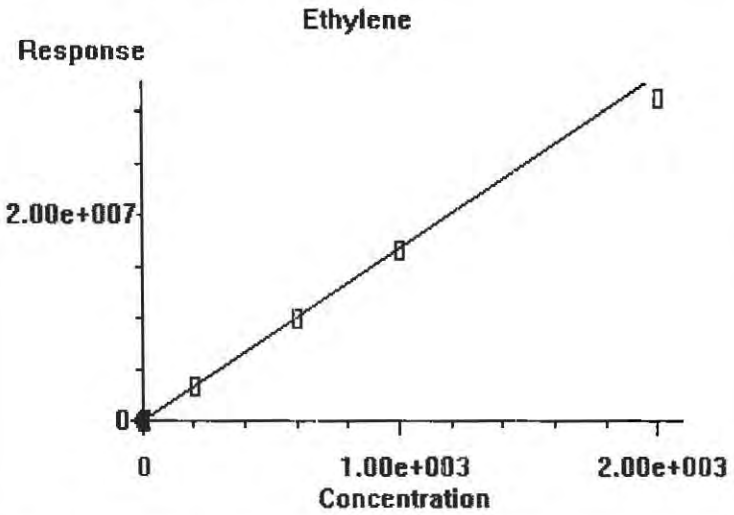
Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compoun
  - Oxygen/Argon
  - Carbon monoxide
  - Methane (TCD)
  - Carbon dioxide
  - Signal #2
  - Methane (FID)
  - Ethylene
  - Ethane
  - Propylene
  - Propane
  - Isobutylene
  - Isobutane
  - n-Butane

Identification | Calibration | User-Defined | Advanced | Reporting

Lvl ID	Concentration	Response
1	0.151000	2621.970000
2	0.302000	4946.731301
3	1.510000	26884.746847
4	4.530000	77902.721497
5	10.570000	172085.529560
6	200.000000	3339702.313219
7	600.000000	10007758.776971
8	1000.000000	16608503.805988
9	2000.000000	31192443.898600
10	4000.000000	

Lvl ID	Concentration	Response
11	20000.000000	



0.000e+000	Quadratic term
1.673e+004	Linear term
0.000e+000	Constant term
3.897%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

Edit Compounds -- Compound #8 -- Ethane

Search by ◉ Ret Time ○ Name ○ Index [ ] Find Compound

- Compound Database
- External Standard Compoun
  - Oxygen/Argon
  - Carbon monoxide
  - Methane (TCD)
  - Carbon dioxide
  - Signal #2
  - Methane (FID)
  - Ethylene
  - Ethane
  - Propylene
  - Propane
  - Isobutylene
  - Isobutane
  - n-Butane

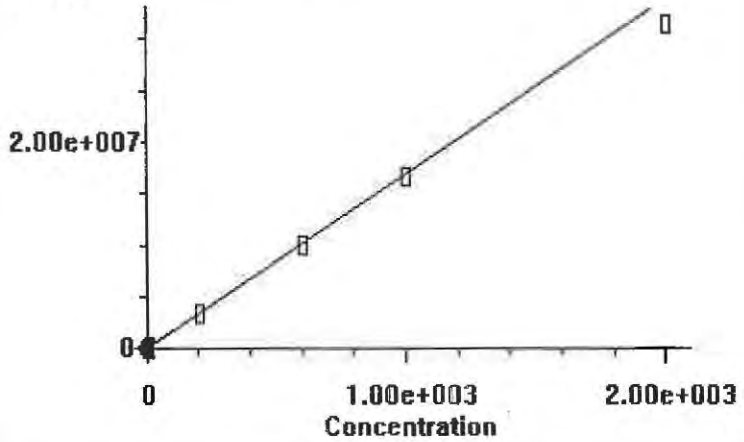
Identification | Calibration | User-Defined | Advanced | Reporting

Lvl ID	Concentration	Response
1	0.151000	2689.928008
2	0.302000	5060.331943
3	1.510000	26943.667500
4	4.530000	78353.525045
5	10.570000	178840.731148
6	200.000000	3350442.319129
7	600.000000	10048964.218029
8	1000.000000	16703164.879012
9	2000.000000	31424217.938900
10	4000.000000	

Lvl ID	Concentration	Response
11	20000.000000	

Ethane

Response



0.000e+000	Quadratic term
1.695e+004	Linear term
0.000e+000	Constant term
3.831%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

Edit Compounds -- Compound #9 -- Propylene

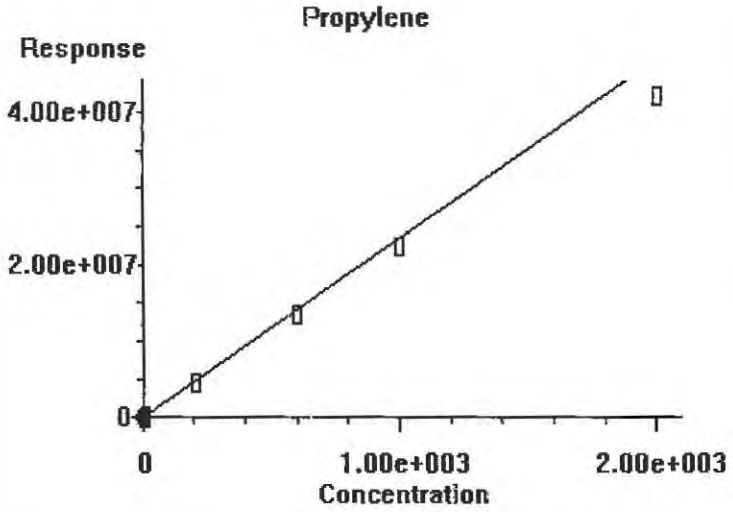
Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compoun
  - Oxygen/Argon
  - Carbon monoxide
  - Methane (TCD)
  - Carbon dioxide
  - Signal #2
  - Methane (FID)
  - Ethylene
  - Ethane
  - Propylene
  - Propane
  - Isobutylene
  - Isobutane
  - n-Butane

Identification | Calibration | User-Defined | Advanced | Reporting

Lvl ID	Concentration	Response
1	0.151000	3782.537646
2	0.302000	6933.285530
3	1.510000	39139.518208
4	4.530000	112341.896872
5	10.570000	248003.903623
6	200.000000	4504060.086084
7	600.000000	13569342.761419
8	1000.000000	22494887.720990
9	2000.000000	42124689.656800
10	4000.000000	

Lvl ID	Concentration	Response
11	20000.000000	



0.000e+000	Quadratic term
2.343e+004	Linear term
0.000e+000	Constant term
6.559%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

Edit Compounds -- Compound #10 -- Propane

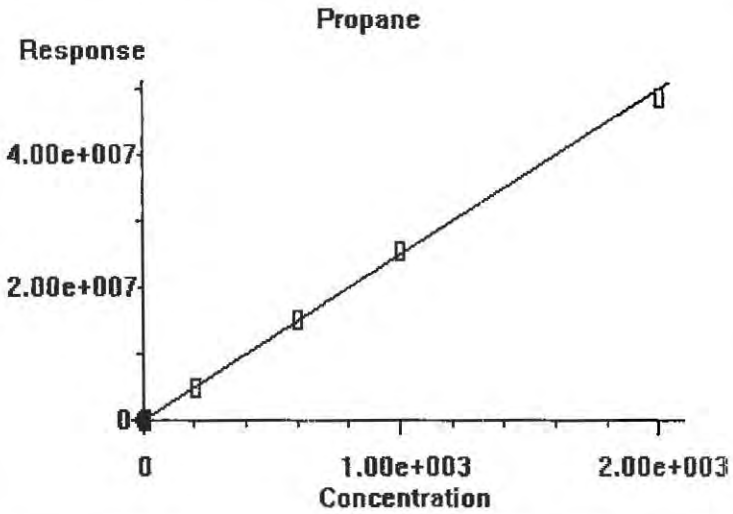
Search by: Ret Time | Name | Index — Find Compound

- Compound Database
- External Standard Compoun
  - Oxygen/Argon
  - Carbon monoxide
  - Methane (TCD)
  - Carbon dioxide
  - Signal #2
  - Methane (FID)
  - Ethylene
  - Ethane
  - Propylene
  - Propane
  - Isobutylene
  - Isobutane
  - n-Butane

Identification | Calibration | User-Defined | Advanced | Reporting

Lvl ID	Concentration	Response
1	0.151000	3682.897354
2	0.302000	6894.237803
3	1.510000	39934.166792
4	4.530000	115723.428128
5	10.570000	257124.432806
6	200.000000	5043035.663316
7	600.000000	15251325.797404
8	1000.000000	25459410.657938
9	2000.000000	48583085.287451
10	4000.000000	

Lvl ID	Concentration	Response
11	20000.000000	



0.000e+000	Quadratic term
2.488e+004	Linear term
0.000e+000	Constant term
4.200%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

Calibration Status Report HP5890

Method Path : J:\GC10\METHODS\
Method File : RS091217_R.M
Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
Last Update : Wed Sep 13 11:14:47 2017
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	0	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121702.D
2	2	0	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121703.D
3	3	3	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121704.D
4	4	10	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121705.D
5	5	25	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121706.D
6	6	125	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121707.D
7	7	5000	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121708.D
8	8	25000	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121709.D
9	9	2000	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121710.D
10	10	30000	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121711.D
11	11	20000	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121712.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	Sep 13 11:04 2017	Sep 12 15:03 2017	12-Sep-2017, 10:52
2	2	Sep 13 11:05 2017	Sep 13 11:05 2017	12-Sep-2017, 11:05
3	3	Sep 13 11:06 2017	Sep 13 11:05 2017	12-Sep-2017, 11:45
4	4	Sep 13 11:09 2017	Sep 13 11:06 2017	12-Sep-2017, 12:09
5	5	Sep 13 11:09 2017	Sep 13 11:09 2017	12-Sep-2017, 12:30
6	6	Sep 13 11:10 2017	Sep 13 11:10 2017	12-Sep-2017, 12:47
7	7	Sep 13 11:11 2017	Sep 13 11:10 2017	12-Sep-2017, 13:00
8	8	Sep 13 11:12 2017	Sep 13 11:11 2017	12-Sep-2017, 13:47
9	9	Sep 13 11:12 2017	Sep 13 11:12 2017	12-Sep-2017, 14:07
10	10	Sep 13 11:14 2017	Sep 13 11:13 2017	12-Sep-2017, 14:48
11	11	Sep 13 11:14 2017	Sep 13 11:14 2017	12-Sep-2017, 15:21

RS091217_R.M Wed Sep 13 15:11:22 2017

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121702.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 10:52
Operator : MC
Sample : 0.151ppm 0.250ml s32-09121702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 12 11:03:15 2017
Quant Method : I:\GC10\METHODS\RS082417.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Fri Aug 25 09:19:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.767	373920	0.128	ppm	
2)	Carbon monoxide	1.767	373920	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	
4)	Carbon dioxide	0.000	0	N.D.	ppm	
6)	Methane (FID)	0.000	0	N.D.	ppm	d
7)	Ethylene	1.595	2622	0.156	ppm	
8)	Ethane	1.848	2690	0.156	ppm	
9)	Propylene	4.222	3783	0.154	ppm	
10)	Propane	4.348	3683	0.139	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	6.582f	6058	NoCal	ppm	
13)	n-Butane	6.582f	6058	NoCal	ppm	

(f)=RT Delta > 1/2 Window (m)=manual int.

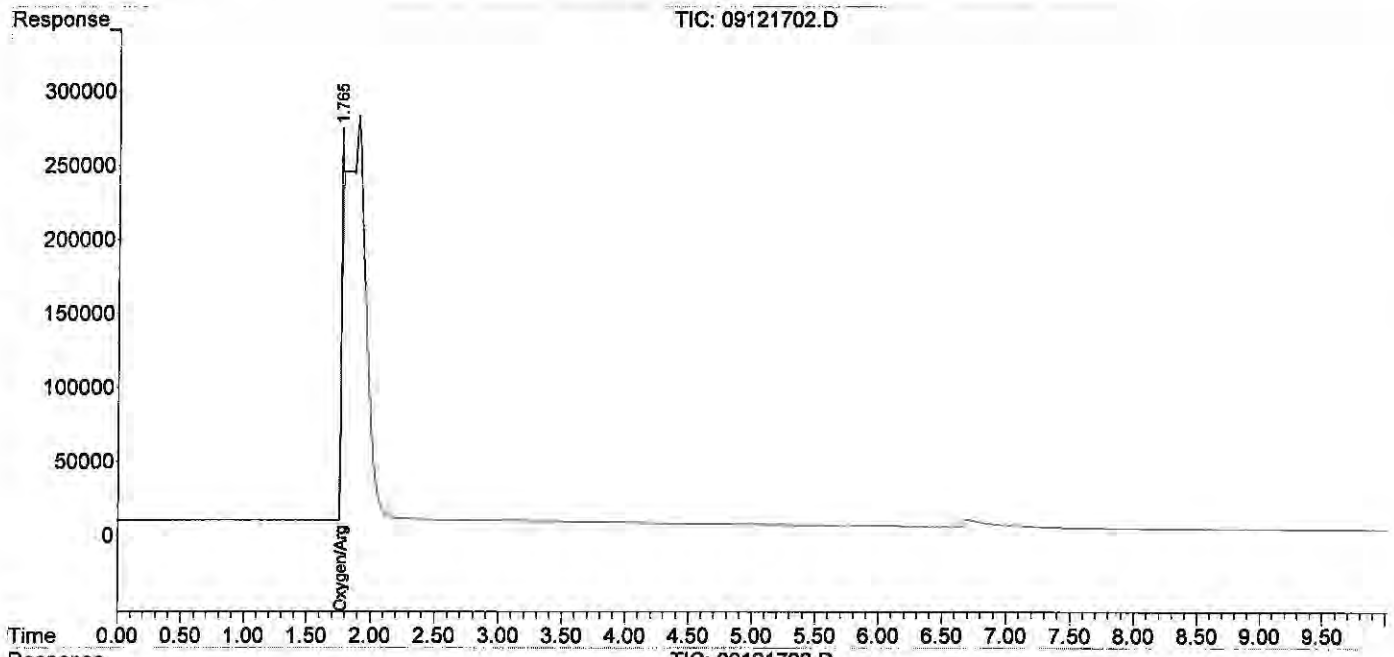
9/13/17

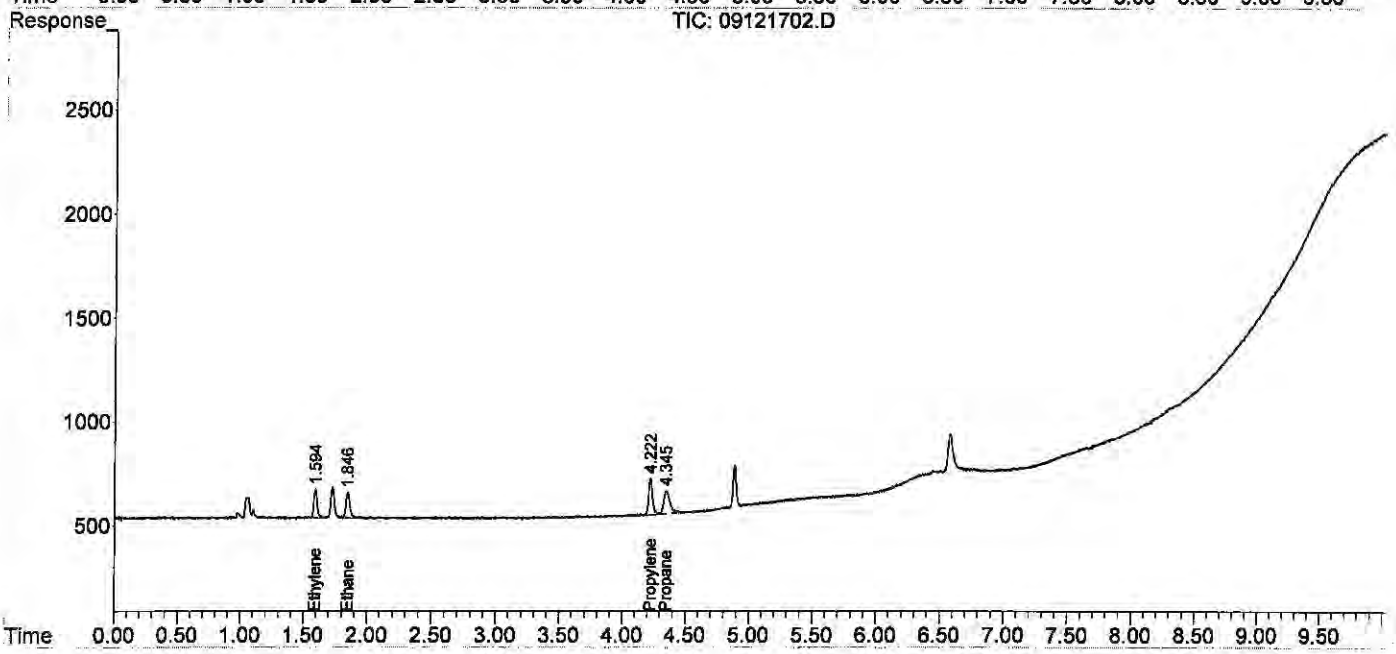
Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121702.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 10:52
Operator : MC
Sample : 0.151ppm 0.250ml s32-09121702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 12 11:03:15 2017
Quant Method : I:\GC10\METHODS\RS082417.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Fri Aug 25 09:19:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121703.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 11:05
Operator : MC
Sample : 0.302ppm 0.5ml s32-09121702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:05:03 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.913f	-25181981	N.D.	ppm	
2)	Carbon monoxide	1.913f	-25181981	1.089	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	
4)	Carbon dioxide	0.000	0	N.D.	ppm	
6)	Methane (FID)	1.049	3564	0.391	ppm	m
7)	Ethylene	1.577	4947	0.292	ppm	
8)	Ethane	1.828	5060	0.293	ppm	
9)	Propylene	4.207	6933	0.281	ppm	
10)	Propane	4.337	6894	0.268	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	6.579f	9587	0.158	ppm	
13)	n-Butane	6.579f	9587	0.158	ppm	

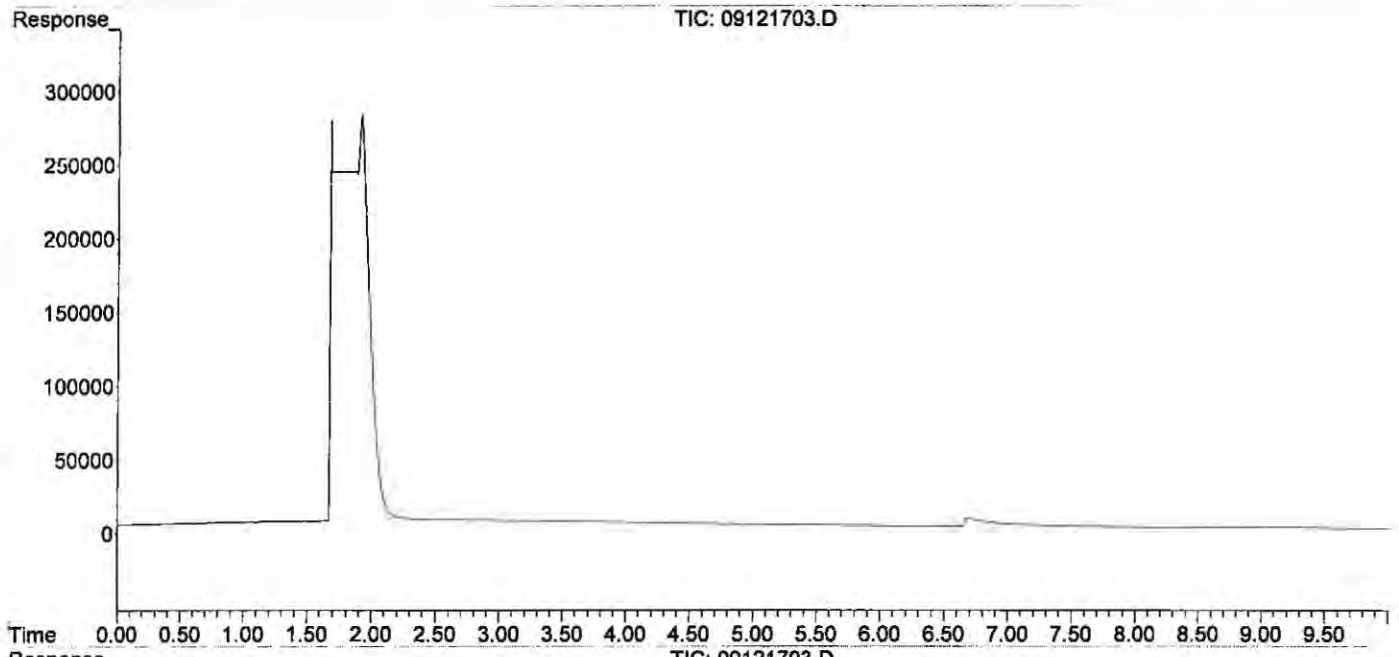
(f)=RT Delta > 1/2 Window (m)=manual int.

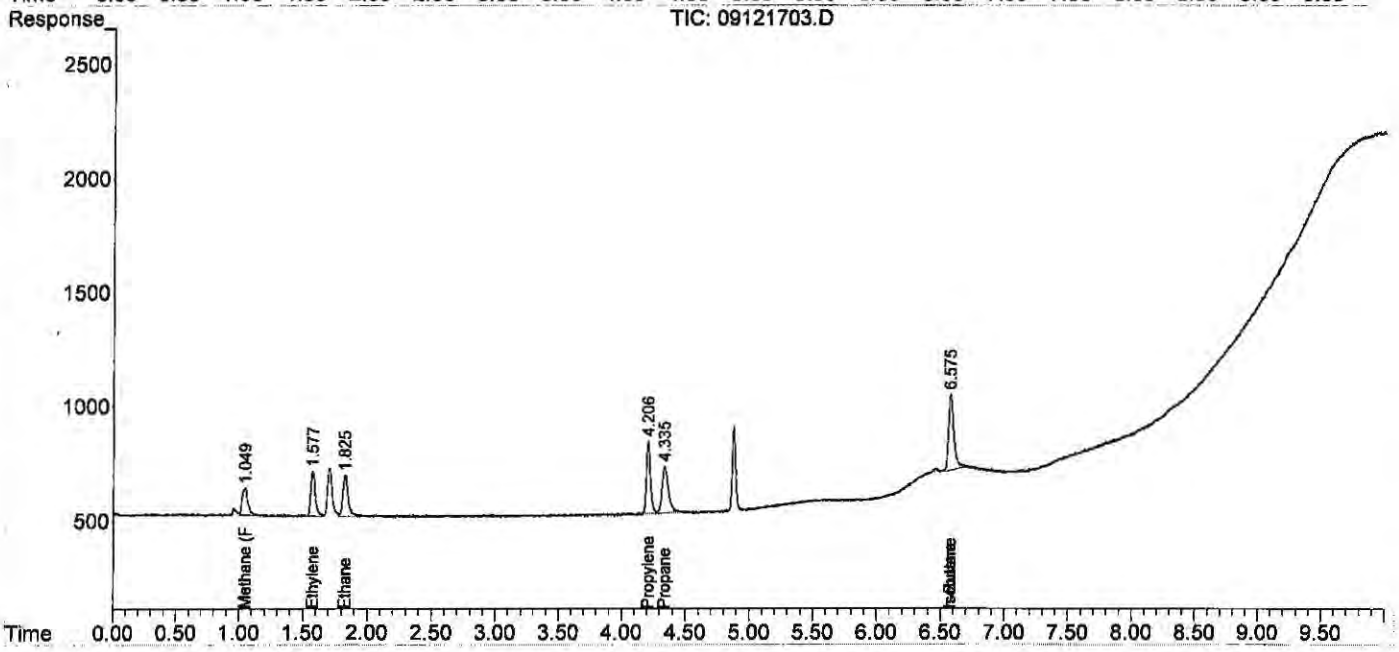
Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121703.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 11:05
Operator : MC
Sample : 0.302ppm 0.5ml s32-09121702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:05:03 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



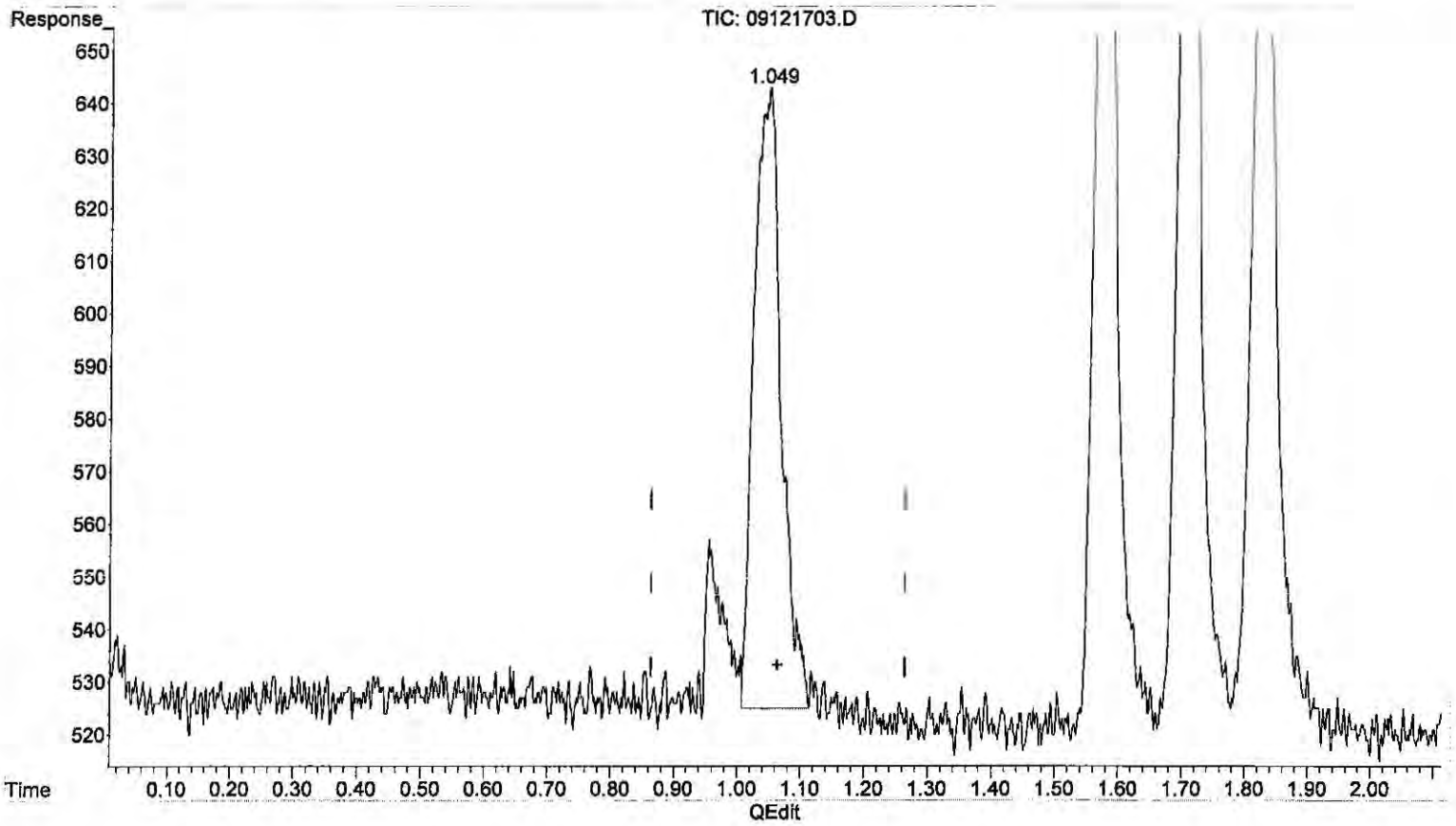


Quantitation Report (Qedit)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121703.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 11:05
Operator : MC
Sample : 0.302ppm 0.5ml s32-09121702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:05:03 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase :
Signal #1 Info :
Signal #2 Phase:
Signal #2 Info :



(6) Methane (FID)
1.049min 0.391 ppm m
response 3564

(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121704.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 11:45
Operator : MC
Sample : 1.51ppm 0.1ml s32-09051701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:05:55 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

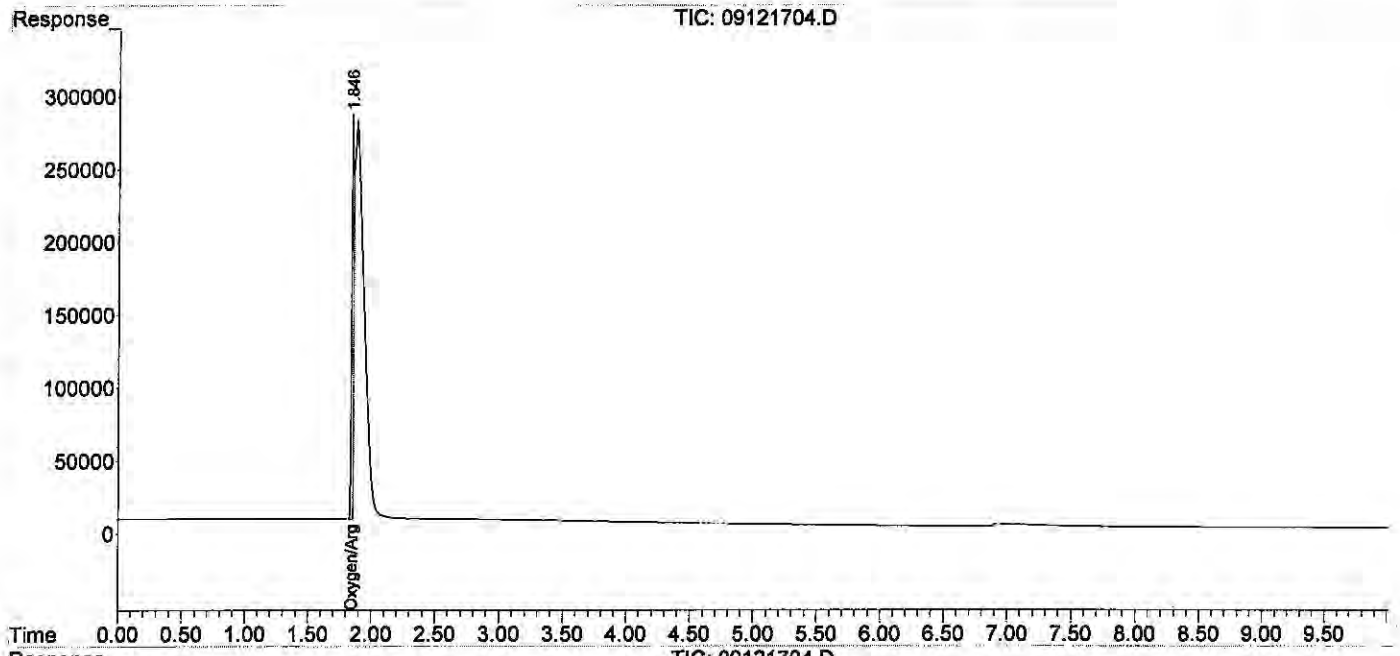
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.847	2536230	1.056	ppm
2)	Carbon monoxide	1.847	2536230	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.064	14725	1.613	ppm
7)	Ethylene	1.598	26885	1.582	ppm
8)	Ethane	1.851	26944	1.555	ppm
9)	Propylene	4.220	39140	1.589	ppm
10)	Propane	4.349	39934	1.596	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	6.578f	55348	1.020	ppm
13)	n-Butane	6.578f	55348	1.020	ppm

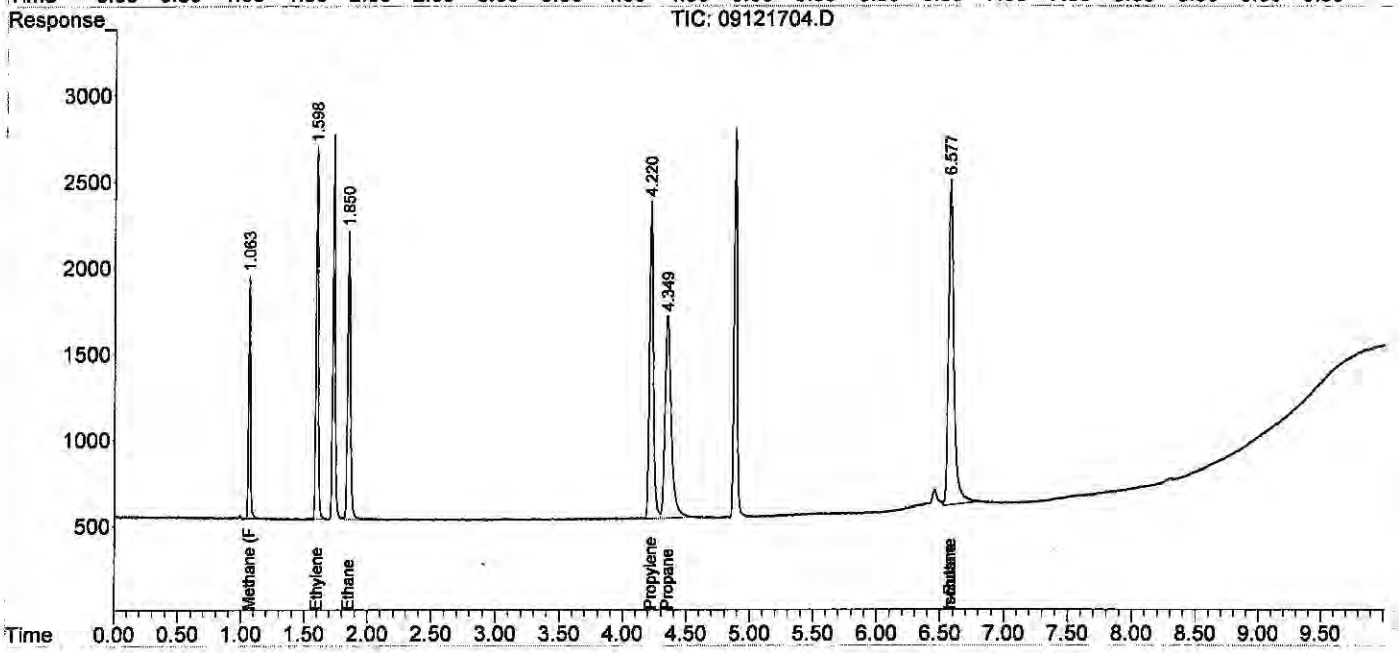
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121704.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 11:45
Operator : MC
Sample : 1.51ppm 0.1ml s32-09051701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:05:55 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121705.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 12:09
Operator : MC
Sample : 4.53ppm 0.3ml s32-09051701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:06:32 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.738	-331216	N.D.	ppm
2)	Carbon monoxide	1.738	-331216	0.019	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.052	41129	4.522	ppm
7)	Ethylene	1.586	77903	4.637	ppm
8)	Ethane	1.838	78354	4.558	ppm
9)	Propylene	4.218	112342	4.614	ppm
10)	Propane	4.347	115723	4.680	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	6.580f	155256	3.565	ppm
13)	n-Butane	6.580f	155256	3.565	ppm

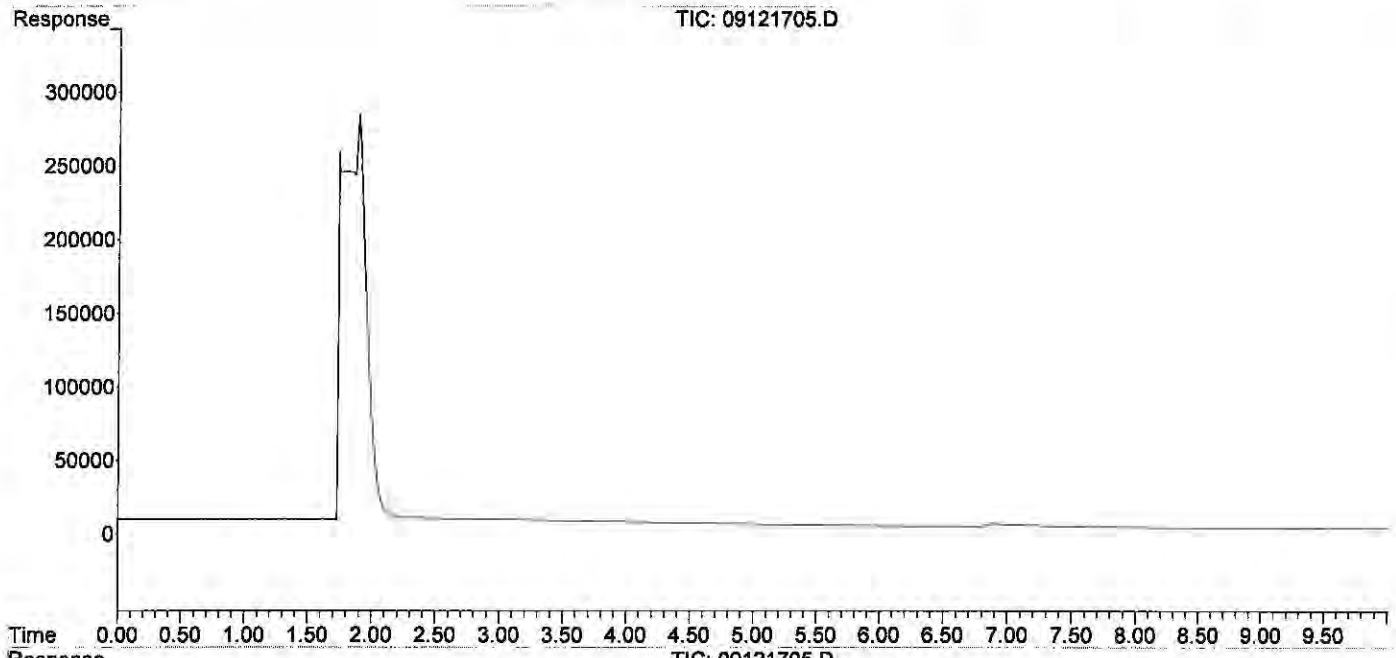
(f)=RT Delta > 1/2 Window (m)=manual int.

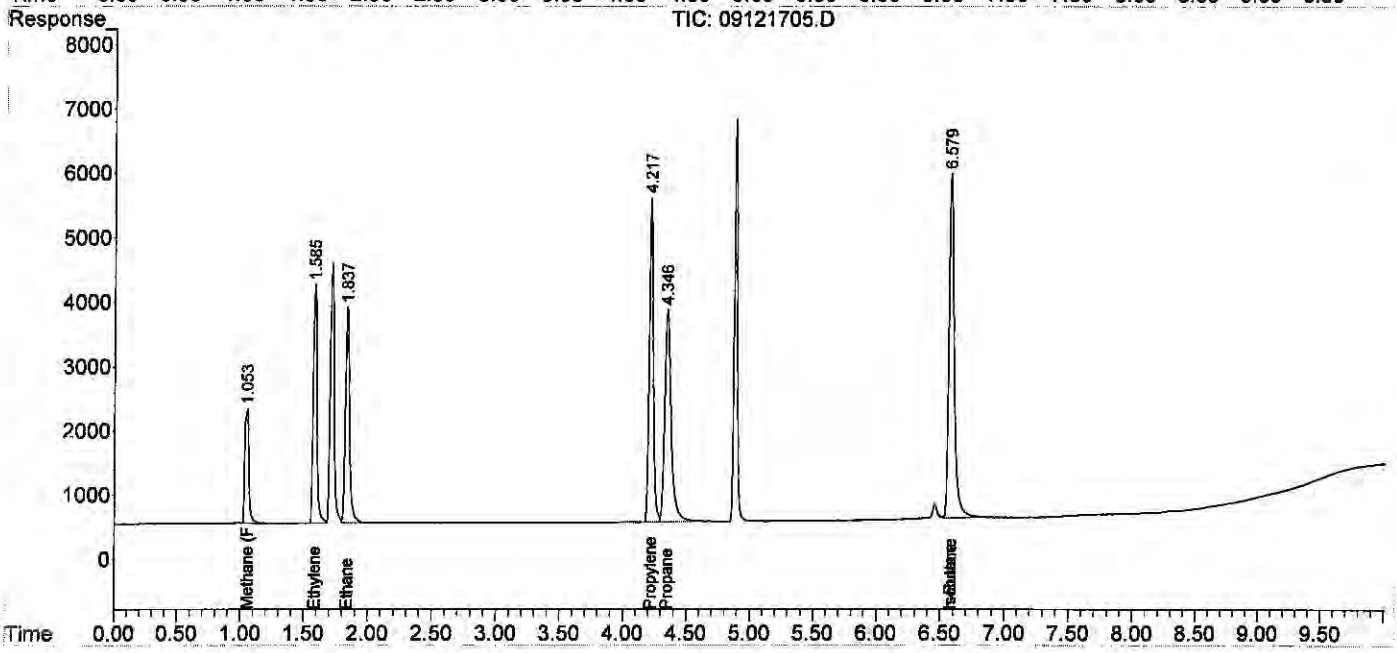
Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121705.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 12:09
Operator : MC
Sample : 4.53ppm 0.3ml s32-09051701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:06:32 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121706.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 12:30
Operator : MC
Sample : 10.57ppm 0.7ml s32-09051701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:09:24 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.929f	-31871242	N.D.	ppm
2)	Carbon monoxide	1.929f	-31871242	1.818	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.025	91967	10.135	ppm
7)	Ethylene	1.568	172086	10.273	ppm
8)	Ethane	1.822	178841	10.441	ppm
9)	Propylene	4.214	248004	10.236	ppm
10)	Propane	4.344	257124	10.458	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	6.578f	338181	9.254	ppm
13)	n-Butane	6.578f	338181	9.254	ppm

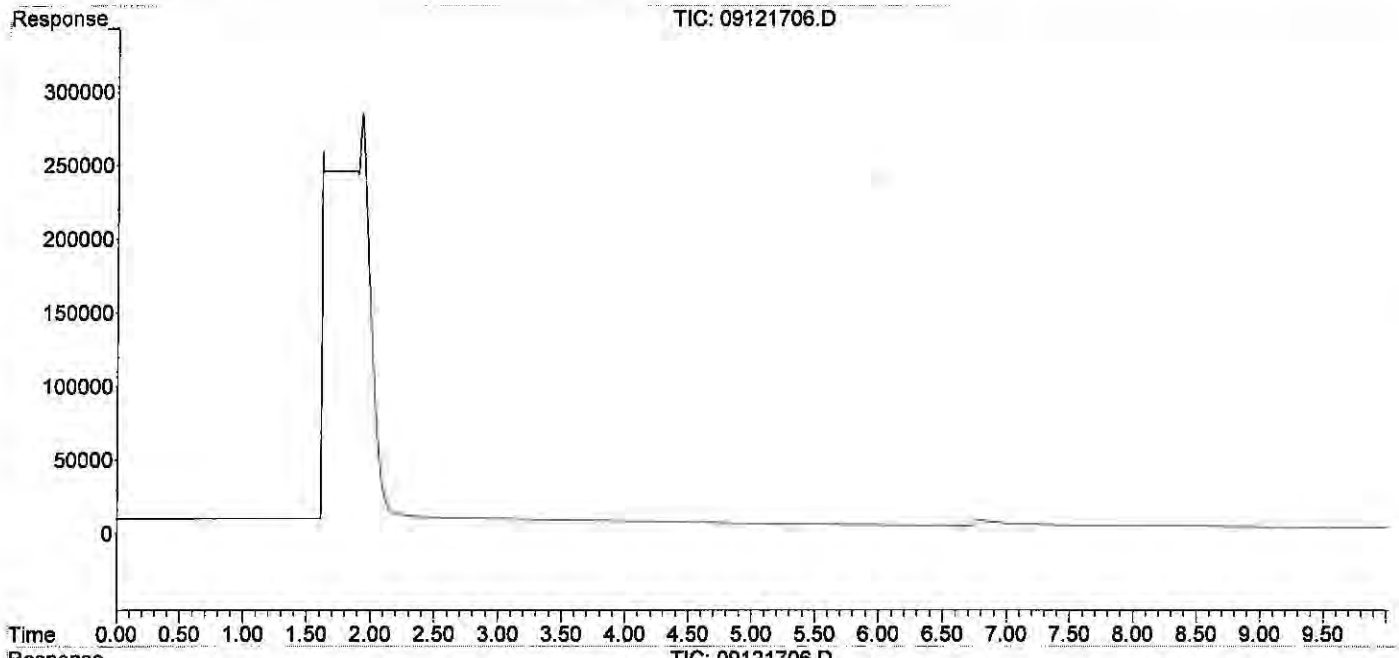
(f)=RT Delta > 1/2 Window (m)=manual int.

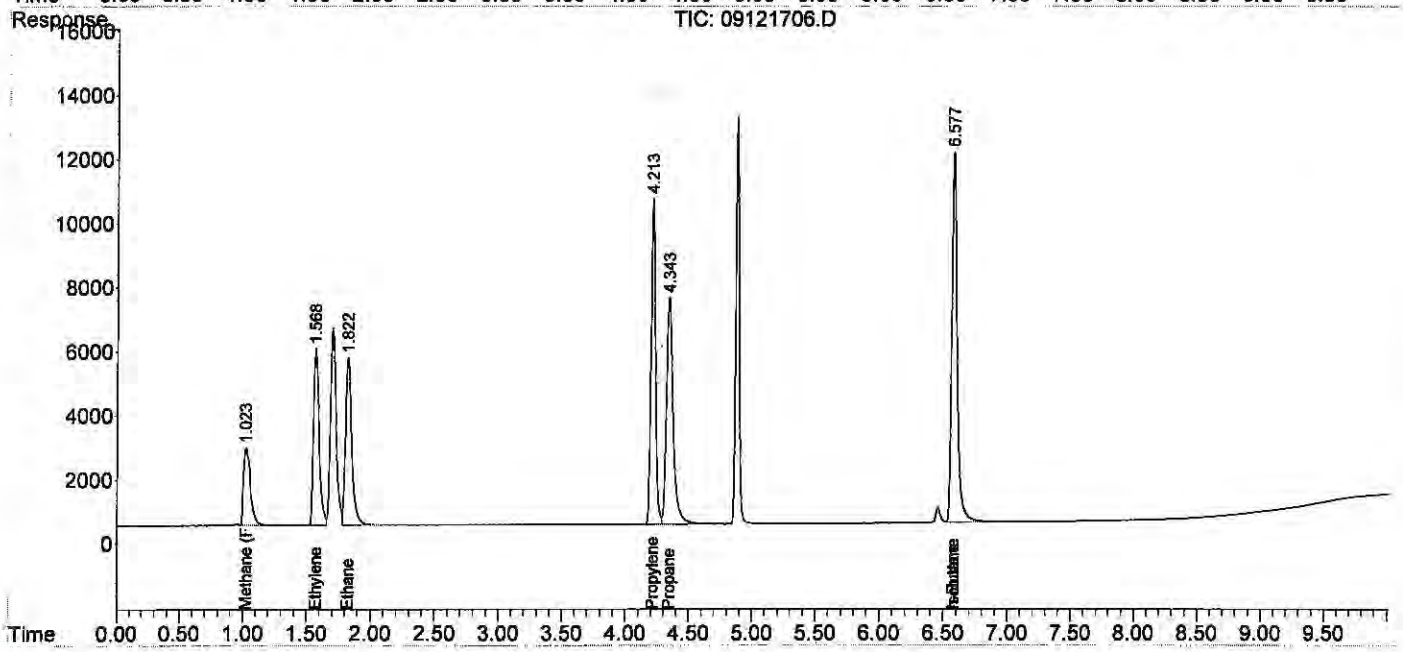
Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121706.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 12:30
Operator : MC
Sample : 10.57ppm 0.7ml s32-09051701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:09:24 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121707.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 12:47
Operator : MC
Sample : 200ppm 0.1ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:09:59 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.897	155286	0.065	ppm
2)	Carbon monoxide	1.897	155286	N.D.	ppm
3)	Methane (TCD)	4.079f	27015	2856.472	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.063	1735997	190.792	ppm
7)	Ethylene	1.597	3339702	198.758	ppm
8)	Ethane	1.849	3350442	194.597	ppm
9)	Propylene	4.201	4504060	185.706	ppm
10)	Propane	4.333	5043036	204.809	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

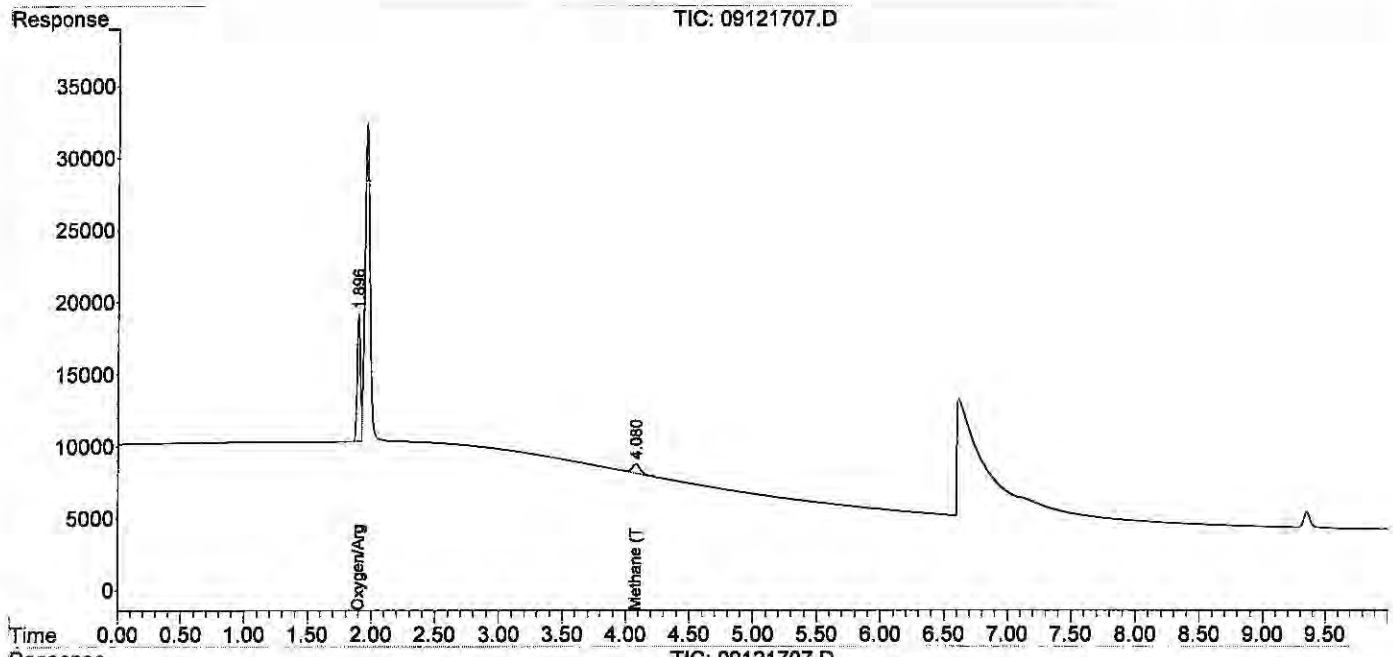
(f)=RT Delta > 1/2 Window (m)=manual int.

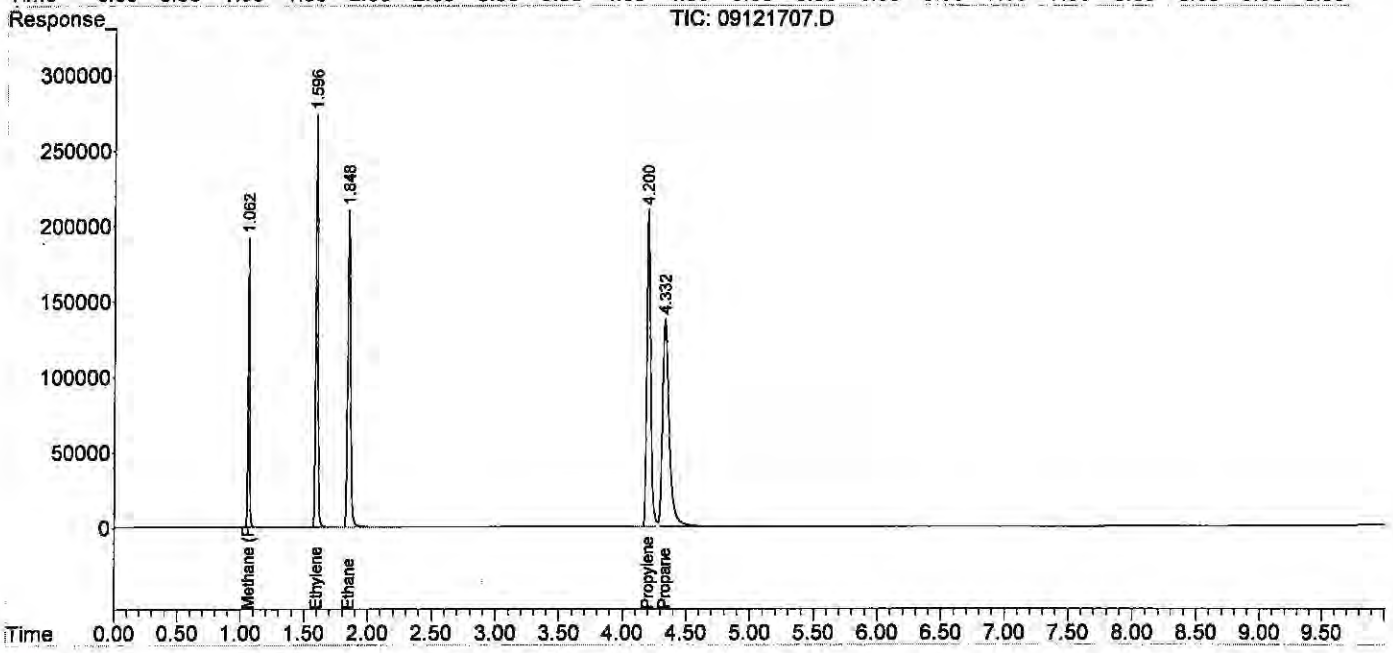
Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121707.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 12:47
Operator : MC
Sample : 200ppm 0.1ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:09:59 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121708.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 13:00
Operator : MC
Sample : 600ppm 0.3ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:10:57 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:10:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

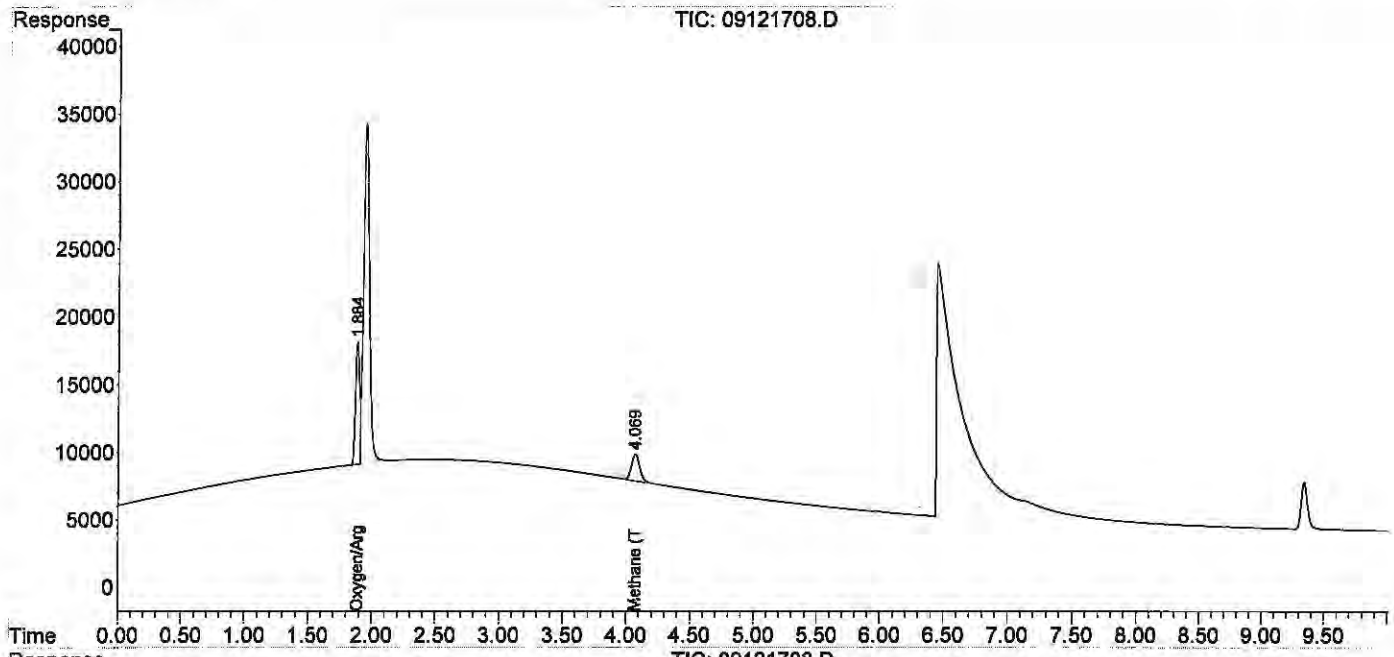
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.884	196022	0.124	ppm
2)	Carbon monoxide	1.884	196022	N.D.	ppm
3)	Methane (TCD)	4.070f	88282	782.730	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.044	5189849	539.759	ppm
7)	Ethylene	1.573	10007759	590.286	ppm
8)	Ethane	1.822	10048964	583.213	ppm
9)	Propylene	4.160	13569343	562.612	ppm
10)	Propane	4.300	15251326	615.171	ppm
11)	Isobutylene	6.143	9815	NoCal	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

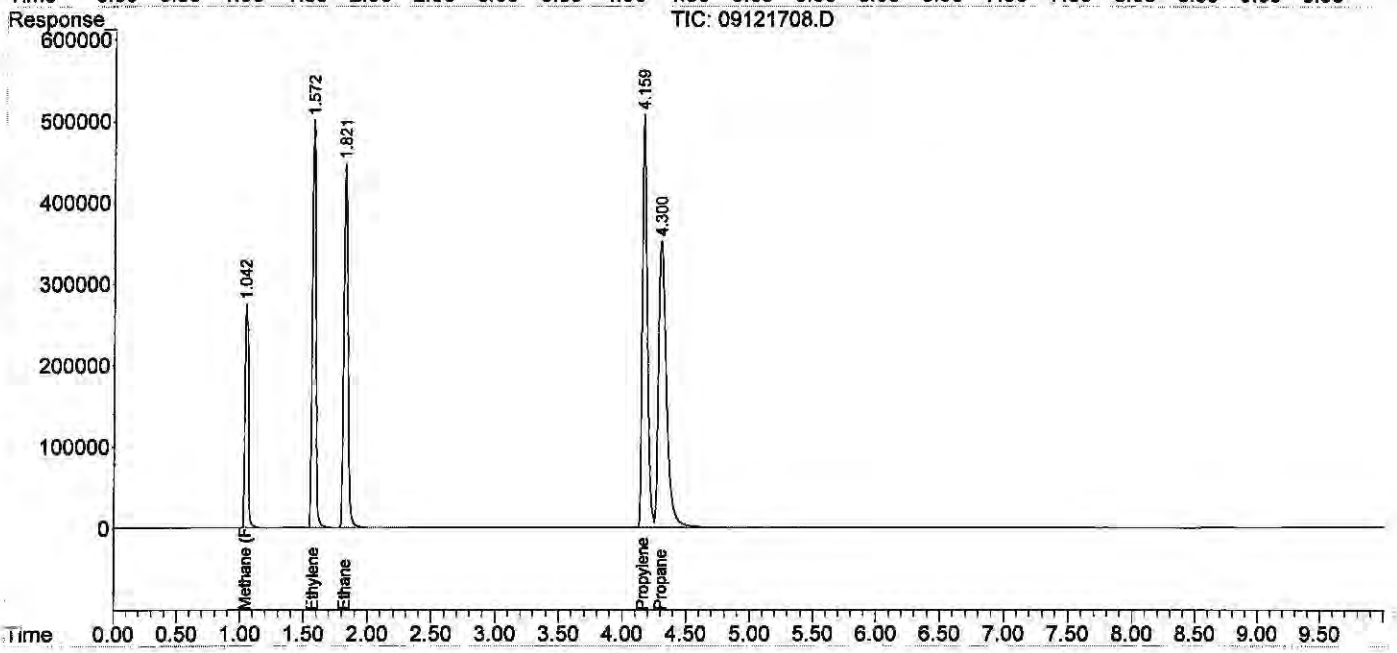
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121708.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 13:00
Operator : MC
Sample : 600ppm 0.3ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:10:57 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:10:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121709.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 13:47
Operator : MC
Sample : 1000ppm 0.5ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:11:46 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:11:38 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.879	192611	0.162	ppm
2)	Carbon monoxide	1.879	192611	N.D.	ppm
3)	Methane (TCD)	4.070f	145492	1244.729	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.039	8598534	945.644	ppm
7)	Ethylene	1.576	16608504	981.887	ppm
8)	Ethane	1.827	16709165	973.644	ppm
9)	Propylene	4.161	22494888	941.060	ppm
10)	Propane	4.298	25459411	1023.223	ppm
11)	Isobutylene	6.138	16970	8645.243	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

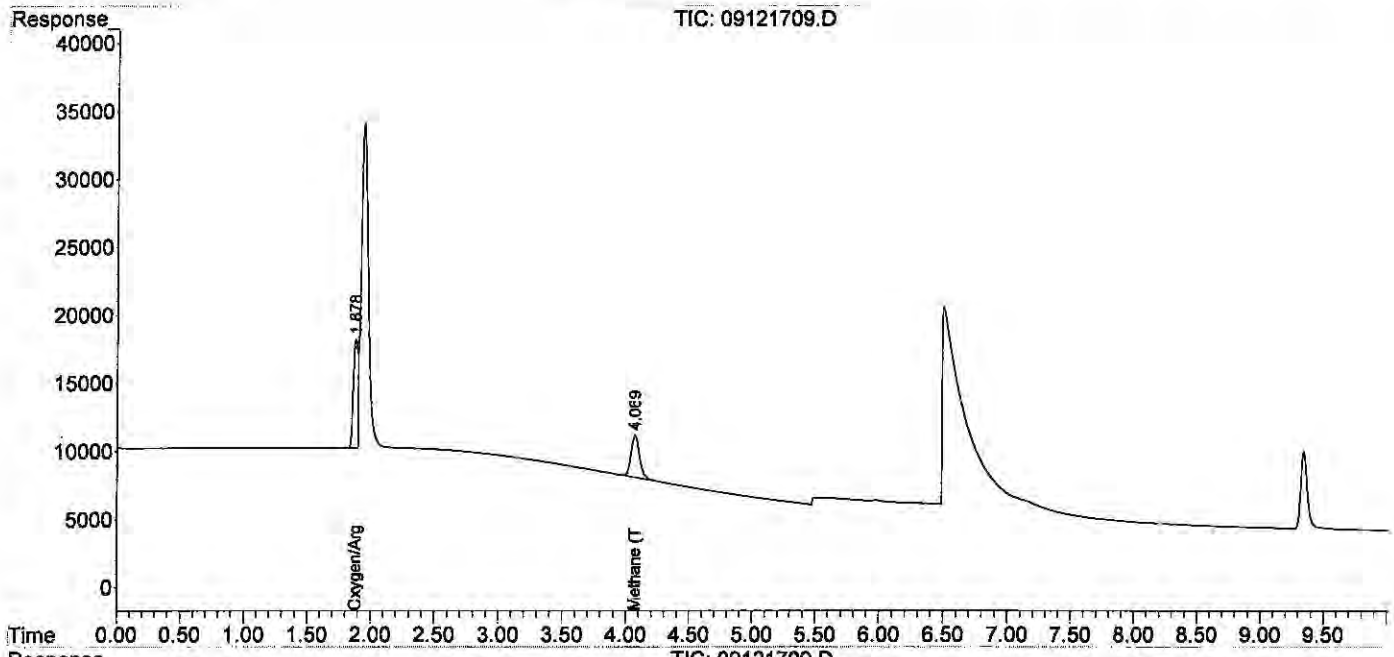
(f)=RT Delta > 1/2 Window (m)=manual int.

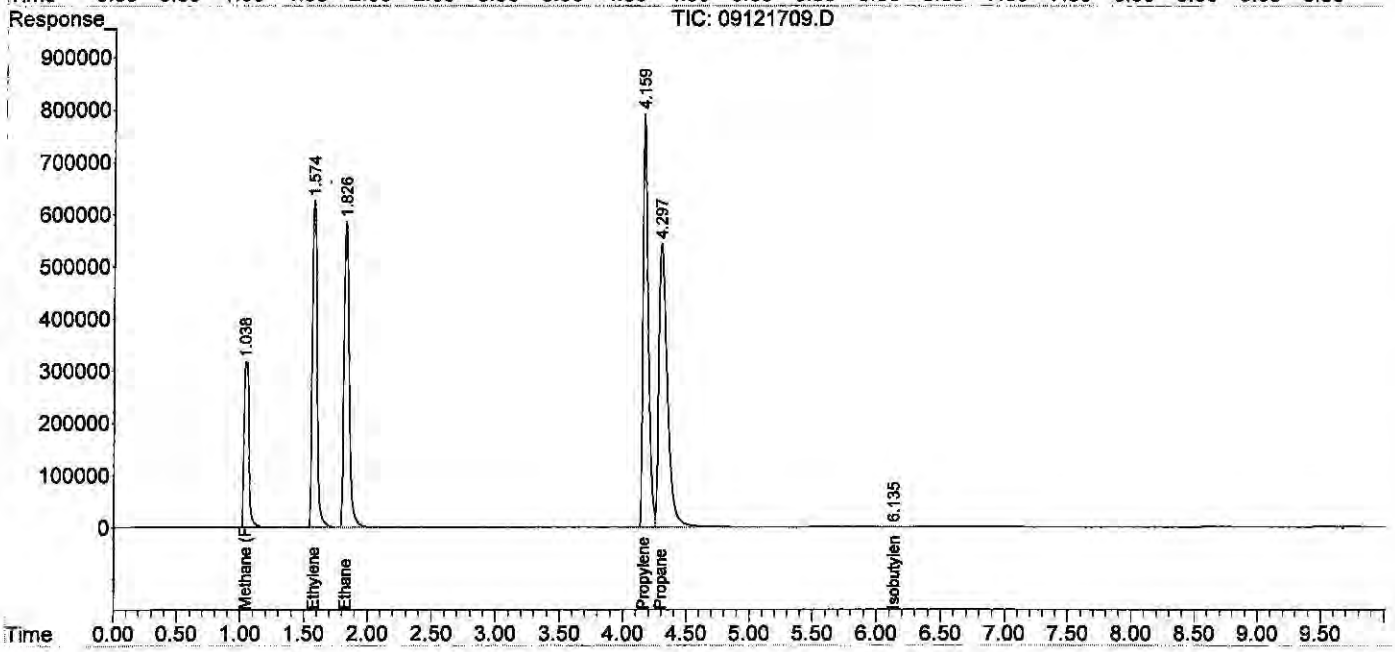
Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121709.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 13:47
Operator : MC
Sample : 1000ppm 0.5ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:11:46 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:11:38 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121710.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 14:07
Operator : MC
Sample : 2000ppm 1ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:12:33 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:12:25 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

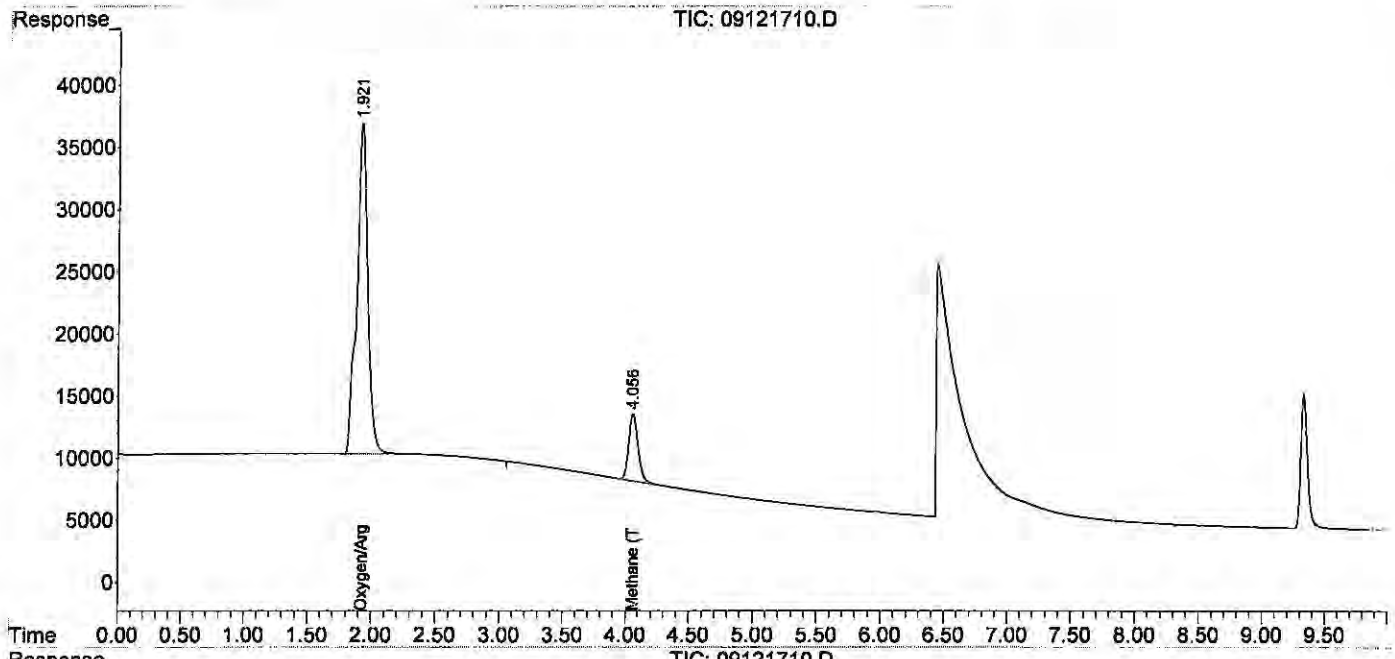
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.922f	1578147	1.659	ppm	
2)	Carbon monoxide	1.922f	1578147	N.D.	ppm	
3)	Methane (TCD)	4.057f	281651	3526.607	ppm	
4)	Carbon dioxide	0.000	0	N.D.	ppm	
6)	Methane (FID)	1.016	16098209	1763.622	ppm	
7)	Ethylene	1.552	31192444	1848.268	ppm	
8)	Ethane	1.801	31424218	1837.143	ppm	
9)	Propylene	4.129	42124690	1775.341	ppm	m
10)	Propane	4.269	48583085	1946.921	ppm	
11)	Isobutylene	6.136	33832	25613.603	ppm	
12)	Isobutane	6.576f	3845	0.120	ppm	
13)	n-Butane	6.576f	3845	0.120	ppm	

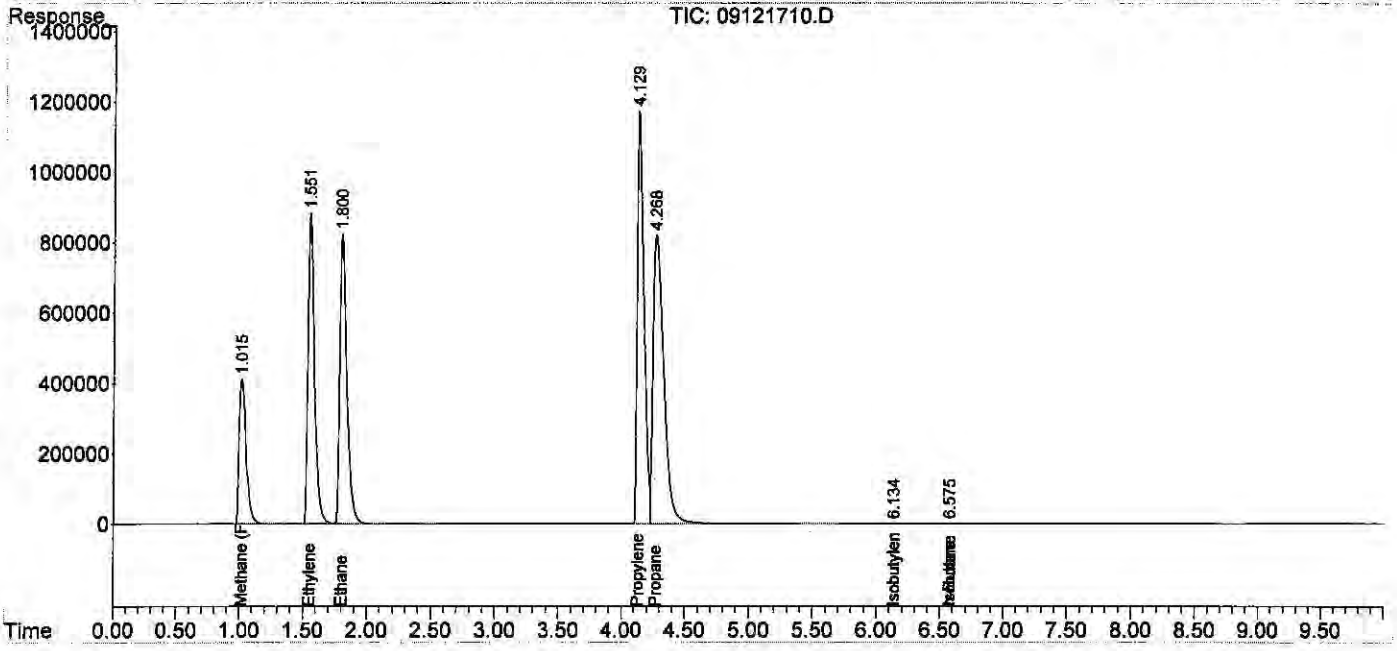
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121710.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 14:07
Operator : MC
Sample : 2000ppm 1ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:12:33 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:12:25 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



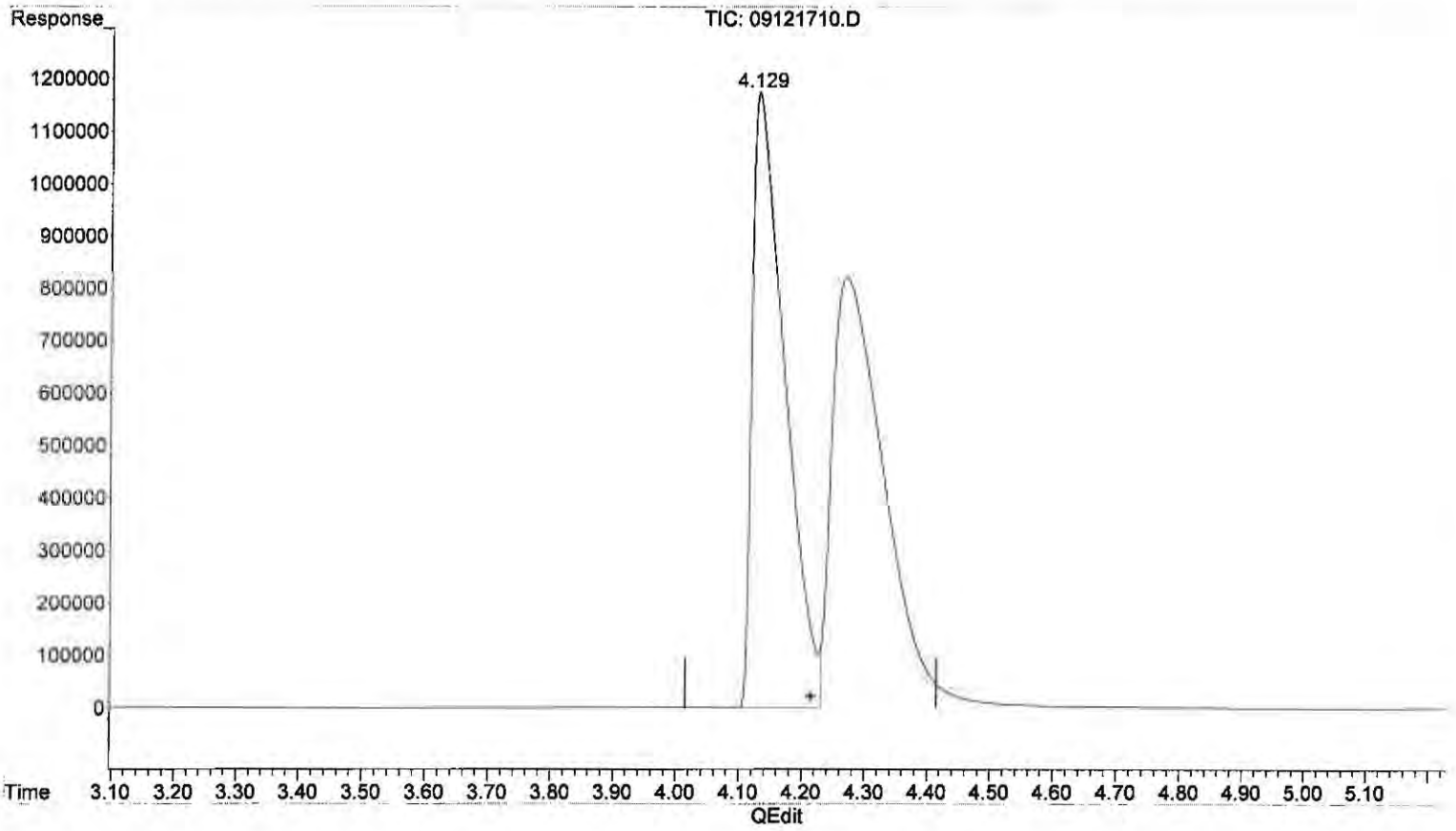


Quantitation Report (Qedit)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121710.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 14:07
Operator : MC
Sample : 2000ppm 1ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:12:33 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:12:25 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase :
Signal #1 Info :
Signal #2 Phase:
Signal #2 Info :



(9) Propylene

4.129min 1775.341 ppm m

response 42124690

(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121711.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 14:48
Operator : MC
Sample : 4000ppm 0.1ml s32-08231701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:13:37 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:13:29 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

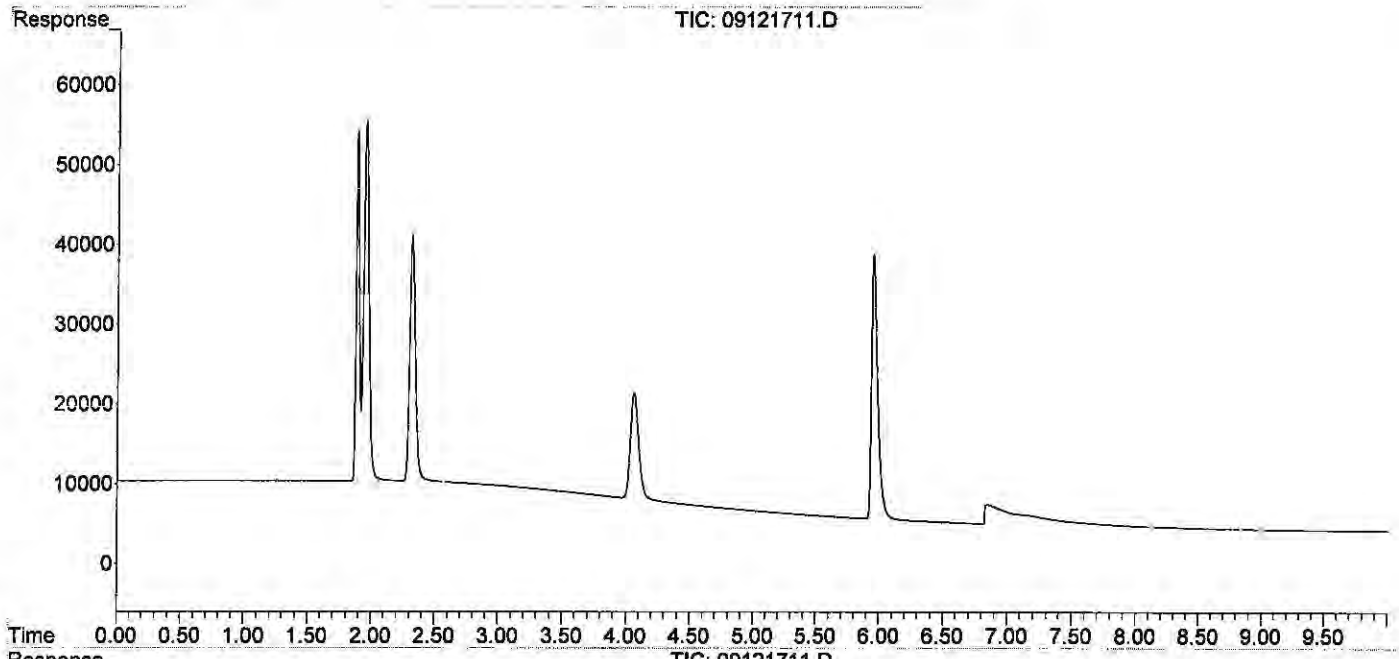
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	0.000	0	N.D.	ppm	d
2)	Carbon monoxide	0.000	0	N.D.	ppm	d
3)	Methane (TCD)	0.000	0	N.D.	ppm	d
4)	Carbon dioxide	0.000	0	N.D.	ppm	d
6)	Methane (FID)	1.059	35776839	3925.122	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

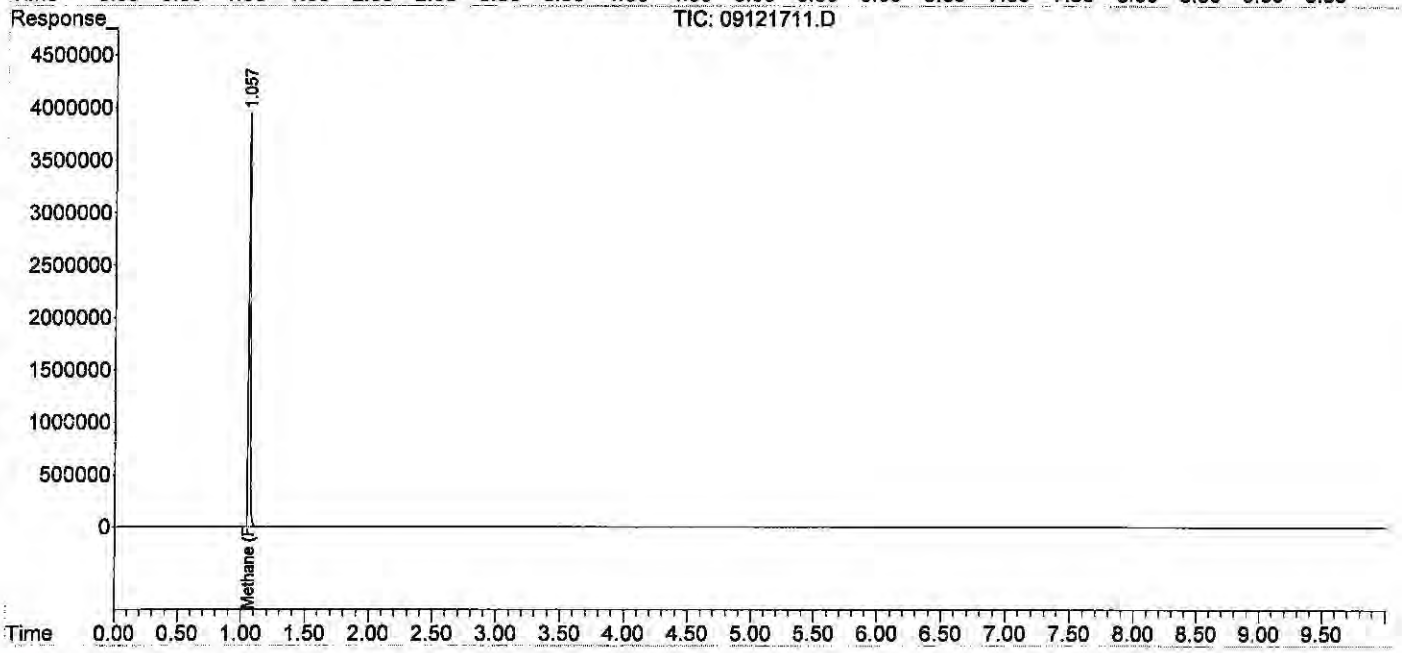
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121711.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 14:48
Operator : MC
Sample : 4000ppm 0.1ml s32-08231701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:13:37 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:13:29 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase :
Signal #1 Info :
Signal #2 Phase:
Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121712.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 15:21
Operator : MC
Sample : 20000ppm 0.5ml s32-08231701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:14:17 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:13:29 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	0.000	0	N.D.	ppm	d
2)	Carbon monoxide	1.836	3190788	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	d
4)	Carbon dioxide	0.000	0	N.D.	ppm	d
6)	Methane (FID)	1.034	169009160	18492.064	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

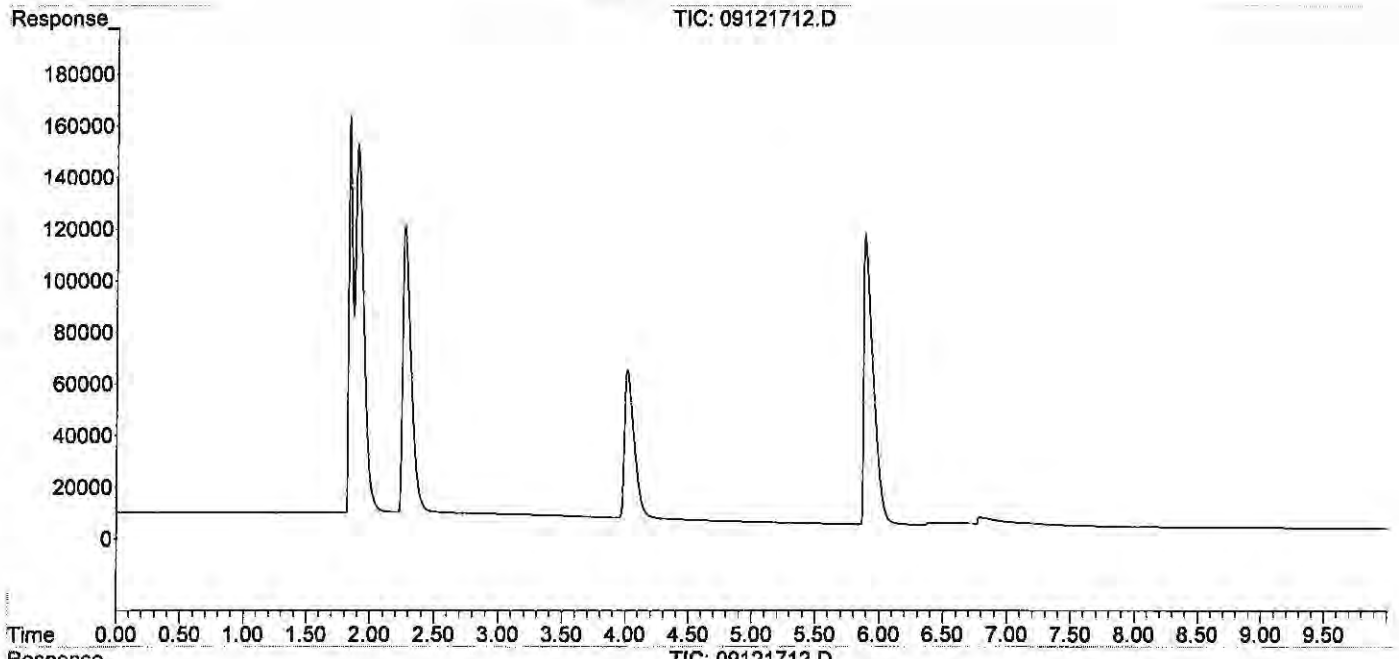
(f)=RT Delta > 1/2 Window (m)=manual int.

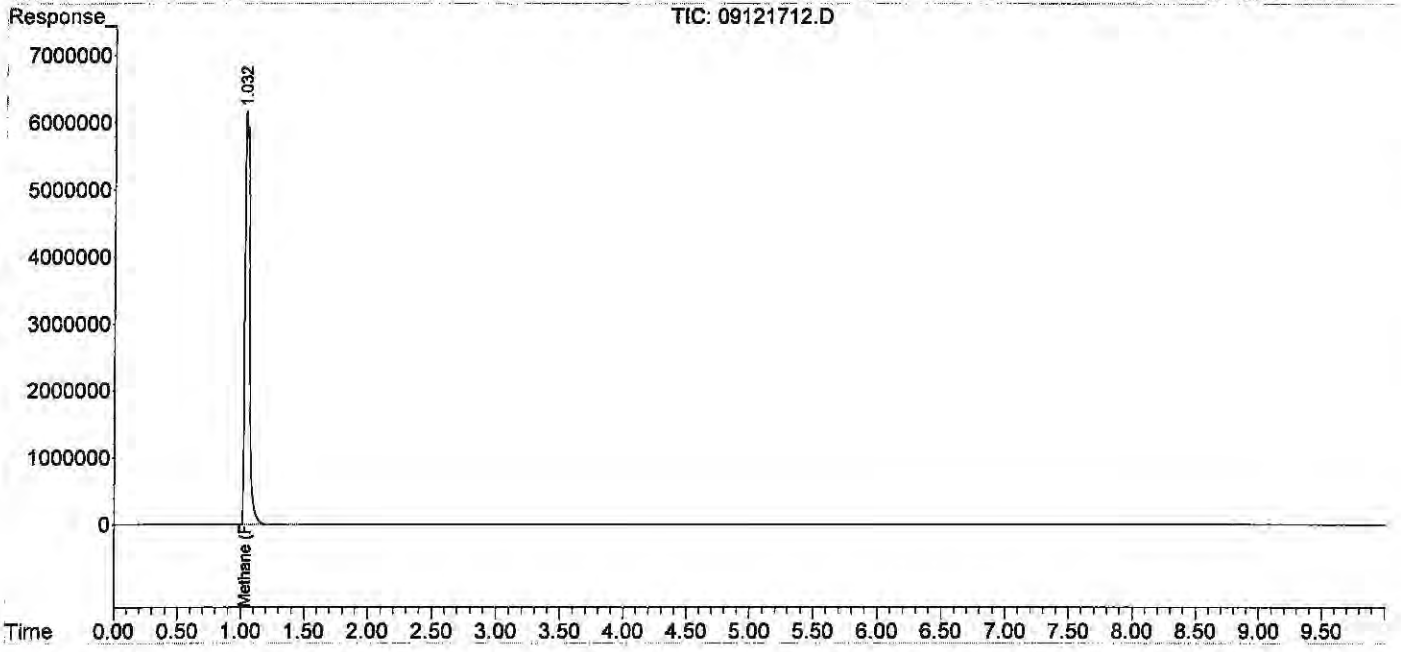
Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121712.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 15:21
Operator : MC
Sample : 20000ppm 0.5ml s32-08231701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:14:17 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:13:29 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121715.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 16:15
Operator : MC
Sample : icv s30-05241604
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:15:11 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:13:29 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.843	2922459	3.687	ppm	
2)	Carbon monoxide	1.843	2922459	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	actual %D
4)	Carbon dioxide	0.000	0	N.D.	ppm	
6)	Methane (FID)	1.063	13748	1.516	ppm	1.50 101.1
7)	Ethylene	1.598	24153	1.443	ppm	1.50 96.2
8)	Ethane	1.850	24488	1.445	ppm	1.50 96.3
9)	Propylene	4.221	36004	1.537	ppm	1.50 102.5
10)	Propane	4.350	37738	1.517	ppm	1.51 100.5
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	6.579f	48019	1.804	ppm	9/14/2
13)	n-Butane	6.579f	48019	1.804	ppm	

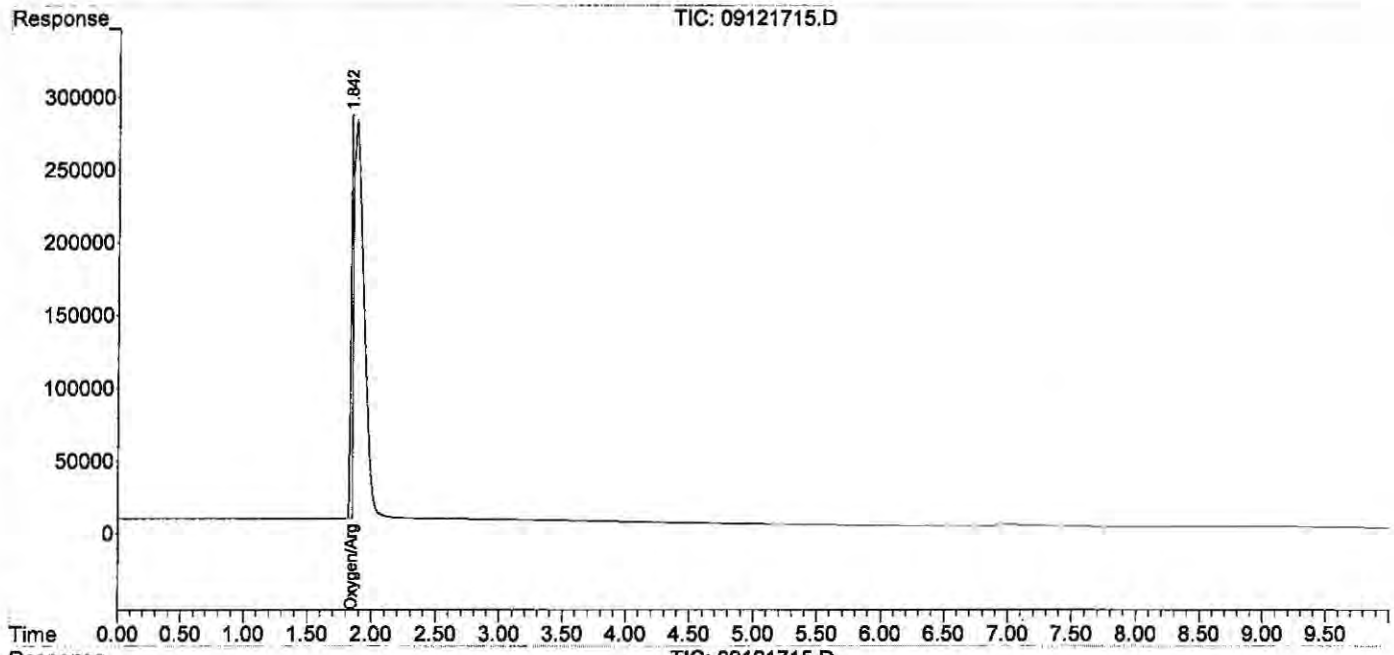
(f)=RT Delta > 1/2 Window (m)=manual int.

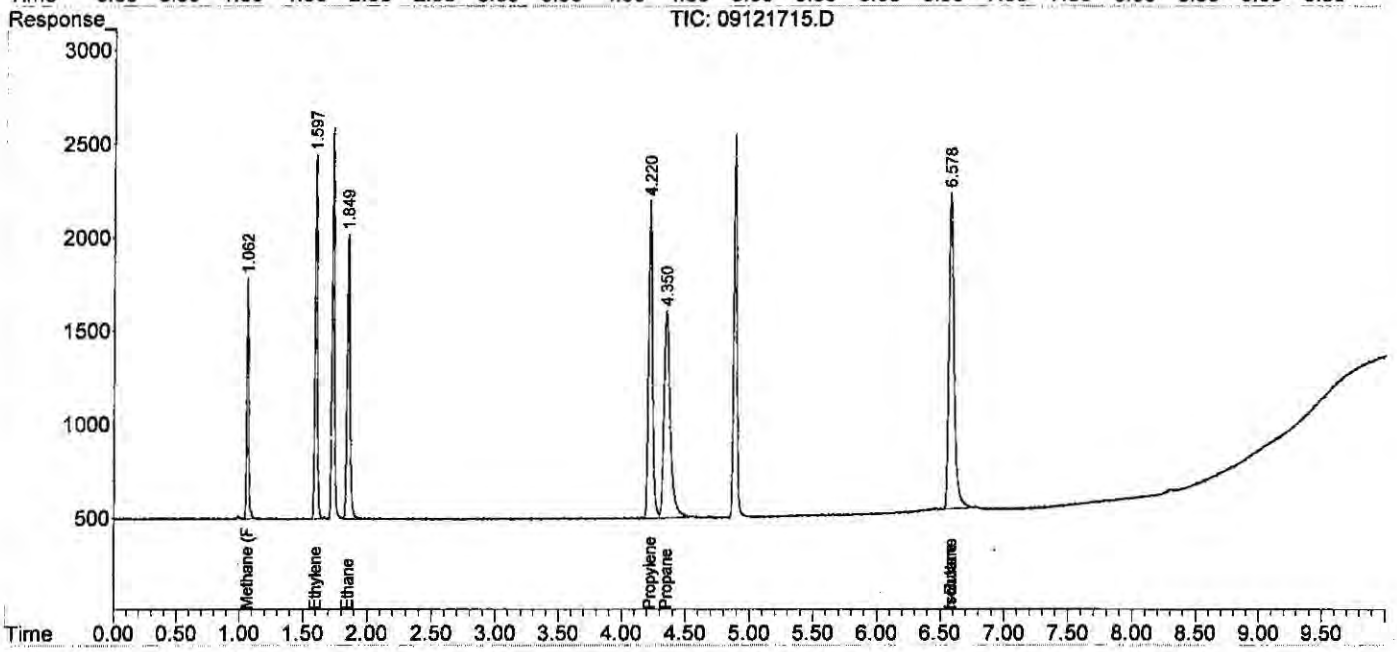
9/14/2017

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121715.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 16:15
Operator : MC
Sample : icv s30-05241604
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:15:11 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:13:29 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Dissolved Gases by RSK175

ALS Environmental

Method : RSK175 Headspace Method for Dissolved Hydrocarbon in Water by FID/TCD

Client : ALS Laboratory Group | Analyst : WH | Instrument : GC#10

Service Request: P1905493 | Date Analysis : 09/19/19 | Detector : FID#10, TCD#10

Sample Vol. (ml) : 32.00 ml | Head Space Vol.(ml) : 8.00 ml | Gas Constant : 24.05684 (20°C)

HEAD SPACE RESULT (ppm)

Sample ID	Inj. Vol.	Methane	Ethylene	Ethane
STD s32-05221901	0.100	94.544	101.854	101.449
ACTUAL		101.50	100.90	101.40
%Difference		6.9%	0.9%	0.0%
mcs 0.1ml	0.100	0.034	0.000	0.000
RB 0.1ml	0.100	0.000	0.000	0.000
LCS FID	0.100	1.391	1.135	1.278
LCSD FID	0.100	1.360	1.110	1.266
P1905493-001 0.1ml	0.100	1.585	0.000	0.000
P1905493-002 0.1ml	0.100	335.075	1.320	0.065
P1905493-003 0.1ml	0.100	124.387	1.366	0.052
P1905493-004 0.1ml	0.100	1502.45	0.000	0.000
P1905493-005 0.1ml	0.100	1742.97	0.000	0.000
P1905493-006 0.1ml	0.100	1408.40	0.000	0.000
P1905493-007 0.1ml	0.100	693.569	0.000	0.000
P1905493-002MS 0.1ml	0.100	356.908	57.524	64.264
P1905493-002MSD 0.1ml	0.100	332.745	53.740	60.046
STD s32-05221901		101.949	108.768	108.050
ACTUAL		101.50	100.90	101.40
%Difference		0.4%	7.8%	6.6%

FINAL HEAD SPACE RESULT (ppm)

	Methane	Ethylene	Ethane
WWt.	16.04	28.05	30.07
HENRY'S CONSTANT	3.76E+04	1.02E+04	2.63E+04
RL	1.30	1.00	0.60
mcs 0.1ml	0.340	0.000	0.000
LCS FID	13.910	11.350	12.780
LCSD FID	13.600	11.100	12.660
P1905493-001 0.1ml	15.850	0.000	0.000
P1905493-002 0.1ml	3350.750	13.200	0.650
P1905493-003 0.1ml	1243.870	13.660	0.520
P1905493-004 0.1ml	15024.45	0.000	0.000
P1905493-005 0.1ml	17429.71	0.000	0.000
P1905493-006 0.1ml	14084.02	0.000	0.000
P1905493-007 0.1ml	6935.690	0.000	0.000
P1905493-002MS 0.1ml	3569.080	575.240	642.640
P1905493-002MSD 0.1ml	3327.450	537.400	600.460

00999360

Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191901.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 09:46:53
Operator : WH
Sample : STD s32-05221901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 19 10:01:02 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.116	857578	94.544	ppm
7)	Ethylene	1.680	1704458	101.854	ppm
8)	Ethane	1.943	1719572	101.449	ppm
9)	Propylene	4.302	2529612	107.958	ppm
10)	Propane	4.425	2606105	104.746	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191901.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 09:46:53
Operator : WH
Sample : STD s32-05221901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 19 10:01:02 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
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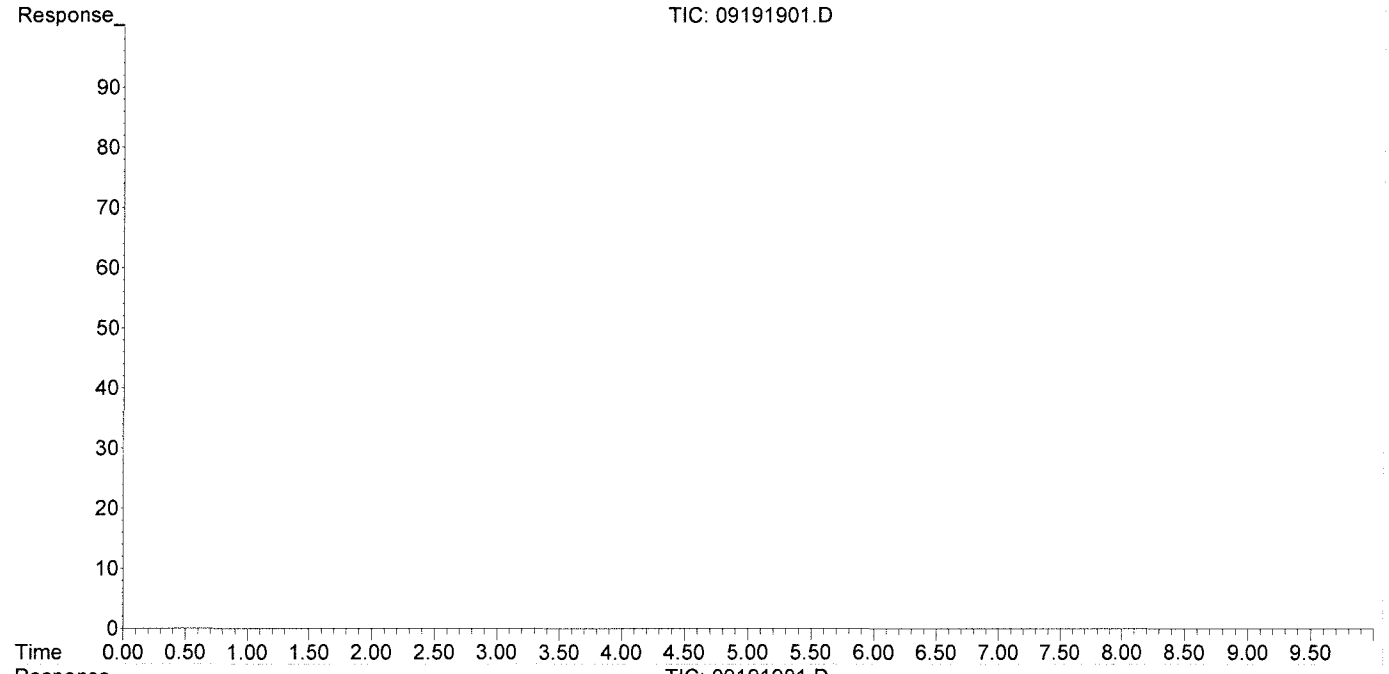
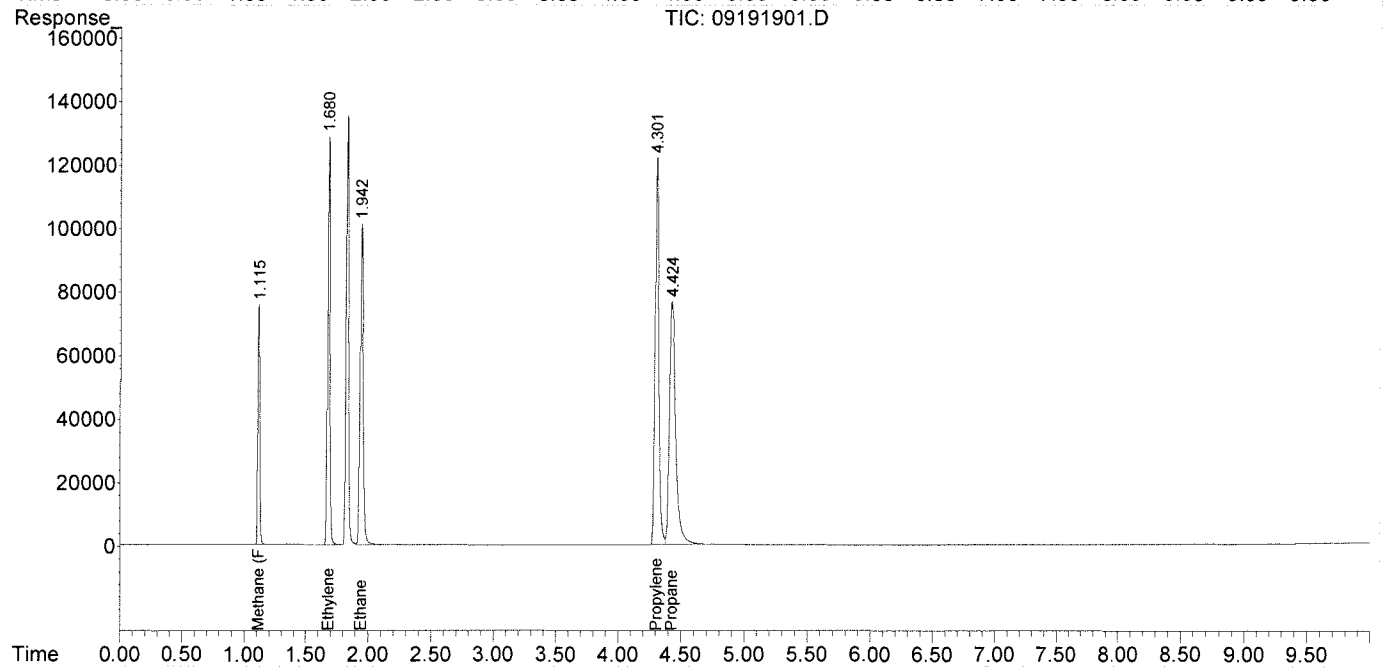
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191915.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 14:56:17
Operator : WH
Sample : STD s32-05221901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 19 15:13:02 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

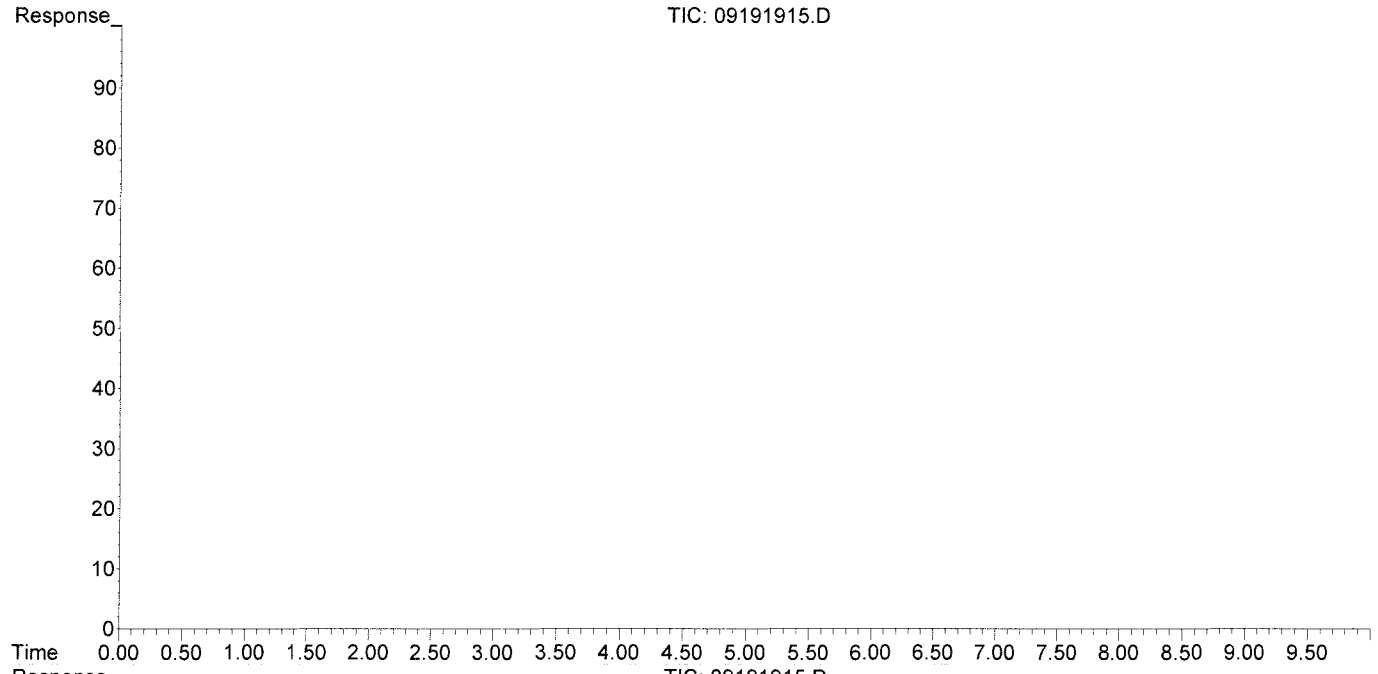
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.117	924745	101.949	ppm
7)	Ethylene	1.682	1820161	108.768	ppm
8)	Ethane	1.945	1831465	108.050	ppm
9)	Propylene	4.305	2686868	114.669	ppm
10)	Propane	4.428	2758067	110.854	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

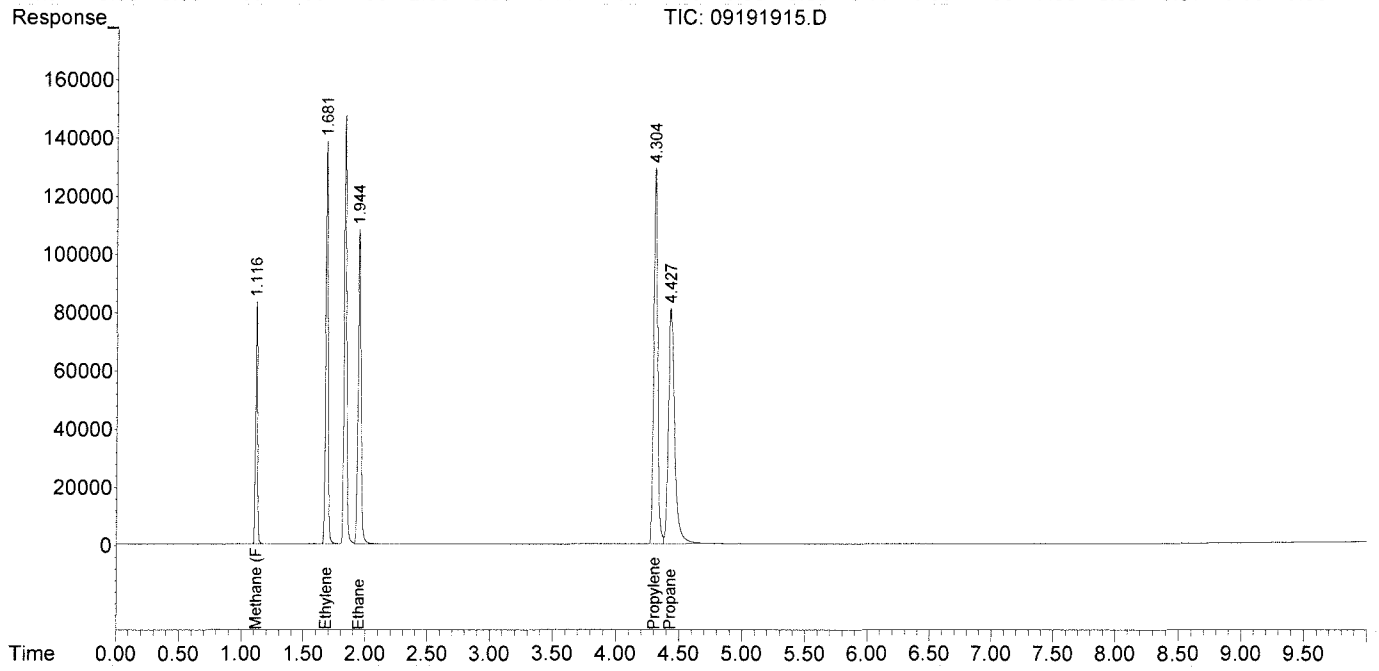
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_09\19\
Data File : 09191915.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 19-Sep-2019, 14:56:17
Operator : WH
Sample : STD s32-05221901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 19 15:13:02 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Injection Log

Directory: I:\GC10\DATA\RSK_FID\2017_09\12\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	12-Sep-17, 08:38:08	09121701.D	test		MC	RSKBOTH.M	
2	12-Sep-17, 10:52:40	09121702.D	0.151ppm 0.250ml s32-09121702		MC	RSKBOTH.M	Curve
3	12-Sep-17, 11:05:49	09121703.D	0.302ppm 0.5ml s32-09121702		MC	RSKBOTH.M	Curve
4	12-Sep-17, 11:45:34	09121704.D	1.51ppm 0.1ml s32-09051701		MC	RSKBOTH.M	Curve
5	12-Sep-17, 12:09:33	09121705.D	4.53ppm 0.3ml s32-09051701		MC	RSKBOTH.M	Curve
6	12-Sep-17, 12:30:23	09121706.D	10.57ppm 0.7ml s32-09051701		MC	RSKBOTH.M	Curve
7	12-Sep-17, 12:47:18	09121707.D	200ppm 0.1ml s32-09121701		MC	RSKBOTH.M	Curve
8	12-Sep-17, 13:00:22	09121708.D	600ppm 0.3ml s32-09121701		MC	RSKBOTH.M	Curve
9	12-Sep-17, 13:47:48	09121709.D	1000ppm 0.5ml s32-09121701		MC	RSKBOTH.M	Curve
10	12-Sep-17, 14:07:58	09121710.D	2000ppm 1ml s32-09121701		MC	RSKBOTH.M	Curve
11	12-Sep-17, 14:48:48	09121711.D	4000ppm 0.1ml s32-08231701		MC	RSKBOTH.M	Curve
12	12-Sep-17, 15:21:51	09121712.D	20000ppm 0.5ml s32-08231701		MC	RSKBOTH.M	Curve
13	12-Sep-17, 15:38:59	09121713.D	mb 0.5ml		MC	RSKBOTH.M	Pass
14	12-Sep-17, 15:55:35	09121714.D	mb 0.1ml		MC	RSKBOTH.M	Pass
15	12-Sep-17, 16:15:26	09121715.D	icv s30-05241604		MC	RSKBOTH.M	Pass

Injection Log

Directory: I:\GC10\DATA\RSK_FID\2019_09\19\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	19-Sep-19, 09:46:53	09191901.D	STD s32-05221901		WH	RSKBOTH.M	
2	19-Sep-19, 10:12:42	09191902.D	RB 0.1ml		WH	RSKBOTH.M	
3	19-Sep-19, 11:28:04	09191903.D	mcs 0.1ml		WH	RSKBOTH.M	
4	19-Sep-19, 11:40:59	09191904.D	P1905493-001 0.1ml		WH	RSKBOTH.M	
5	19-Sep-19, 12:02:04	09191905.D	P1905493-003 0.1ml		WH	RSKBOTH.M	
6	19-Sep-19, 12:14:41	09191906.D	P1905493-004 0.1ml		WH	RSKBOTH.M	
7	19-Sep-19, 12:27:19	09191907.D	P1905493-005 0.1ml		WH	RSKBOTH.M	
8	19-Sep-19, 12:40:48	09191908.D	P1905493-006 0.1ml		WH	RSKBOTH.M	
9	19-Sep-19, 12:53:45	09191909.D	P1905493-007 0.1ml		WH	RSKBOTH.M	
10	19-Sep-19, 13:26:25	09191910.D	P1905493-002 0.1ml		WH	RSKBOTH.M	
11	19-Sep-19, 13:50:38	09191911.D	P1905493-002MS 0.1ml		WH	RSKBOTH.M	
12	19-Sep-19, 14:04:15	09191912.D	P1905493-002MSD 0.1ml		WH	RSKBOTH.M	
13	19-Sep-19, 14:21:20	09191913.D	LCS FID		WH	RSKBOTH.M	
14	19-Sep-19, 14:38:42	09191914.D	LCSD FID		WH	RSKBOTH.M	
15	19-Sep-19, 14:56:17	09191915.D	STD s32-05221901		WH	RSKBOTH.M	
16	19-Sep-19, 15:14:31	09191916.D	K1908366-001 0.1ml		WH	RSKBOTH.M	
17	19-Sep-19, 15:41:38	09191917.D	K1908366-002 0.1ml		WH	RSKBOTH.M	
18	19-Sep-19, 15:54:10	09191918.D	K1908366-003 0.1ml		WH	RSKBOTH.M	
19	19-Sep-19, 16:11:44	09191919.D	K1908366-004 0.1ml		WH	RSKBOTH.M	
20	19-Sep-19, 16:24:01	09191920.D	K1908366-005 0.1ml		WH	RSKBOTH.M	
21	19-Sep-19, 16:44:38	09191921.D	K1908366-006 0.1ml		WH	RSKBOTH.M	
22	19-Sep-19, 16:58:37	09191922.D	STD s32-05221901		WH	RSKBOTH.M	

10515 Research Drive
Knoxville, TN 37932
Phone: (865) 573-8188
Fax: (865) 573-8133

Client: RJ Modashia
ALS Laboratory Group
10450 Stancliff Rd
Suite 210
Houston, TX 77040

Phone: 281-575-2279

Fax:

Identifier: 034QI **Date Rec:** 09/12/2019 **Report Date:** 09/19/2019

Client Project #: NW01312.0150 **Client Project Name:** LHAAP-58

Purchase Order #:

Analysis Requested: CENSUS

Reviewed By:



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MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **ALS Laboratory Group**
Project: LHAAP-58

MI Project Number: **034QI**
Date Received: 09/12/2019

Sample Information

Client Sample ID:		35AWW19_091119	35AWW20_091119	LHSMW07_091119	35AWW06_091119	35AWW23_091119
Sample Date:		09/11/2019	09/11/2019	09/11/2019	09/11/2019	09/11/2019
Units:		cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Analyst/Reviewer:		HT	HT	HT	HT	HT

Dechlorinating Bacteria

Dehalococcoides	*DHC*	**1.84E+01**	**1.60E+04**	**4.98E+01**	**2.86E+01**	**3.26E+02**
tceA Reductase	TCE	**7.00E-01**	<5.00E-01	**3.00E-01 (J)**	<2.60E+00	**3.40E+00**
BAV1 Vinyl Chloride Reductase	BVC	<5.00E-01	**1.03E+04**	<5.00E-01	**7.00E-01 (J)**	**1.10E+00 (J)**
Vinyl Chloride Reductase	VCR	**1.10E+00**	<5.00E-01	**2.74E+02**	<2.60E+00	**3.21E+01**
Dehalobacter spp.	*DHBt*	**2.36E+04**	**3.86E+02**	**1.32E+03**	<2.56E+01	<1.39E+01

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **ALS Laboratory Group**
Project: LHAAP-58

MI Project Number: **034QI**
Date Received: 09/12/2019

Sample Information

Client Sample ID:	**35AWW11_091119**
Sample Date:	09/11/2019
Units:	cells/mL
Analyst/Reviewer:	HT

Dechlorinating Bacteria

Dehalococcoides	*DHC*	**1.24E+03**
tceA Reductase	TCE	<9.00E-01
BAV1 Vinyl Chloride Reductase	BVC	<9.00E-01
Vinyl Chloride Reductase	VCR	**8.01E+01**
Dehalobacter spp.	*DHBt*	**1.15E+05**

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

Quality Assurance/Quality Control Data

Samples Received **9/12/2019**

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
BVC	09/12/2019	09/19/2019	1 °C	100%	non-detect	non-detect
TCE	09/12/2019	09/19/2019	1 °C	98%	non-detect	non-detect
VCR	09/12/2019	09/19/2019	1 °C	107%	non-detect	non-detect
DHBt	09/12/2019	09/19/2019	1 °C	105%	non-detect	non-detect
DHC	09/12/2019	09/19/2019	1 °C	107%	non-detect	non-detect

HS19090511 8260 Raw Data

ALS WO# HS19090511

MSVOA06 -Logbook

Batch: 37507
Date: 09-11-2019
Method: 8260 ICAL
Comments:

Analyst: Devak Giga
Reviewer:
Laboratory: Houston

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	09-11-2019 11:08 am	1.00	0.00 mL	0.00 mL	X091101.D	Liquid	Y	NA
	Auto find/purged									
2	VSTD000.25	ICAL1	09-11-2019 11:31 am	1.00	5.00 mL	0.00 mL	X091102.D	Liquid	Y	NA
3	VSTD000.5	ICAL2	09-11-2019 12:19 pm	1.00	5.00 mL	0.00 mL	X091103.D	Liquid	Y	NA
4	VSTD001	ICAL3	09-11-2019 12:43 pm	1.00	5.00 mL	0.00 mL	X091104.D	Liquid	Y	NA
5	VSTD002	ICAL4	09-11-2019 01:07 pm	1.00	5.00 mL	0.00 mL	X091105.D	Liquid	Y	NA
6	VSTD005	ICAL5	09-11-2019 01:31 pm	1.00	5.00 mL	0.00 mL	X091106.D	Liquid	Y	NA
7	VSTD020	ICAL6	09-11-2019 01:55 pm	1.00	5.00 mL	0.00 mL	X091107.D	Liquid	Y	NA
8	VSTD050	ICAL7	09-11-2019 02:19 pm	1.00	5.00 mL	0.00 mL	X091108.D	Liquid	Y	NA
9	VSTD100	ICAL8	09-11-2019 02:43 pm	1.00	5.00 mL	0.00 mL	X091109.D	Liquid	Y	NA
10	VSTD150	ICAL9	09-11-2019 03:07 pm	1.00	5.00 mL	0.00 mL	X091110.D	Liquid	Y	NA
11	VSTD200	ICAL	09-11-2019 03:31 pm	1.00	5.00 mL	0.00 mL	X091111.D	Liquid	Y	NA
12	BLANK	SAMP	09-11-2019 03:55 pm	1.00	5.00 mL	0.00 mL	X091112.D	Liquid	Y	NA
	Cleanup blk									
13	BLANK	SAMP	09-11-2019 04:19 pm	1.00	5.00 mL	0.00 mL	X091113.D	Liquid	Y	NA
	Cleanup blk									
14	ICV	ICV	09-11-2019 04:43 pm	1.00	5.00 mL	0.00 mL	X091114.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
15	BLANK	SAMP	09-11-2019 05:07 pm	1.00	5.00 mL	0.00 mL	X091115.D	Liquid	Y	NA
	Cleanup blk									
16	CCB	SAMP	09-11-2019 05:31 pm	1.00	5.00 mL	0.00 mL	X091116.D	Liquid	Y	NA
	CCB									
17	VLCSW-190911	LCS	09-11-2019 05:55 pm	1.00	5.00 mL	0.00 mL	X091117.D	Liquid	Y	NA
	4 uL LCS std/50 mL DI									
18	BLK	SAMP	09-11-2019 06:19 pm	1.00	5.00 mL	0.00 mL	X091118.D	Liquid	Y	NA
	Cleanup blk									
19	VBLKW-190911	MBLK	09-11-2019 06:43 pm	1.00	5.00 mL	0.00 mL	X091119.D	Liquid	Y	NA
20	HS19090151-01	SAMP	09-11-2019 07:07 pm	1.00	5.00 mL	0.00 mL	X091120.D	Liquid	Y	<2
21	HS19090191-02	SAMP	09-11-2019 07:31 pm	1.00	5.00 mL	0.00 mL	X091121.D	Liquid	Y	<2
22	HS19090454-03	SAMP	09-11-2019 07:55 pm	1.00	5.00 mL	0.00 mL	X091122.D	Liquid	Y	<2
23	HS19090151-02	SAMP	09-11-2019 08:19 pm	1.00	5.00 mL	0.00 mL	X091123.D	Liquid	Y	<2
24	HS19090191-01	SAMP	09-11-2019 08:43 pm	1.00	5.00 mL	0.00 mL	X091124.D	Liquid	Y	<2
25	HS19090454-01	SAMP	09-11-2019 09:07 pm	1.00	5.00 mL	0.00 mL	X091125.D	Liquid	Y	<2
26	HS19090151-02MS	MS	09-11-2019 09:31 pm	1.00	5.00 mL	0.00 mL	X091126.D	Liquid	Y	NA
	3.2 uL cal std/40 mL sample									
27	HS19090151-02MSD	MSD	09-11-2019 09:55 pm	1.00	5.00 mL	0.00 mL	X091127.D	Liquid	Y	NA
	3.2 uL cal std/40 mL sample									
28	CCV-END	CCV	09-11-2019 10:19 pm	1.00	5.00 mL	0.00 mL	X091128.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									

MSVOA06 -Logbook

Chemical	Value
SURR SPK ID	30502-90-03
IS ID	30502-90-04
ICV STD ID	30603-83-01
LCS/MS ID	30603-83-01
CAL STD ID	30502-93-01/02
BFB ID	30502-90-03
pH Paper	634-64-11

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19090511

Matrix Spike - Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
cis-1,3-Dichloropropene	50.00	47.86	96	80-120
trans-1,3-Dichloroprope	50.00	47.51	95	80-120
1,3-Dichlorobenzene	50.00	46.72	93	80-120
2,2-Dichloropropane	50.00	46.21	92	80-120
1,1-Dichloropropene	50.00	46.50	93	80-120
Dibromomethane	50.00	45.47	91	80-120
1,2-Dibromoethane	50.00	46.84	94	80-120
trans-1,2-Dichloroethen	50.00	44.98	90	80-120
1,1,1,2-Tetrachloroetha	50.00	47.18	94	80-120
1,1,1-Trichloroethane	50.00	45.58	91	80-120
1,1,2,2-Tetrachloroetha	50.00	49.36	99	80-120
1,1,2-Trichloroethane	50.00	45.95	92	80-120
1,1-Dichloroethane	50.00	44.05	88	80-120
1,1-Dichloroethene	50.00	45.81	92	80-120
Trichloroethene	50.00	46.88	94	80-120
1,2,3-Trichlorobenzene	50.00	48.90	98	80-120
Trichlorofluoromethane	50.00	47.37	95	80-120
1,2,4-Trichlorobenzene	50.00	50.72	101	80-120
1,2,4-Trimethylbenzene	50.00	46.01	92	80-120
Tetrachloroethene	50.00	45.90	92	80-120
1,2-Dichlorobenzene	50.00	45.30	91	80-120
1,2-Dichloroethane	50.00	46.25	92	80-120
1,2-Dichloropropane	50.00	45.15	90	80-120
1,3,5-Trimethylbenzene	50.00	45.98	92	80-120
1,3-Dichloropropane	50.00	44.92	90	80-120
1,4-Dichlorobenzene	50.00	46.02	92	80-120
Toluene	50.00	44.37	89	80-120
2-Butanone	100.00	99.60	100	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

_____

FORM III VOA

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19090511

Matrix Spike - Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
2-Chlorotoluene	50.00	48.02	96	80-120
2-Hexanone	100.00	95.51	96	80-120
4-Chlorotoluene	50.00	45.36	91	80-120
tert-Butylbenzene	50.00	45.27	90	80-120
4-Methyl-2-Pentanone	100.00	90.26	90	80-120
Acetone	100.00	110.65	111	80-120
Benzene	50.00	45.24	90	80-120
Bromobenzene	50.00	47.11	94	80-120
Bromochloromethane	50.00	44.86	90	80-120
Bromodichloromethane	50.00	46.90	94	80-120
Bromoform	50.00	49.23	98	80-120
Bromomethane	50.00	55.30	111	80-120
Carbon Disulfide	100.00	92.26	92	80-120
Carbon Tetrachloride	50.00	46.69	93	80-120
Chlorobenzene	50.00	44.77	90	80-120
Chloroethane	50.00	50.68	101	80-120
Chloroform	50.00	45.52	91	80-120
Chloromethane	50.00	48.18	96	80-120
cis-1,2-Dichloroethene	50.00	45.19	90	80-120
Dibromochloromethane	50.00	47.75	96	80-120
Dichlorodifluoromethane	50.00	47.31	95	80-120
Ethylbenzene	50.00	45.41	91	80-120
Hexachlorobutadiene	50.00	51.74	103	80-120
Isopropylbenzene	50.00	45.33	91	80-120
m,p-Xylenes	100.00	91.73	92	80-120
Methylene Chloride	50.00	50.29	100	80-120
n-Butylbenzene	50.00	49.17	98	80-120
n-Propylbenzene	50.00	46.04	92	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

_____

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19090511

Matrix Spike - Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
Naphthalene	50.00	50.14	100	80-120
o-Xylene	50.00	46.99	94	80-120
sec-Butylbenzene	50.00	45.80	92	80-120
Styrene	50.00	46.72	93	80-120
Vinyl Chloride	50.00	45.34	91	80-120
1,2,3-Trichloropropane	50.00	46.61	93	80-120
p-Isopropyltoluene	50.00	47.62	95	80-120
1,2-Dibromo-3-Chloropro	50.00	50.45	101	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

_____

FORM III VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19090511

Lab File ID: X091101 BFB Injection Date: 09/11/19

Instrument ID: VOA6 BFB Injection Time: 1108

GC Column: DB624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.4
75	30.0 - 60.0% of mass 95	47.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.1
173	Less than 2.0% of mass 174	0.6 (0.9)1
174	Greater than 50.0% of mass 95	67.3
175	5.0 - 9.0% of mass 174	5.5 (8.2)1
176	95.0 - 101.0% of mass 174	66.3 (98.4)1
177	5.0 - 9.0% of mass 176	4.8 (7.2)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD000.25	VSTD000.25	X091102	09/11/19	1131
02	VSTD000.5	VSTD000.5	X091103	09/11/19	1219
03	VSTD001	VSTD001	X091104	09/11/19	1243
04	VSTD002	VSTD002	X091105	09/11/19	1307
05	VSTD005	VSTD005	X091106	09/11/19	1331
06	VSTD020	VSTD020	X091107	09/11/19	1355
07	VSTD050	VSTD050	X091108	09/11/19	1419
08	VSTD100	VSTD100	X091109	09/11/19	1443
09	VSTD150	VSTD150	X091110	09/11/19	1507
10	VSTD200	VSTD200	X091111	09/11/19	1531
11	ICV	ICV	X091114	09/11/19	1643
12					
13					
14					
15					
16					
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18					
19					
20					
21					
22					

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19090511

Instrument ID: VOA6 Calibration Date(s): 09/11/19 09/11/19

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1131 1531

LAB FILE ID: RF0.25: X091102 RF0.5: X091103 RF1: X091104
RF2: X091105 RF5: X091106 RF20: X091107

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF5	RF20
cis-1,3-Dichloropropene		0.605	0.510	0.479	0.514	0.527
trans-1,3-Dichloropropene		0.532	0.464	0.420	0.472	0.471
1,3-Dichlorobenzene		1.938	1.686	1.425	1.598	1.551
2,2-Dichloropropane		0.827	0.733	0.658	0.669	0.653
1,1-Dichloropropene		0.465	0.426	0.426	0.429	0.421
Dibromomethane		0.278	0.245	0.209	0.225	0.221
1,2-Dibromoethane		0.432	0.387	0.366	0.376	0.375
trans-1,2-Dichloroethene		0.542	0.481	0.425	0.438	0.450
1,1,1,2-Tetrachloroethane		0.453	0.371	0.350	0.380	0.381
1,1,1-Trichloroethane		0.860	0.665	0.682	0.668	0.689
1,1,2,2-Tetrachloroethane		2534	4019	7917	20131	74445
1,1,2-Trichloroethane		0.335	0.304	0.262	0.282	0.287
1,1-Dichloroethane		0.966	0.879	0.799	0.812	0.799
1,1-Dichloroethene		0.555	0.450	0.400	0.407	0.432
Trichloroethene		0.471	0.379	0.358	0.374	0.383
1,2,3-Trichlorobenzene		0.708	0.509	0.477	0.499	0.512
Trichlorofluoromethane		0.910	0.708	0.722	0.724	0.761
1,2,4-Trichlorobenzene		0.911	0.785	0.719	0.774	0.830
1,2,4-Trimethylbenzene		3.419	2.636	2.459	2.690	2.566
Tetrachloroethene		0.473	0.368	0.346	0.357	0.359
1,2-Dichlorobenzene		1.946	1.612	1.421	1.525	1.448
1,2-Dichloroethane		0.486	0.436	0.414	0.398	0.417
1,2-Dichloropropane		0.410	0.344	0.289	0.328	0.314
1,3,5-Trimethylbenzene		3.365	2.612	2.436	2.550	2.496
1,3-Dichloropropane		0.758	0.606	0.566	0.583	0.569
1,4-Dichlorobenzene		2.049	1.623	1.587	1.550	1.559
Toluene		1.994	1.669	1.558	1.594	1.536
2-Butanone		0.164	0.146	0.142	0.156	0.175
2-Chlorotoluene		7538	11478	20963	52981	183313
2-Hexanone		0.224	0.208	0.200	0.209	0.211
4-Chlorotoluene		2.944	2.568	2.303	2.391	2.293
tert-Butylbenzene		2.796	2.152	2.067	2.148	2.081
4-Methyl-2-Pentanone		0.370	0.307	0.292	0.310	0.309
Acetone		2796	3677	5543	12619	38329
Benzene		1.549	1.379	1.247	1.290	1.256
Bromobenzene		1.088	0.962	0.859	0.920	0.925
Bromochloromethane		0.368	0.303	0.295	0.288	0.292
Bromodichloromethane		0.527	0.429	0.397	0.423	0.420
Bromoform		0.338	0.266	0.263	0.288	0.306
Bromomethane		2529	3909	7413	17822	58243
Carbon Disulfide		1.597	1.287	1.217	1.228	1.281
Carbon Tetrachloride		0.466	0.489	0.438	0.431	0.435
Chlorobenzene		1.412	1.148	1.039	1.035	1.012
Chloroethane		1391	2962	5096	12384	44628

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1909051

Instrument ID: VOA6 Calibration Date(s): 09/11/19 09/11/19

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1131 1531

LAB FILE ID: RF0.25: X091102 RF0.5: X091103 RF1: X091104
RF2: X091105 RF5: X091106 RF20: X091107

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF5	RF20
Chloroform		0.956	0.826	0.804	0.824	0.816
Chloromethane		1991	3564	6106	14767	51588
cis-1,2-Dichloroethene		0.648	0.506	0.502	0.526	0.537
Dibromochloromethane		0.465	0.407	0.366	0.402	0.410
Dichlorodifluoromethane		0.421	0.366	0.351	0.348	0.380
Ethylbenzene		0.700	0.558	0.513	0.559	0.538
Hexachlorobutadiene		2333	2354	4709	10747	42707
Isopropylbenzene		2.058	1.702	1.594	1.627	1.584
m,p-Xylenes		0.867	0.688	0.644	0.662	0.649
Methylene Chloride		4784	6231	10011	20049	67157
n-Butylbenzene		2.405	1.955	1.903	2.073	2.073
n-Propylbenzene		4.197	3.460	3.103	3.343	3.237
Naphthalene		1.505	1.200	1.118	1.255	1.280
o-Xylene		0.838	0.704	0.629	0.651	0.632
sec-Butylbenzene		3.827	3.060	2.832	2.866	2.849
Styrene		1.350	1.159	1.077	1.153	1.102
Vinyl Chloride		0.640	0.565	0.524	0.506	0.513
1,2,3-Trichloropropane		0.813	0.629	0.621	0.644	0.636
p-Isopropyltoluene		3.378	2.626	2.409	2.598	2.618
1,2-Dibromo-3-Chloropropane		0.129	0.122	0.113	0.123	0.134
1,2-Dichloroethane-d4		2997	4149	7112	18091	66450
Dibromofluoromethane		1985	3670	6526	17526	63931
Toluene-d8		1.797	1.564	1.364	1.428	1.340
4-Bromofluorobenzene		3880	5953	10361	24672	85758

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1909051

Instrument ID: VOA6 Calibration Date(s): 09/11/19 09/11/19

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1131 1531

LAB FILE ID: RF50: X091108 RF100: X091109 RF150: X091110
RF200: X091111

COMPOUND	RF50	RF100	RF150	RF200
cis-1,3-Dichloropropene	0.508	0.510	0.515	0.518
trans-1,3-Dichloropropene	0.454	0.452	0.467	0.464
1,3-Dichlorobenzene	1.462	1.461	1.486	1.487
2,2-Dichloropropane	0.582	0.596	0.594	0.582
1,1-Dichloropropene	0.387	0.407	0.410	0.409
Dibromomethane	0.215	0.209	0.216	0.214
1,2-Dibromoethane	0.357	0.345	0.353	0.346
trans-1,2-Dichloroethene	0.400	0.408	0.402	0.389
1,1,1,2-Tetrachloroethane	0.367	0.365	0.376	0.371
1,1,1-Trichloroethane	0.628	0.660	0.657	0.651
1,1,2,2-Tetrachloroethane	160783	298413	431707	560360
1,1,2-Trichloroethane	0.264	0.247	0.254	0.247
1,1-Dichloroethane	0.716	0.710	0.698	0.675
1,1-Dichloroethene	0.393	0.411	0.400	0.386
Trichloroethene	0.362	0.378	0.383	0.382
1,2,3-Trichlorobenzene	0.499	0.507	0.541	0.547
Trichlorofluoromethane	0.698	0.762	0.748	0.735
1,2,4-Trichlorobenzene	0.791	0.793	0.838	0.846
1,2,4-Trimethylbenzene	2.374	2.408	2.420	2.410
Tetrachloroethene	0.330	0.340	0.343	0.338
1,2-Dichlorobenzene	1.372	1.341	1.366	1.346
1,2-Dichloroethane	0.386	0.385	0.402	0.397
1,2-Dichloropropane	0.287	0.282	0.283	0.281
1,3,5-Trimethylbenzene	2.320	2.318	2.363	2.318
1,3-Dichloropropane	0.533	0.508	0.516	0.507
1,4-Dichlorobenzene	1.464	1.468	1.502	1.489
Toluene	1.399	1.385	1.398	1.352
2-Butanone	0.160	0.148	0.148	0.142
2-Chlorotoluene	400143	776530	1111118	1446997
2-Hexanone	0.196	0.187	0.190	0.188
4-Chlorotoluene	2.134	2.113	2.147	2.130
tert-Butylbenzene	1.923	1.967	2.042	1.961
4-Methyl-2-Pentanone	0.281	0.264	0.272	0.270
Acetone	97100	166654	232352	284066
Benzene	1.180	1.199	1.220	1.203
Bromobenzene	0.878	0.865	0.890	0.892
Bromochloromethane	0.266	0.266	0.269	0.257
Bromodichloromethane	0.407	0.413	0.419	0.421
Bromoform	0.303	0.301	0.317	0.314
Bromomethane	132892	250871	328661	
Carbon Disulfide	1.174	1.208	1.194	1.155
Carbon Tetrachloride	0.412	0.447	0.456	0.461
Chlorobenzene	0.952	0.940	0.956	0.934
Chloroethane	98550	178684	244145	304376

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1909051

Instrument ID: VOA6 Calibration Date(s): 09/11/19 09/11/19

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1131 1531

LAB FILE ID: RF50: X091108 RF100: X091109 RF150: X091110
RF200: X091111

COMPOUND	RF50	RF100	RF150	RF200
Chloroform	0.746	0.731	0.735	0.720
Chloromethane	116359	225494	322071	425541
cis-1,2-Dichloroethene	0.481	0.476	0.476	0.461
Dibromochloromethane	0.395	0.389	0.400	0.395
Dichlorodifluoromethane	0.331	0.368	0.369	0.363
Ethylbenzene	0.501	0.506	0.514	0.501
Hexachlorobutadiene	96426	195659	282920	367338
Isopropylbenzene	1.458	1.493	1.510	1.481
m,p-Xylenes	0.604	0.603	0.602	0.584
Methylene Chloride	142480	258129	362490	461146
n-Butylbenzene	1.905	1.945	1.941	1.914
n-Propylbenzene	3.007	3.081	3.136	3.075
Naphthalene	1.260	1.248	1.354	1.367
o-Xylene	0.590	0.586	0.587	0.566
sec-Butylbenzene	2.620	2.712	2.714	2.699
Styrene	1.046	1.020	1.012	0.993
Vinyl Chloride	0.473	0.503	0.491	0.475
1,2,3-Trichloropropane	0.602	0.578	0.591	0.582
p-Isopropyltoluene	2.443	2.490	2.525	2.514
1,2-Dibromo-3-Chloropropane	0.133	0.126	0.138	0.138
1,2-Dichloroethane-d4	146423	278768	397673	513160
Dibromofluoromethane	137410	261669	373457	481166
Toluene-d8	1.231	1.230	1.252	1.220
4-Bromofluorobenzene	185823	357809	511799	664062

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1909051

Instrument ID: VOA6 Calibration Date(s): 09/11/19 09/11/19

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1131 1531

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2
cis-1,3-Dichloropropene	AVRG		0.52085386	6.542	15.000
trans-1,3-Dichloropropene	AVRG		0.46622218	6.296	15.000
1,3-Dichlorobenzene	AVRG		1.56616886	10.313	15.000
2,2-Dichloropropane	AVRG		0.65490278	12.513	15.000
1,1-Dichloropropene	AVRG		0.42006466	5.130	15.000
Dibromomethane	AVRG		0.22579514	9.910	15.000
1,2-Dibromoethane	AVRG		0.37082961	7.280	15.000
trans-1,2-Dichloroethene	AVRG		0.43727846	11.148	15.000
1,1,1,2-Tetrachloroethane	AVRG		0.37921840	7.679	15.000
1,1,1-Trichloroethane	AVRG		0.68454006	9.961	15.000
1,1,2,2-Tetrachloroethane	LINR	-4.4e-003	1.37596758	0.9996768	0.9900000
1,1,2-Trichloroethane	AVRG		0.27585483	10.632	15.000
1,1-Dichloroethane	AVRG		0.78388551	12.165	15.000
1,1-Dichloroethene	AVRG		0.42616581	12.226	15.000
Trichloroethene	AVRG		0.38558875	8.658	15.000
1,2,3-Trichlorobenzene	AVRG		0.53323994	12.922	15.000
Trichlorofluoromethane	AVRG		0.75216525	8.413	15.000
1,2,4-Trichlorobenzene	AVRG		0.80969111	6.673	15.000
1,2,4-Trimethylbenzene	AVRG		2.59789848	12.597	15.000
Tetrachloroethene	AVRG		0.36149343	12.077	15.000
1,2-Dichlorobenzene	AVRG		1.48640928	13.092	15.000
1,2-Dichloroethane	AVRG		0.41333096	7.616	15.000
1,2-Dichloropropane	AVRG		0.31331062	13.628	15.000
1,3,5-Trimethylbenzene	AVRG		2.53092904	13.075	15.000
1,3-Dichloropropane	AVRG		0.57184085	13.660	15.000
1,4-Dichlorobenzene	AVRG		1.58814971	11.425	15.000
Toluene	AVRG		1.54272057	13.066	15.000
2-Butanone	AVRG		0.15349153	7.279	15.000
2-Chlorotoluene	LINR	9.139e-004	0.53267763	0.9997918	0.9900000
2-Hexanone	AVRG		0.20138970	6.170	15.000
4-Chlorotoluene	AVRG		2.33598105	11.700	15.000
tert-Butylbenzene	AVRG		2.12636942	12.400	15.000
4-Methyl-2-Pentanone	AVRG		0.29730874	10.921	15.000
Acetone	LINR	-0.1170275	7.79548481	0.9963047	0.9900000
Benzene	AVRG		1.28031416	9.166	15.000
Bromobenzene	AVRG		0.91993907	7.713	15.000
Bromochloromethane	AVRG		0.28956578	11.600	15.000
Bromodichloromethane	AVRG		0.42849370	8.918	15.000
Bromoform	AVRG		0.29949587	8.055	15.000
Bromomethane	LINR	-2.99e-002	2.56482728	0.9974643	0.9900000
Carbon Disulfide	AVRG		1.26004287	10.620	15.000
Carbon Tetrachloride	AVRG		0.44852456	5.046	15.000
Chlorobenzene	AVRG		1.04754956	14.568	15.000
Chloroethane	LINR	-5.07e-002	3.65702314	0.9972036	0.9900000

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1909051

Instrument ID: VOA6 Calibration Date(s): 09/11/19 09/11/19

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1131 1531

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2
Chloroform	AVRG		0.79545503	9.320	15.000
Chloromethane	LINR	-3.12e-003	2.67819752	0.9998950	0.9900000
cis-1,2-Dichloroethene	AVRG		0.51262414	11.027	15.000
Dibromochloromethane	AVRG		0.40331335	6.551	15.000
Dichlorodifluoromethane	AVRG		0.36643004	6.851	15.000
Ethylbenzene	AVRG		0.54345478	11.616	15.000
Hexachlorobutadiene	LINR	1.89e-002	2.08942332	0.9995221	0.9900000
Isopropylbenzene	AVRG		1.61192237	11.483	15.000
m,p-Xylenes	AVRG		0.65604376	13.138	15.000
Methylene Chloride	LINR	-5.18e-002	2.45246188	0.9990778	0.9900000
n-Butylbenzene	AVRG		2.01279947	8.004	15.000
n-Propylbenzene	AVRG		3.29328028	11.183	15.000
Naphthalene	AVRG		1.28732064	8.590	15.000
o-Xylene	AVRG		0.64250518	13.157	15.000
sec-Butylbenzene	AVRG		2.90866397	12.642	15.000
Styrene	AVRG		1.10136073	10.050	15.000
Vinyl Chloride	AVRG		0.52119691	10.044	15.000
1,2,3-Trichloropropane	AVRG		0.63293083	11.321	15.000
p-Isopropyltoluene	AVRG		2.62244652	11.189	15.000
1,2-Dibromo-3-Chloropropane	AVRG		0.12845274	6.580	15.000
1,2-Dichloroethane-d4	LINR	-1.52e-002	2.20304747	0.9996982	0.9900000
Dibromofluoromethane	LINR	-1.64e-002	2.34852613	0.9996231	0.9900000
Toluene-d8	AVRG		1.38093922	13.997	15.000
4-Bromofluorobenzene	LINR	-1.19e-002	2.14636571	0.9999142	0.9900000

FORM VI VOA

Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091101.D

Date : 11-SEP-2019 11:08

Client ID: BFB

Instrument: voa6.i

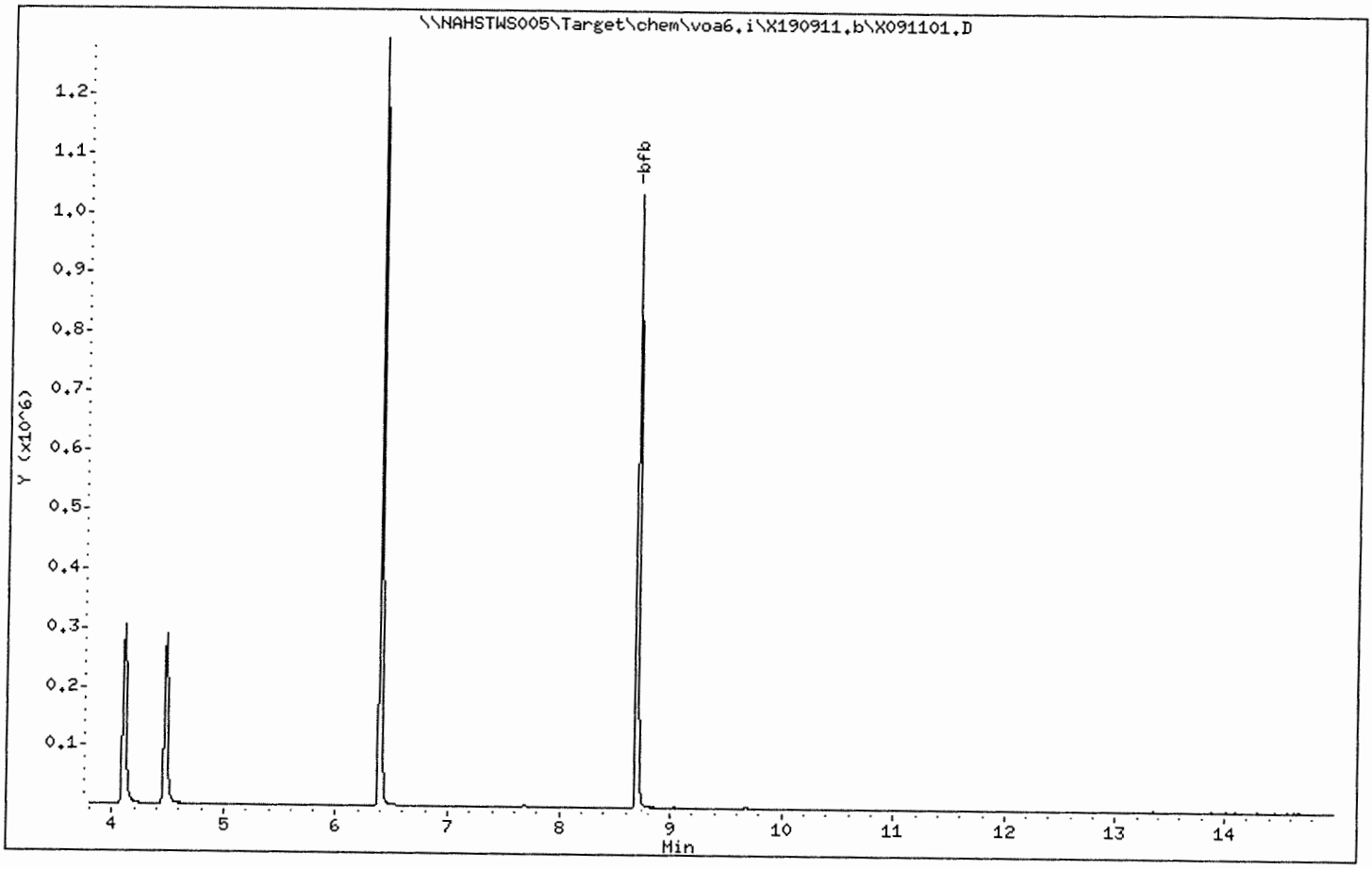
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091101.D

Date : 11-SEP-2019 11:08

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

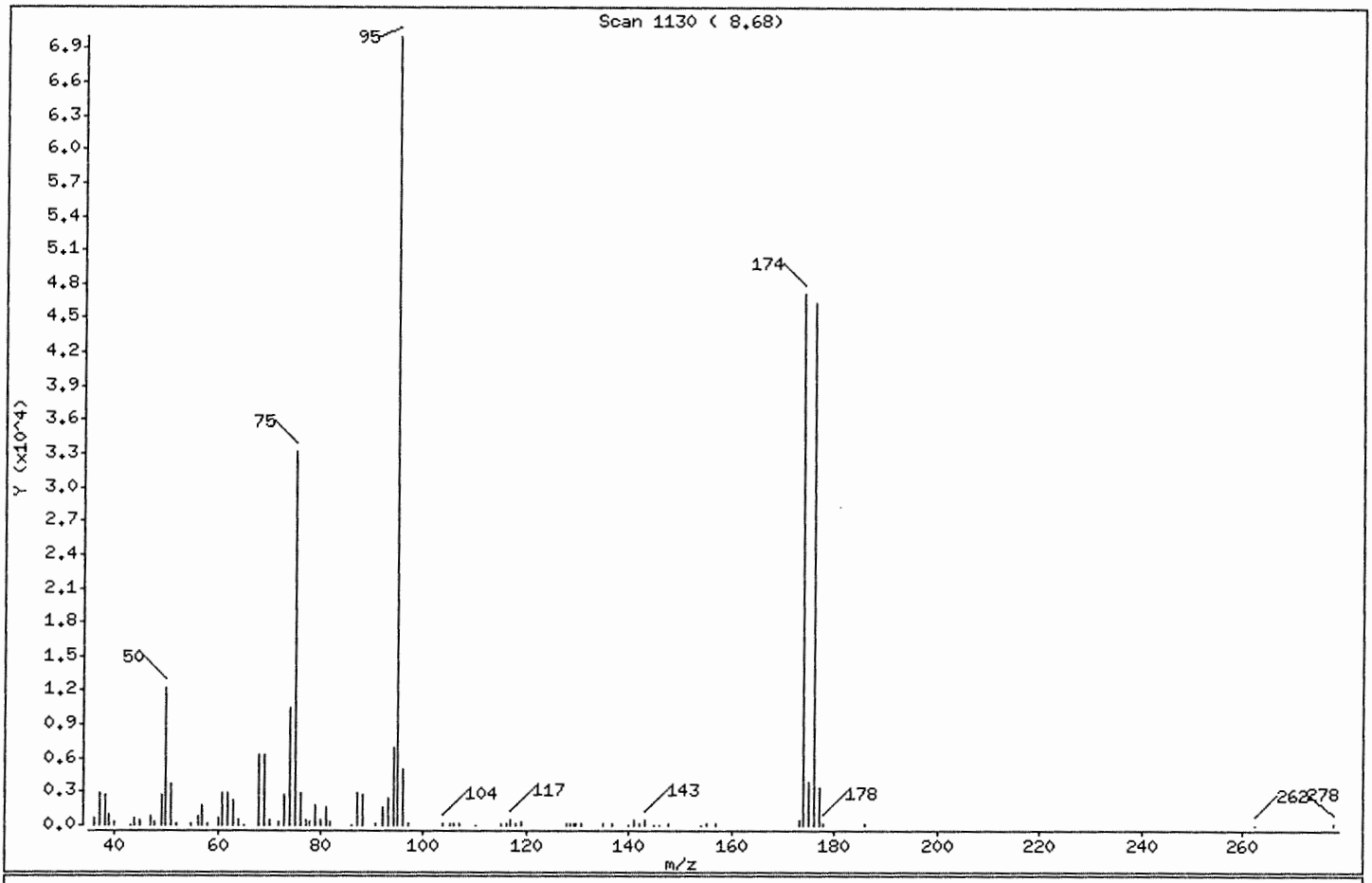
Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	17.38
75	30.00 - 60.00% of mass 95	47.36
96	5.00 - 9.00% of mass 95	7.10
173	Less than 2.00% of mass 174	0.63 (0.94)
174	Greater than 50.00% of mass 95	67.35
175	5.00 - 9.00% of mass 174	5.51 (8.18)
176	95.00 - 101.00% of mass 174	66.29 (98.42)
177	5.00 - 9.00% of mass 176	4.80 (7.24)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091101.D

Date : 11-SEP-2019 11:08

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

Data File: X091101.D
Spectrum: Scan 1130 (8.68)
Location of Maximum: 95.00
Number of points: 84

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	614	64.00	494	94.00	6852	140.90	421
37.10	2960	65.10	56	95.00	70024	141.90	82
38.10	2682	68.00	6276	96.00	4969	142.90	549
39.00	1027	69.10	6264	97.00	195	144.80	63
39.90	373	70.00	535	103.80	222	145.80	74
43.00	65	71.80	338	105.00	164	147.80	186
44.00	605	73.00	2761	105.80	215	154.00	55
45.00	493	74.10	10542	106.90	89	155.00	166
46.90	798	75.00	33160	110.10	72	156.80	123
47.90	389	76.00	2934	114.90	124	173.00	442
49.00	2750	77.10	482	116.00	165	173.90	47160
50.00	12169	77.90	383	116.90	432	175.00	3857
51.00	3764	78.90	1737	117.80	233	176.00	46416
52.00	167	80.00	484	119.00	298	177.00	3361
55.00	176	81.00	1549	127.80	221	177.90	116
56.10	752	81.80	312	128.60	85	186.10	95
57.00	1693	86.00	77	129.20	109	262.40	80
57.90	122	87.00	2854	129.70	172	278.10	91
60.10	604	88.00	2671	130.70	101		
61.00	2889	90.70	234	135.00	110		
62.00	2859	92.00	1593	136.80	100		
63.00	2307	93.00	2488	140.00	71		

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091102.D
Lab Smp Id: VSTD000.25 Client Smp ID: VSTD000.25
Inj Date : 11-SEP-2019 11:31
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.25;VSTD000.25;1;1;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X190911.b\8260W.m
Meth Date : 24-Sep-2019 15:13 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 11:31 Cal File: X091102.D
Als bottle: 2 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	382007	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	551953	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	491763	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	278341	50.0000	
$ 30 Dibromofluoromethane	113	4.118	4.103	(0.985)	1004	0.25000	(a)
$ 35 1,2-Dichloroethane-d4	65	4.490	4.476	(1.074)	1585	0.25000	(Ta)
$ 48 Toluene-d8	98	6.395	6.388	(0.834)	4654	0.25000	0.34 (TaM)
$ 69 4-Bromofluorobenzene	95	8.702	8.695	(1.134)	2617	0.25000	(a)
60 1,1,1,2-Tetrachloroethane	131	7.785	7.778	(1.015)	1121	0.25000	0.30 (a)
31 1,1,1-Trichloroethane	97	4.082	4.089	(0.976)	1481	0.25000	0.28 (a)
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	1183	0.25000	0.07 (aM)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	905	0.25000	0.33 (a)
22 1,1-Dichloroethane	63	2.929	2.922	(0.700)	1908	0.25000	0.31 (TaM)
11 1,1-Dichloroethene	96	1.919	1.912	(0.459)	1033	0.25000	0.31 (a)
32 1,1-Dichloropropene	75	4.290	4.283	(0.863)	1790	0.25000	0.38 (a)
93 1,2,3-Trichlorobenzene	180	11.753	11.746	(1.216)	672	0.25000	0.22 (aM)
71 1,2,3-Trichloropropane	75	8.874	8.867	(0.918)	959	0.25000	0.27 (aM)
90 1,2,4-Trichlorobenzene	180	11.352	11.345	(1.174)	984	0.25000	0.21 (aM)
79 1,2,4-Trimethylbenzene	105	9.390	9.383	(0.971)	4463	0.25000	0.30 (a)
89 1,2-Dibromo-3-Chloropropane	155	10.665	10.658	(1.103)	128	0.25000	0.17 (aM)
57 1,2-Dibromoethane	107	7.269	7.262	(0.948)	1006	0.25000	0.27 (a)
88 1,2-Dichlorobenzene	146	10.006	9.999	(1.035)	2520	0.25000	0.30 (a)
33 1,2-Dichloroethane	62	4.569	4.562	(0.919)	1333	0.25000	0.29 (a)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091102.D Page 2
Report Date: 24-Sep-2019 15:13

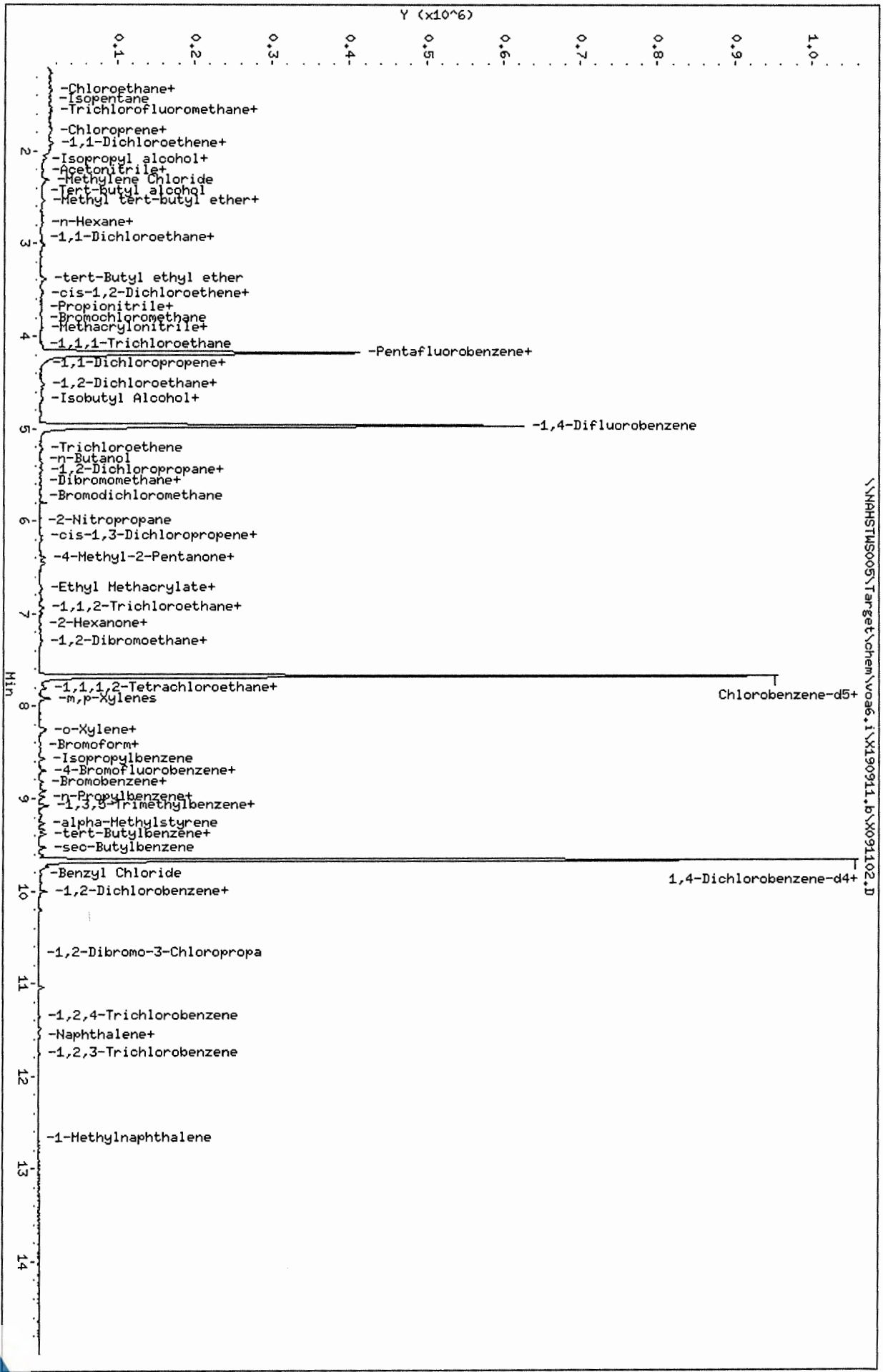
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42 1,2-Dichloropropane	63	5.443	5.443	(1.095)	1036	0.25000	0.29 (aM)
75 1,3,5-Trimethylbenzene	105	9.074	9.075	(0.939)	4211	0.25000	0.29 (a)
83 1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	2479	0.25000	0.28 (a)
54 1,3-Dichloropropane	76	6.990	6.983	(0.911)	1704	0.25000	0.30 (aM)
84 1,4-Dichlorobenzene	146	9.690	9.691	(1.002)	2678	0.25000	0.30 (a)
26 2,2-Dichloropropane	77	3.516	3.516	(0.841)	1440	0.25000	0.28 (aM)
24 2-Butanone	43	3.623	3.581	(0.866)	647	0.50000	0.55 (aM)
76 2-Chlorotoluene	91	8.981	8.981	(0.929)	3430	0.25000	0.37 (aM)
52 2-Hexanone	43	7.112	7.090	(0.927)	1285	0.50000	0.64 (a)
77 4-Chlorotoluene	91	9.082	9.075	(0.939)	4030	0.25000	0.30 (a)
82 p-Isopropyltoluene	119	9.655	9.655	(0.999)	4116	0.25000	0.28 (a)
45 4-Methyl-2-Pentanone	43	6.345	6.331	(0.827)	1615	0.50000	0.55 (a)
10 Acetone	43	1.976	1.976	(0.473)	1690	0.50000	(aM)
37 Benzene	78	4.519	4.519	(0.909)	4533	0.25000	0.32 (aM)
74 Bromobenzene	156	8.817	8.810	(0.912)	1414	0.25000	0.27 (a)
29 Bromochloromethane	128	3.802	3.803	(0.909)	714	0.25000	0.32 (a)
39 Bromodichloromethane	83	5.736	5.729	(1.154)	1349	0.25000	0.28 (aM)
66 Bromoform	173	8.415	8.416	(1.097)	782	0.25000	0.26 (aM)
6 Bromomethane	94	1.338	1.339	(0.320)	1321	0.25000	(aM)
19 Carbon Disulfide	76	2.069	2.069	(0.495)	5821	0.50000	0.60 (aM)
34 Carbon Tetrachloride	117	4.275	4.268	(0.860)	2187	0.25000	0.44 (aM)
59 Chlorobenzene	112	7.699	7.699	(1.004)	3592	0.25000	0.34 (a)
7 Chloroethane	64	1.410	1.403	(0.337)	703	0.25000	(a)
28 Chloroform	83	3.917	3.910	(0.937)	1995	0.25000	0.32 (a)
3 Chloromethane	50	1.080	1.074	(0.258)	985	0.25000	0.18 (aM)
27 cis-1,2-Dichloroethene	96	3.537	3.530	(0.846)	992	0.25000	0.25 (a)
46 cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	1676	0.25000	0.29 (a)
55 Dibromochloromethane	129	7.183	7.184	(0.937)	1053	0.25000	0.26 (a)
44 Dibromomethane	93	5.572	5.558	(1.121)	615	0.25000	0.24 (aM)
2 Dichlorodifluoromethane	85	0.973	0.973	(0.233)	717	0.25000	0.25 (aM)
61 Ethylbenzene	106	7.807	7.807	(1.018)	1541	0.25000	0.28 (a)
91 Hexachlorobutadiene	225	11.488	11.489	(1.188)	734	0.25000	1.22 (aM)
67 Isopropylbenzene	105	8.566	8.566	(1.117)	4864	0.25000	0.30 (a)
62 m,p-Xylenes	106	7.914	7.907	(1.032)	3863	0.50000	0.59 (a)
17 Methylene Chloride	84	2.305	2.306	(0.551)	3336	0.25000	(aM)
87 n-Butylbenzene	91	10.006	9.999	(1.035)	3297	0.25000	0.29 (aM)
73 n-Propylbenzene	91	8.917	8.917	(0.922)	5363	0.25000	0.29 (a)
92 Naphthalene	128	11.560	11.546	(1.196)	1882	0.25000	0.26 (a)
63 o-Xylene	106	8.251	8.244	(1.076)	1916	0.25000	0.30 (a)
81 sec-Butylbenzene	105	9.526	9.526	(0.985)	5167	0.25000	0.31 (a)
64 Styrene	104	8.272	8.265	(1.078)	3224	0.25000	0.29 (a)
78 tert-Butylbenzene	119	9.347	9.340	(0.967)	3480	0.25000	0.29 (a)
56 Tetrachloroethene	164	6.940	6.933	(0.905)	1002	0.25000	0.28 (a)
50 Toluene	91	6.460	6.453	(0.842)	5048	0.25000	0.33 (aM)
20 trans-1,2-Dichloroethene	96	2.535	2.528	(0.606)	919	0.25000	0.27 (Ta)
51 trans-1,3-Dichloropropene	75	6.703	6.682	(1.349)	1231	0.25000	0.23 (a)
38 Trichloroethene	130	5.214	5.214	(1.049)	1280	0.25000	0.30 (a)
8 Trichlorofluoromethane	101	1.560	1.561	(0.373)	1495	0.25000	0.26 (a)
5 Vinyl Chloride	62	1.145	1.138	(0.274)	1287	0.25000	0.32 (aM)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

QC Flag Legend

M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091102.D
Date : 11-SEP-2019 11:31
Client ID: VSTD000.25
Sample Info: VSTD000.25;VSTD000.25;1;1;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091103.D
Lab Smp Id: VSTD000.5 Client Smp ID: VSTD000.5
Inj Date : 11-SEP-2019 12:19
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.5;VSTD000.5;1;2;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X190911.b\8260W.m
Meth Date : 24-Sep-2019 15:13 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 12:19 Cal File: X091103.D
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.182	4.182	(1.000)	366344	50.0000	
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	530334	50.0000	
*	47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	476069	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	262064	50.0000	
$	30 Dibromofluoromethane	113	4.110	4.103	(0.983)	1985	0.50000	(a)
$	35 1,2-Dichloroethane-d4	65	4.483	4.476	(1.072)	2997	0.50000	0.14(Ta)
$	48 Toluene-d8	98	6.395	6.388	(0.834)	8556	0.50000	0.65(aM)
$	69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	3880	0.50000	0.27(a)
	60 1,1,1,2-Tetrachloroethane	131	7.785	7.778	(1.015)	2155	0.50000	0.59(a)
	31 1,1,1-Trichloroethane	97	4.096	4.089	(0.979)	3151	0.50000	0.62(a)
	68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	2534	0.50000	0.44(aM)
	53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	1594	0.50000	0.60(a)
	22 1,1-Dichloroethane	63	2.928	2.922	(0.700)	3540	0.50000	0.61(TaM)
	11 1,1-Dichloroethene	96	1.918	1.912	(0.459)	2032	0.50000	0.65(a)
	32 1,1-Dichloropropene	75	4.289	4.283	(0.863)	2468	0.50000	0.55(aM)
	93 1,2,3-Trichlorobenzene	180	11.753	11.746	(1.216)	1855	0.50000	0.66(a)
	71 1,2,3-Trichloropropane	75	8.874	8.867	(0.918)	2131	0.50000	0.64(aM)
	90 1,2,4-Trichlorobenzene	180	11.352	11.345	(1.174)	2387	0.50000	0.56(a)
	79 1,2,4-Trimethylbenzene	105	9.390	9.383	(0.971)	8959	0.50000	0.65(a)
	89 1,2-Dibromo-3-Chloropropane	155	10.672	10.658	(1.104)	338	0.50000	0.50(aM)
	57 1,2-Dibromoethane	107	7.269	7.262	(0.948)	2055	0.50000	0.58(a)
	88 1,2-Dichlorobenzene	146	9.998	9.999	(1.034)	5101	0.50000	0.65(a)
	33 1,2-Dichloroethane	62	4.569	4.562	(0.919)	2575	0.50000	0.58(a)

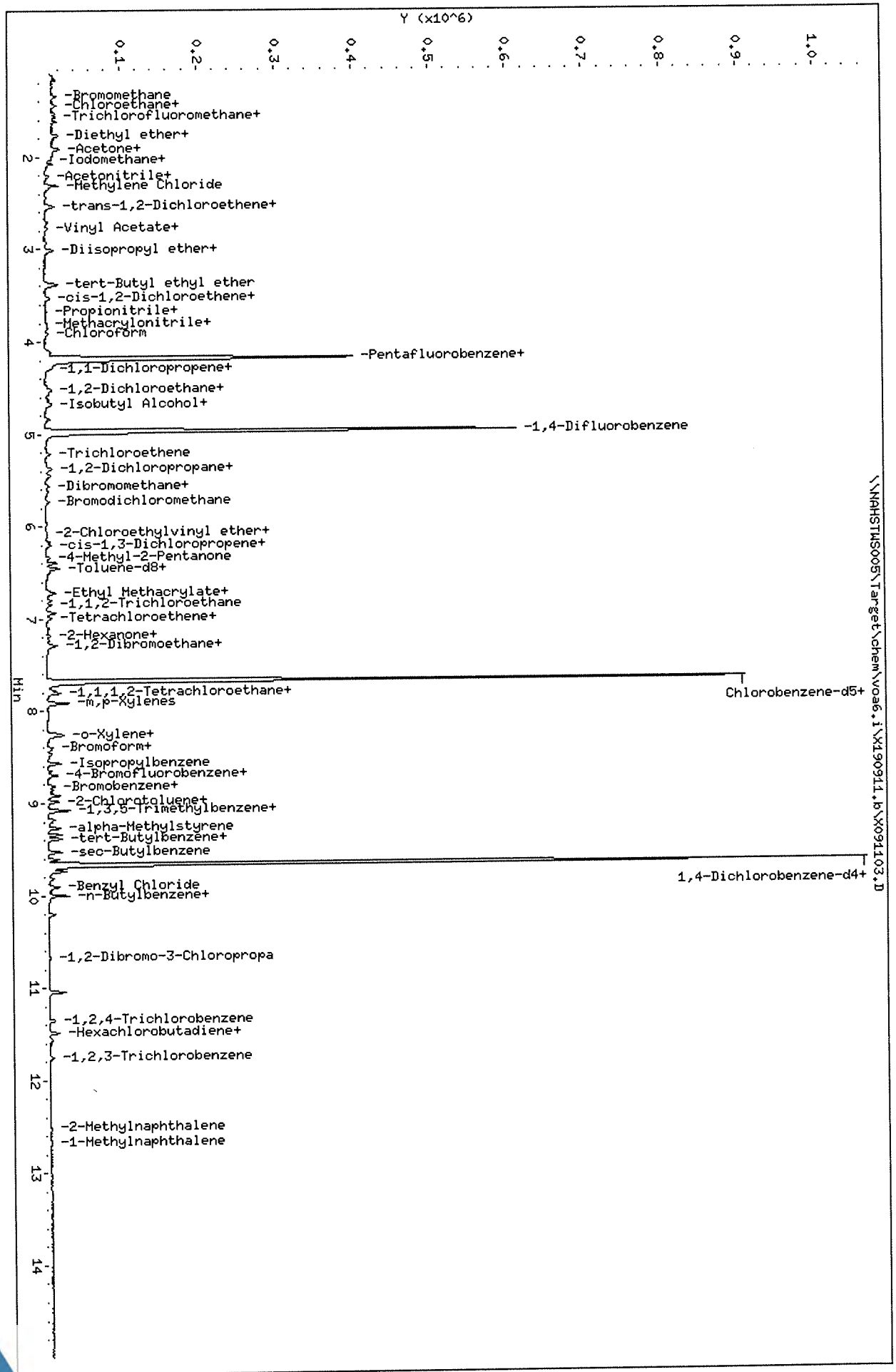
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42 1,2-Dichloropropane	63	5.443	5.443	(1.095)	2173	0.50000	0.65(aM)
75 1,3,5-Trimethylbenzene	105	9.074	9.075	(0.939)	8818	0.50000	0.66(a)
83 1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	5080	0.50000	0.61(a)
54 1,3-Dichloropropane	76	6.990	6.983	(0.911)	3608	0.50000	0.66(aM)
84 1,4-Dichlorobenzene	146	9.683	9.691	(1.001)	5371	0.50000	0.64(a)
26 2,2-Dichloropropane	77	3.516	3.516	(0.841)	3029	0.50000	0.63(aM)
24 2-Butanone	43	3.609	3.581	(0.863)	1202	1.00000	1.06(aM)
76 2-Chlorotoluene	91	8.981	8.981	(0.929)	7538	0.50000	0.81(a)
52 2-Hexanone	43	7.105	7.090	(0.926)	2130	1.00000	1.11(a)
77 4-Chlorotoluene	91	9.082	9.075	(0.939)	7714	0.50000	0.63(a)
82 p-Isopropyltoluene	119	9.655	9.655	(0.999)	8854	0.50000	0.64(a)
45 4-Methyl-2-Pentanone	43	6.338	6.331	(0.826)	3522	1.00000	1.24(a)
10 Acetone	43	1.976	1.976	(0.473)	2796	1.00000	(a)
37 Benzene	78	4.519	4.519	(0.909)	8216	0.50000	0.60(aM)
74 Bromobenzene	156	8.816	8.810	(0.912)	2852	0.50000	0.59(a)
29 Bromochloromethane	128	3.810	3.803	(0.911)	1350	0.50000	0.63(aM)
39 Bromodichloromethane	83	5.736	5.729	(1.154)	2796	0.50000	0.61(aM)
66 Bromoform	173	8.415	8.416	(1.097)	1609	0.50000	0.56(Ta)
6 Bromomethane	94	1.338	1.339	(0.320)	2529	0.50000	(aM)
19 Carbon Disulfide	76	2.069	2.069	(0.495)	11701	1.00000	1.26(aM)
34 Carbon Tetrachloride	117	4.275	4.268	(0.860)	2471	0.50000	0.51(aM)
59 Chlorobenzene	112	7.699	7.699	(1.004)	6722	0.50000	0.67(a)
7 Chloroethane	64	1.403	1.403	(0.336)	1391	0.50000	(aM)
28 Chloroform	83	3.917	3.910	(0.937)	3503	0.50000	0.60(a)
3 Chloromethane	50	1.080	1.074	(0.258)	1991	0.50000	0.57(aM)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	2373	0.50000	0.63(a)
46 cis-1,3-Dichloropropene	75	6.166	6.159	(1.241)	3208	0.50000	0.58(a)
55 Dibromochloromethane	129	7.183	7.184	(0.937)	2214	0.50000	0.57(a)
44 Dibromomethane	93	5.564	5.558	(1.120)	1473	0.50000	0.61(a)
2 Dichlorodifluoromethane	85	0.973	0.973	(0.233)	1544	0.50000	0.57(aM)
61 Ethylbenzene	106	7.806	7.807	(1.018)	3335	0.50000	0.64(a)
91 Hexachlorobutadiene	225	11.488	11.489	(1.188)	2333	0.50000	1.87(a)
67 Isopropylbenzene	105	8.566	8.566	(1.117)	9798	0.50000	0.63(a)
62 m,p-Xylenes	106	7.907	7.907	(1.031)	8257	1.00000	1.32(a)
17 Methylene Chloride	84	2.305	2.306	(0.551)	4784	0.50000	(aM)
87 n-Butylbenzene	91	9.998	9.999	(1.034)	6303	0.50000	0.59(a)
73 n-Propylbenzene	91	8.917	8.917	(0.922)	10998	0.50000	0.63(aM)
92 Naphthalene	128	11.553	11.546	(1.195)	3944	0.50000	0.58(a)
63 o-Xylene	106	8.251	8.244	(1.076)	3989	0.50000	0.65(a)
81 sec-Butylbenzene	105	9.526	9.526	(0.985)	10029	0.50000	0.65(a)
64 Styrene	104	8.265	8.265	(1.078)	6428	0.50000	0.61(a)
78 tert-Butylbenzene	119	9.339	9.340	(0.966)	7327	0.50000	0.65(a)
56 Tetrachloroethene	164	6.940	6.933	(0.905)	2254	0.50000	0.65(a)
50 Toluene	91	6.453	6.453	(0.841)	9492	0.50000	0.64(aM)
20 trans-1,2-Dichloroethene	96	2.534	2.528	(0.606)	1985	0.50000	0.61(a)
51 trans-1,3-Dichloropropene	75	6.696	6.682	(1.347)	2823	0.50000	0.57(a)
38 Trichloroethene	130	5.213	5.214	(1.049)	2500	0.50000	0.61(a)
8 Trichlorofluoromethane	101	1.560	1.561	(0.373)	3335	0.50000	0.60(a)
5 Vinyl Chloride	62	1.145	1.138	(0.274)	2343	0.50000	0.61(aM)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

QC Flag Legend

M - Compound response manually integrated.



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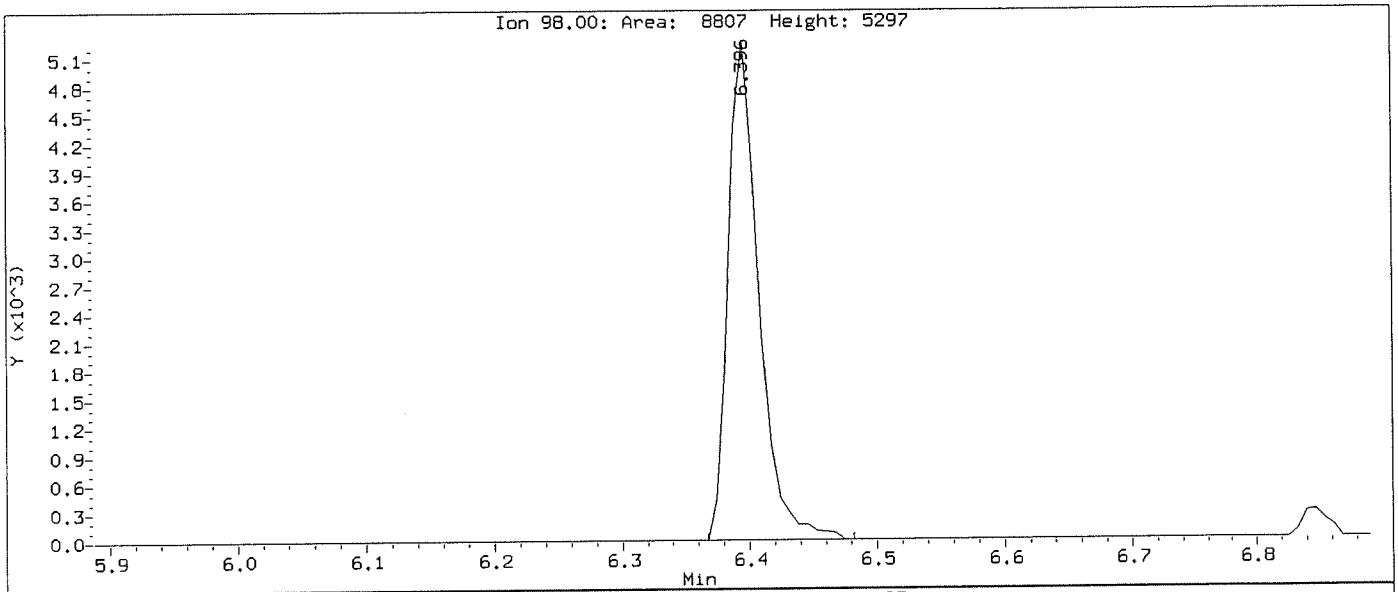
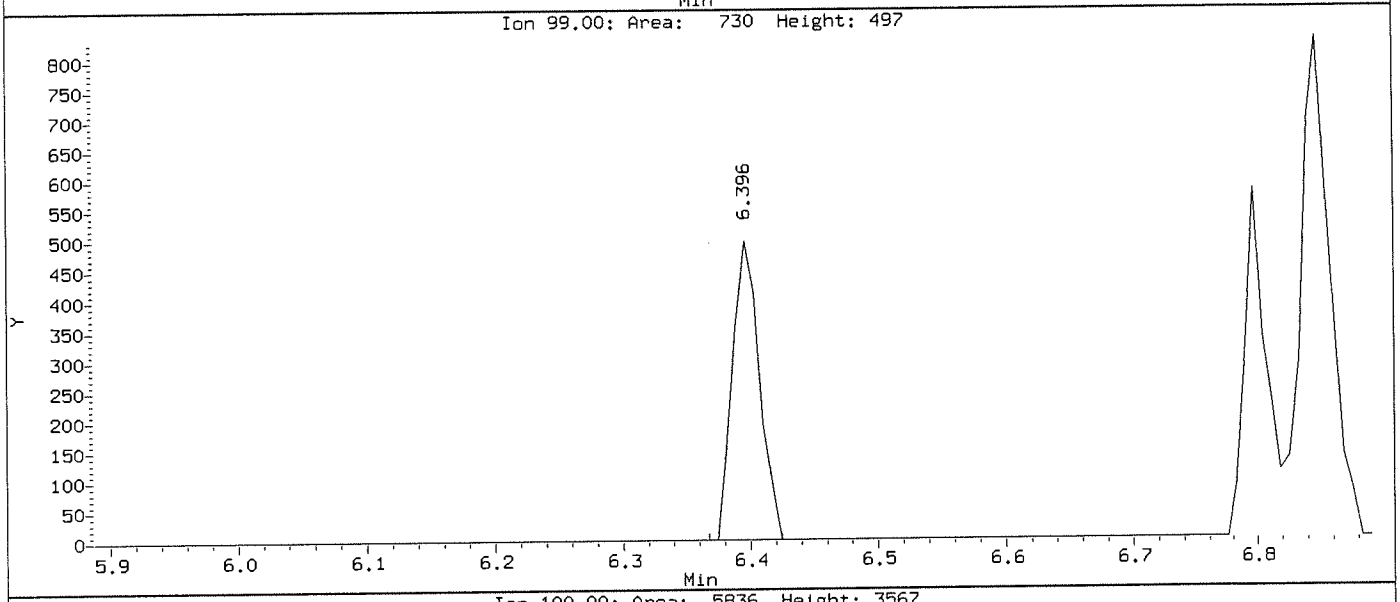
Date : 11-SEP-2019 12:19
Client ID: VSTD000.5
Sample Info: VSTD000.5;VSTD000.5;1;2;
Purge Volume: 5.0
Column phase: DB624

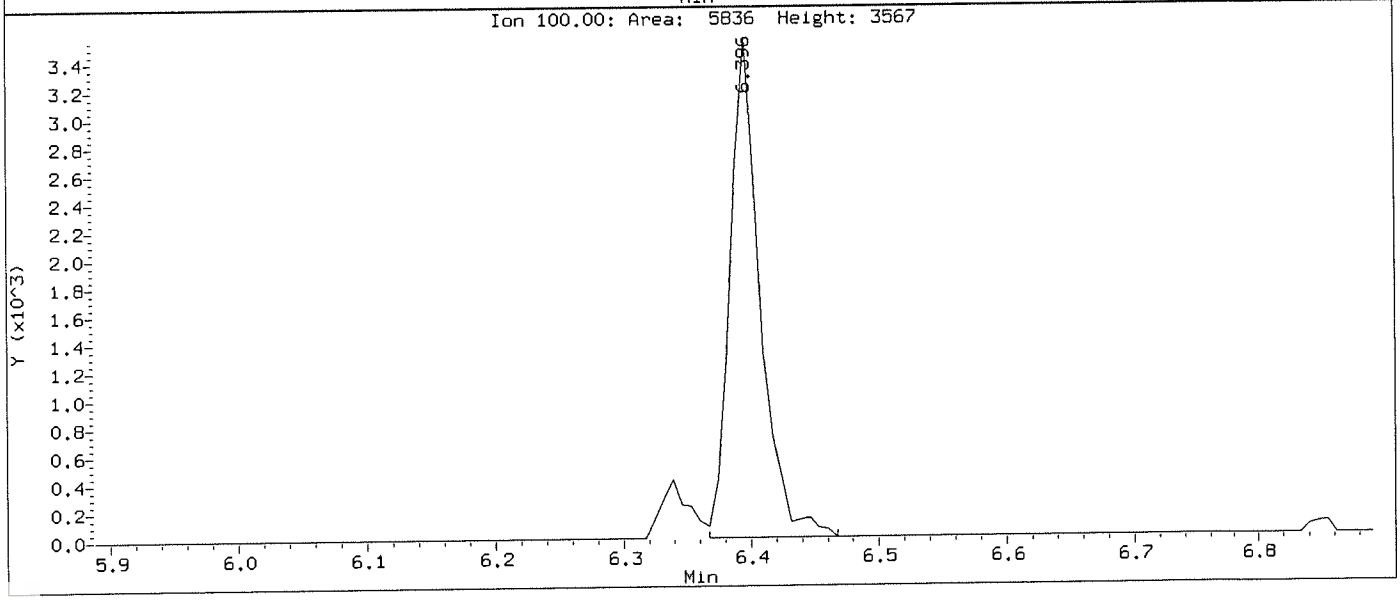
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\BEFORE\X091103.D
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Toluene-d8
CAS Number: 2037-26-5







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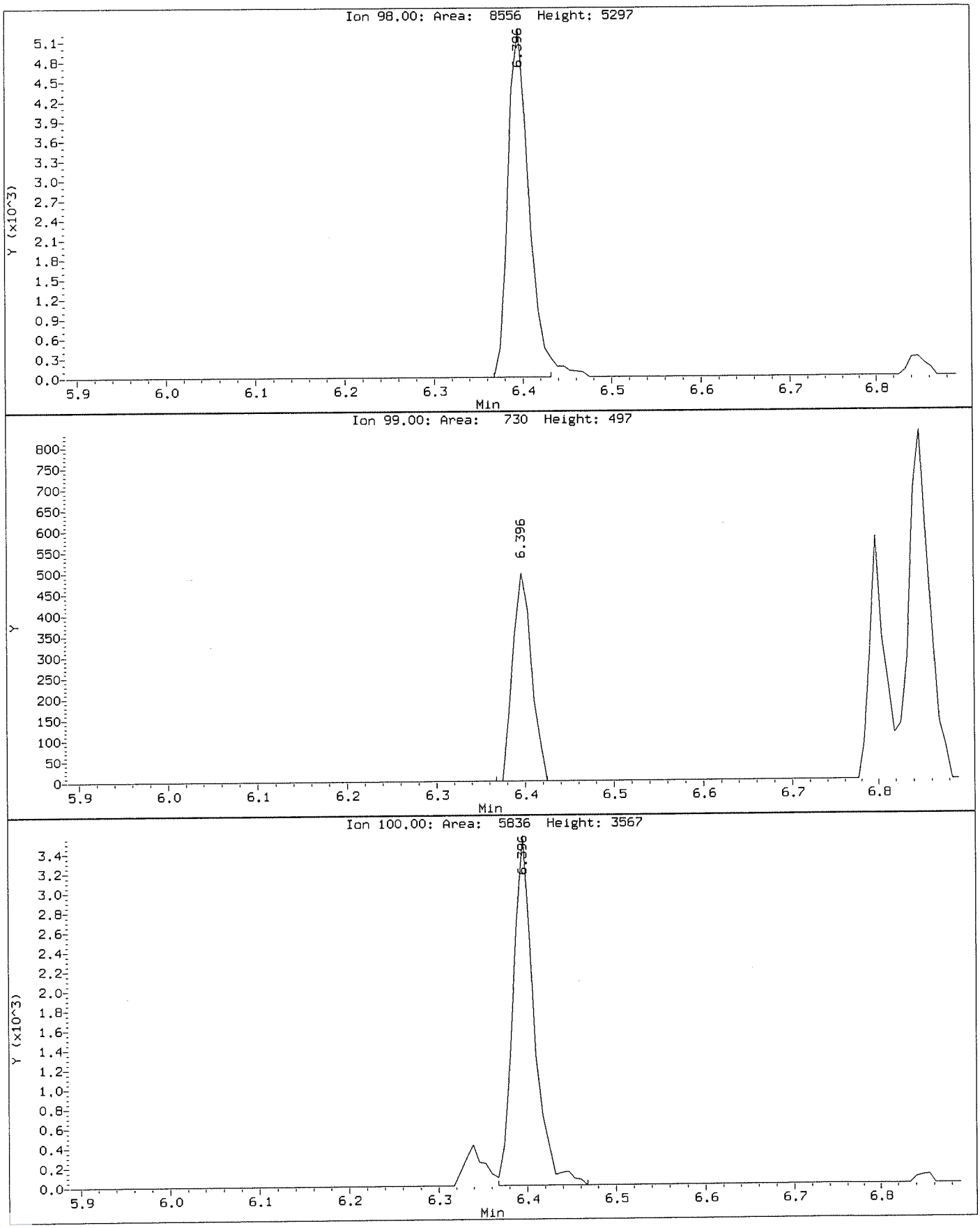
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Toluene-d8
CAS Number: 2037-26-5



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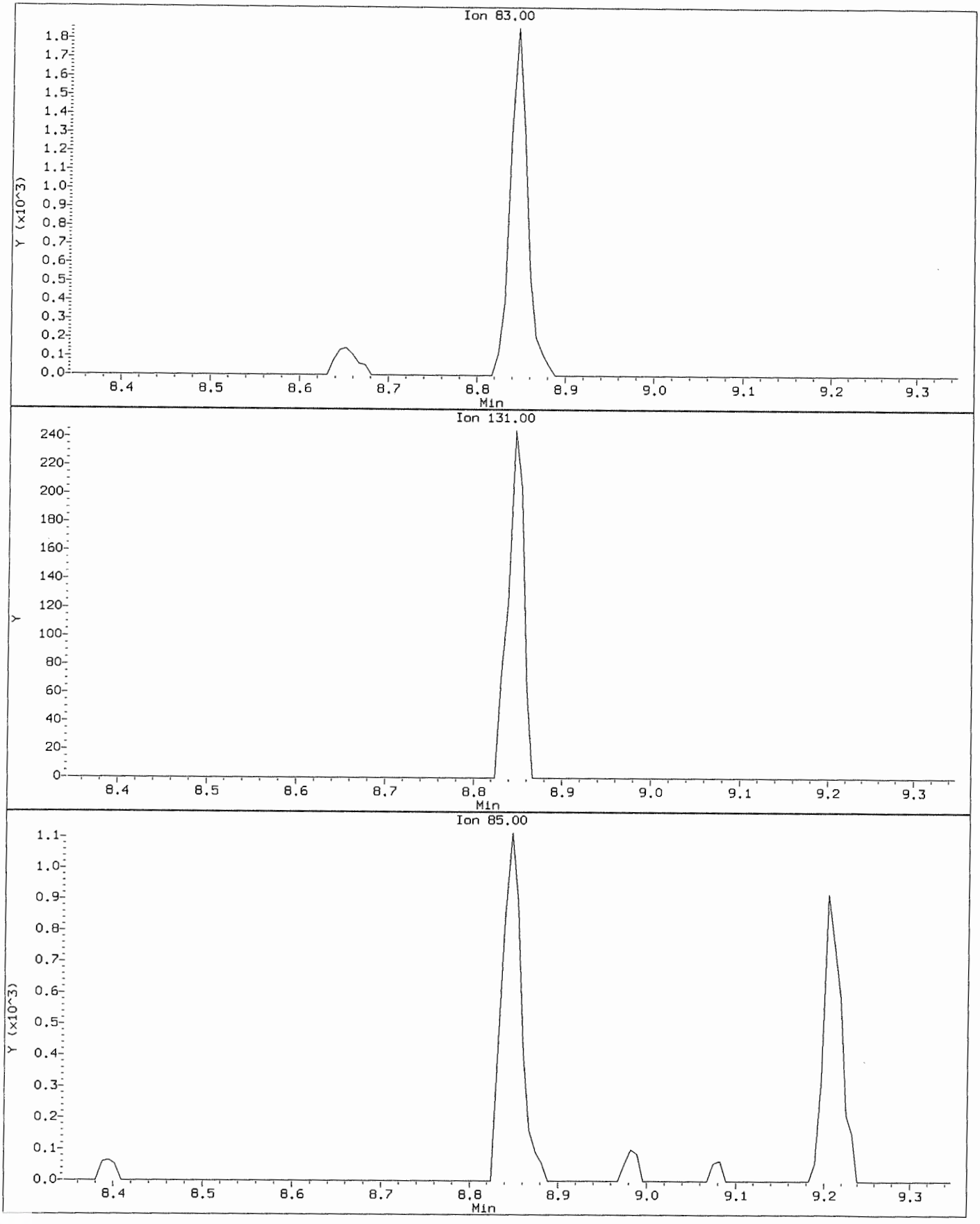
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,1,2,2-Tetrachloroethane
CAS Number: 79-34-5



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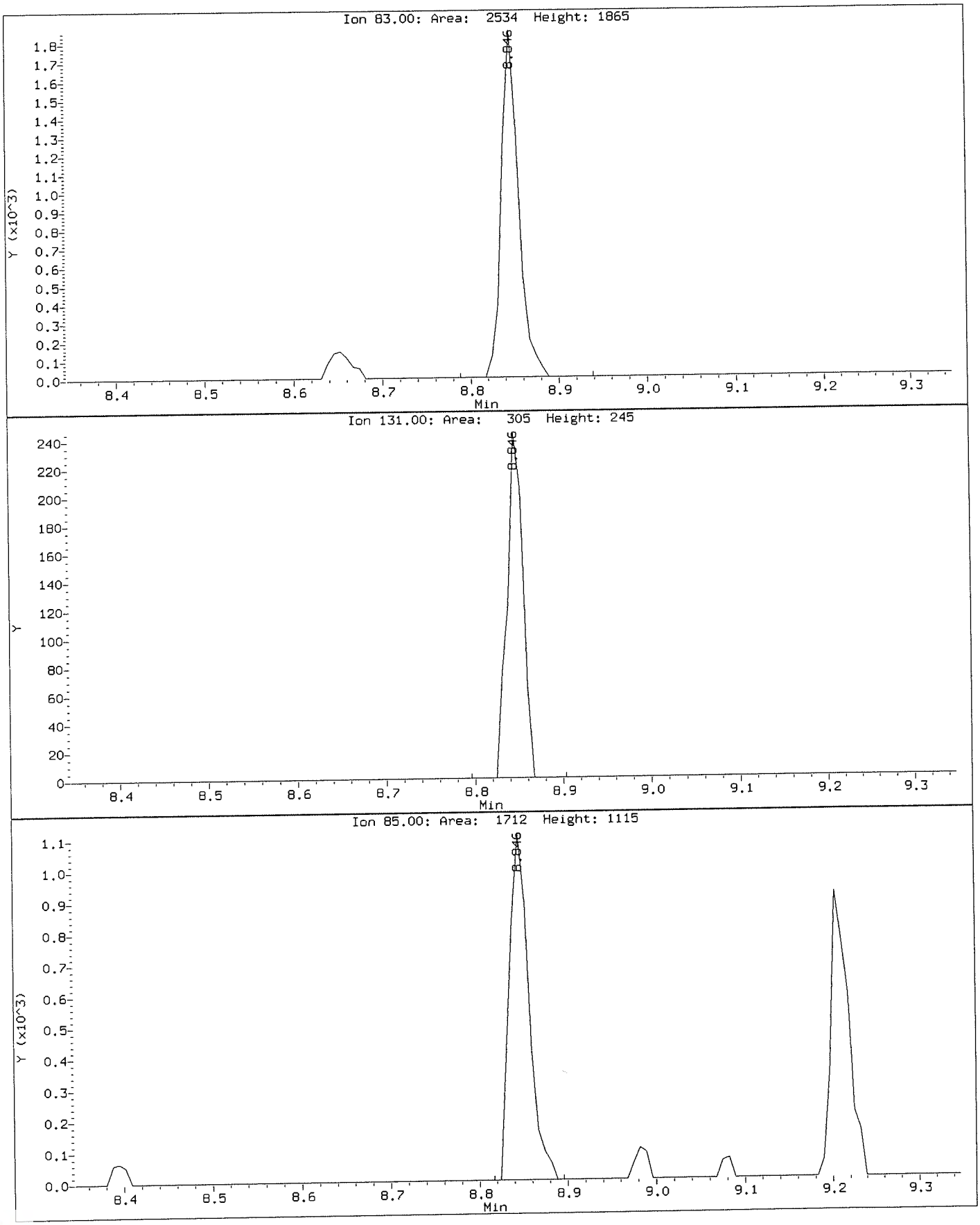
Client Sample ID: VSTD000.5

Compound: 1,1,2,2-Tetrachloroethane
CAS Number: 79-34-5



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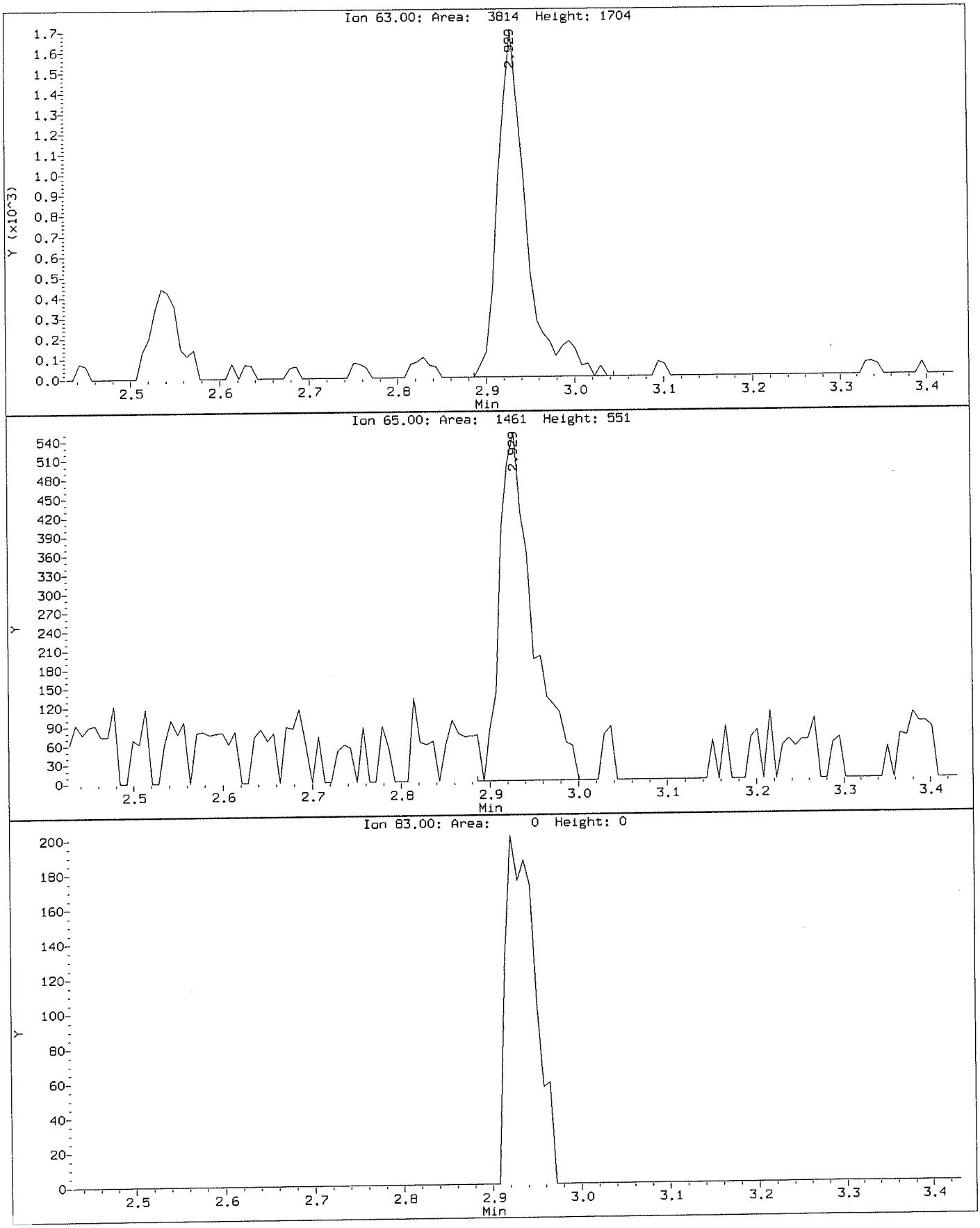
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,1-Dichloroethane
CAS Number: 75-34-3



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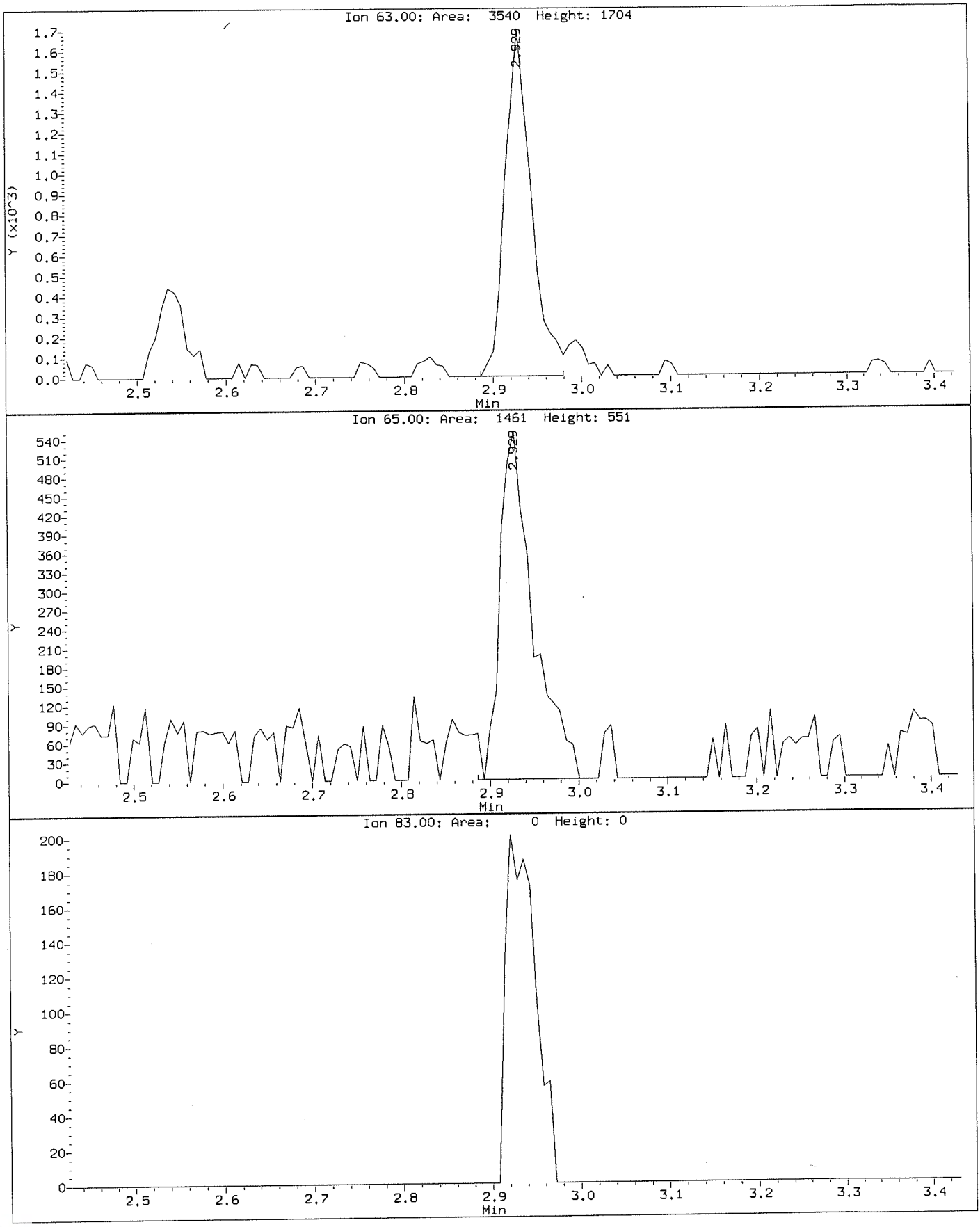
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,1-Dichloroethane
CAS Number: 75-34-3



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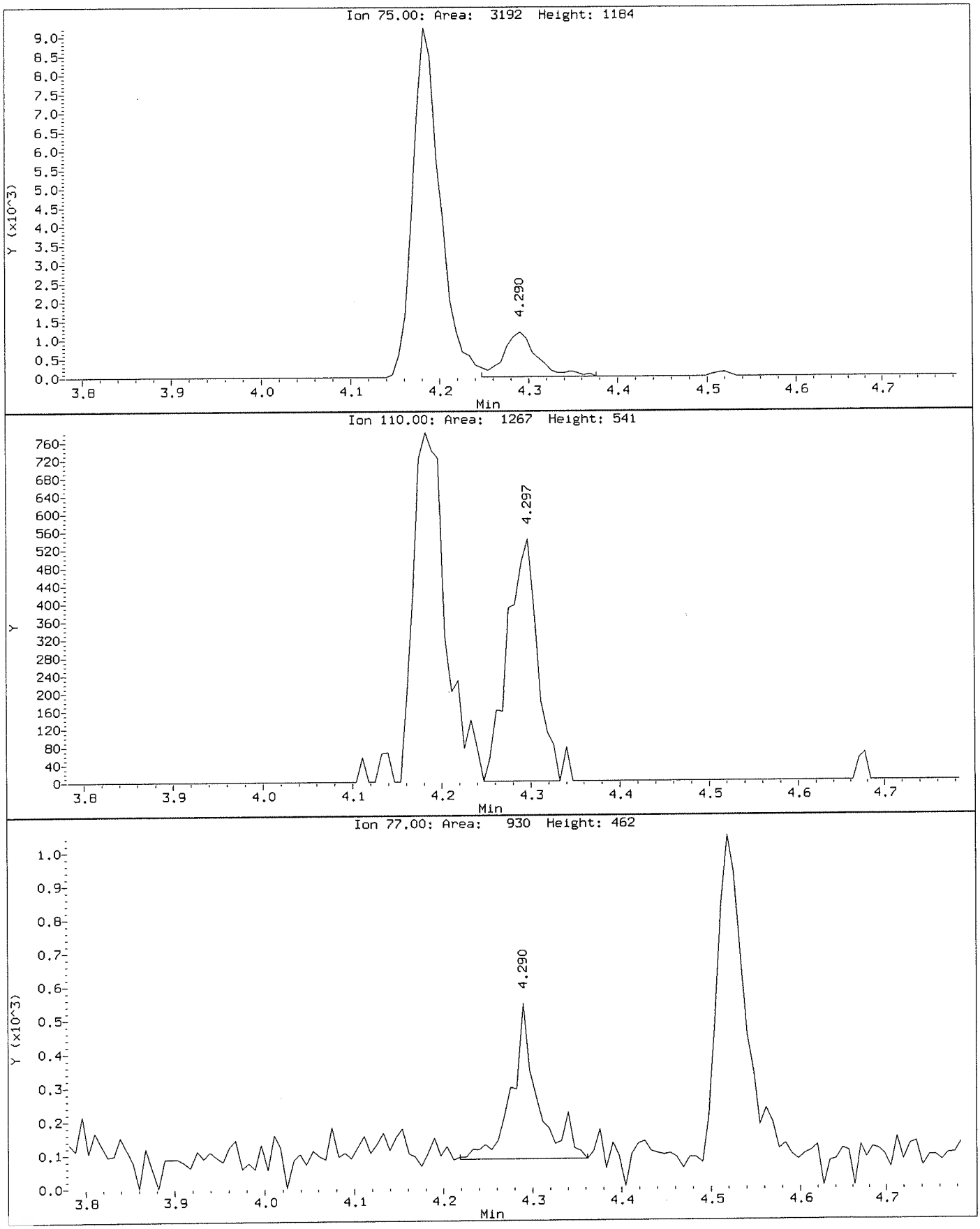
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,1-Dichloropropene
CAS Number: 563-58-6



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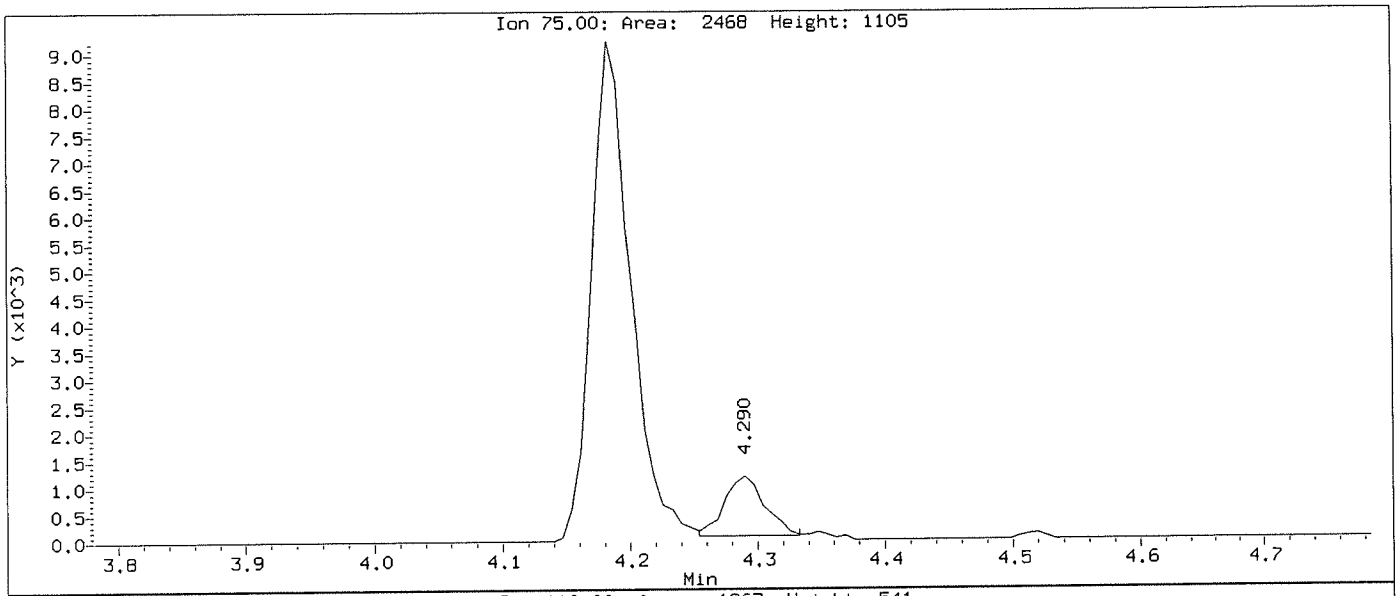
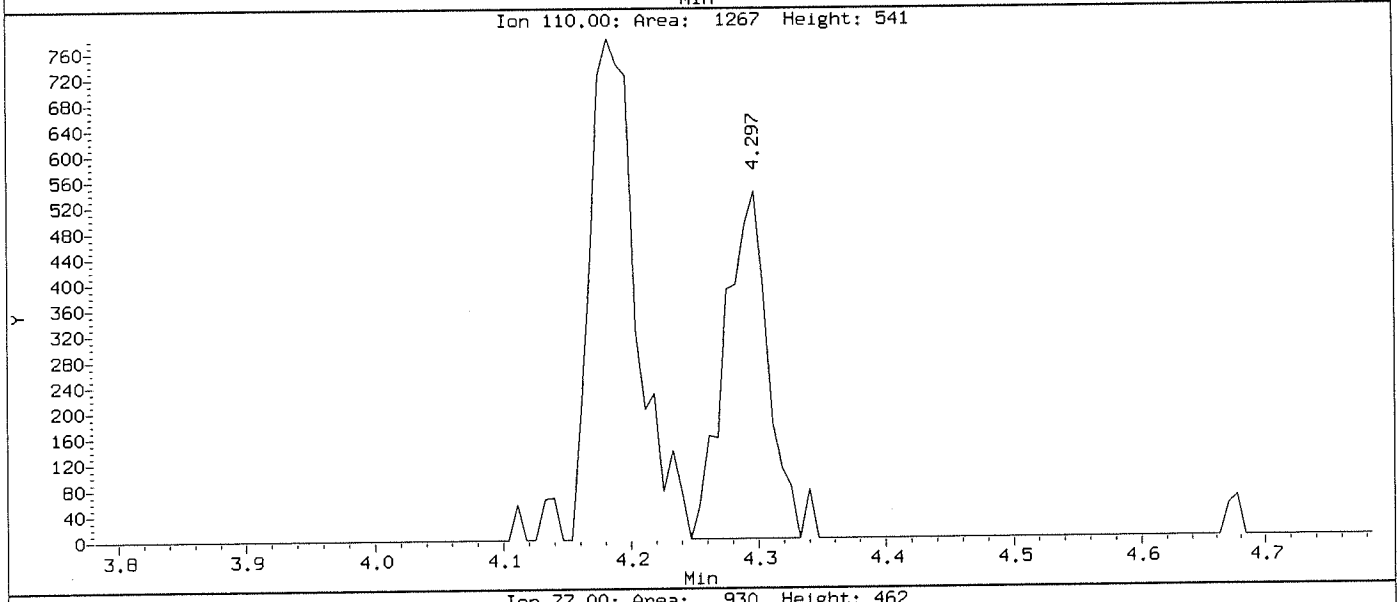
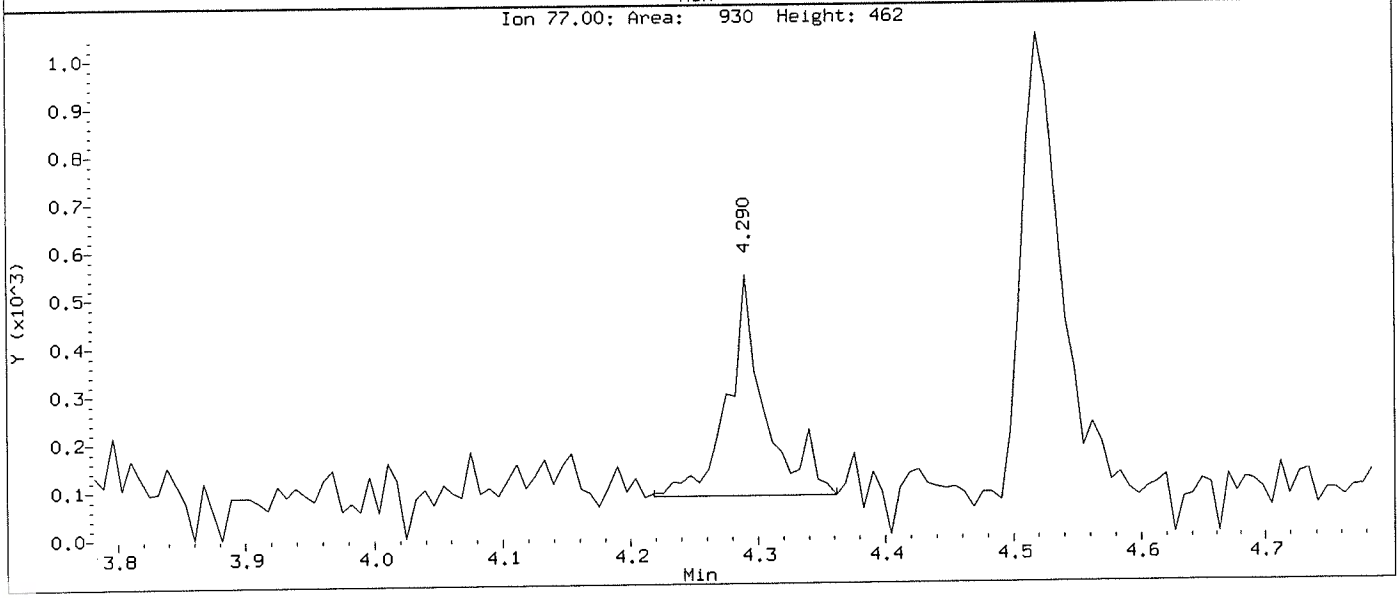
Client Sample ID: VSTD000.5

Compound: 1,1-Dichloropropene
CAS Number: 563-58-6







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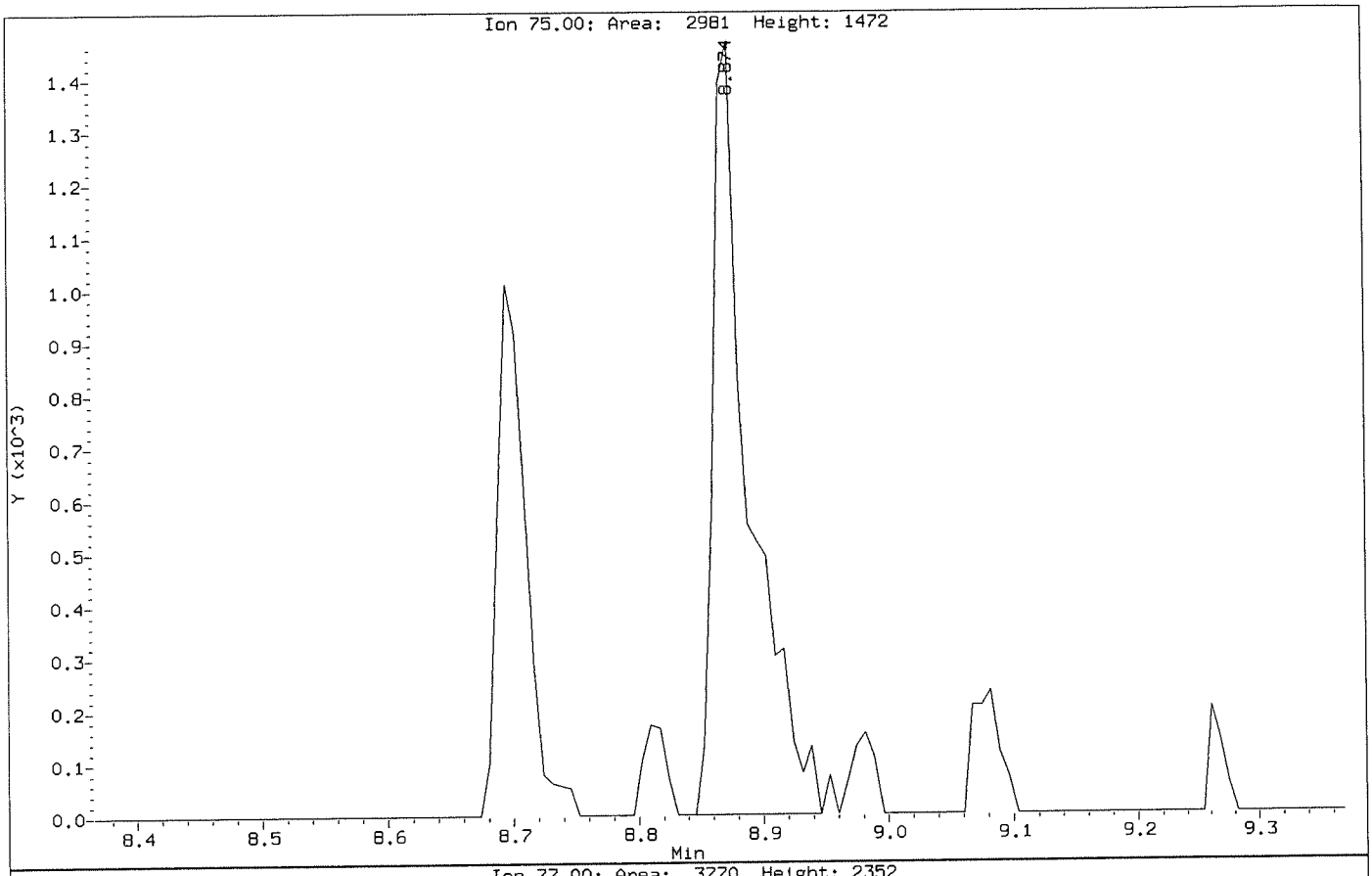
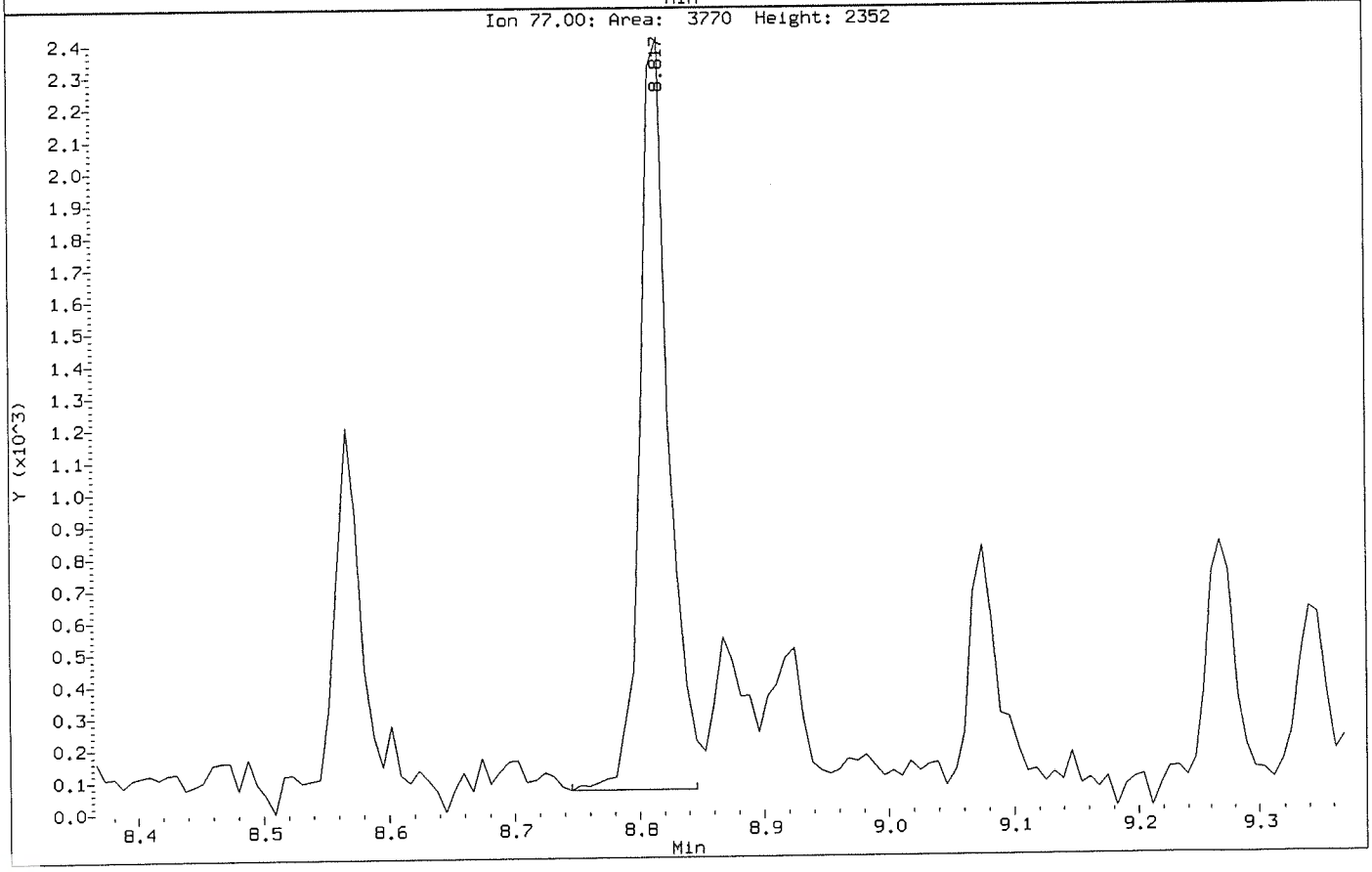
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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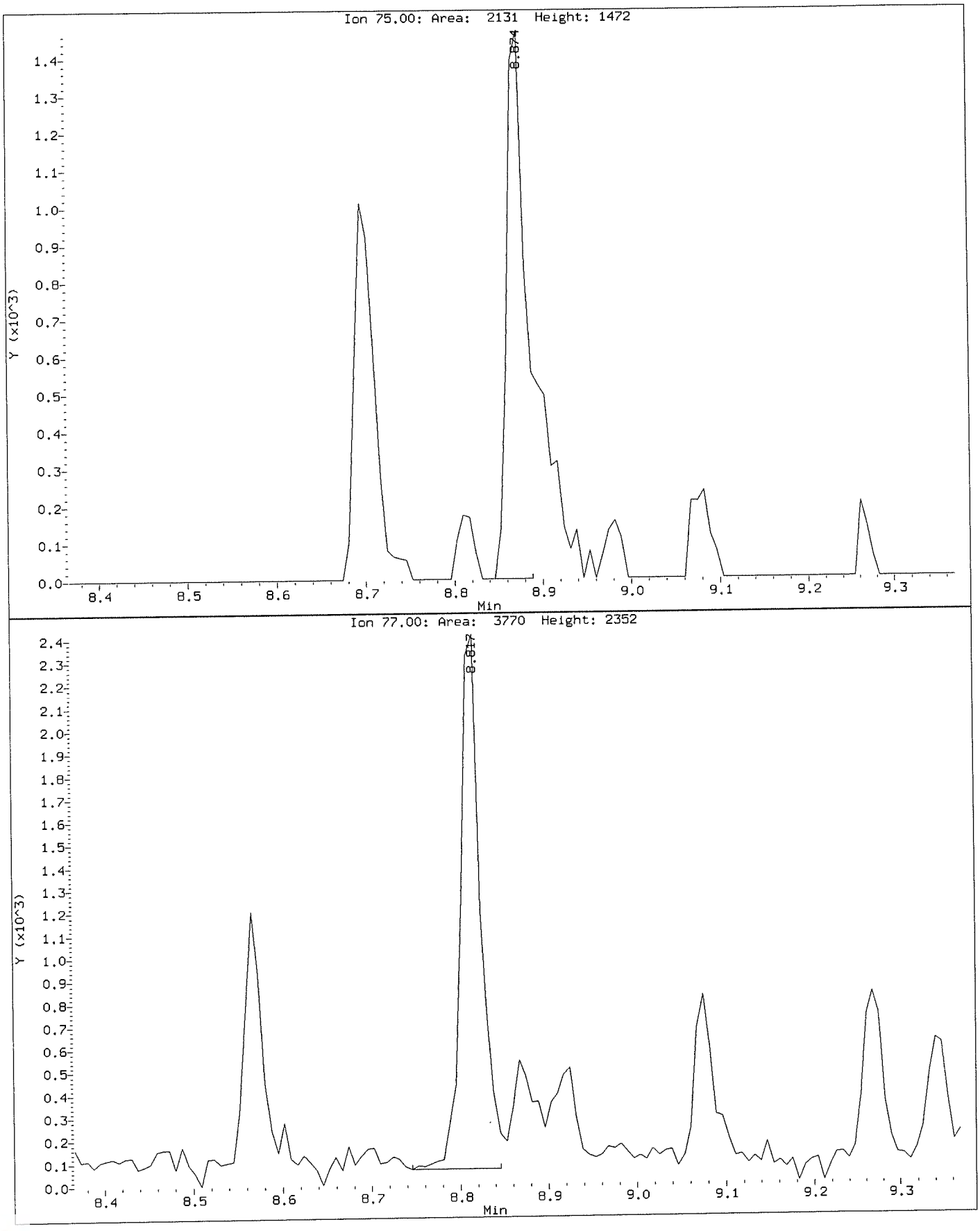
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



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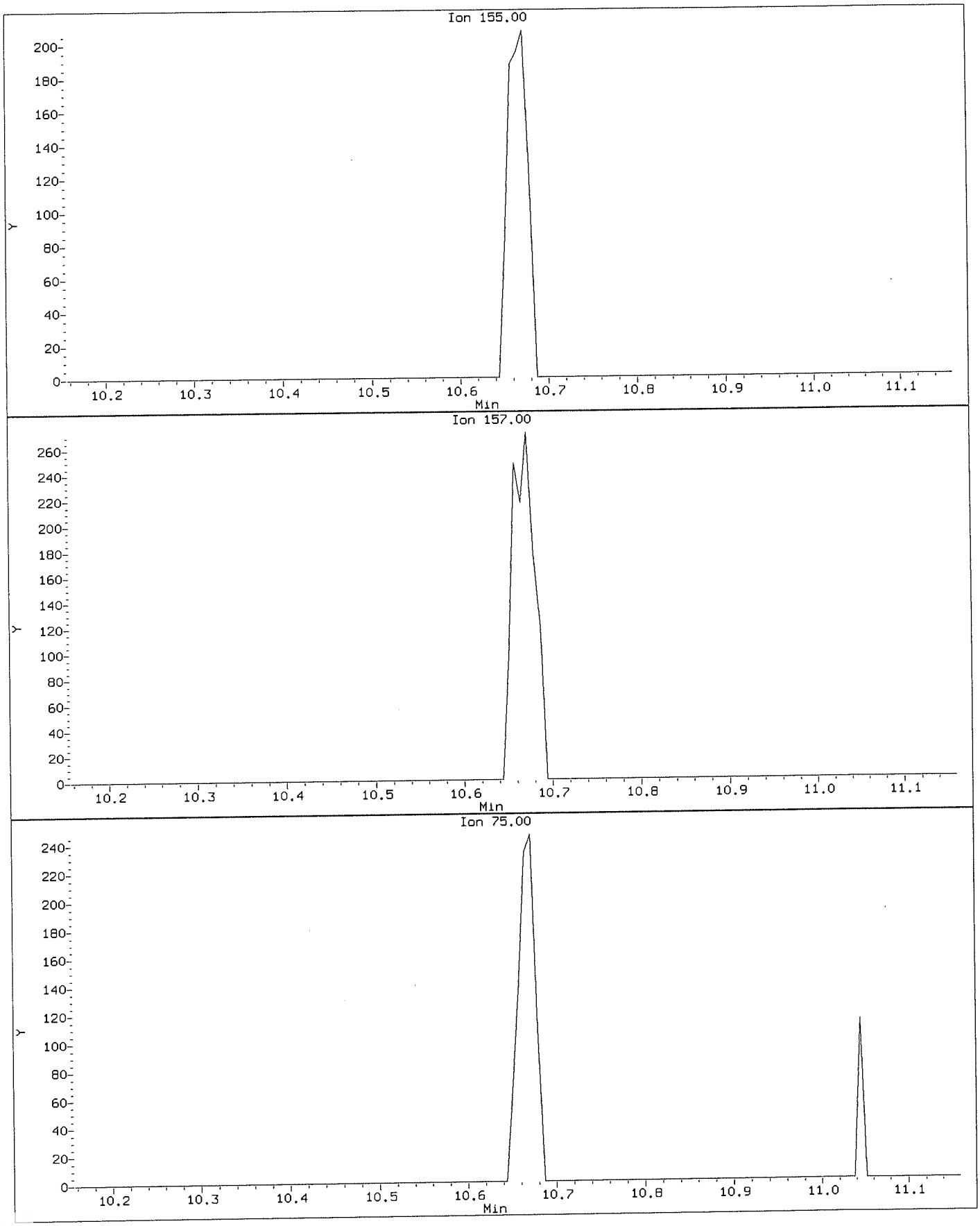
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,2-Dibromo-3-Chloropropane
CAS Number: 96-12-8



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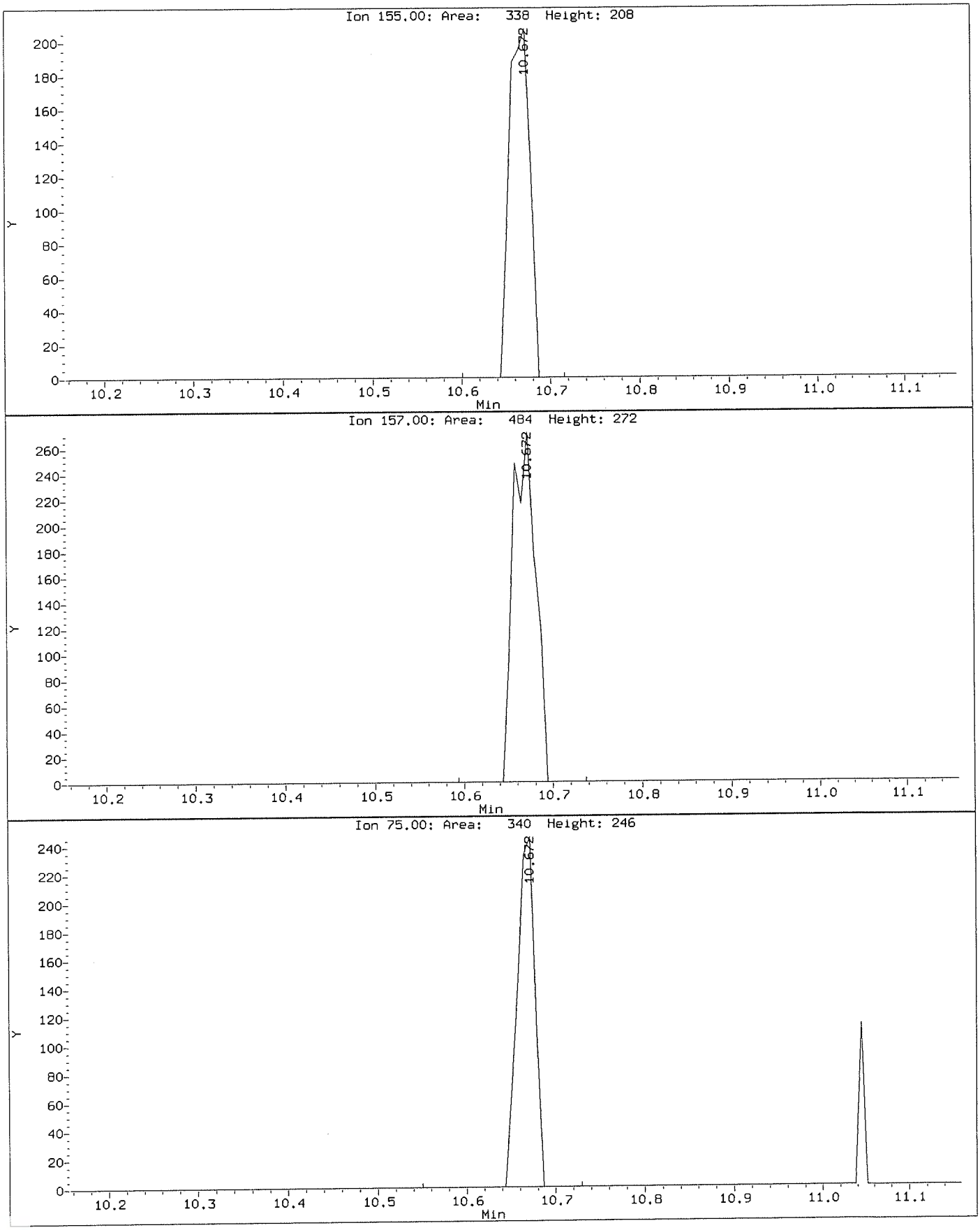
Client Sample ID: VSTD000.5

Compound: 1,2-Dibromo-3-Chloropropane
CAS Number: 96-12-8



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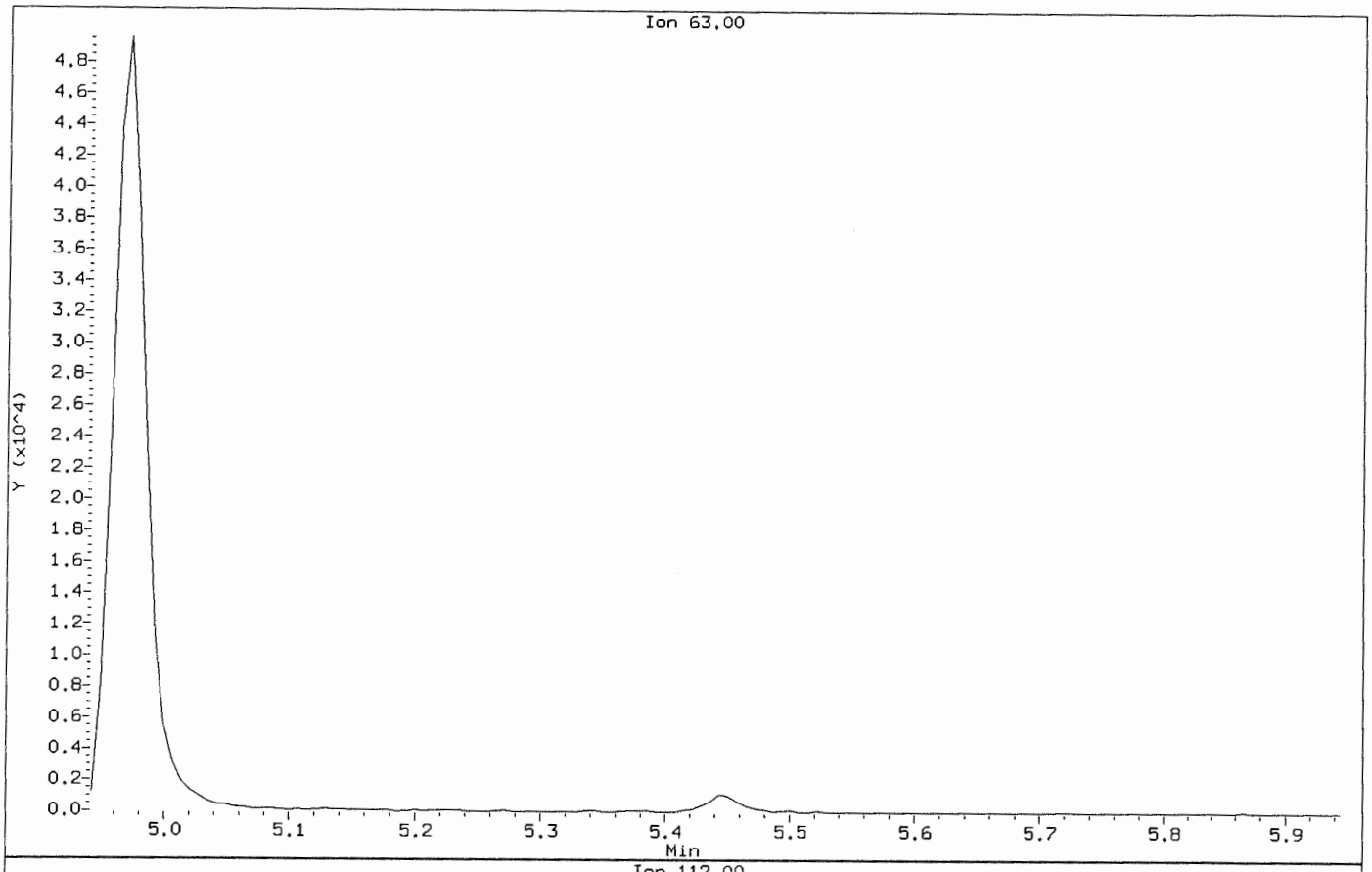
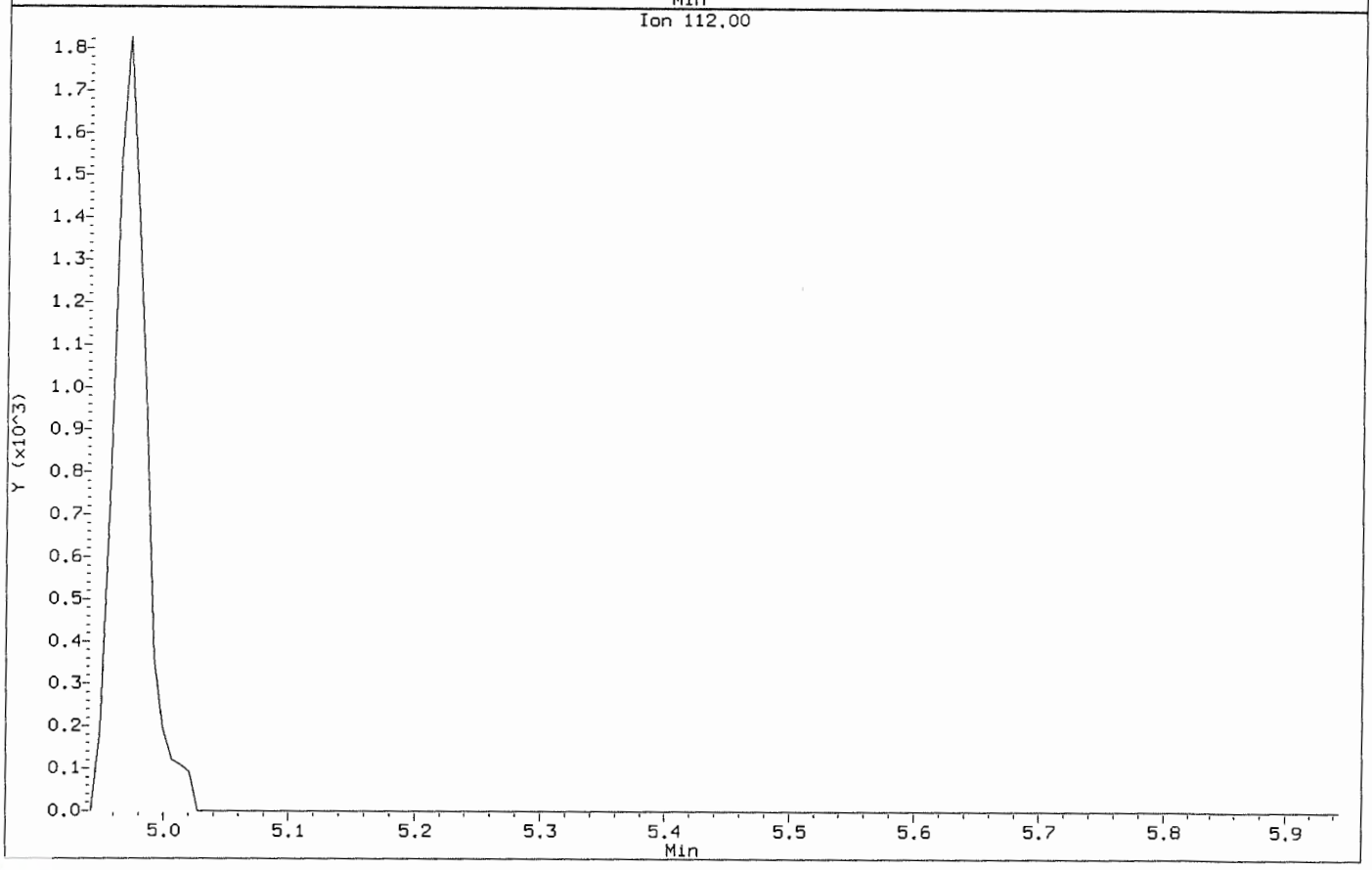
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,2-Dichloropropane
CAS Number: 78-87-5





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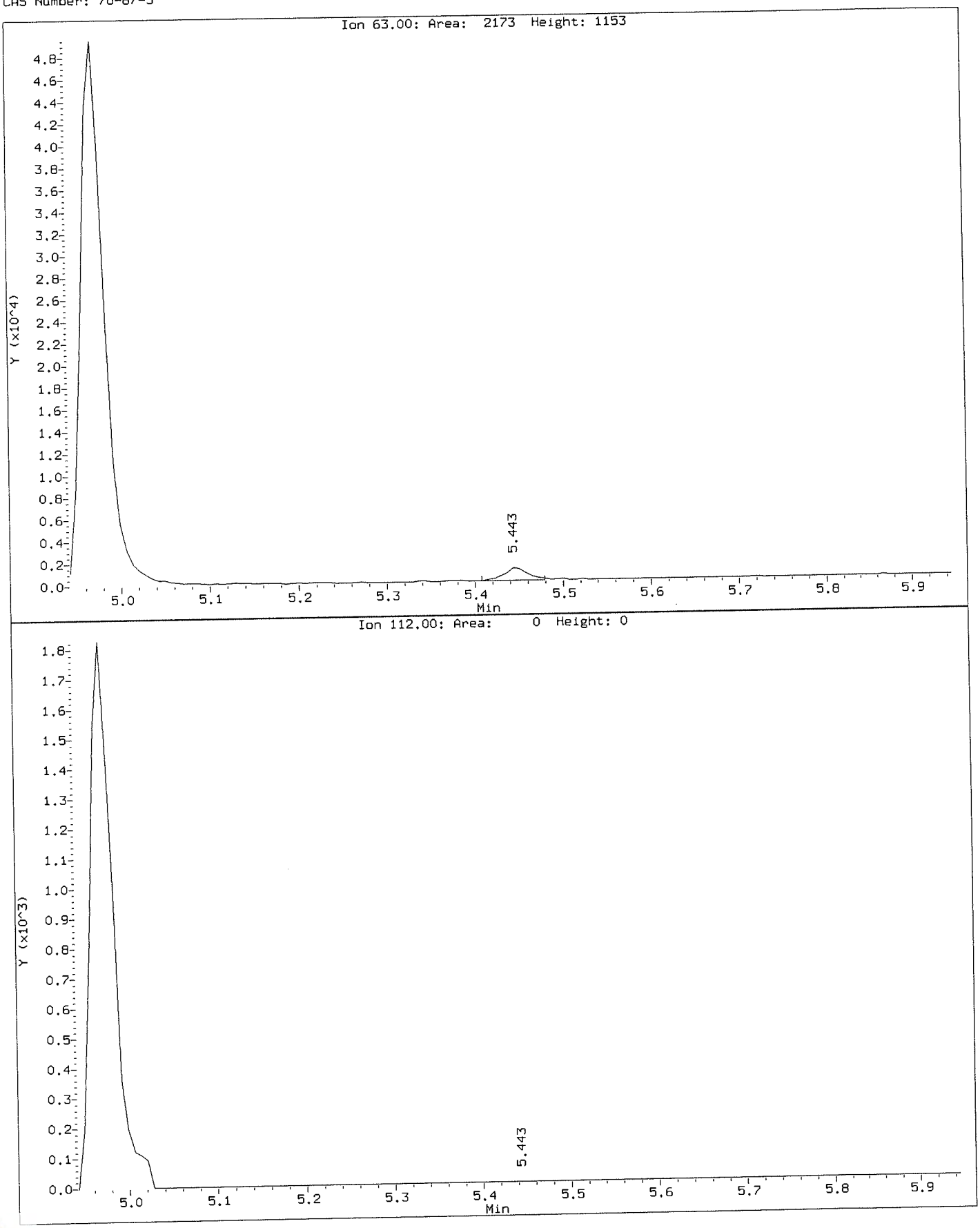
Client Sample ID: VSTD000.5

Compound: 1,2-Dichloropropane
CAS Number: 78-87-5



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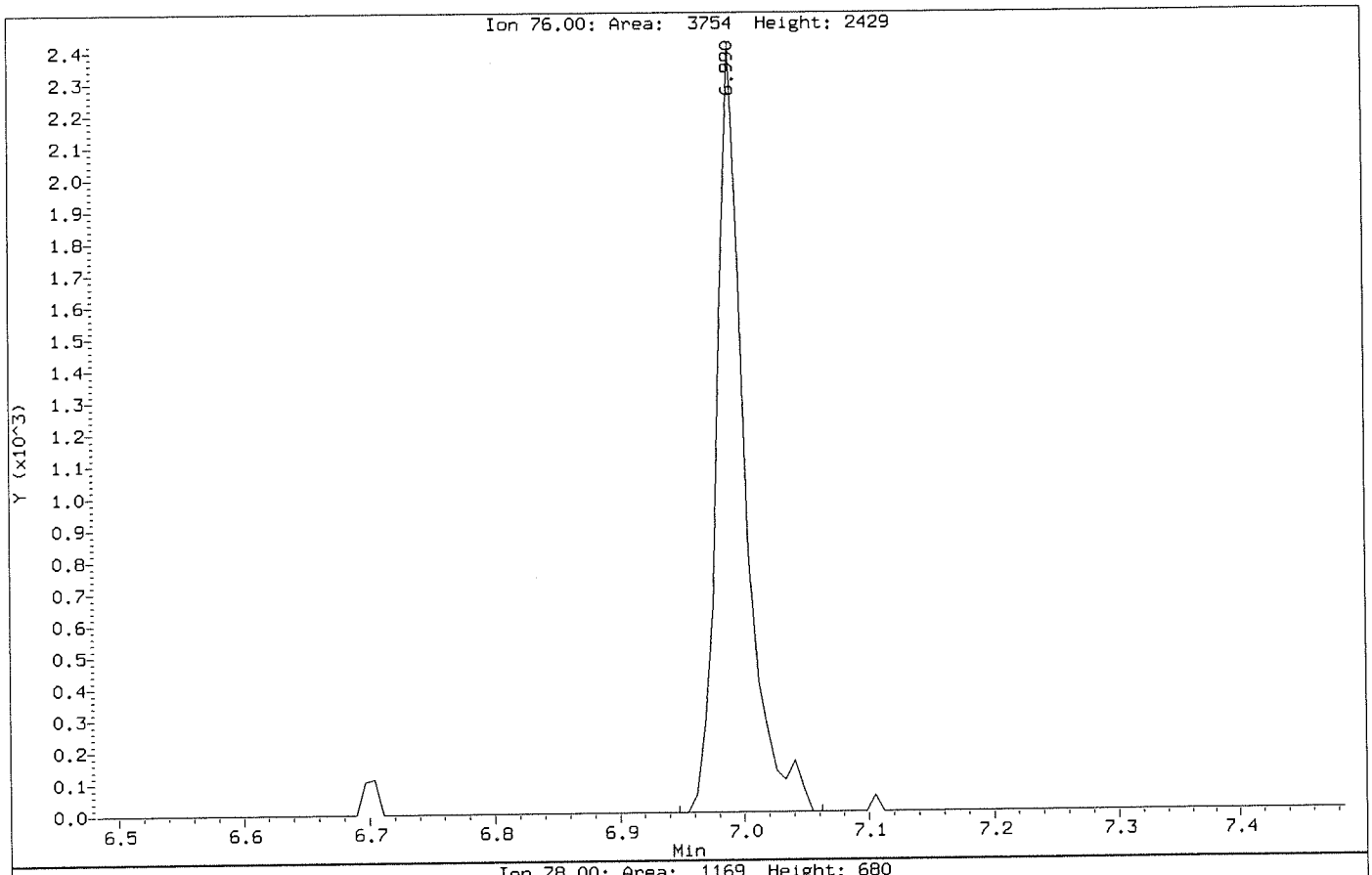
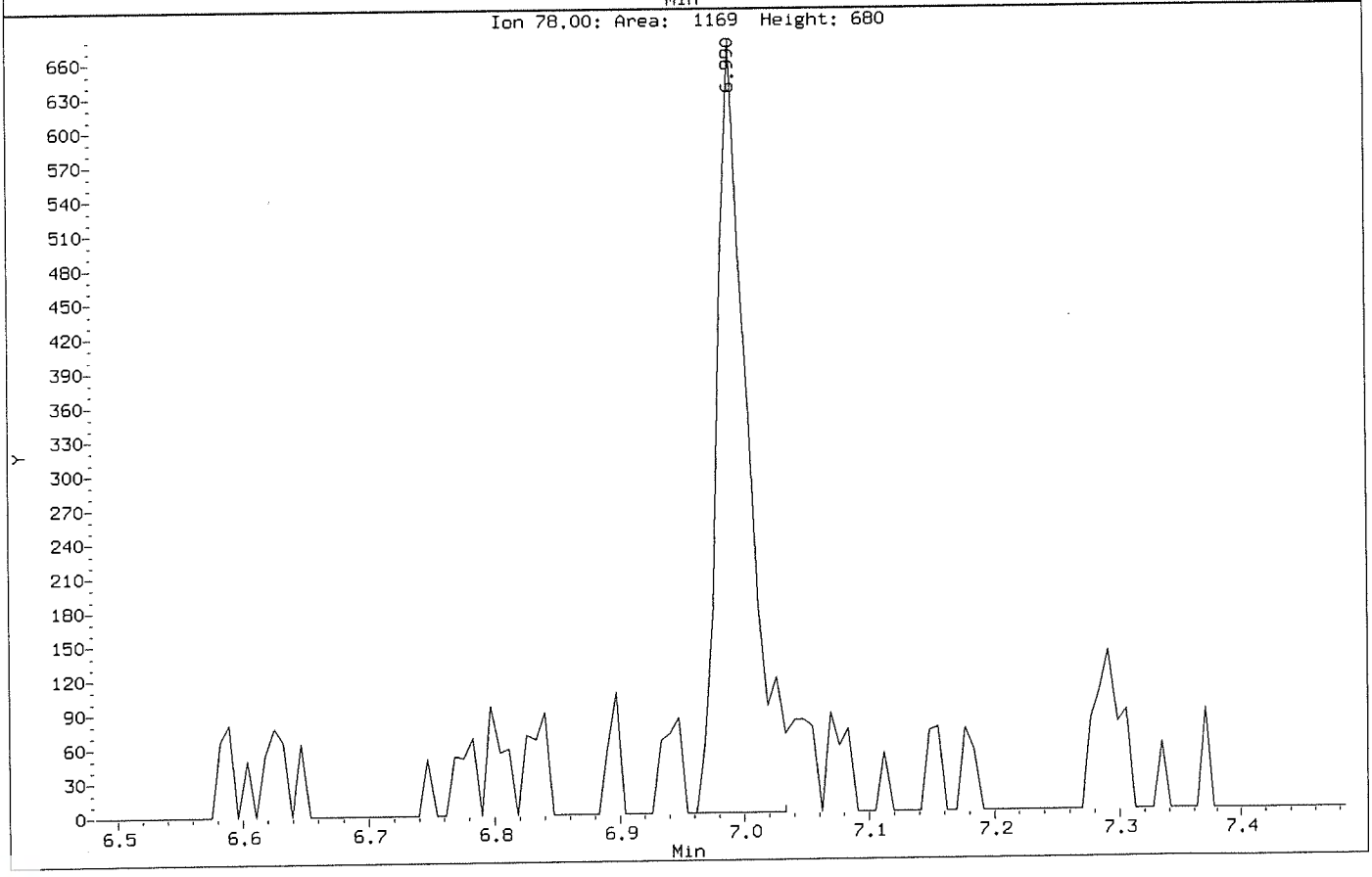
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,3-Dichloropropane
CAS Number: 142-28-9





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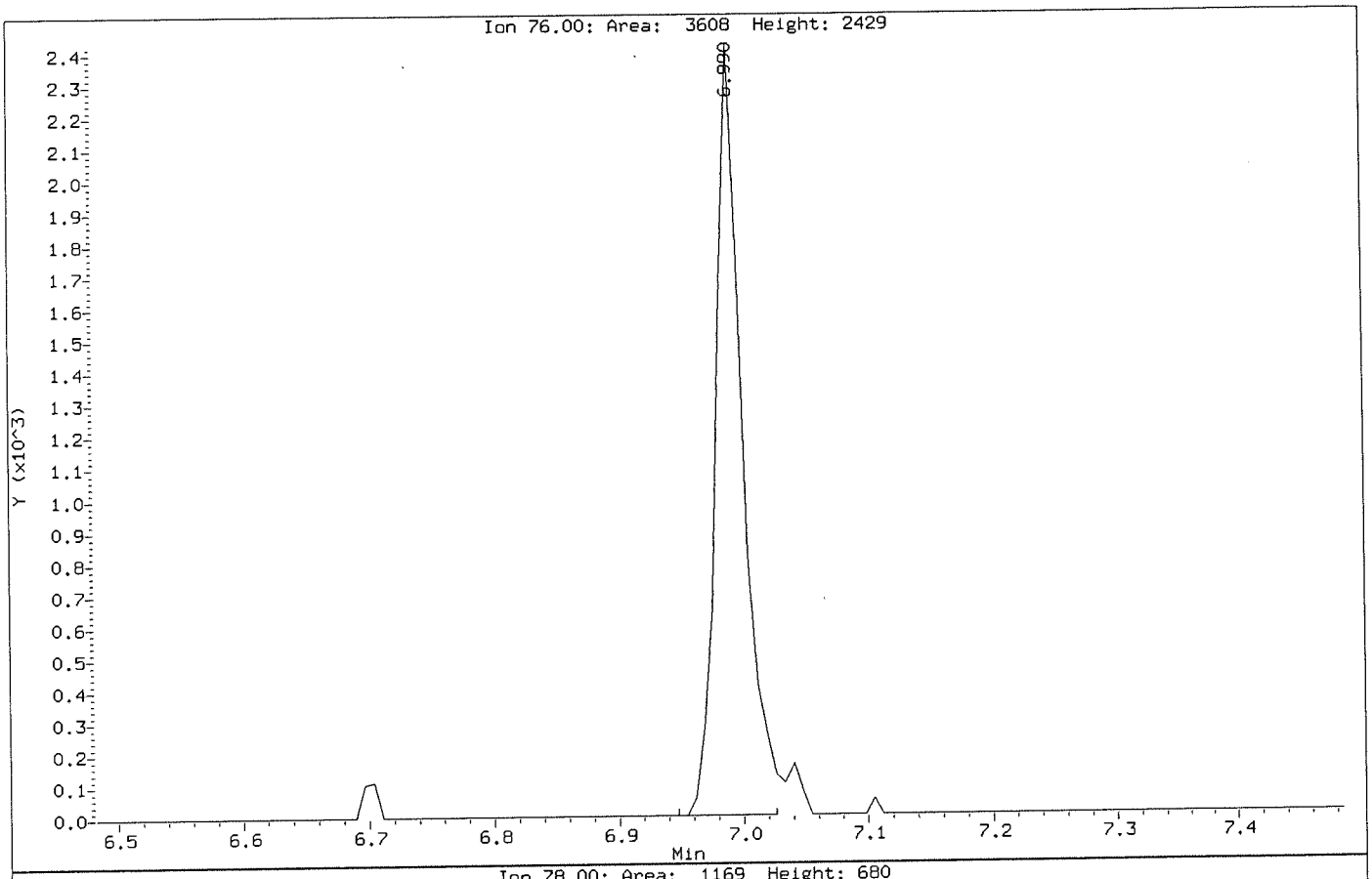
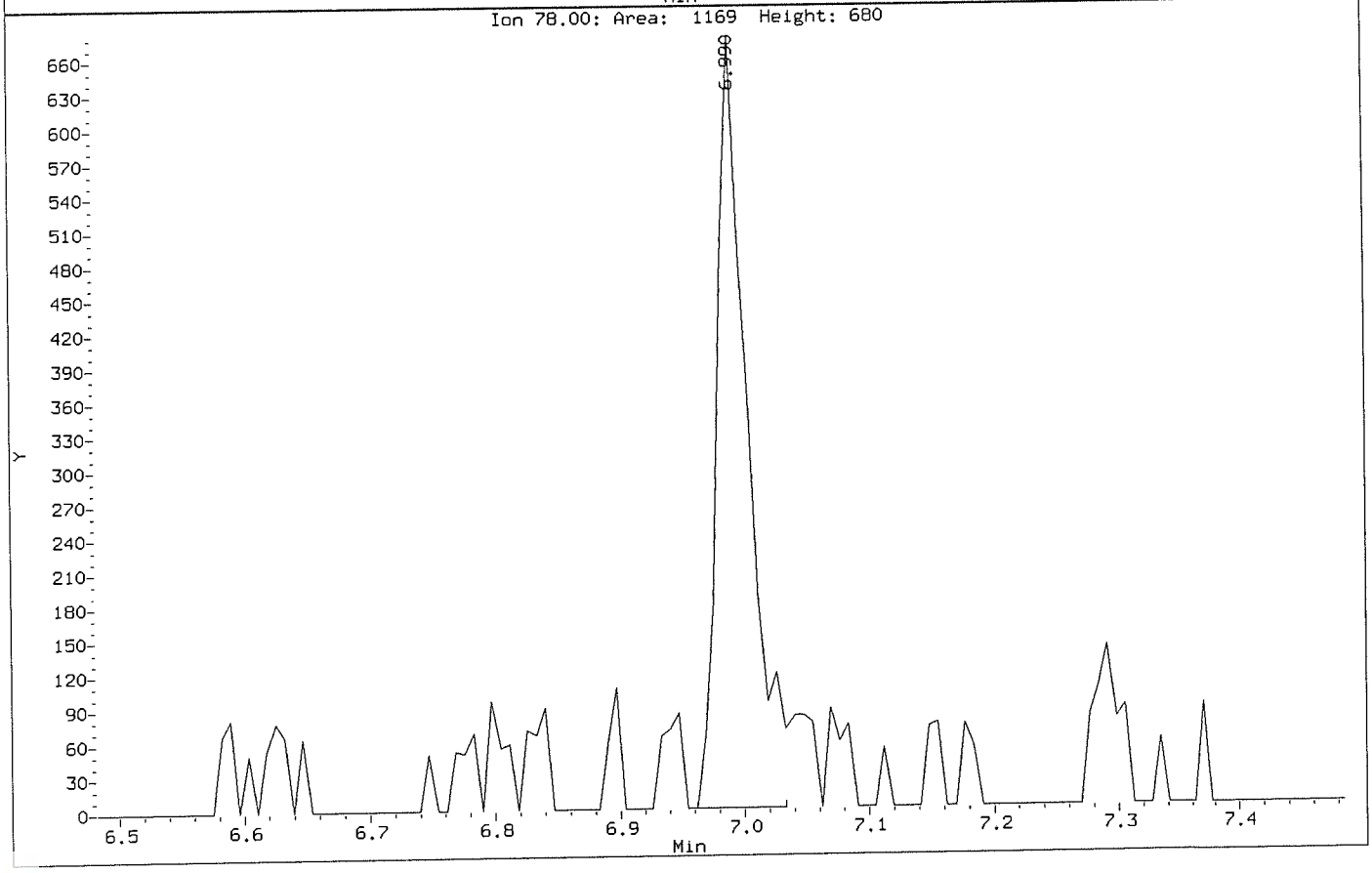
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,3-Dichloropropane
CAS Number: 142-28-9





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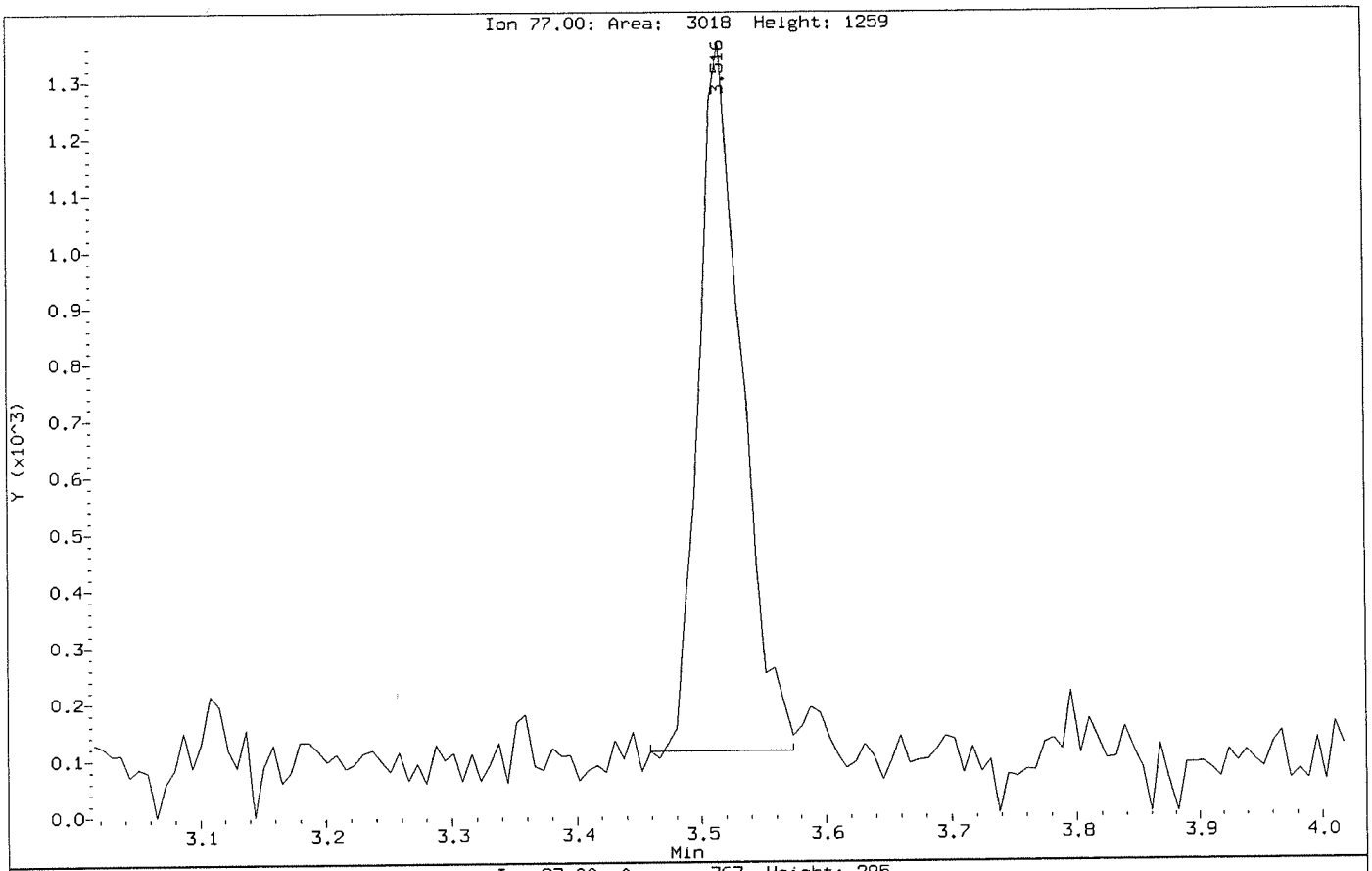
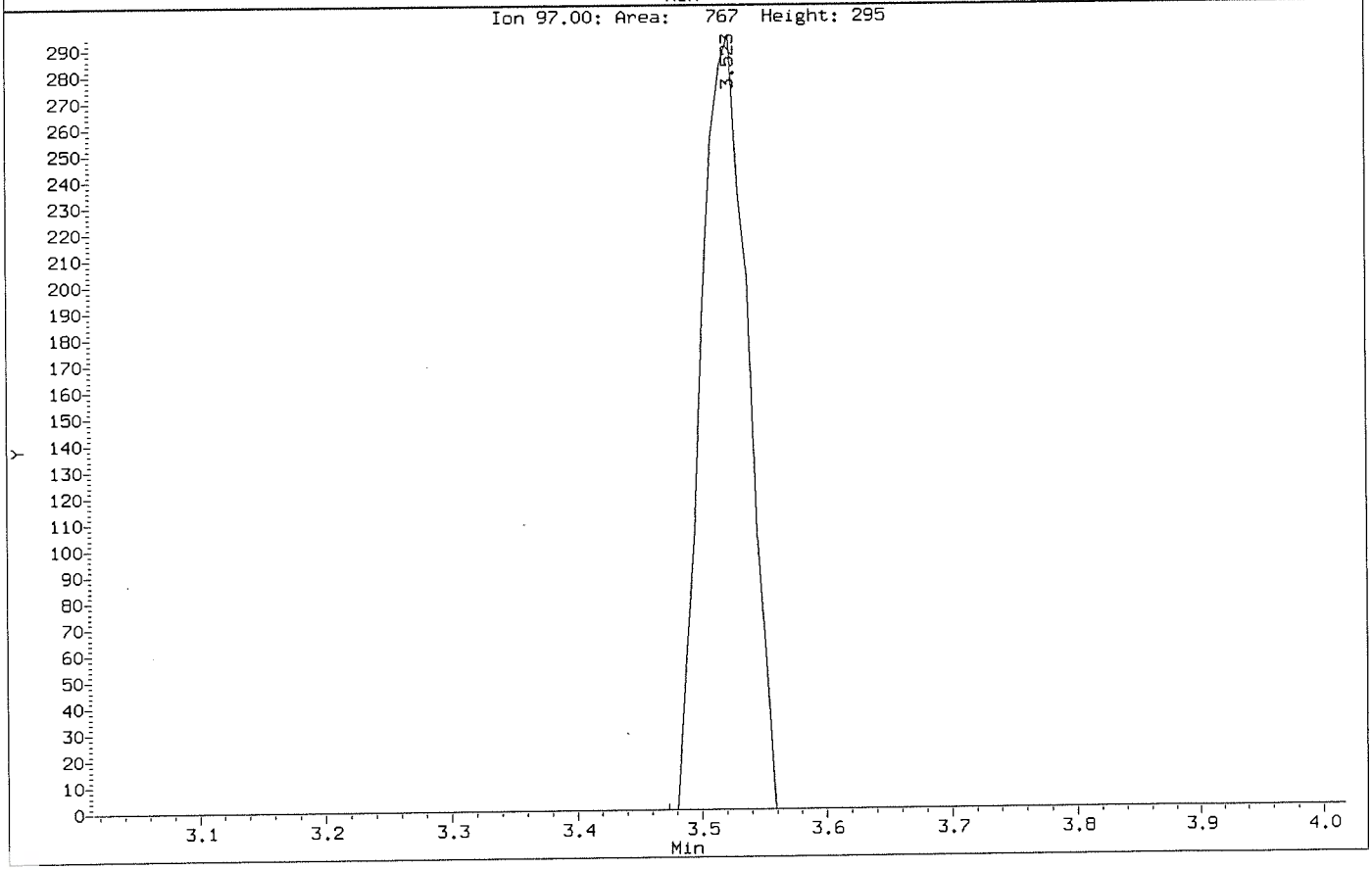
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 2,2-Dichloropropane
CAS Number: 594-20-7





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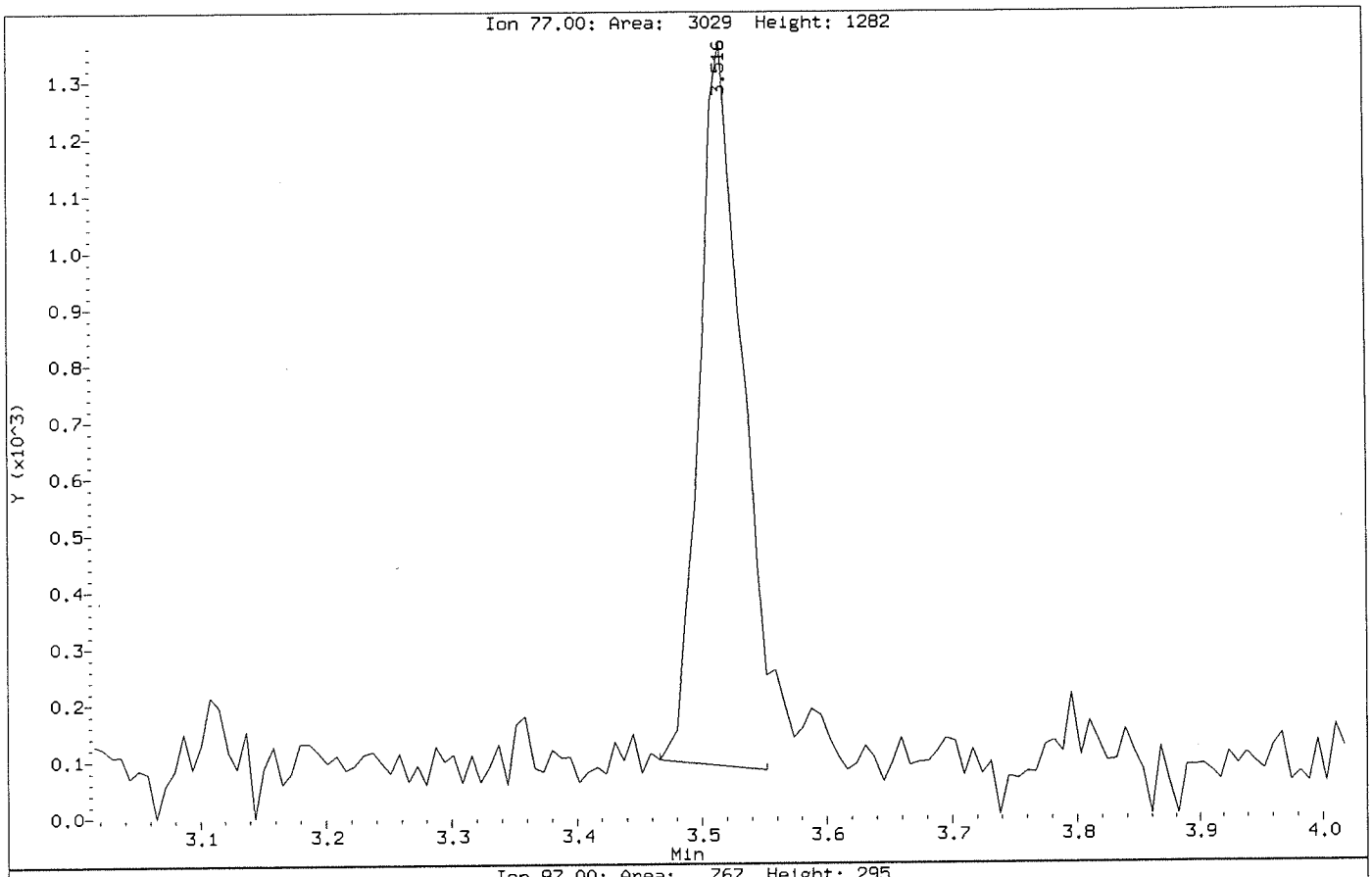
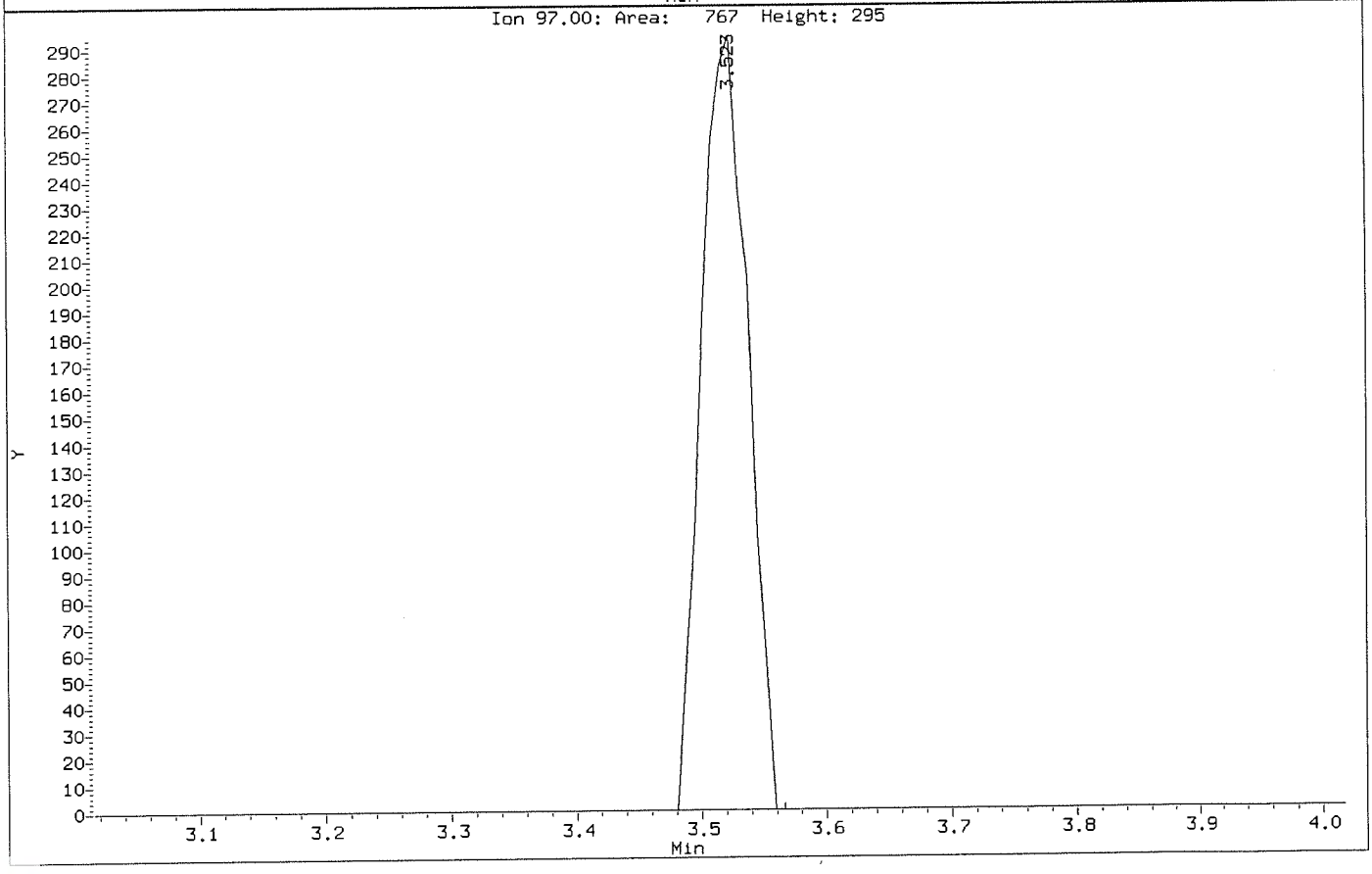
Client Sample ID: VSTD000.5

Compound: 2,2-Dichloropropane
CAS Number: 594-20-7





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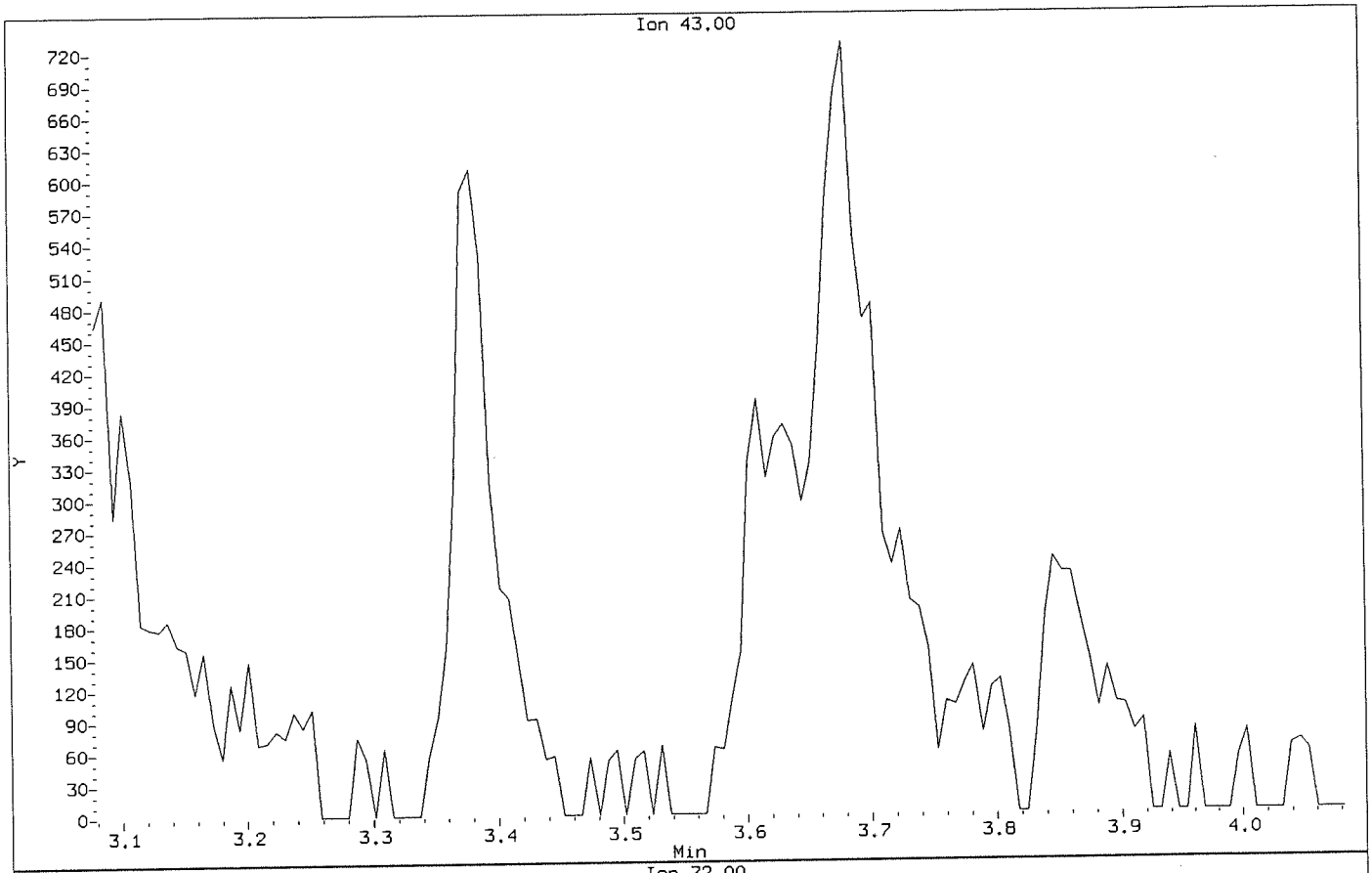
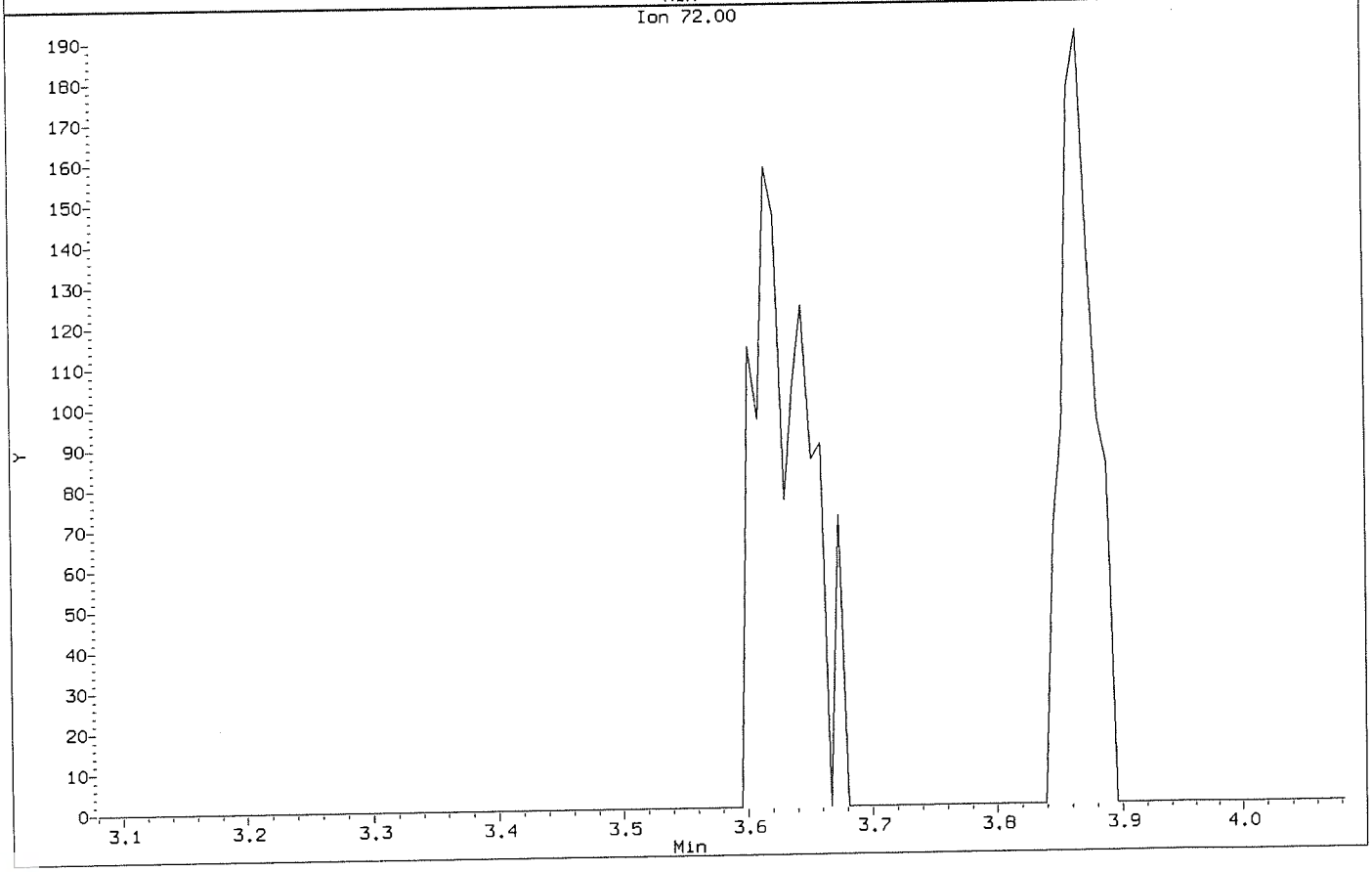
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 2-Butanone
CAS Number: 78-93-3





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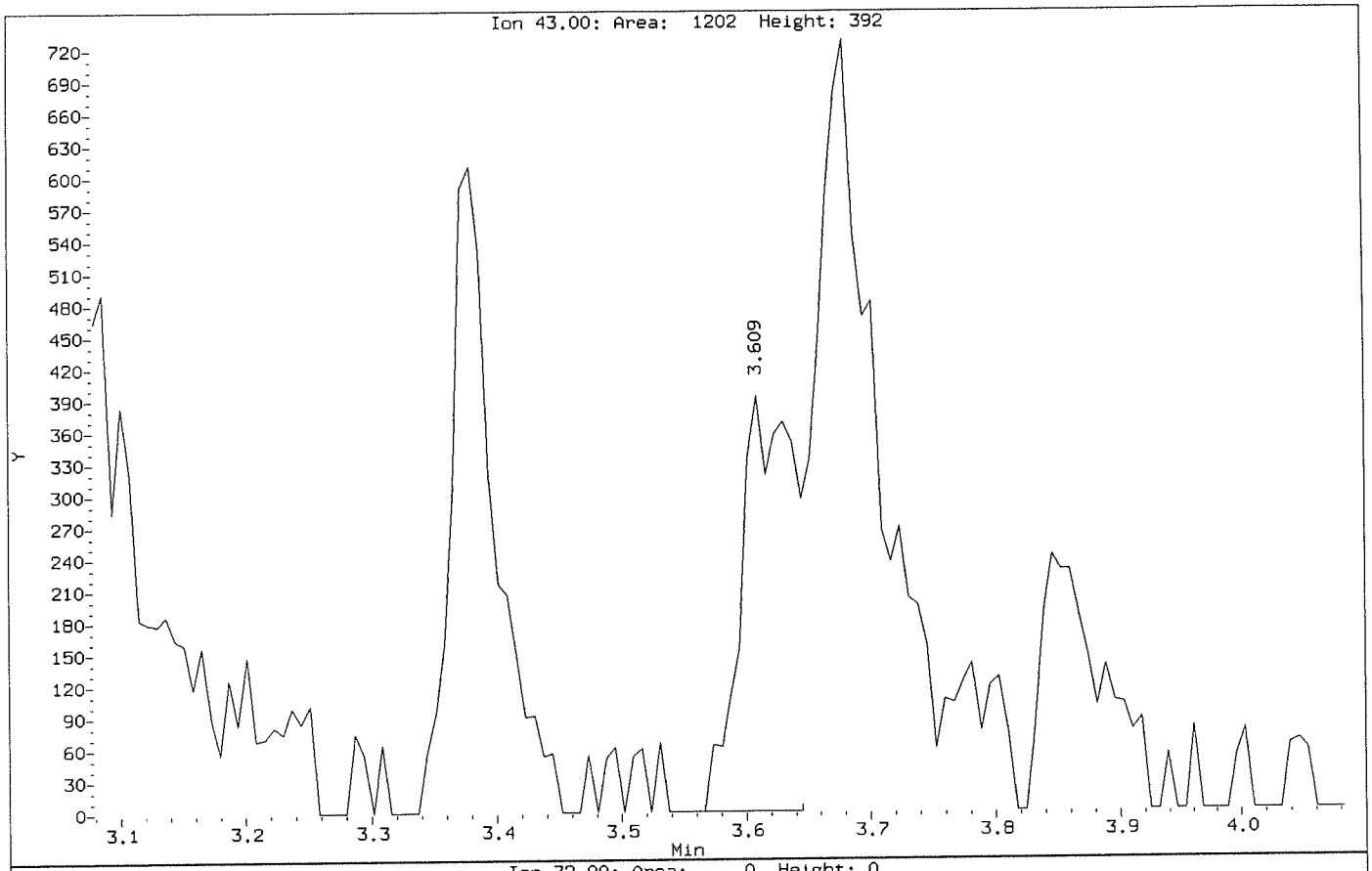
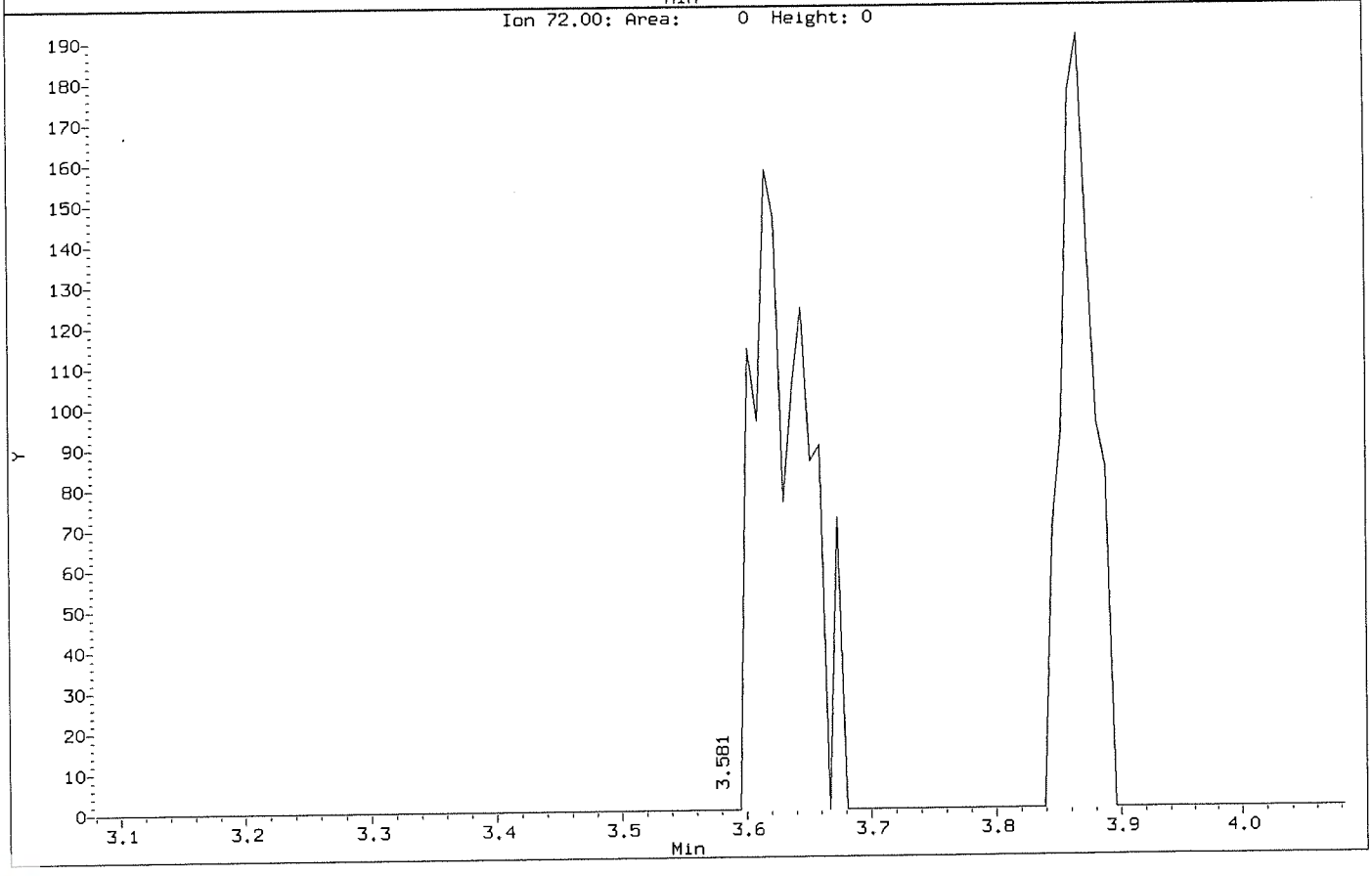
Compound: 2-Butanone
CAS Number: 78-93-3





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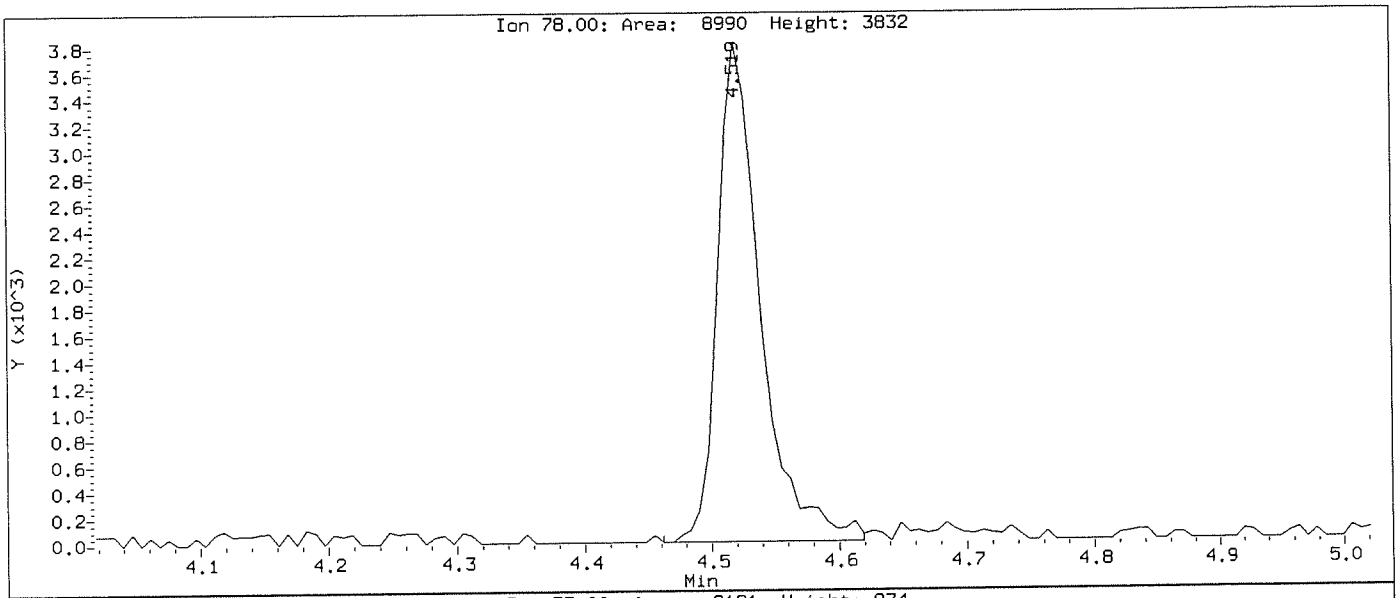
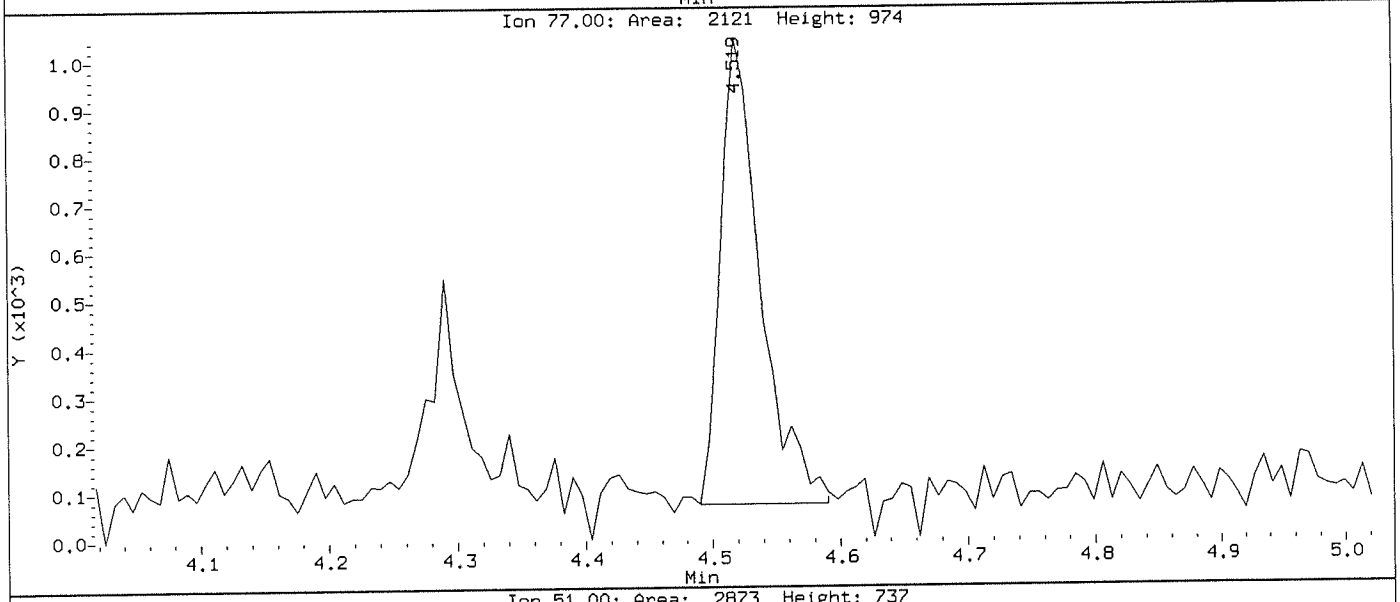
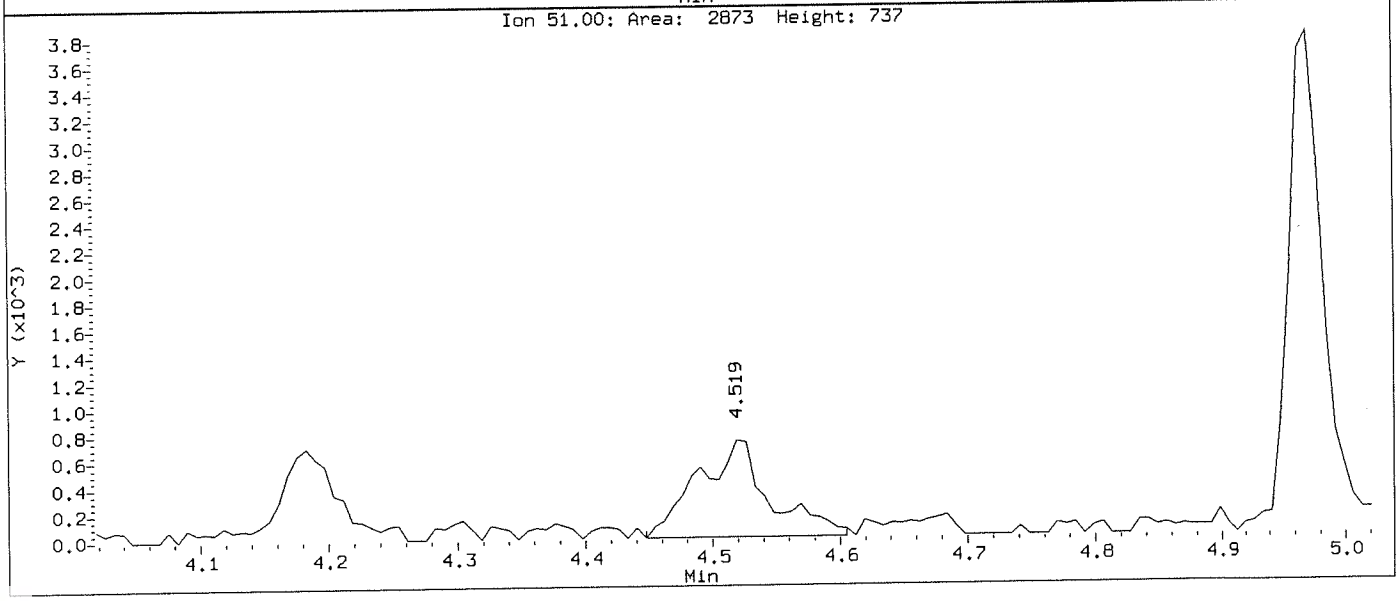
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Benzene
CAS Number: 71-43-2







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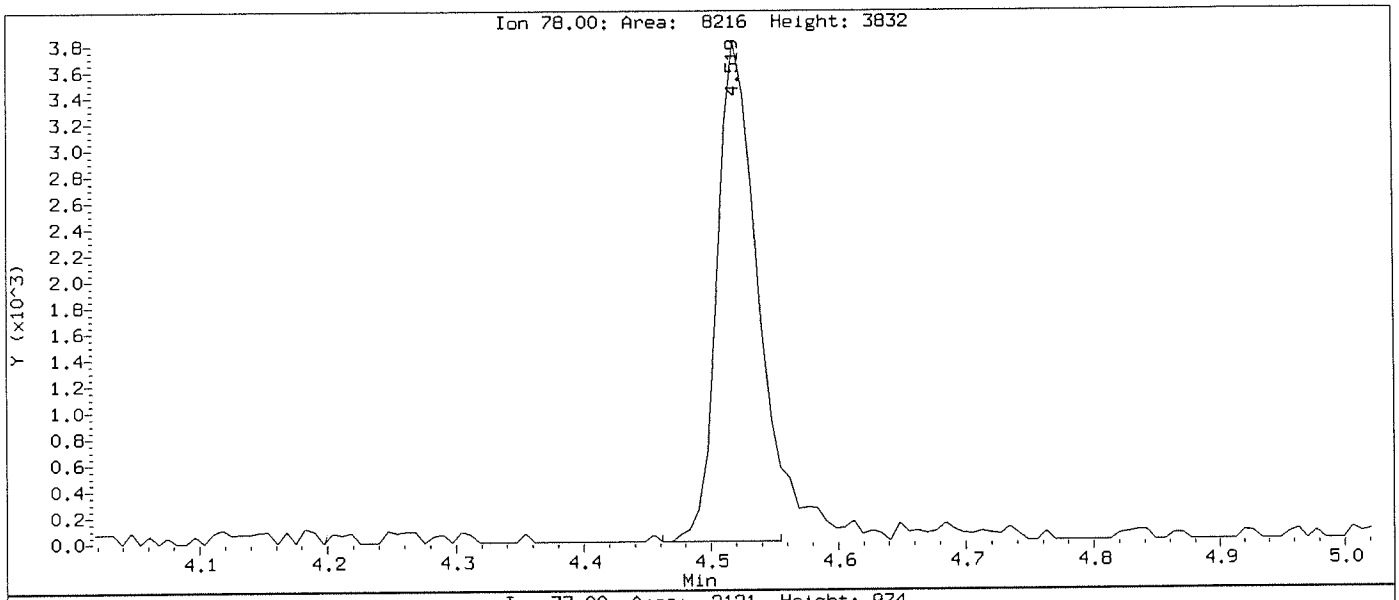
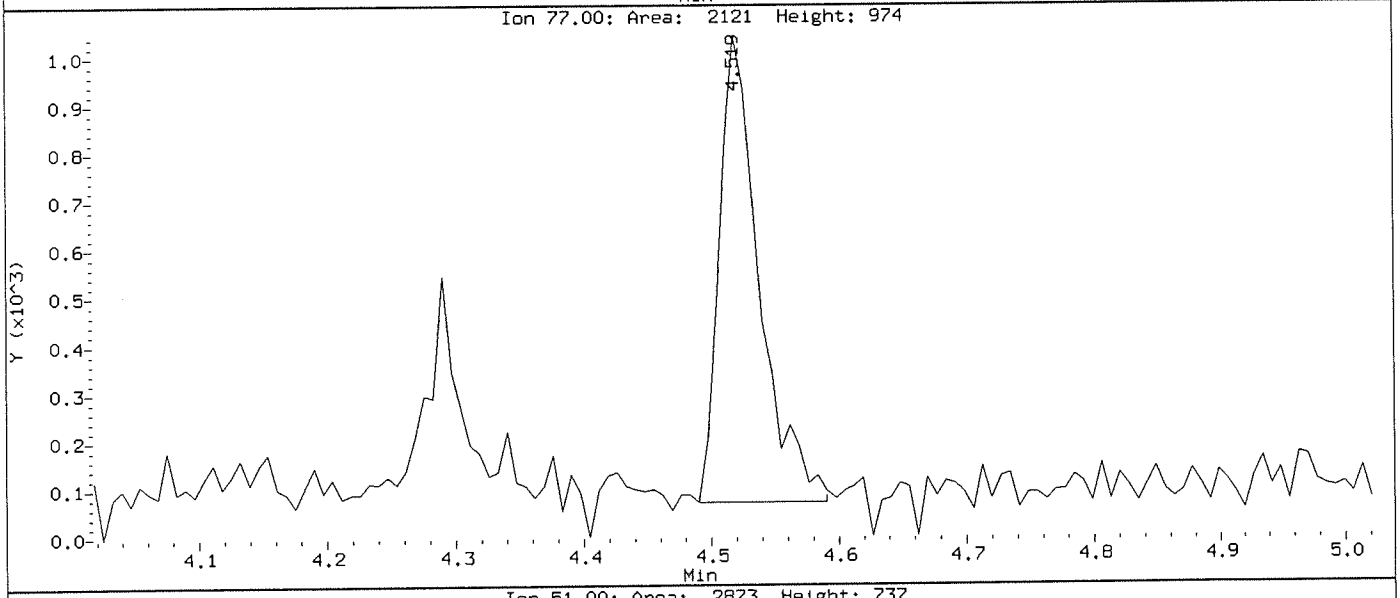
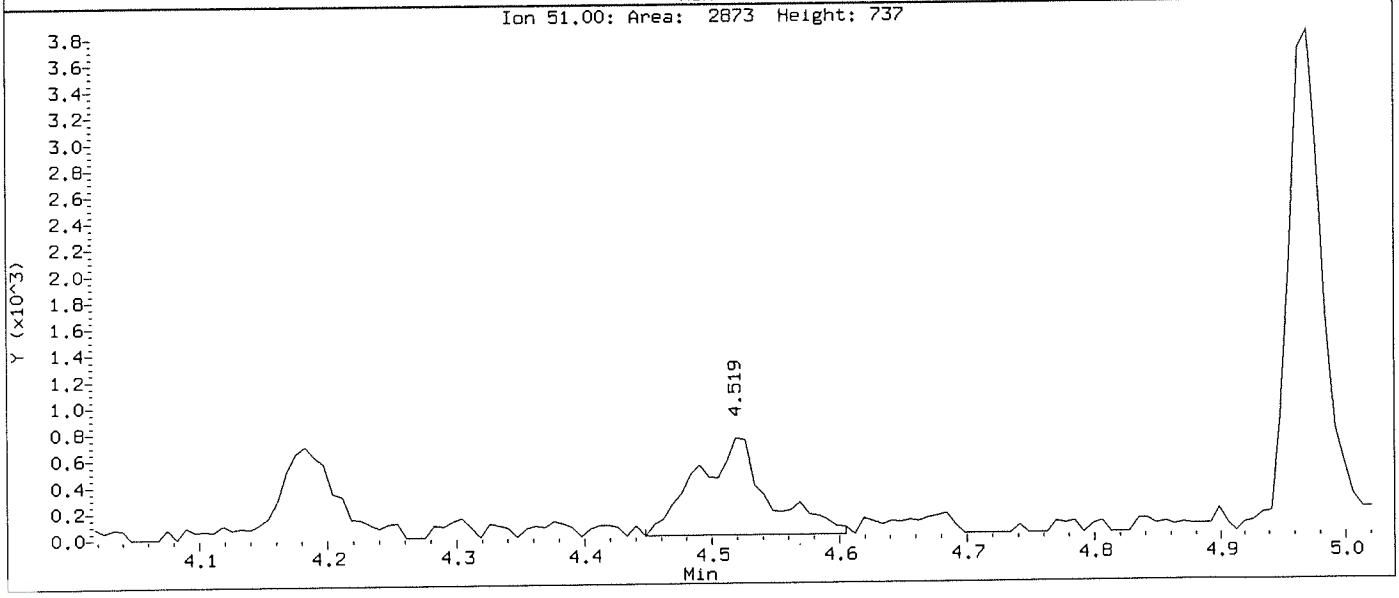
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Benzene
CAS Number: 71-43-2







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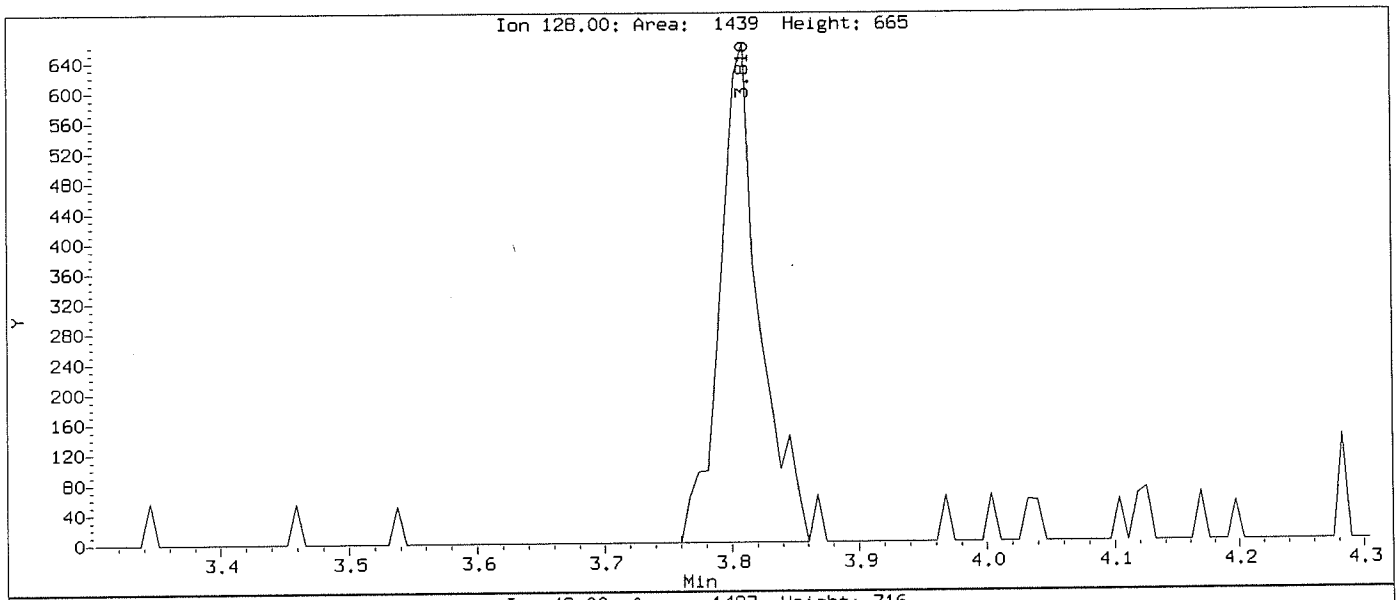
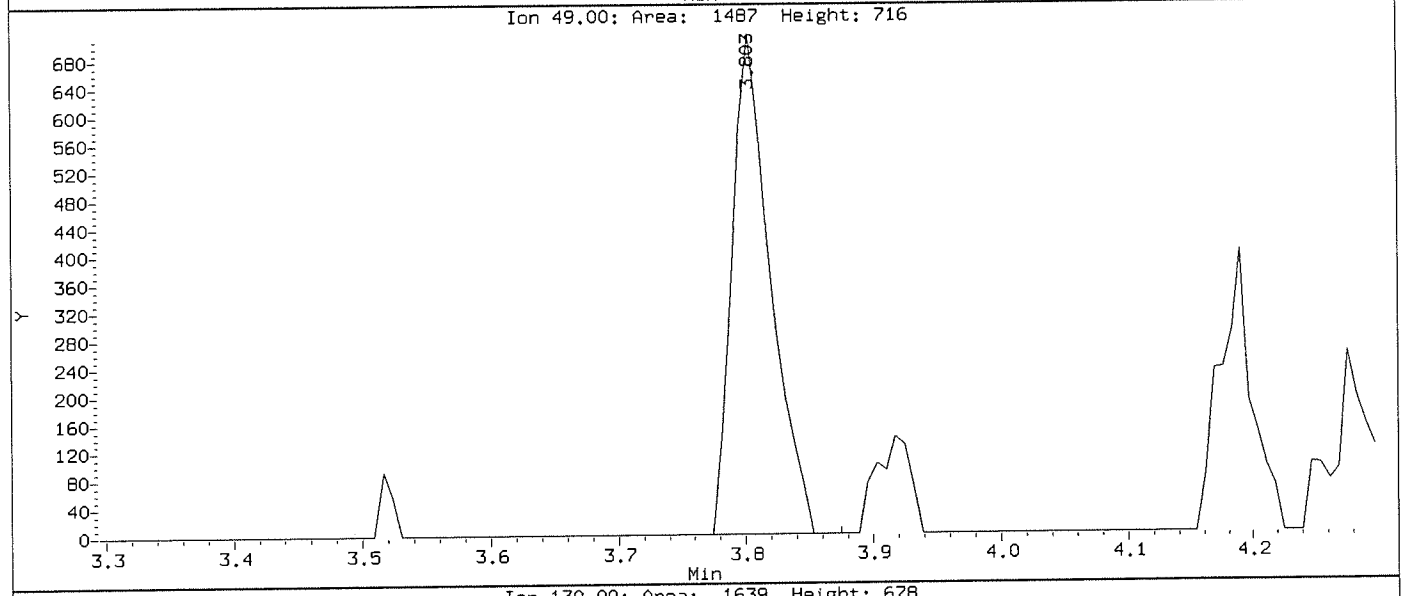
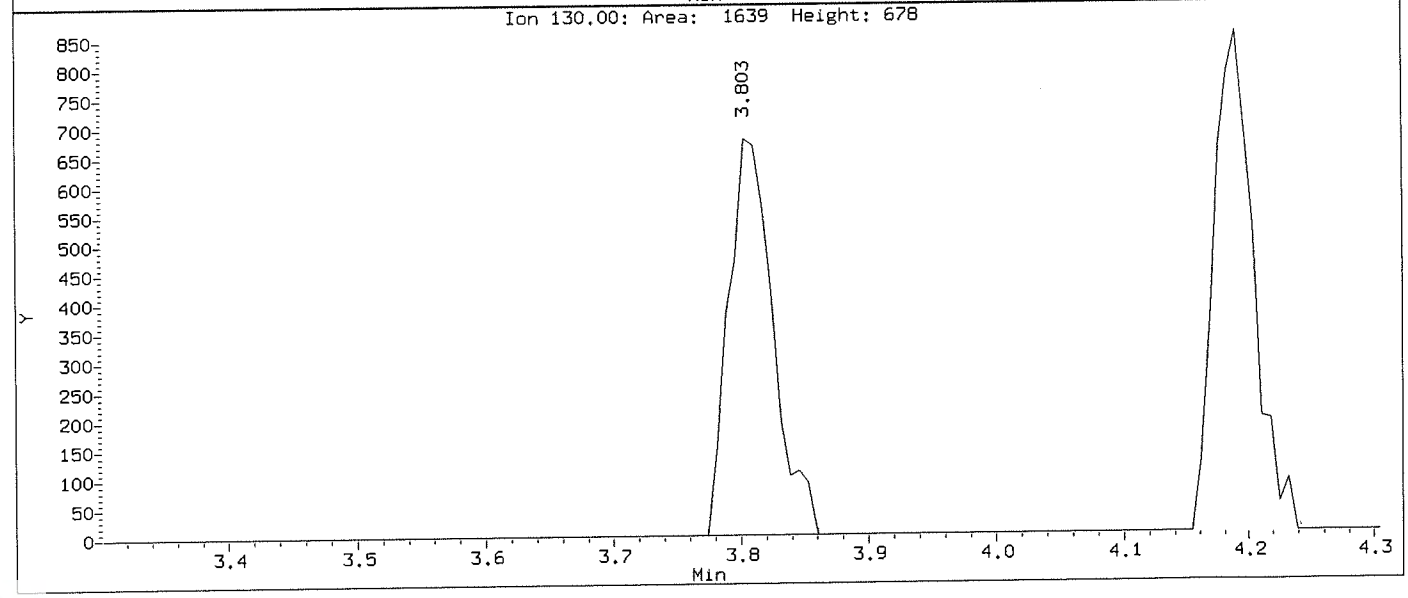
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Bromochloromethane
CAS Number: 74-97-5







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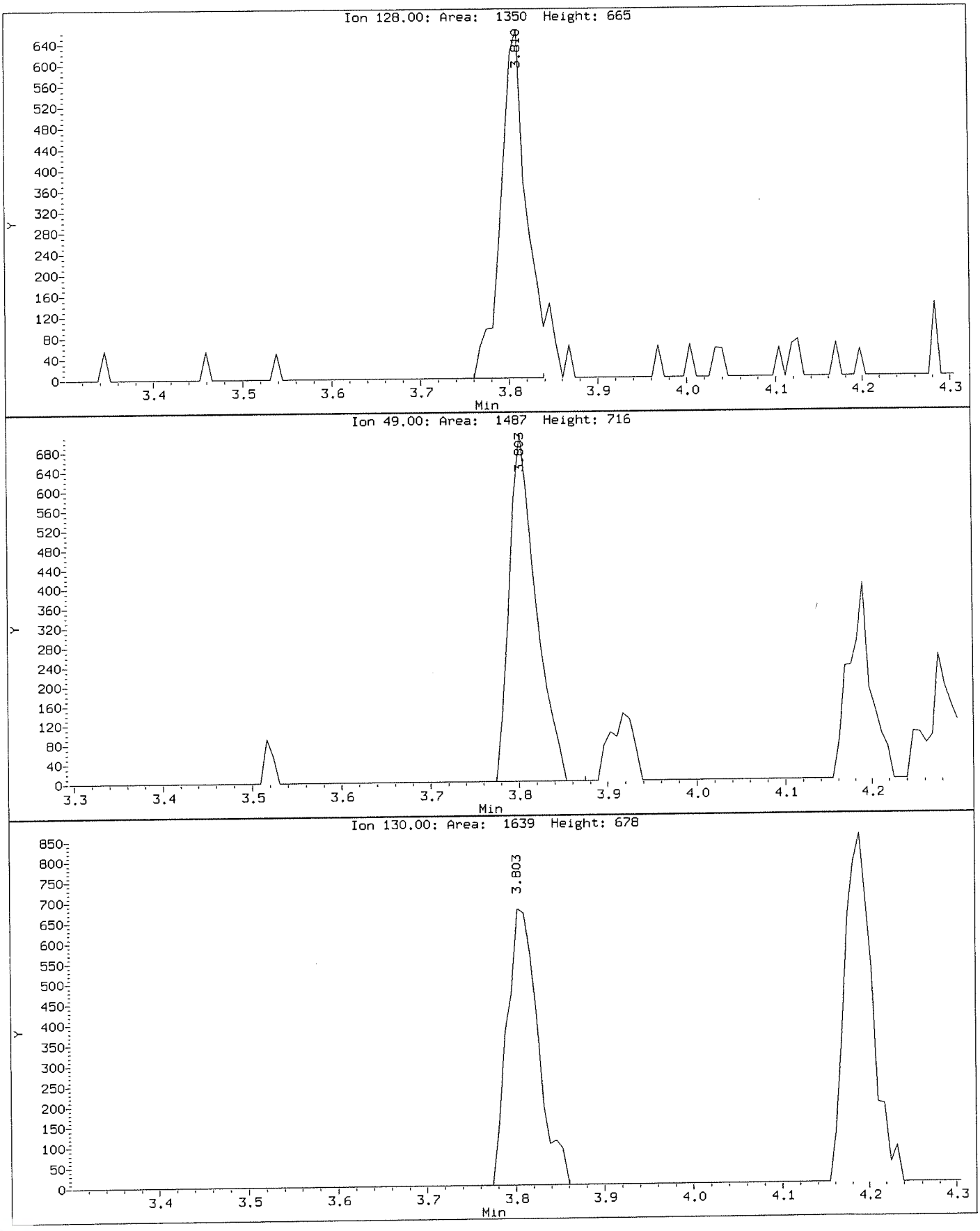
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Bromochloromethane
CAS Number: 74-97-5



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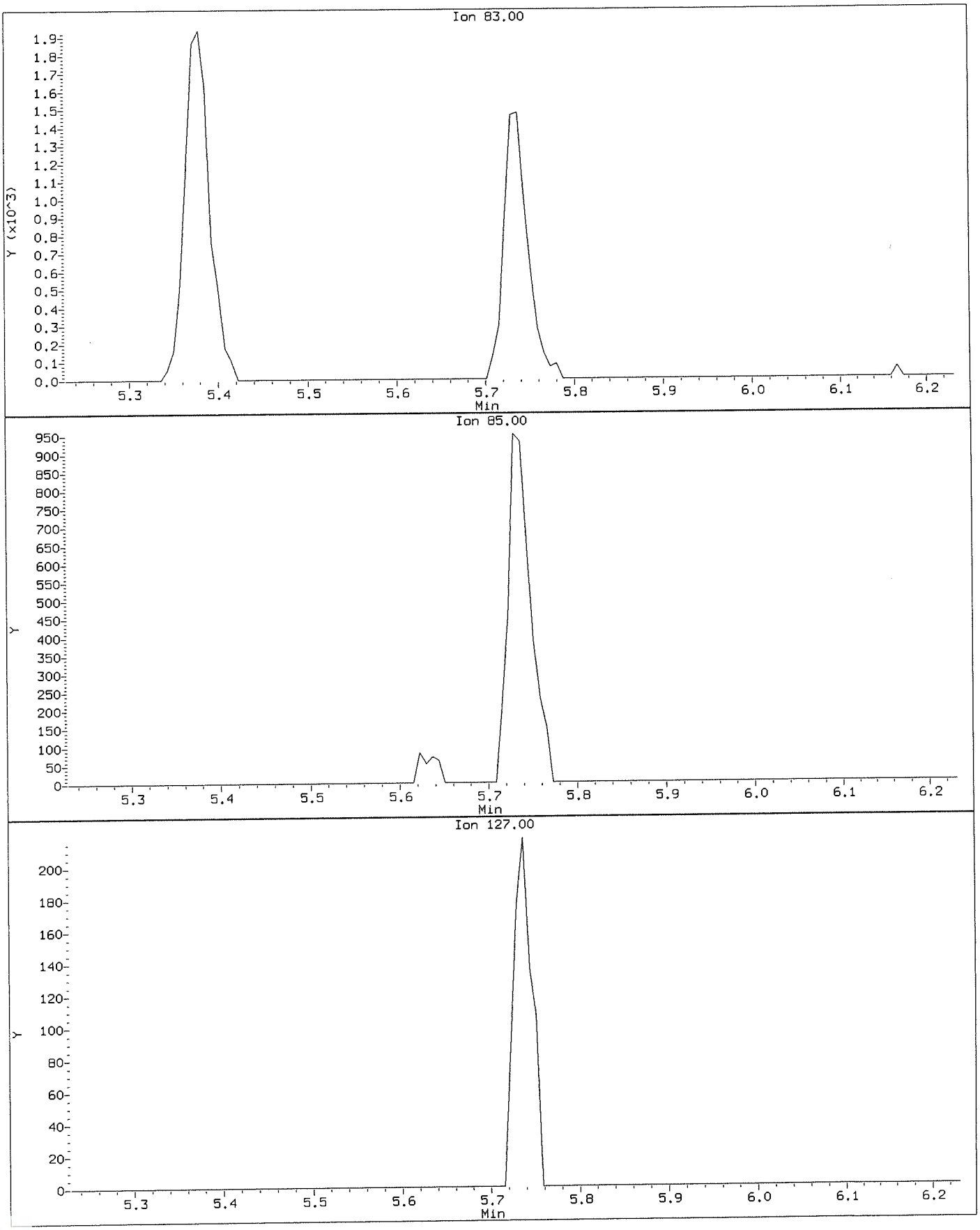
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Bromodichloromethane
CAS Number: 75-27-4



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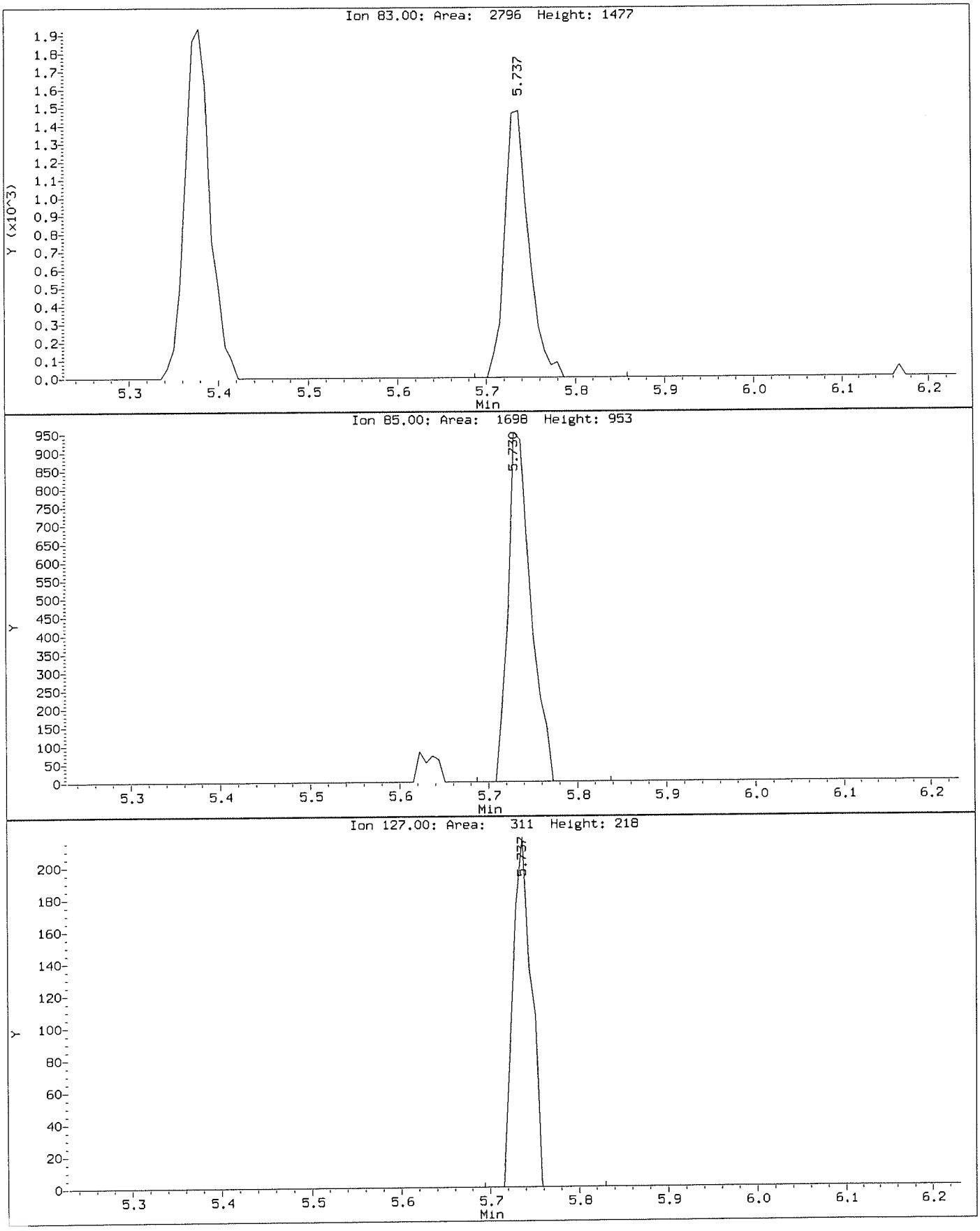
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Bromodichloromethane
CAS Number: 75-27-4



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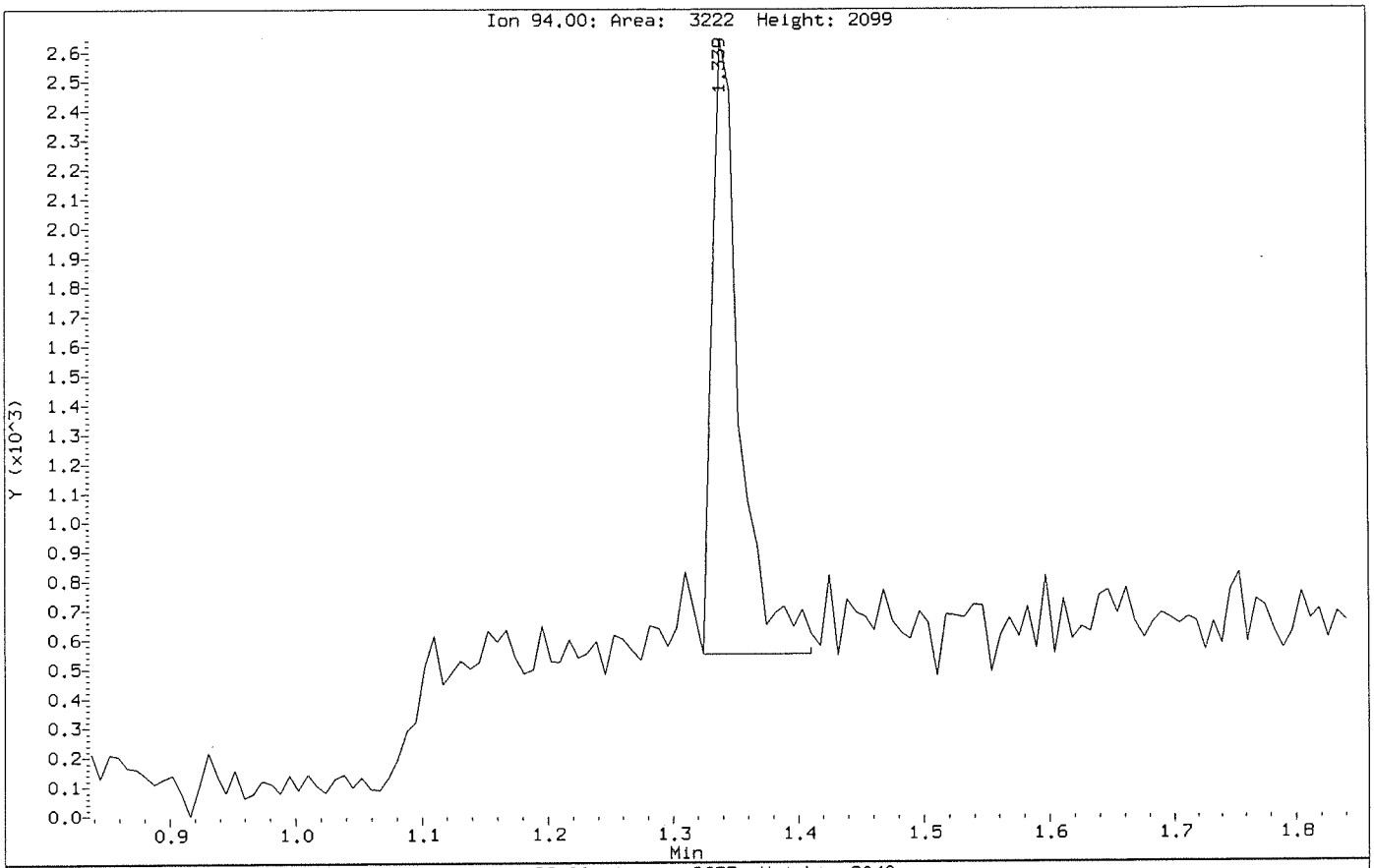
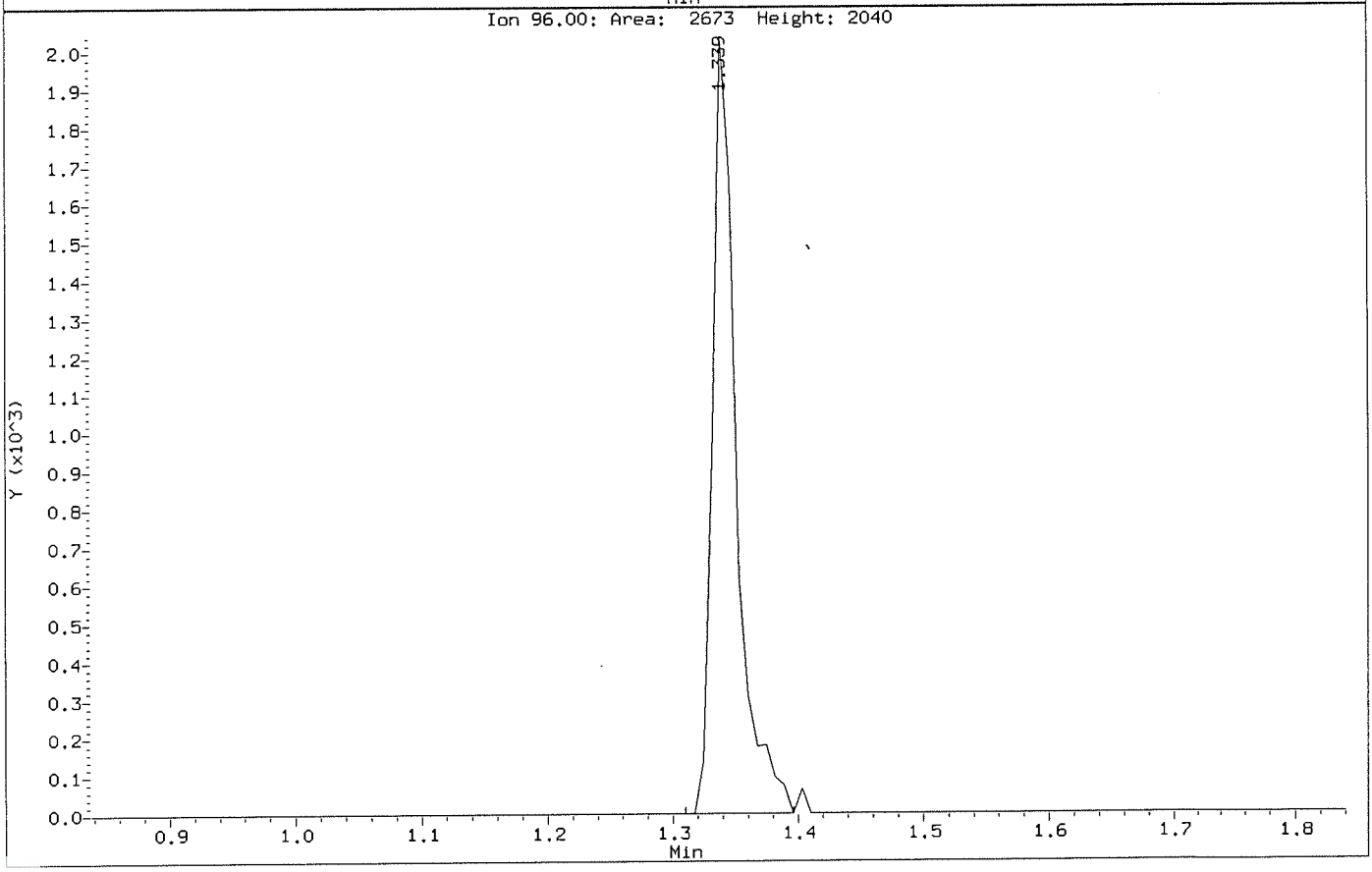
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Bromomethane
CAS Number: 74-83-9





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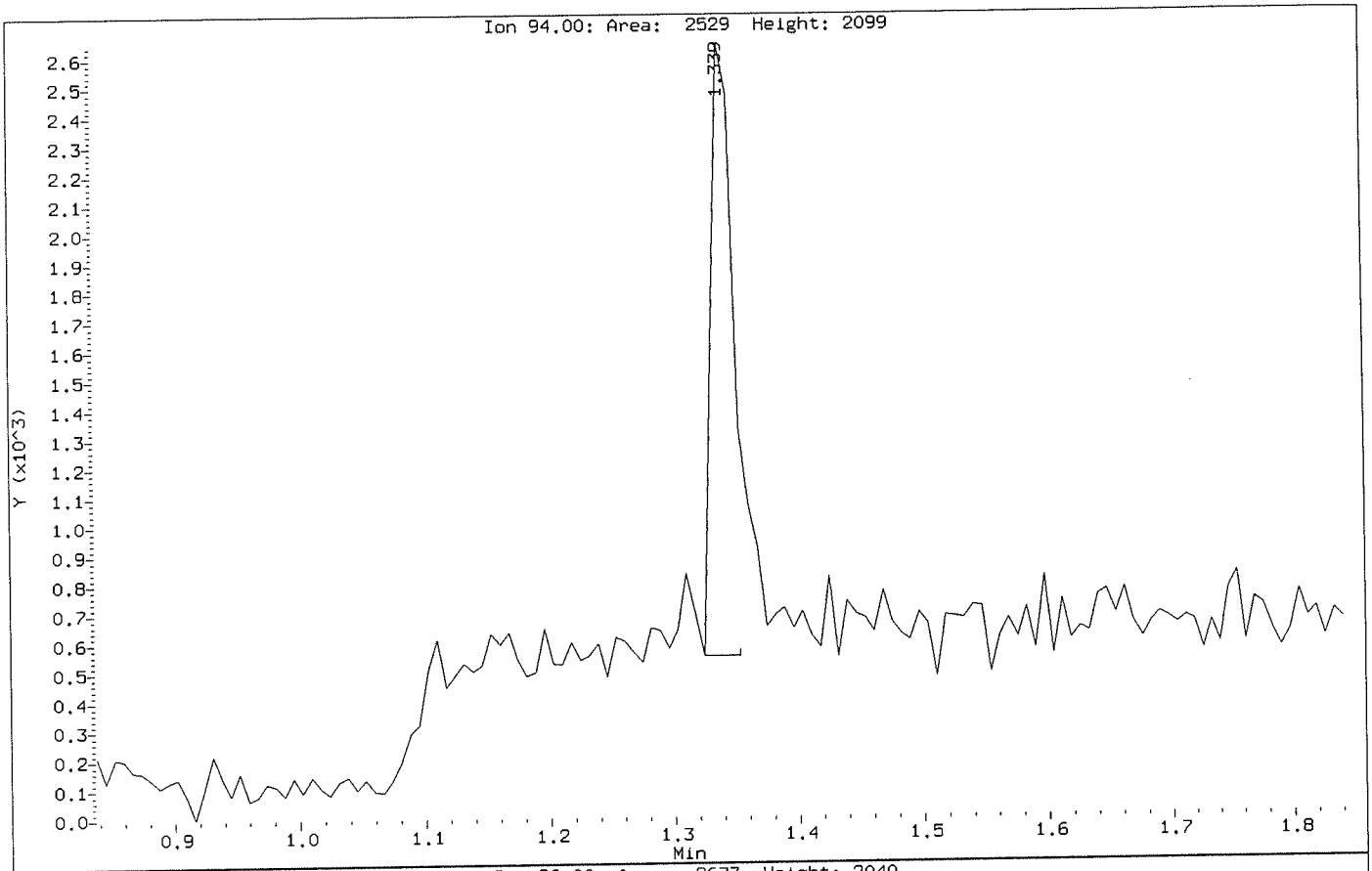
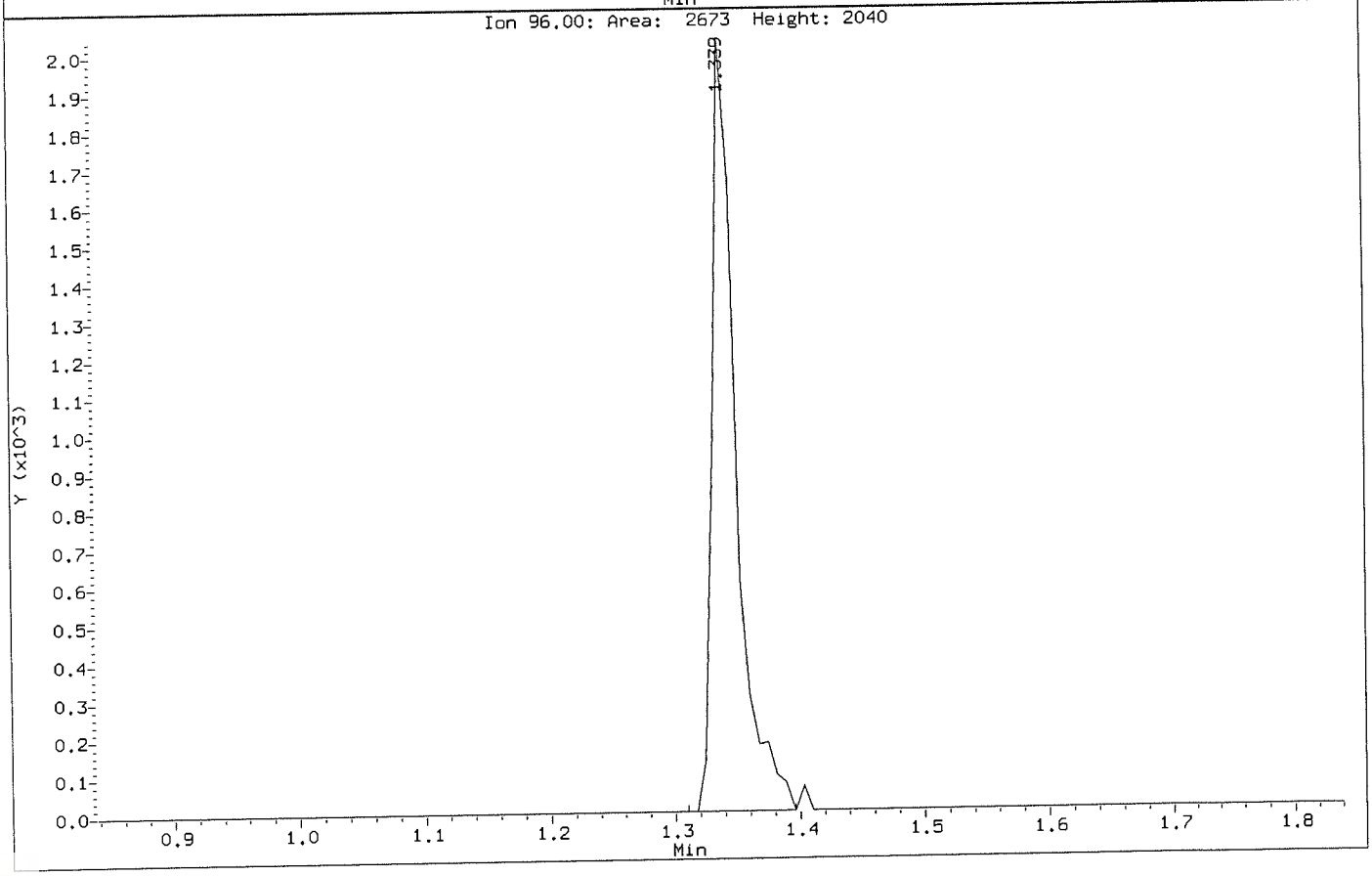
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Bromomethane
CAS Number: 74-83-9





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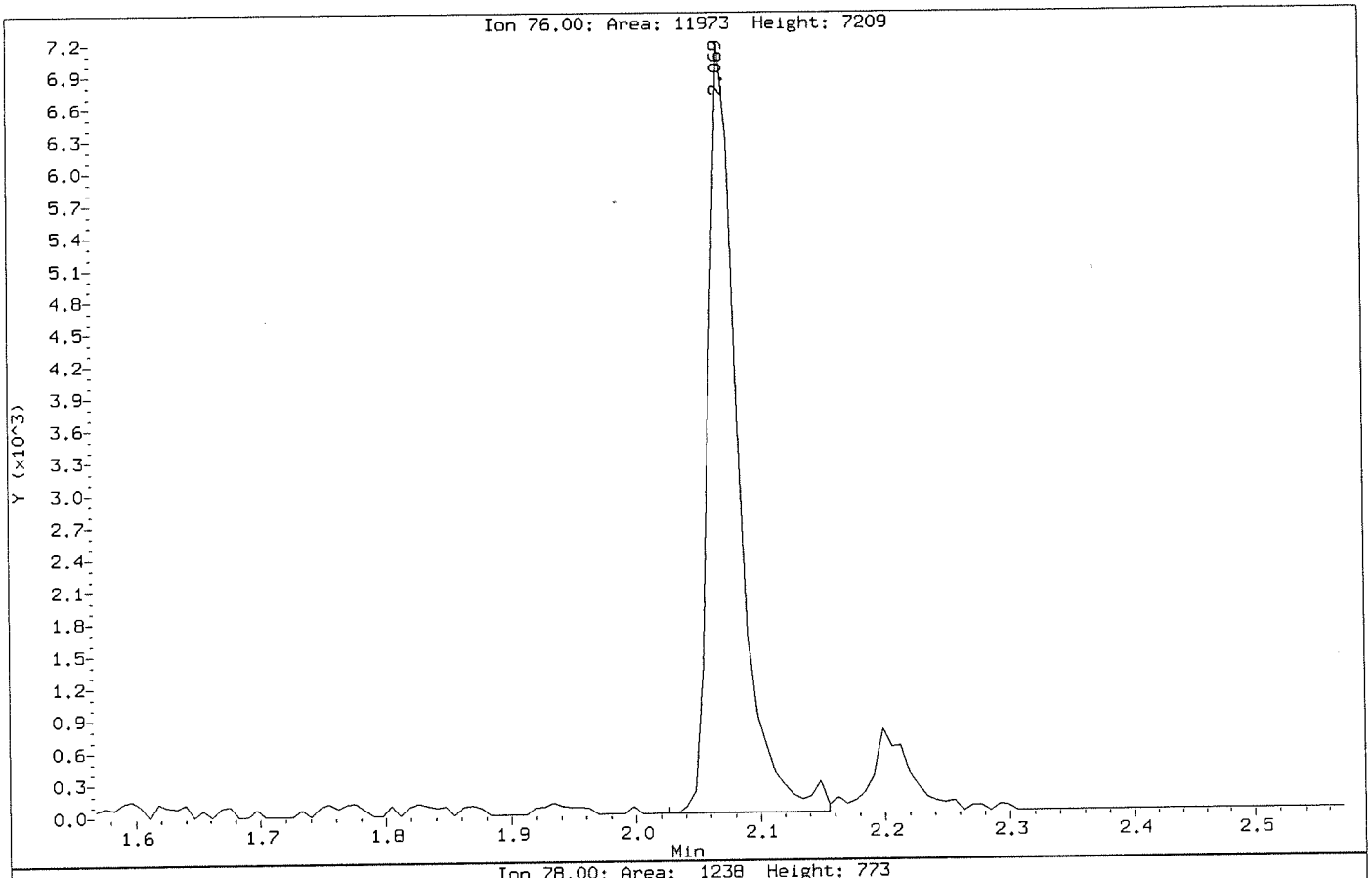
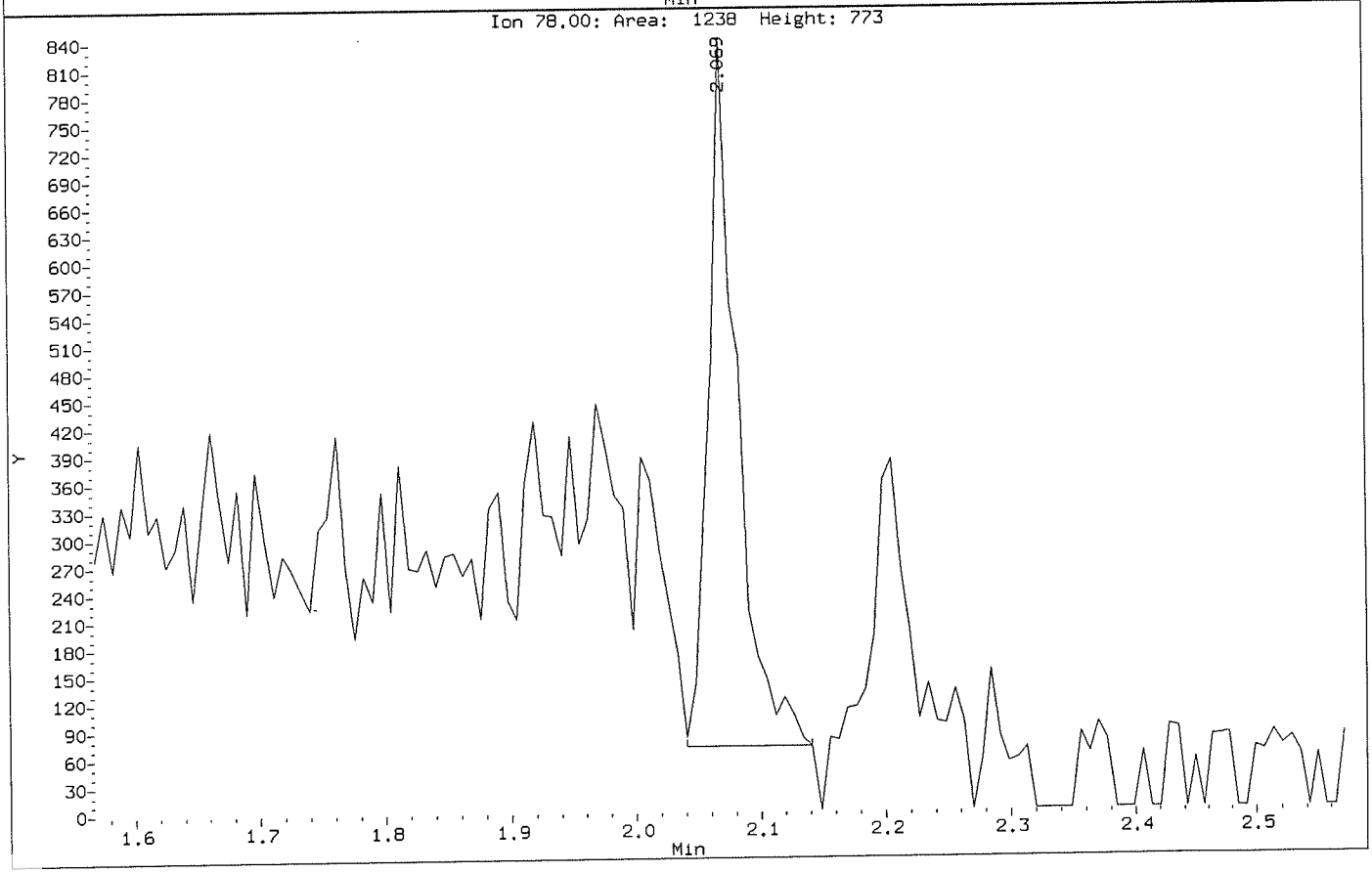
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Carbon Disulfide
CAS Number: 75-15-0





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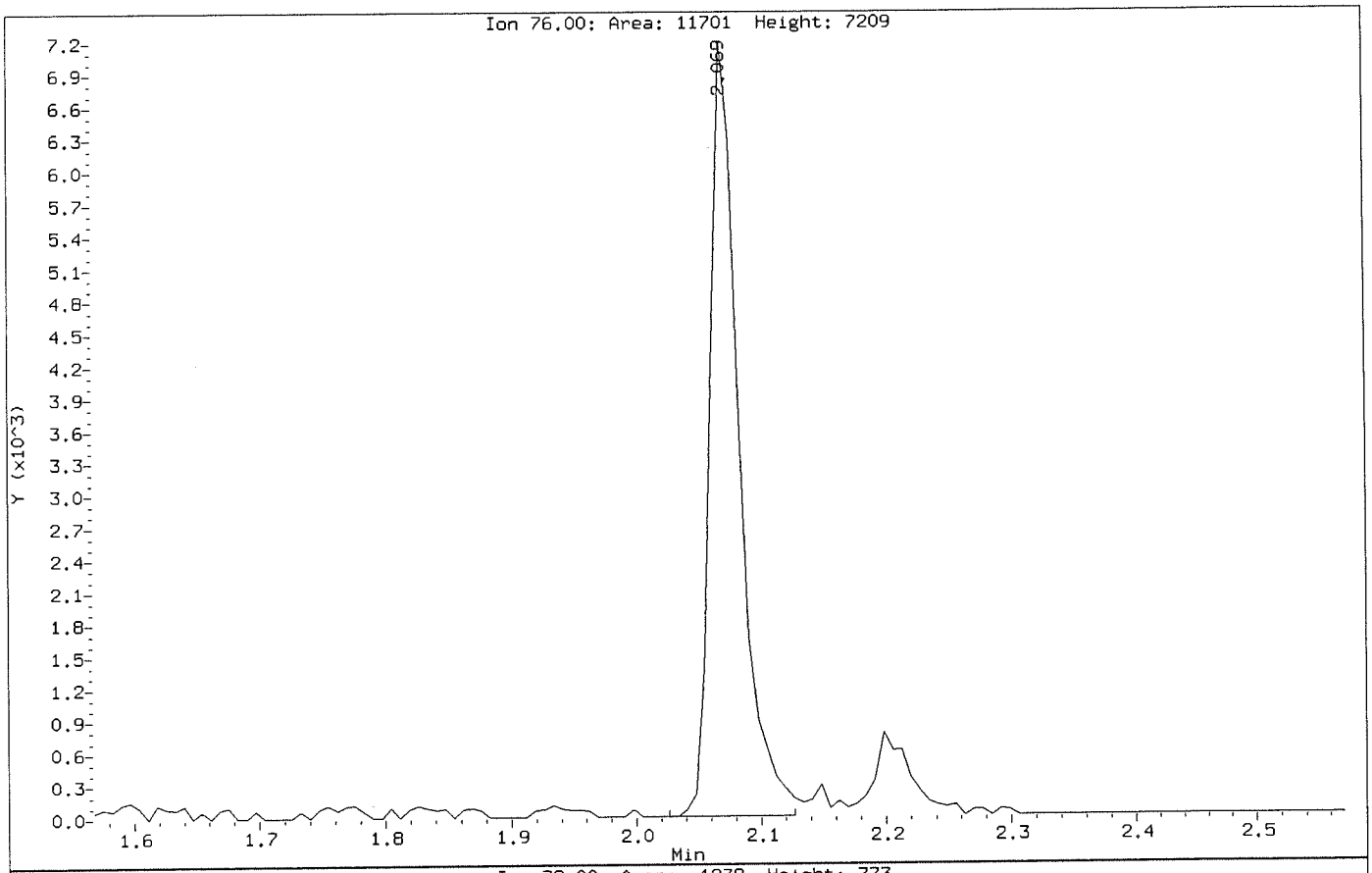
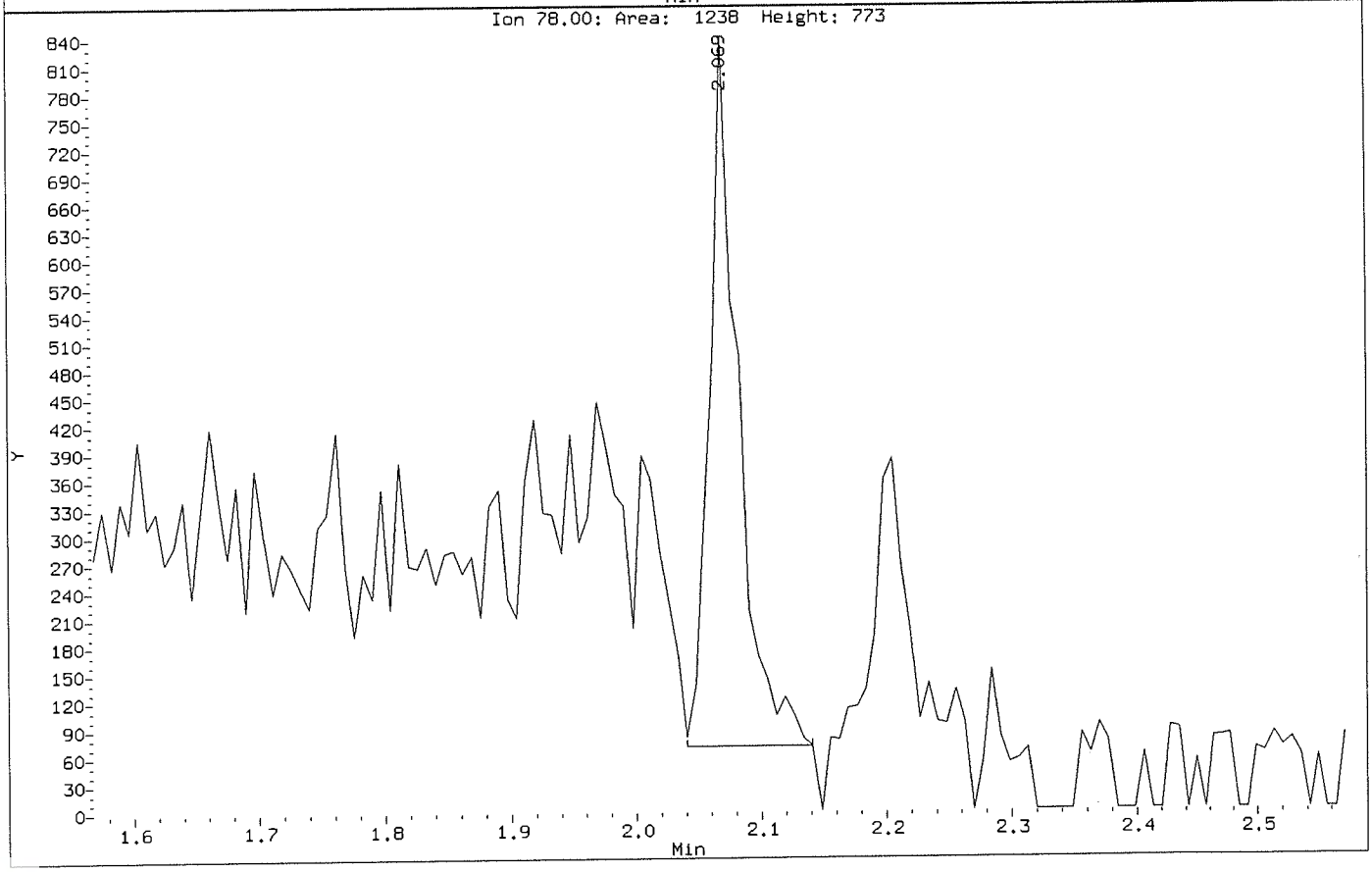
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Carbon Disulfide
CAS Number: 75-15-0





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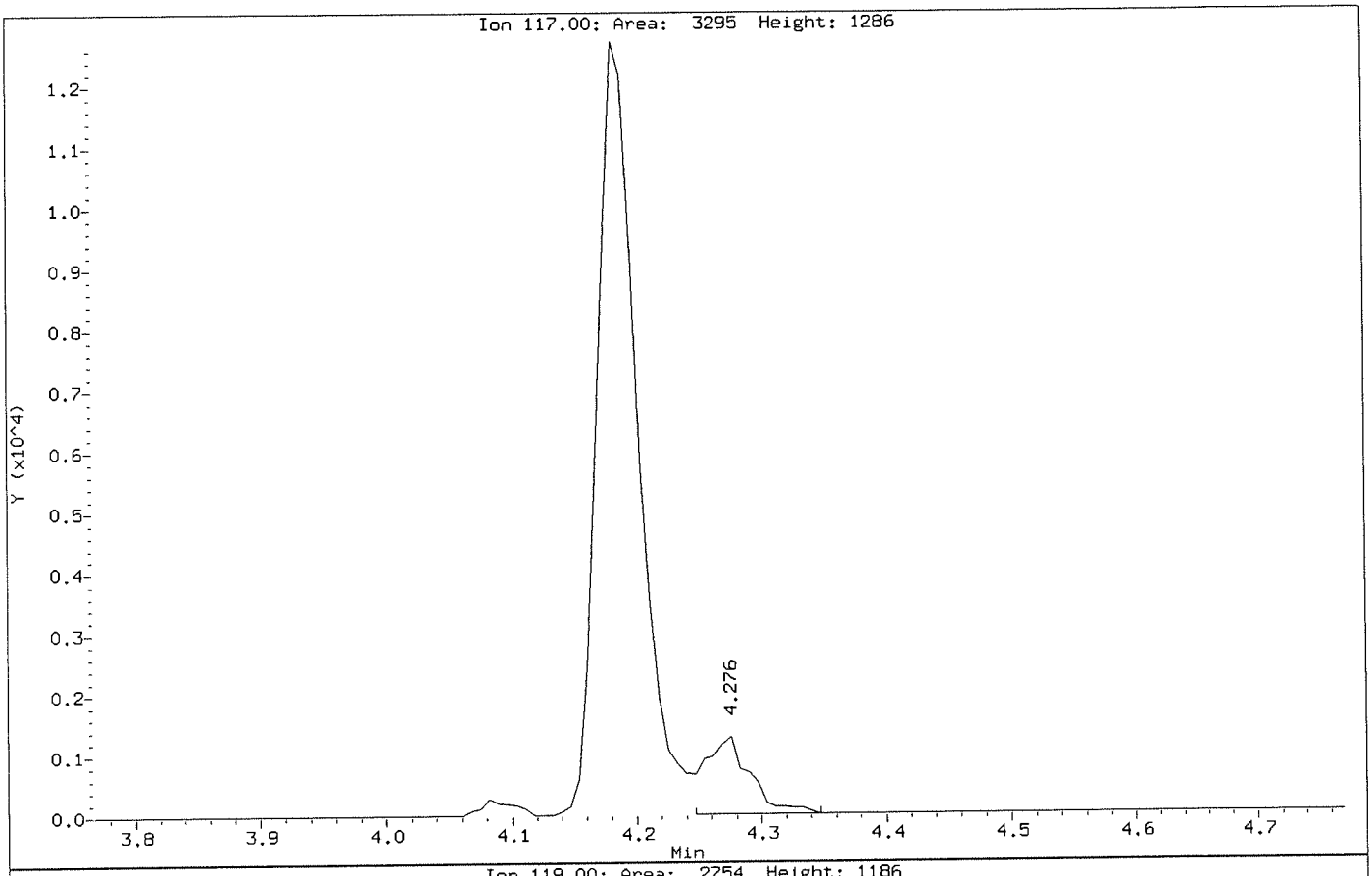
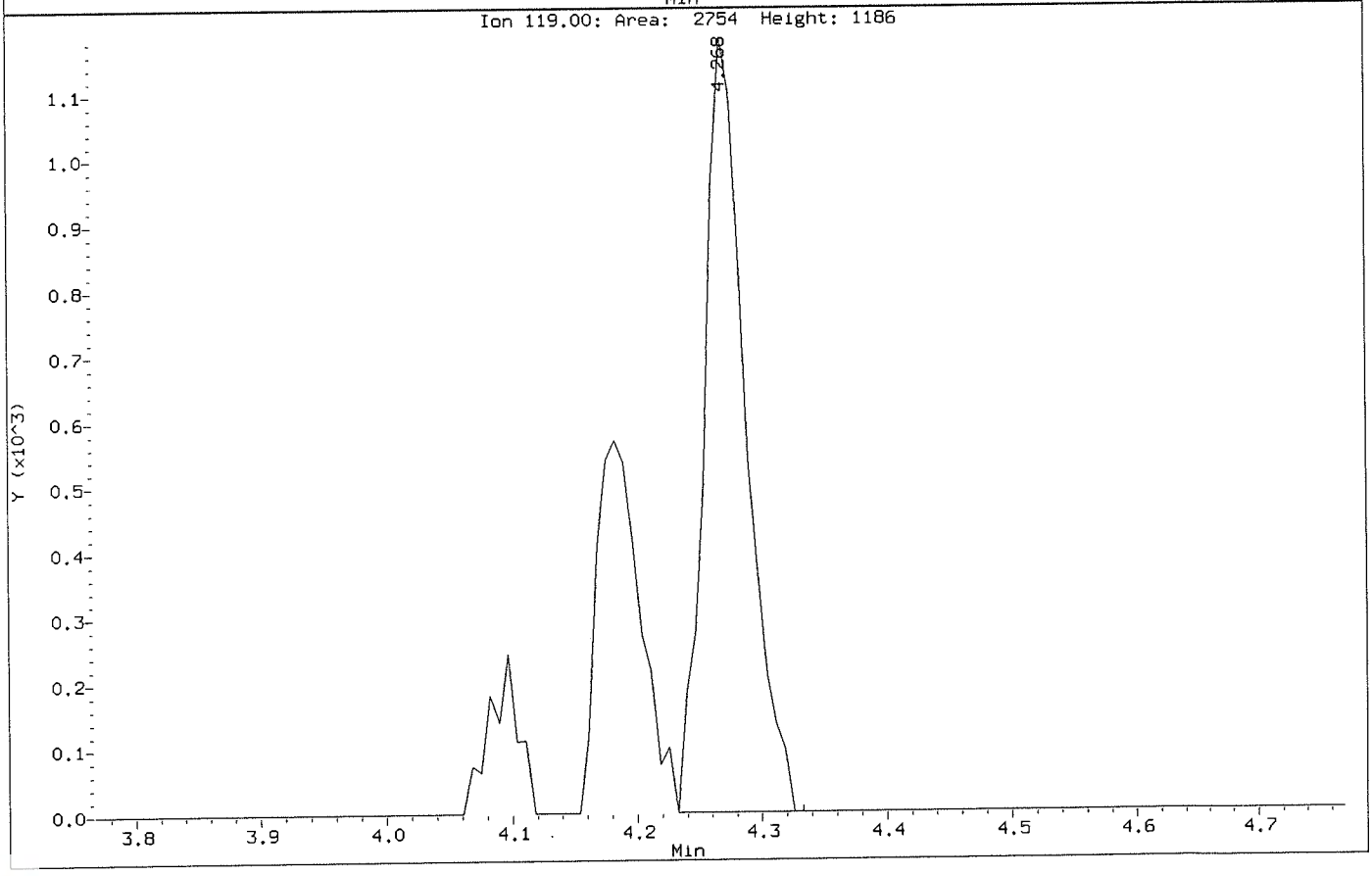
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Carbon Tetrachloride
CAS Number: 56-23-5





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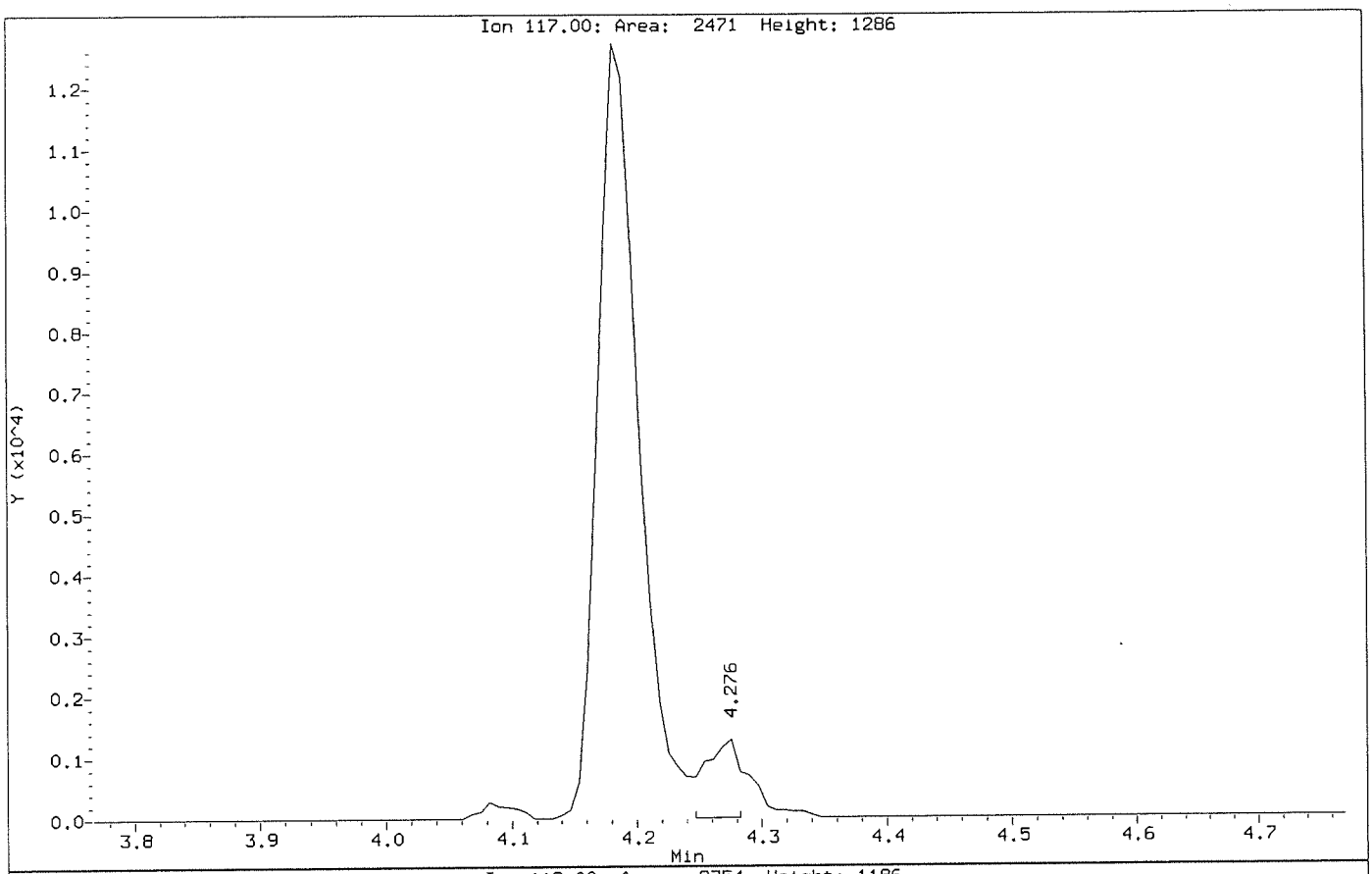
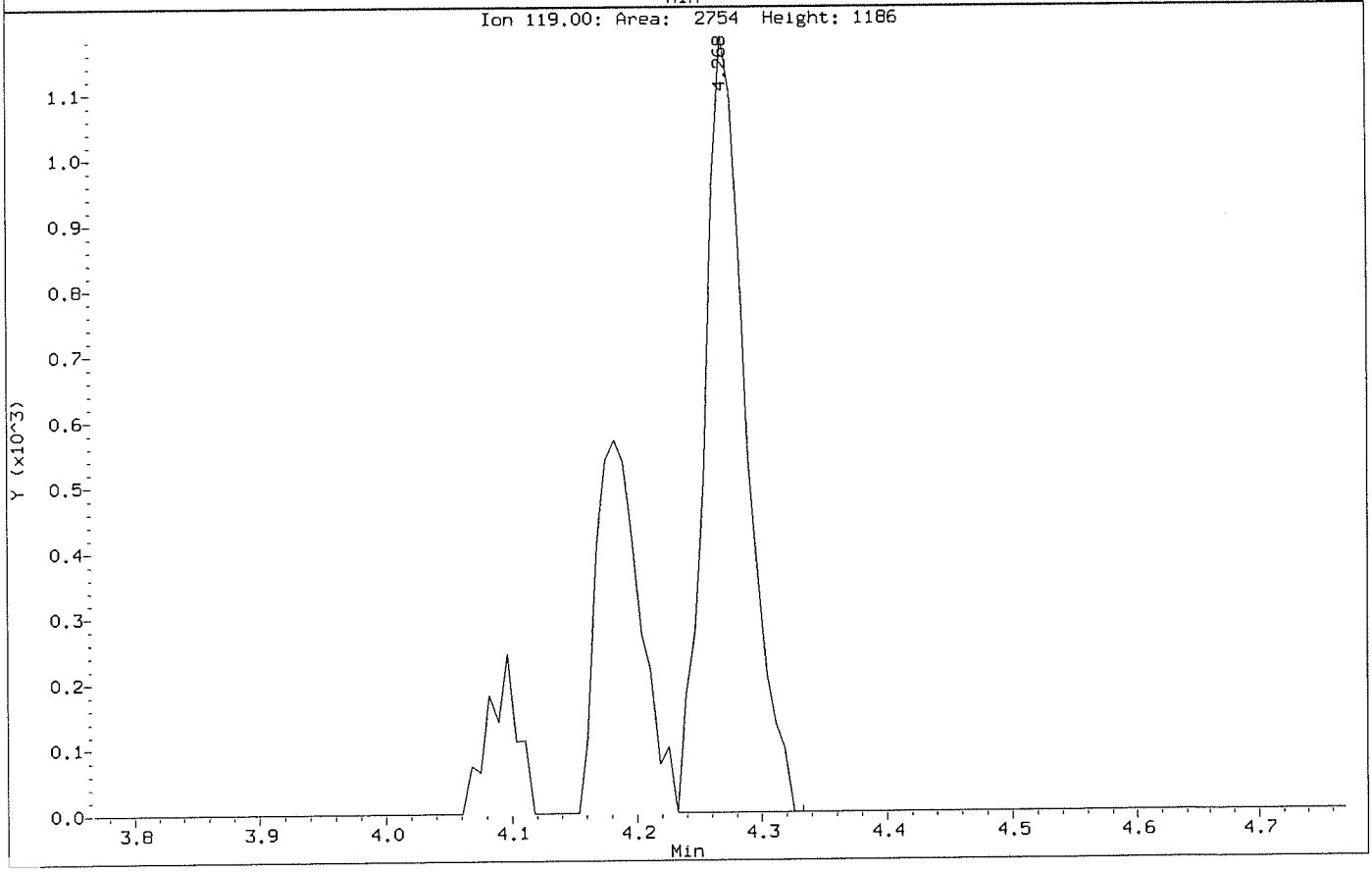
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Carbon Tetrachloride
CAS Number: 56-23-5





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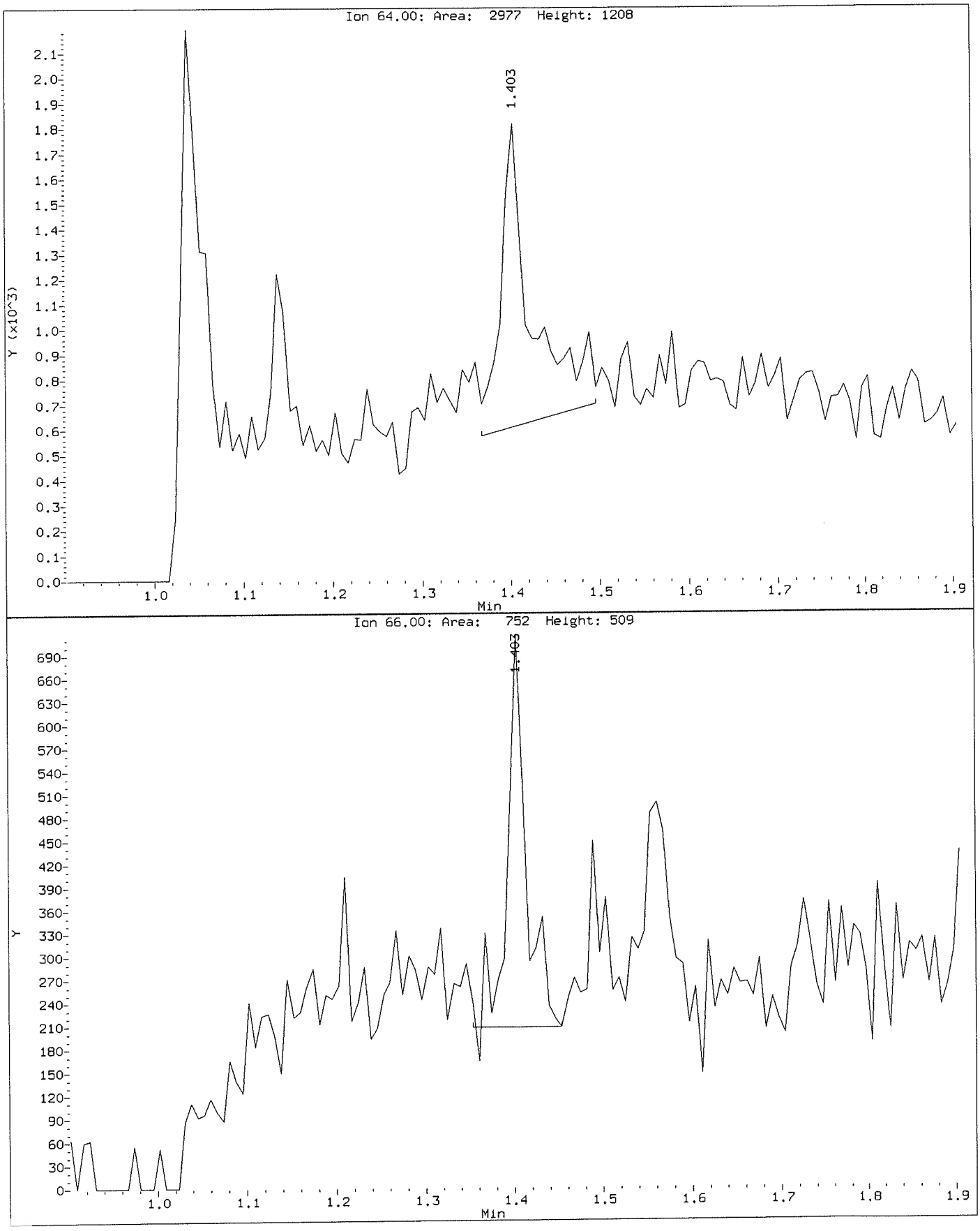
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Chloroethane
CAS Number: 75-00-3



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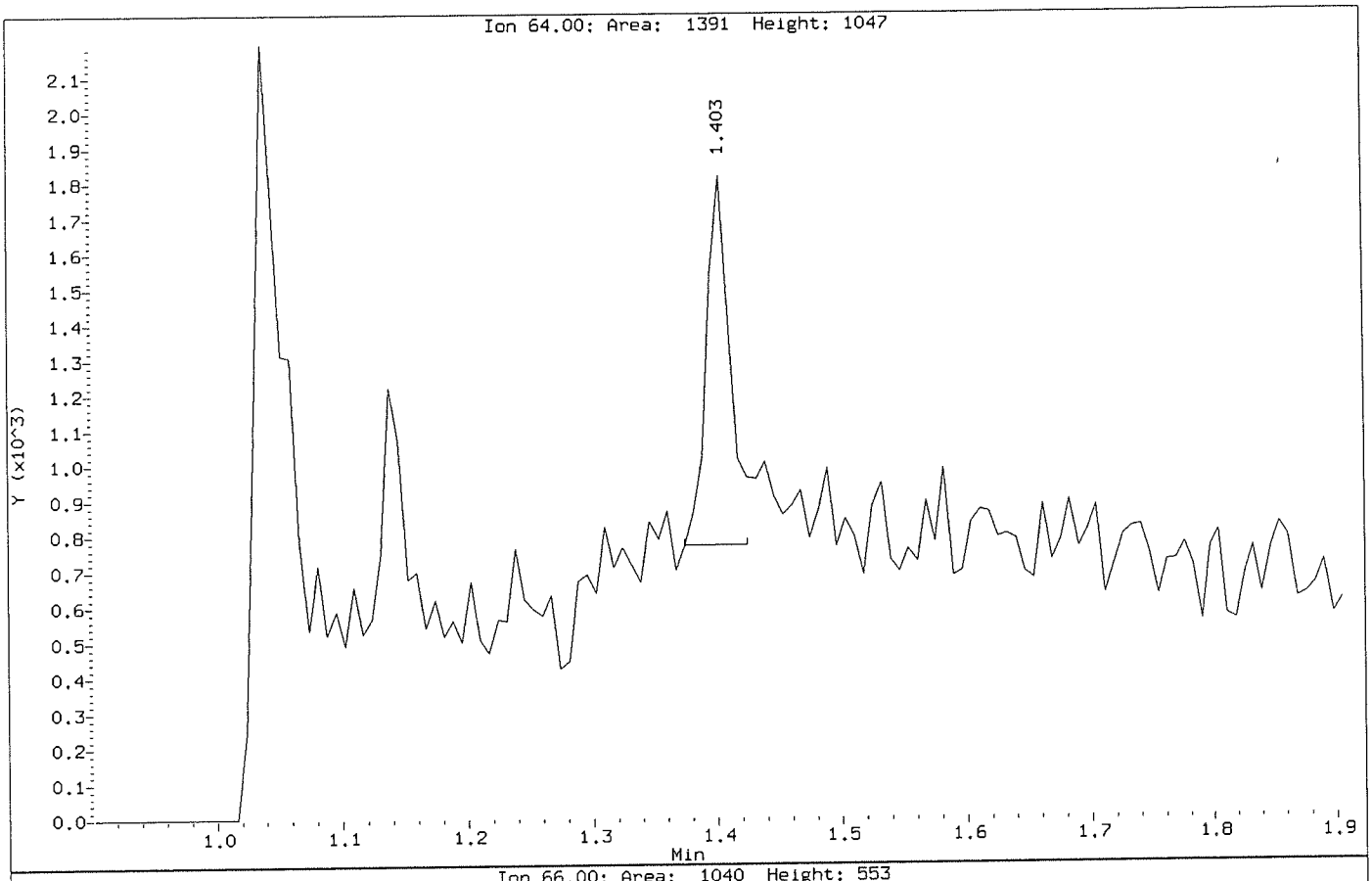
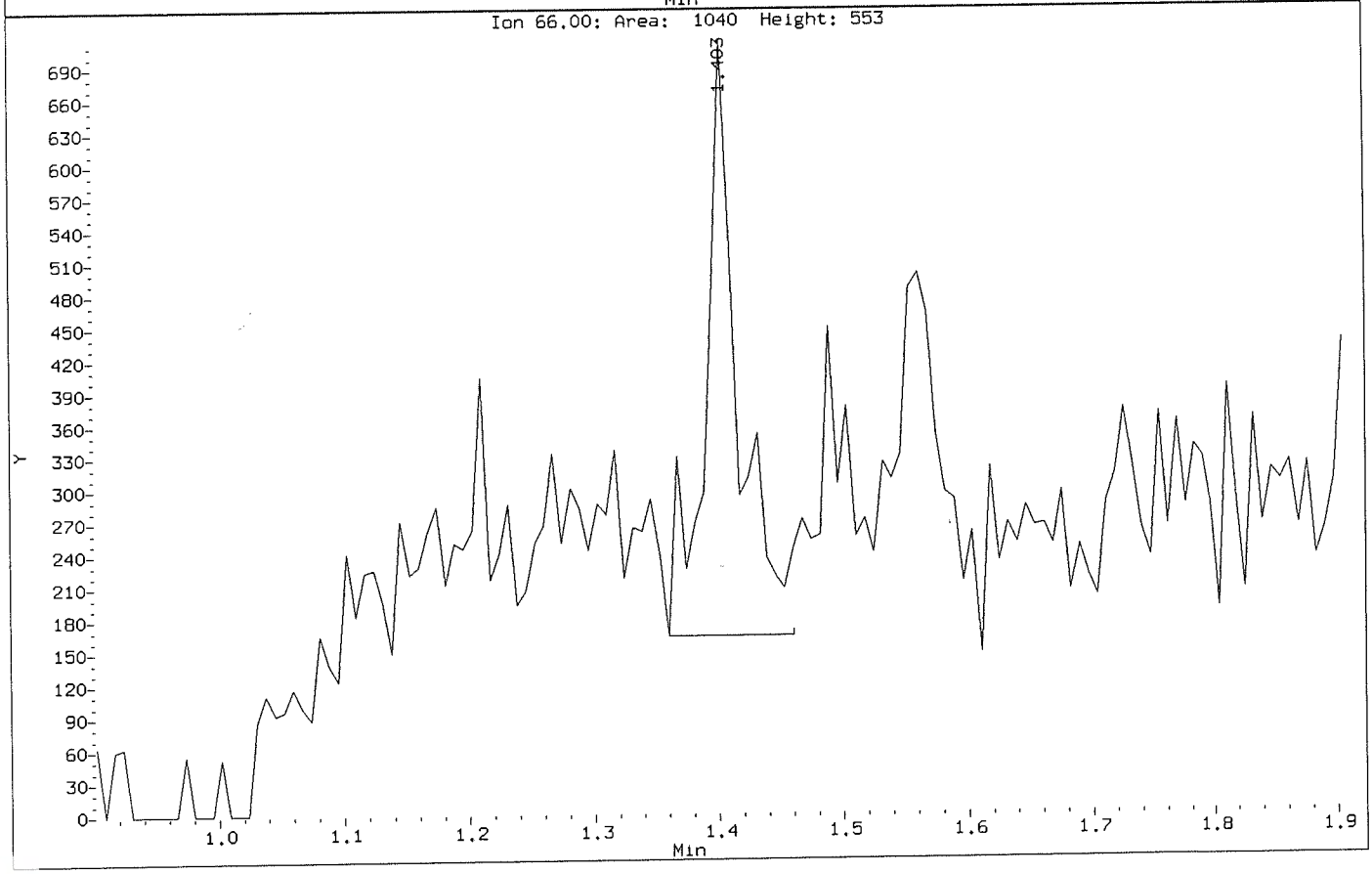
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Chloroethane
CAS Number: 75-00-3





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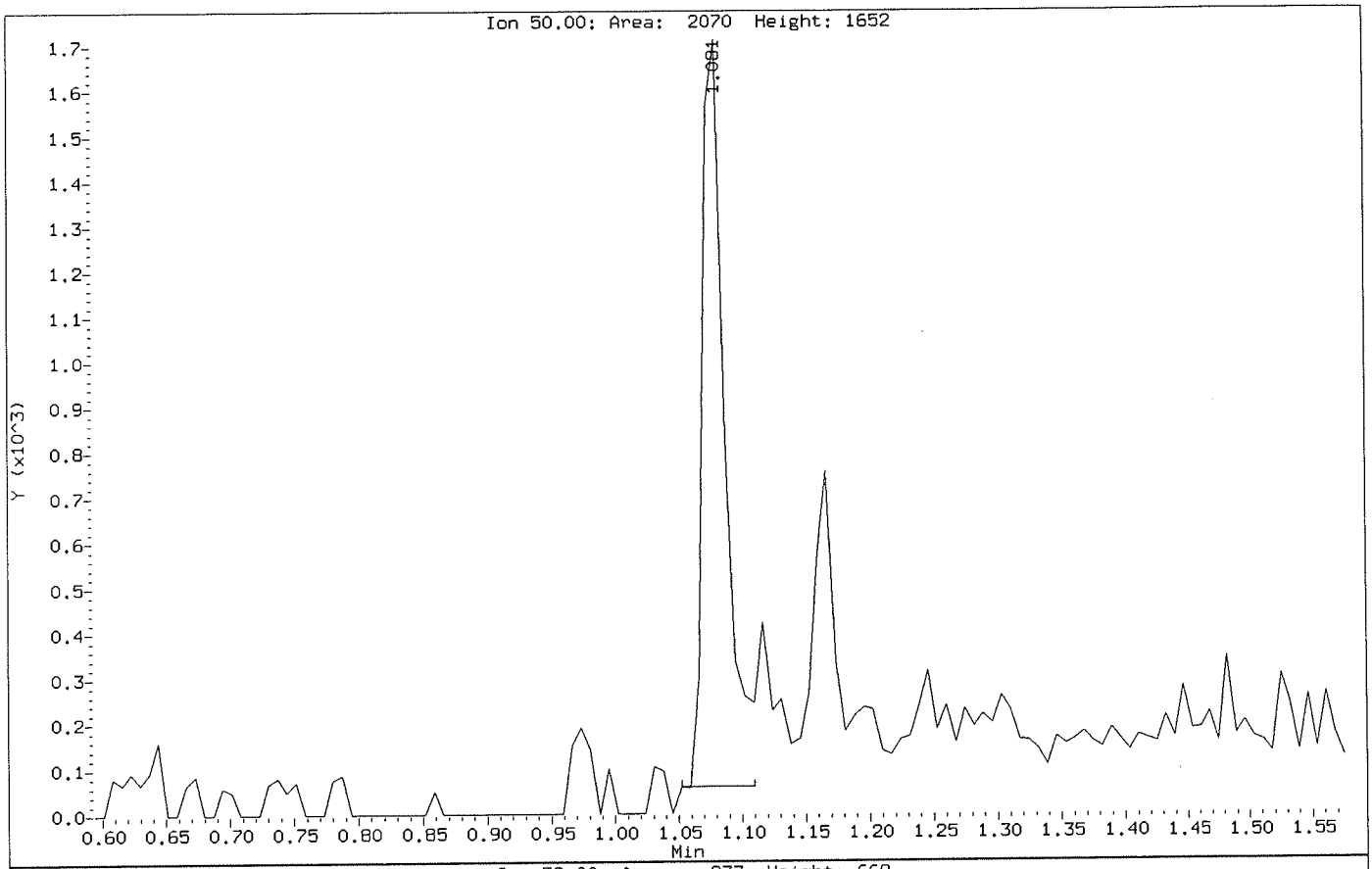
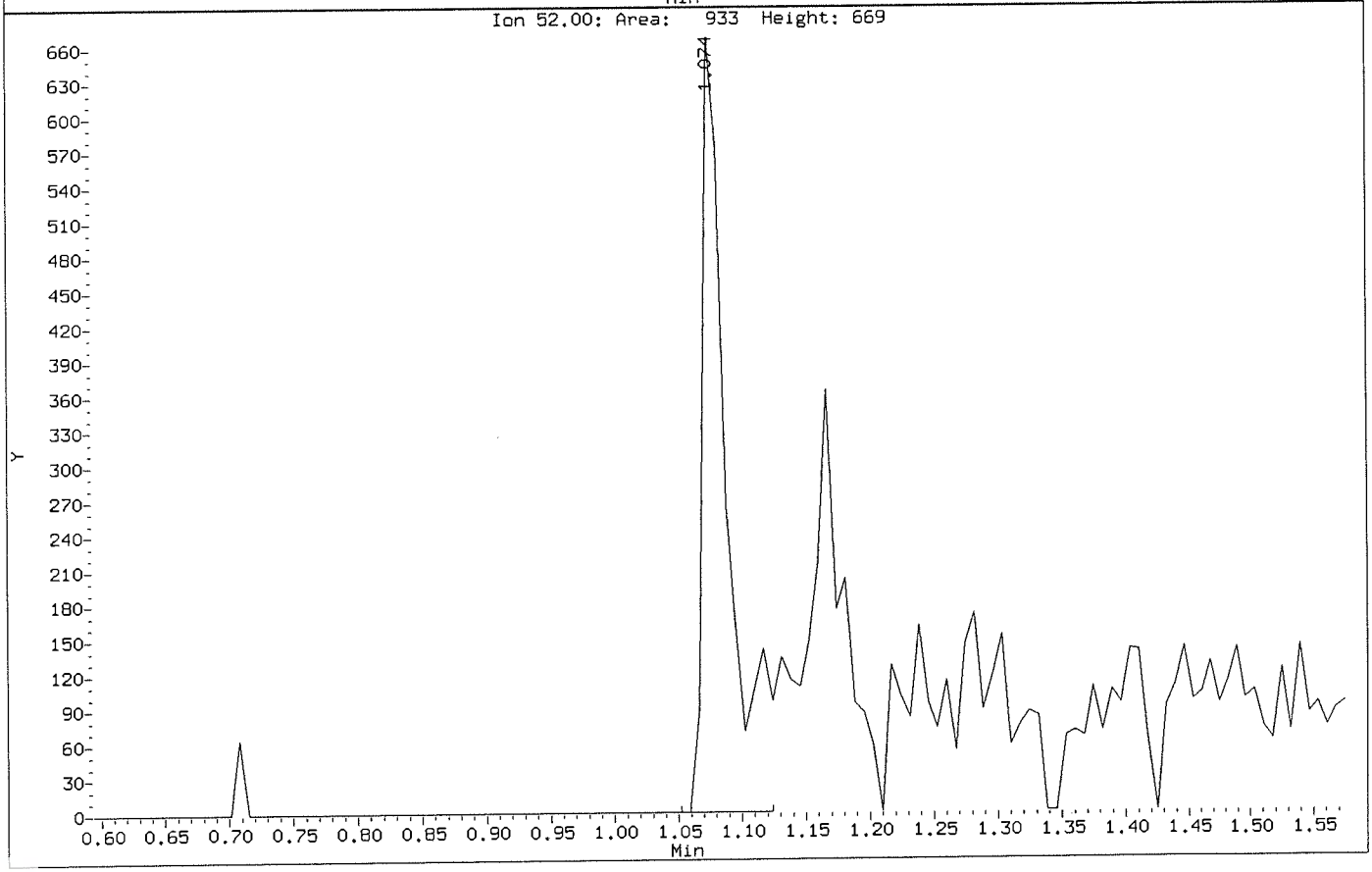
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Chloromethane
CAS Number: 74-87-3





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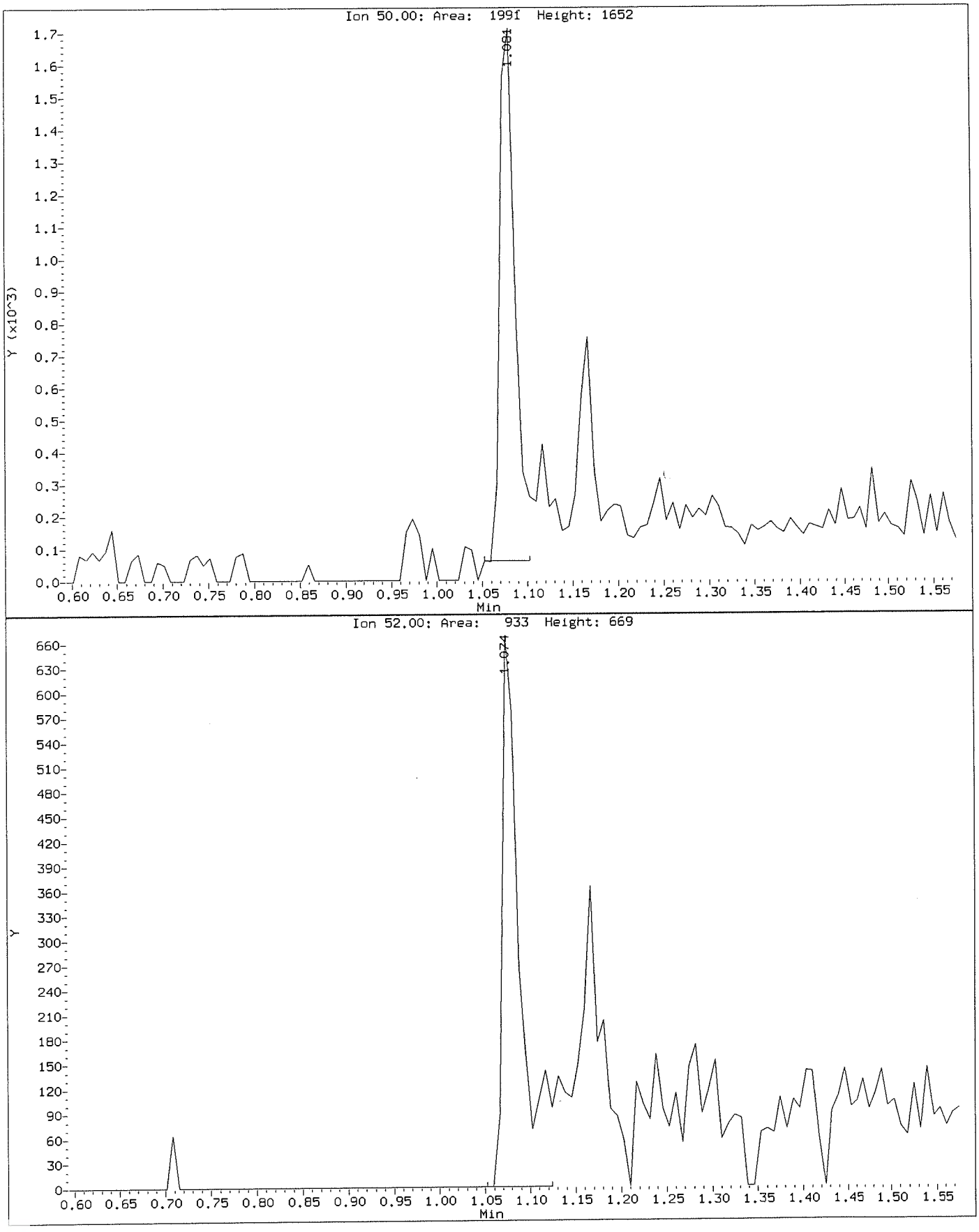
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Chloromethane
CAS Number: 74-87-3



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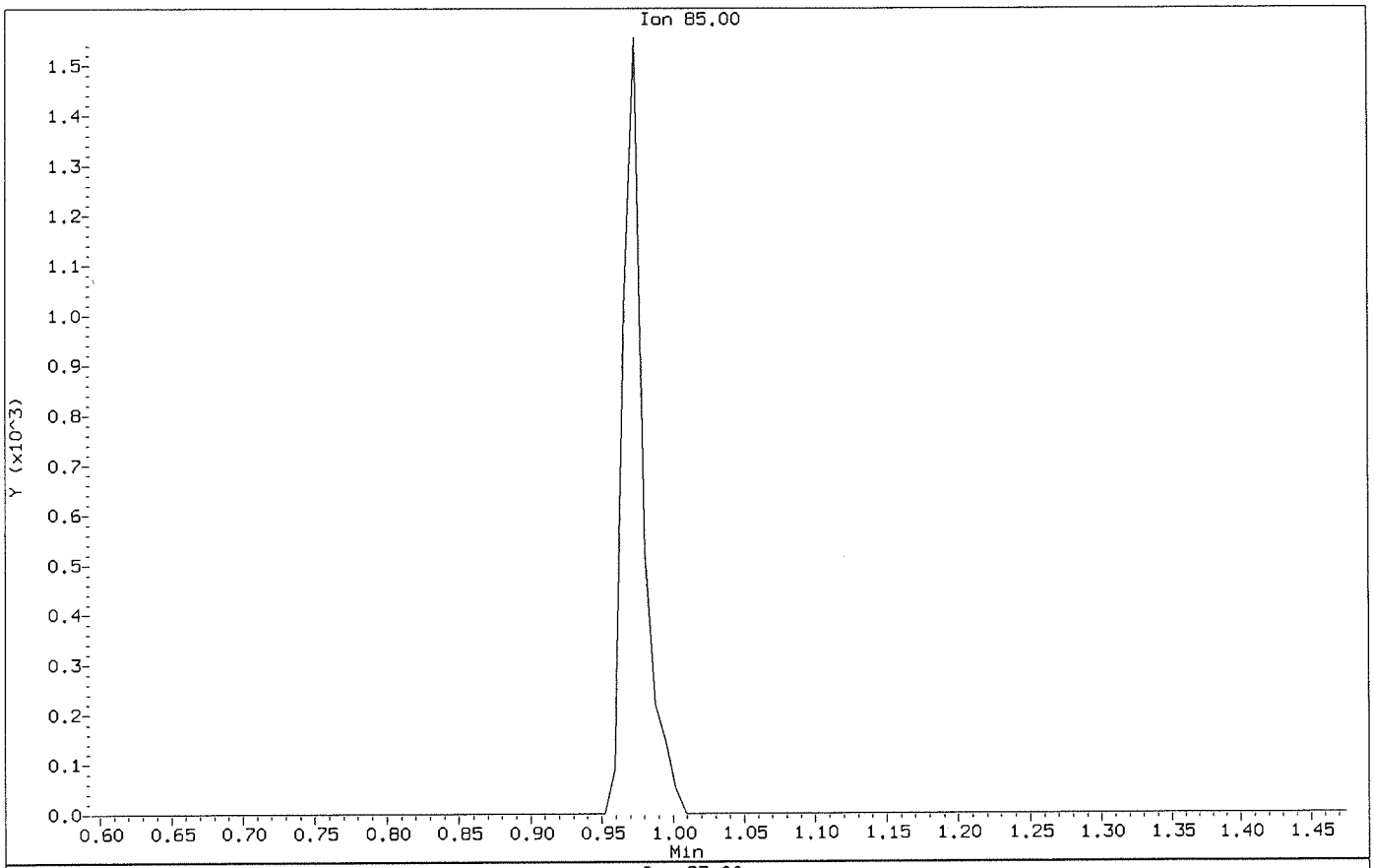
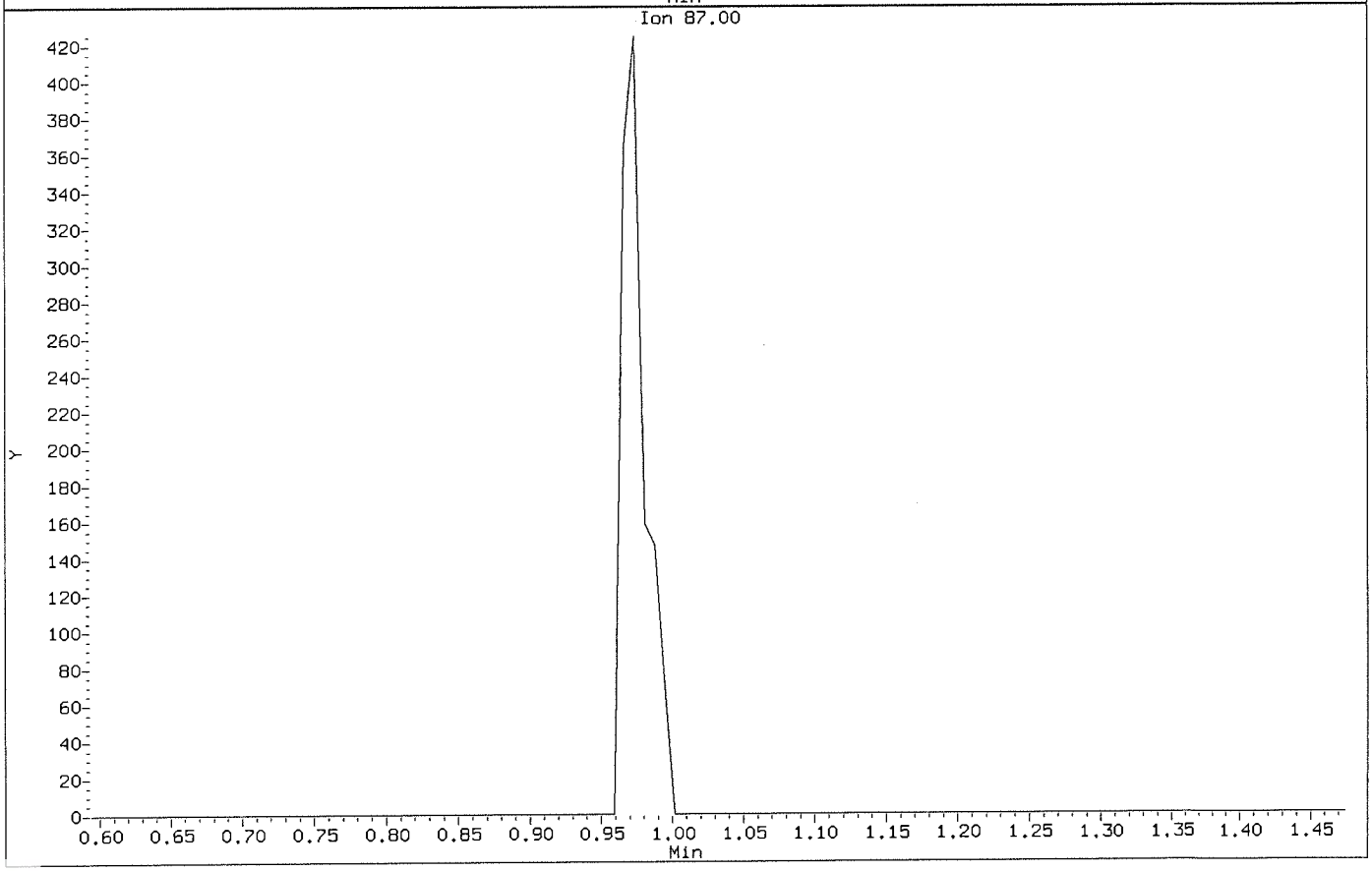
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Dichlorodifluoromethane
CAS Number: 75-71-8





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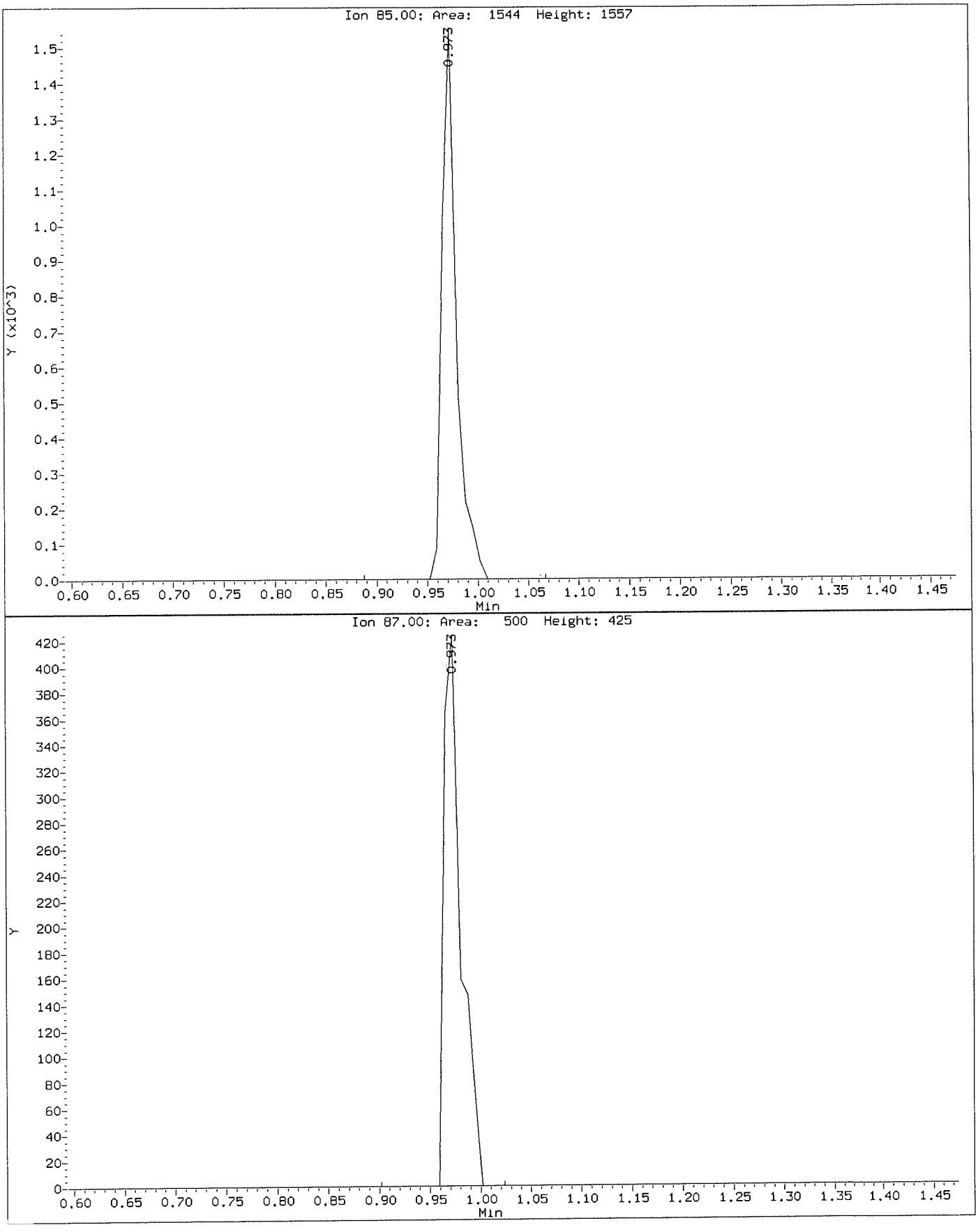
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Dichlorodifluoromethane
CAS Number: 75-71-8



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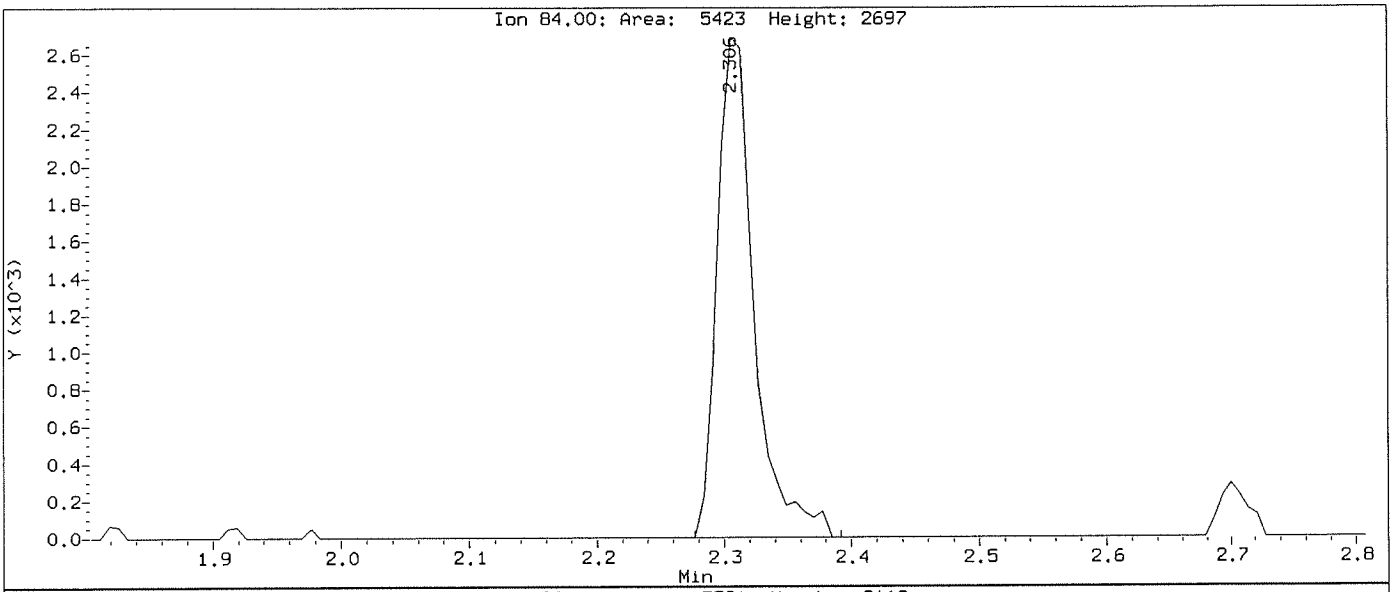
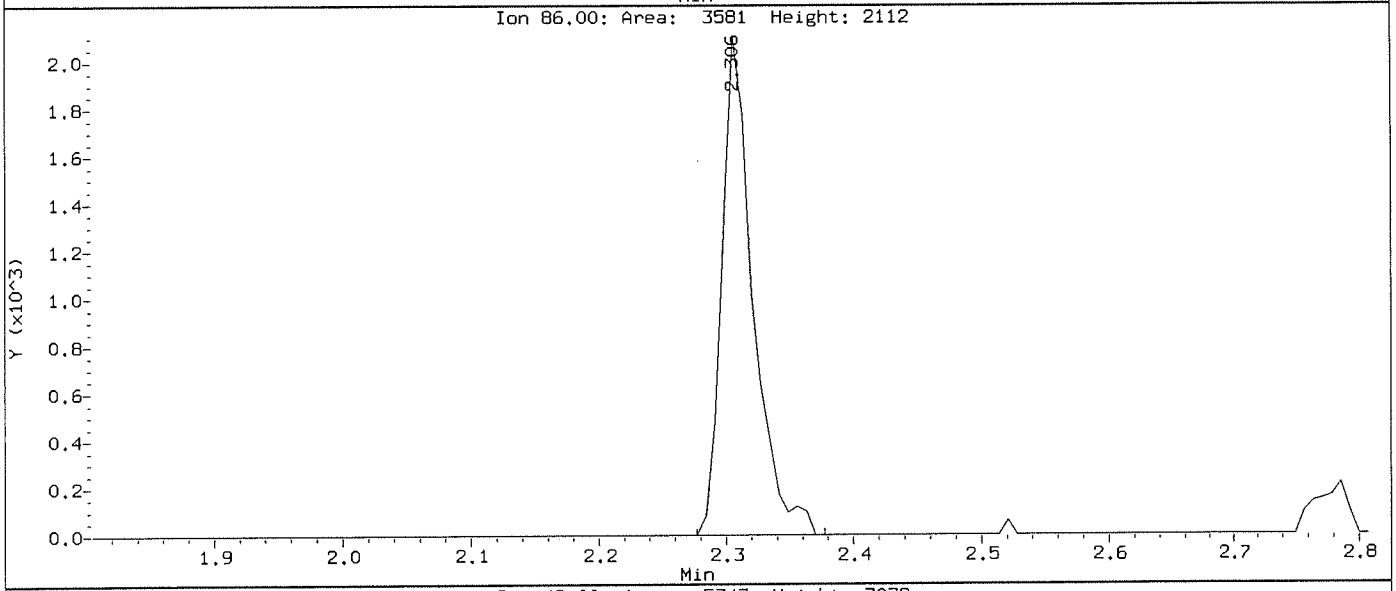
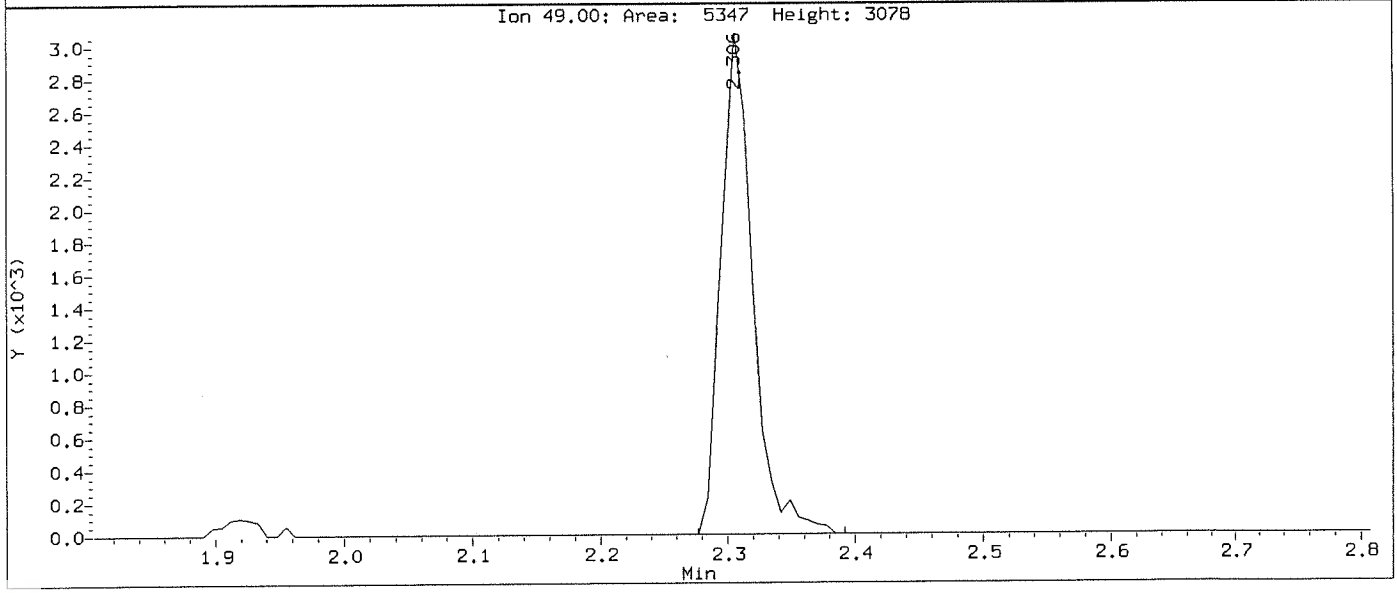
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Methylene Chloride
CAS Number: 75-09-2







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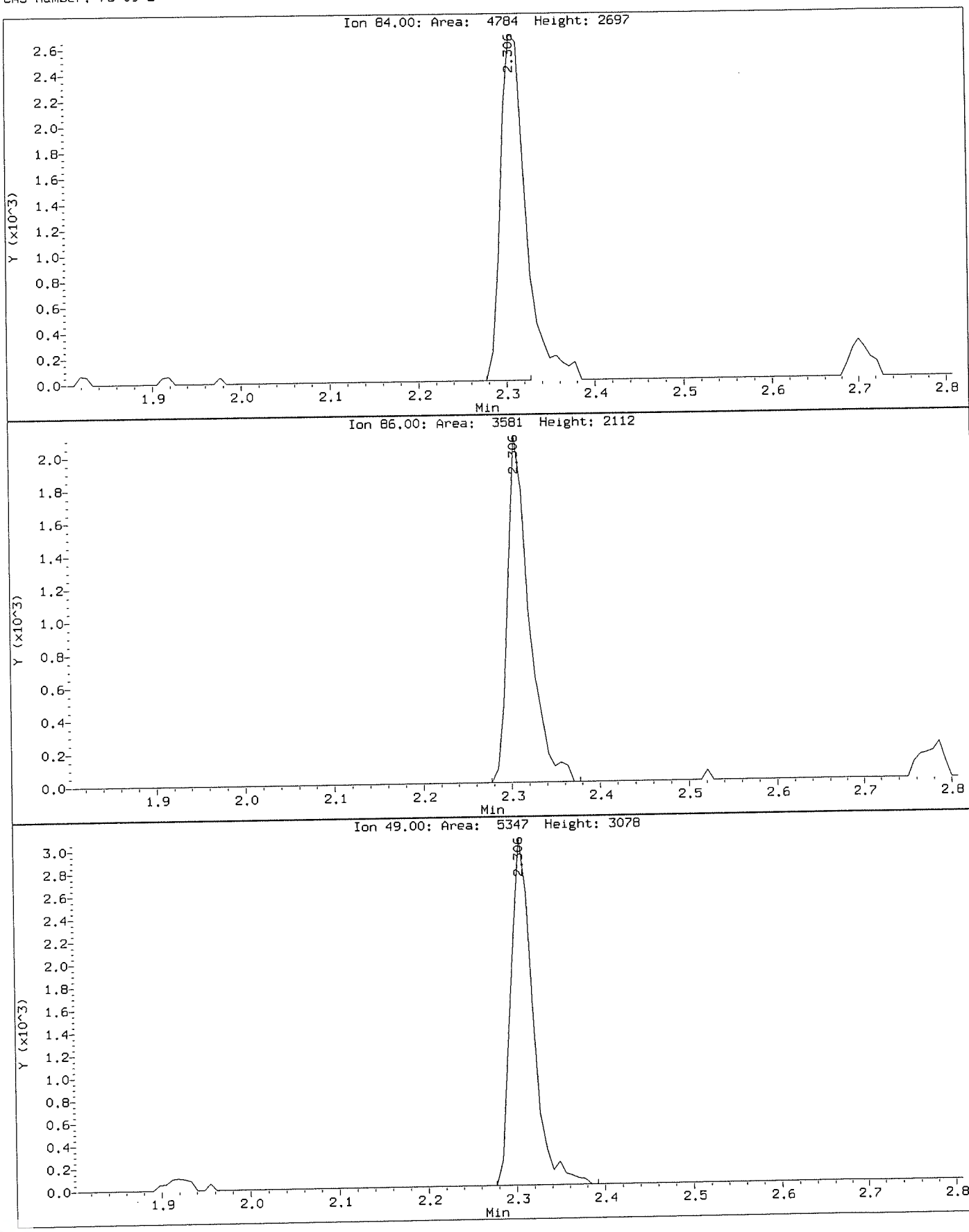
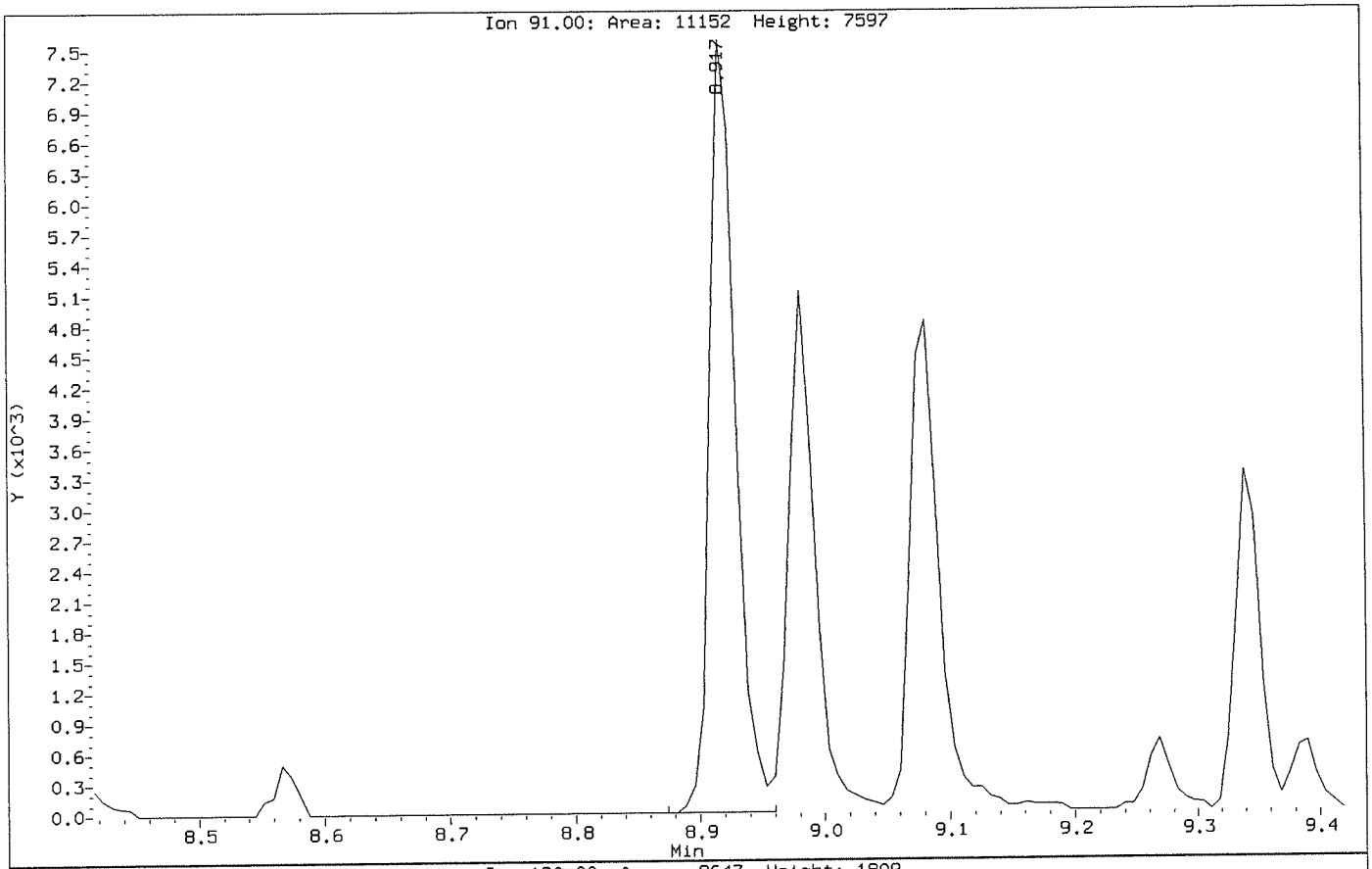
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

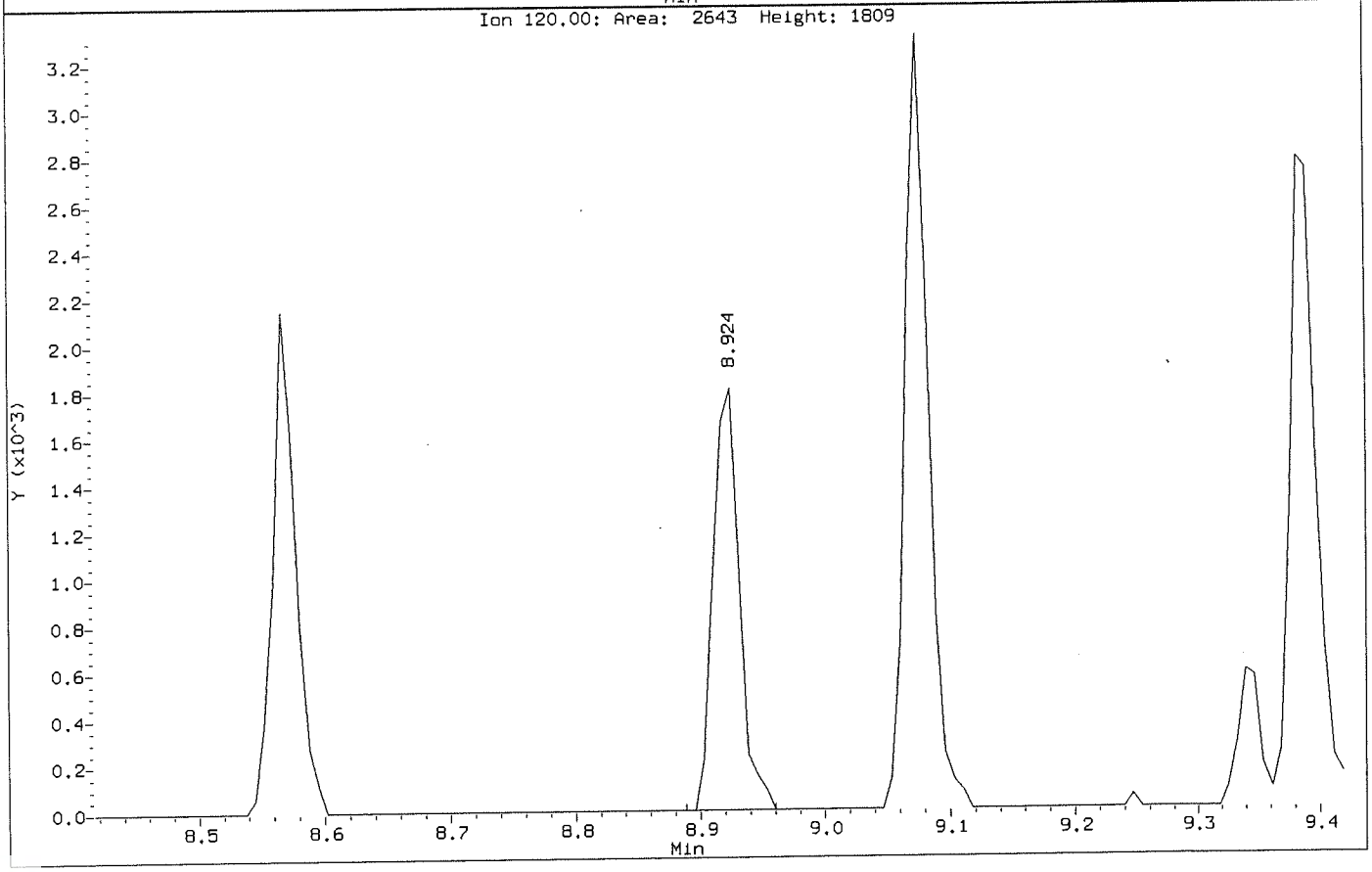
Compound: Methylene Chloride
CAS Number: 75-09-2



Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\BEFORE\X091103.D
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

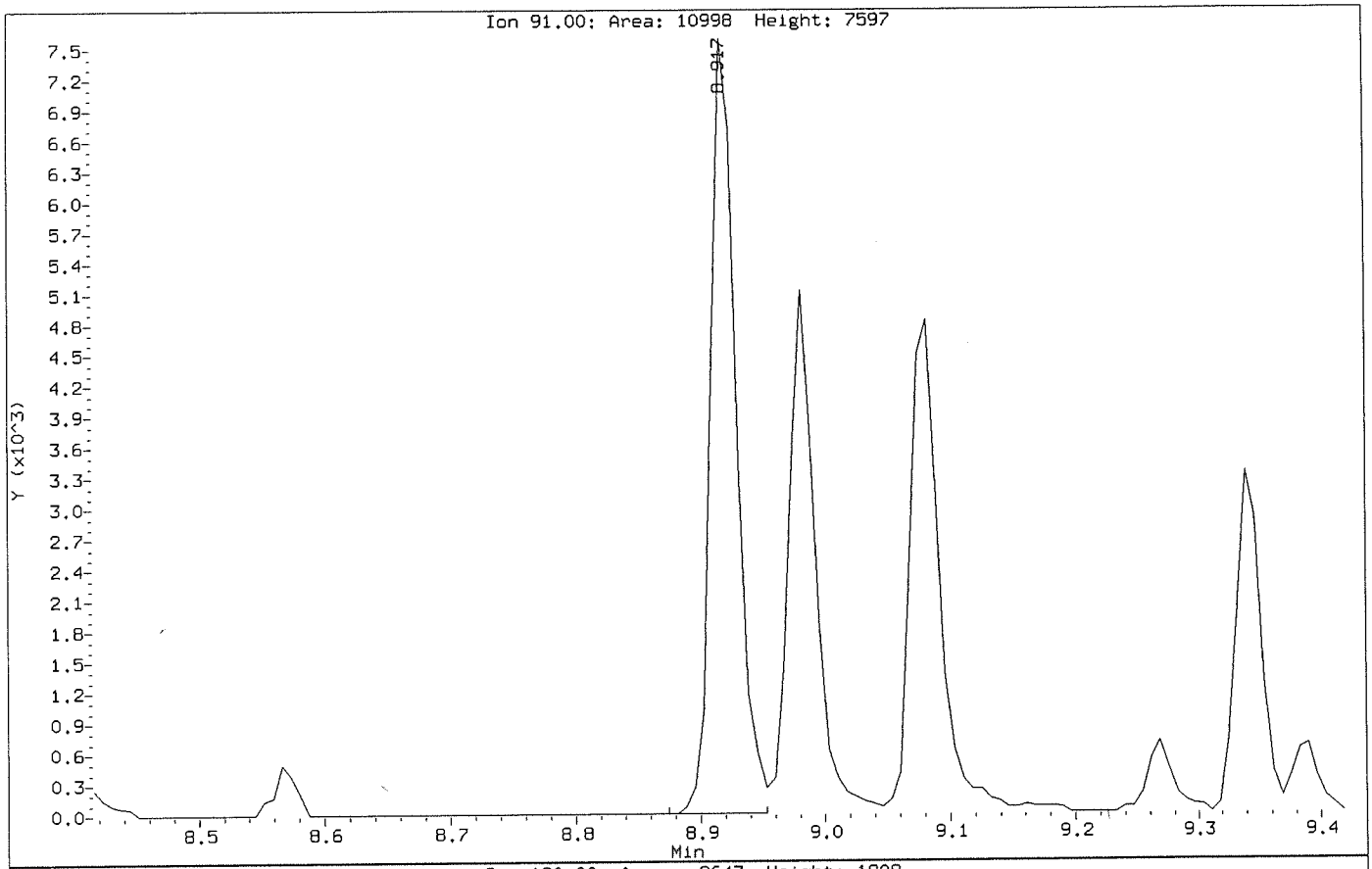
Compound: n-Propylbenzene
CAS Number: 106-65-1

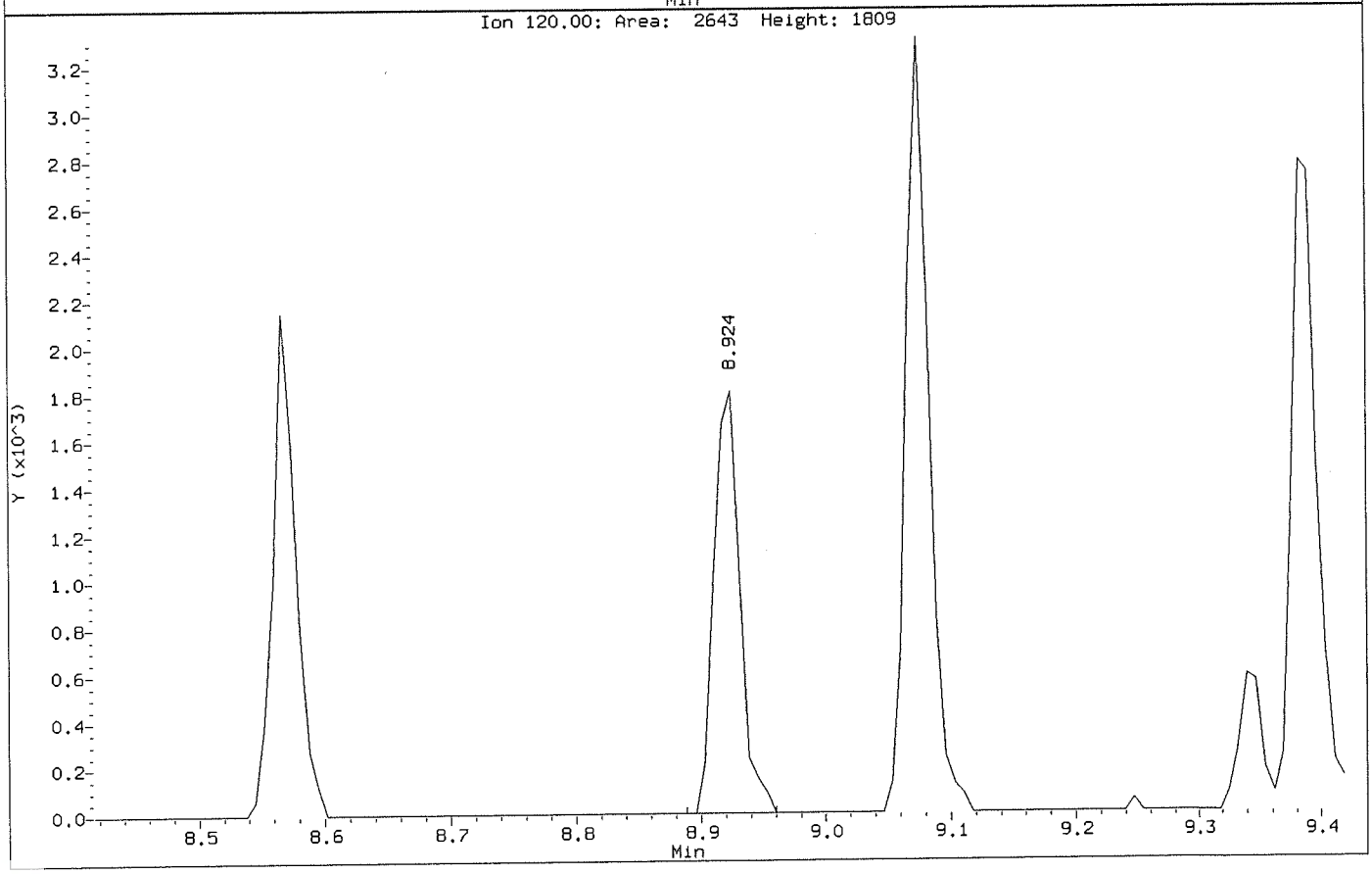




Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091103.D
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

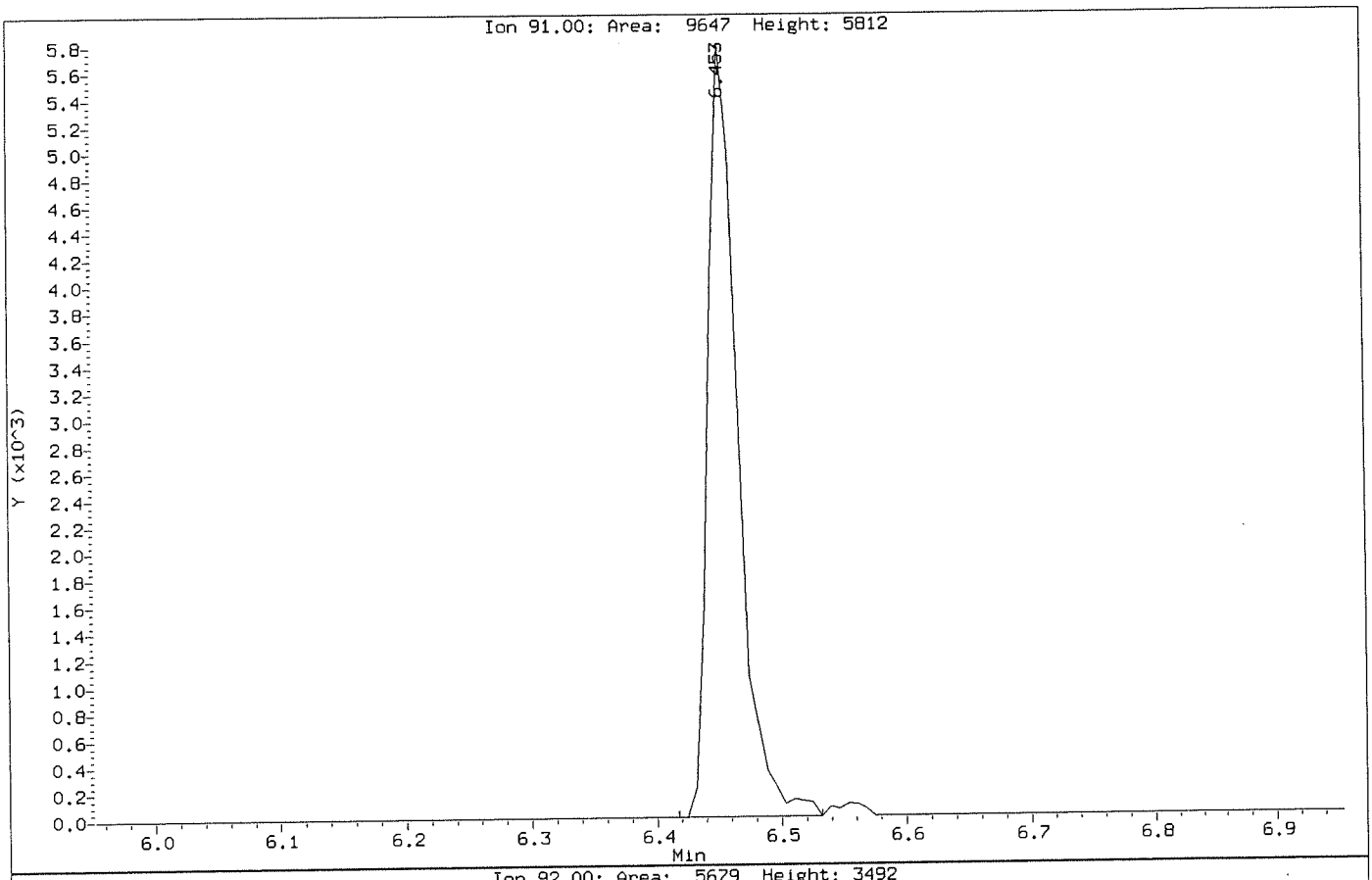
Compound: n-Propylbenzene
CAS Number: 106-65-1

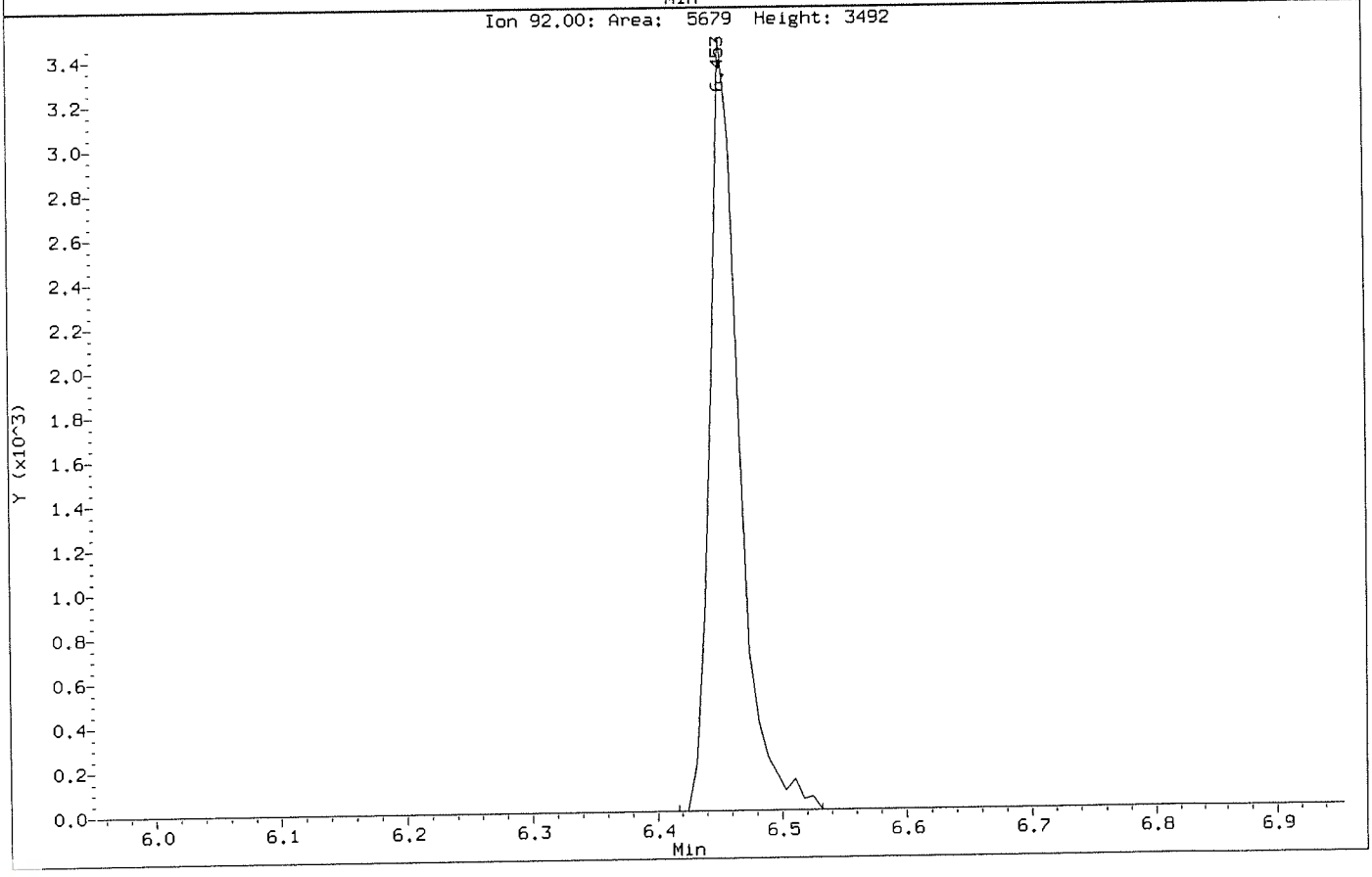




Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\BEFORE\X091103.D
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Toluene
CAS Number: 108-88-3





Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091103.D
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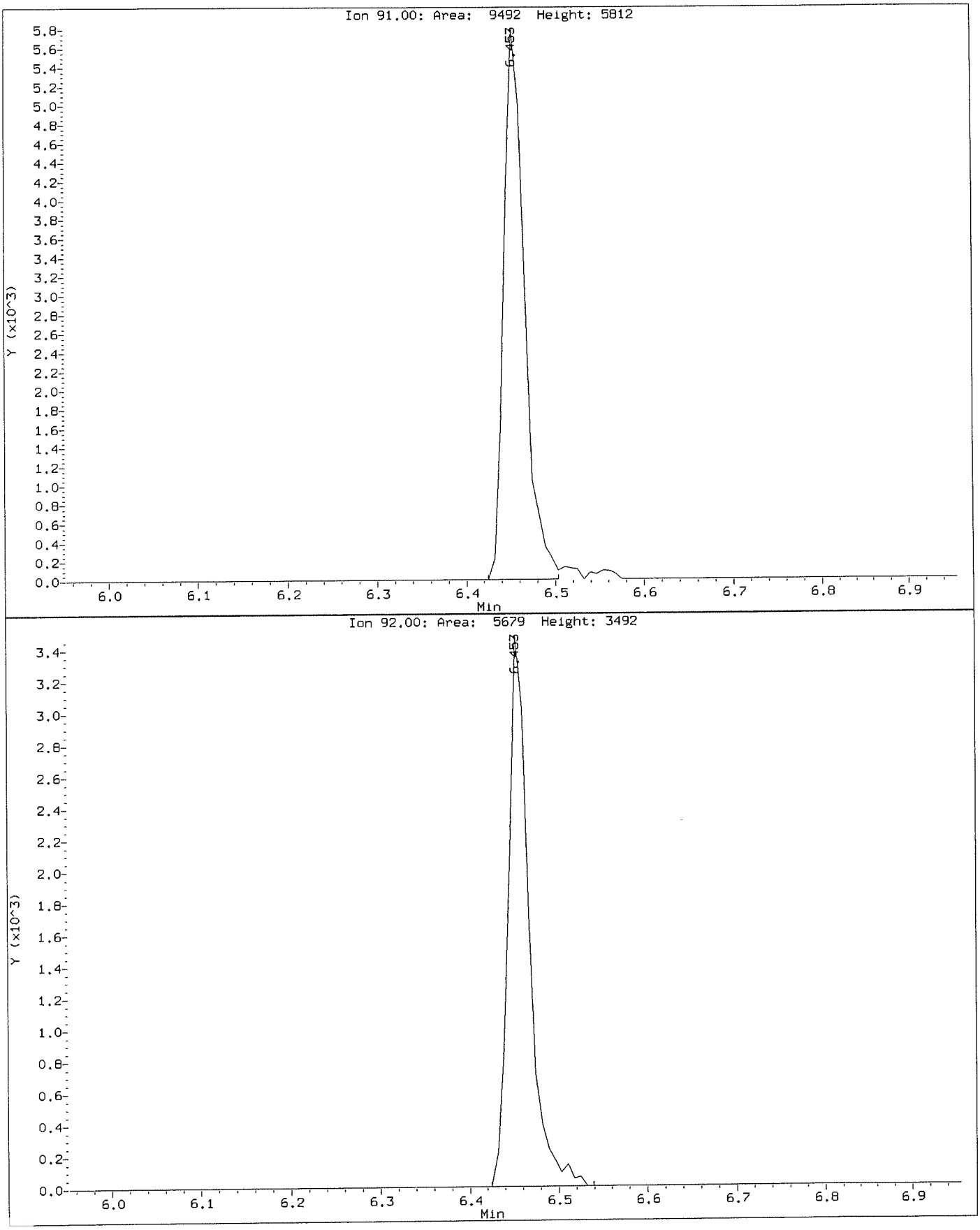
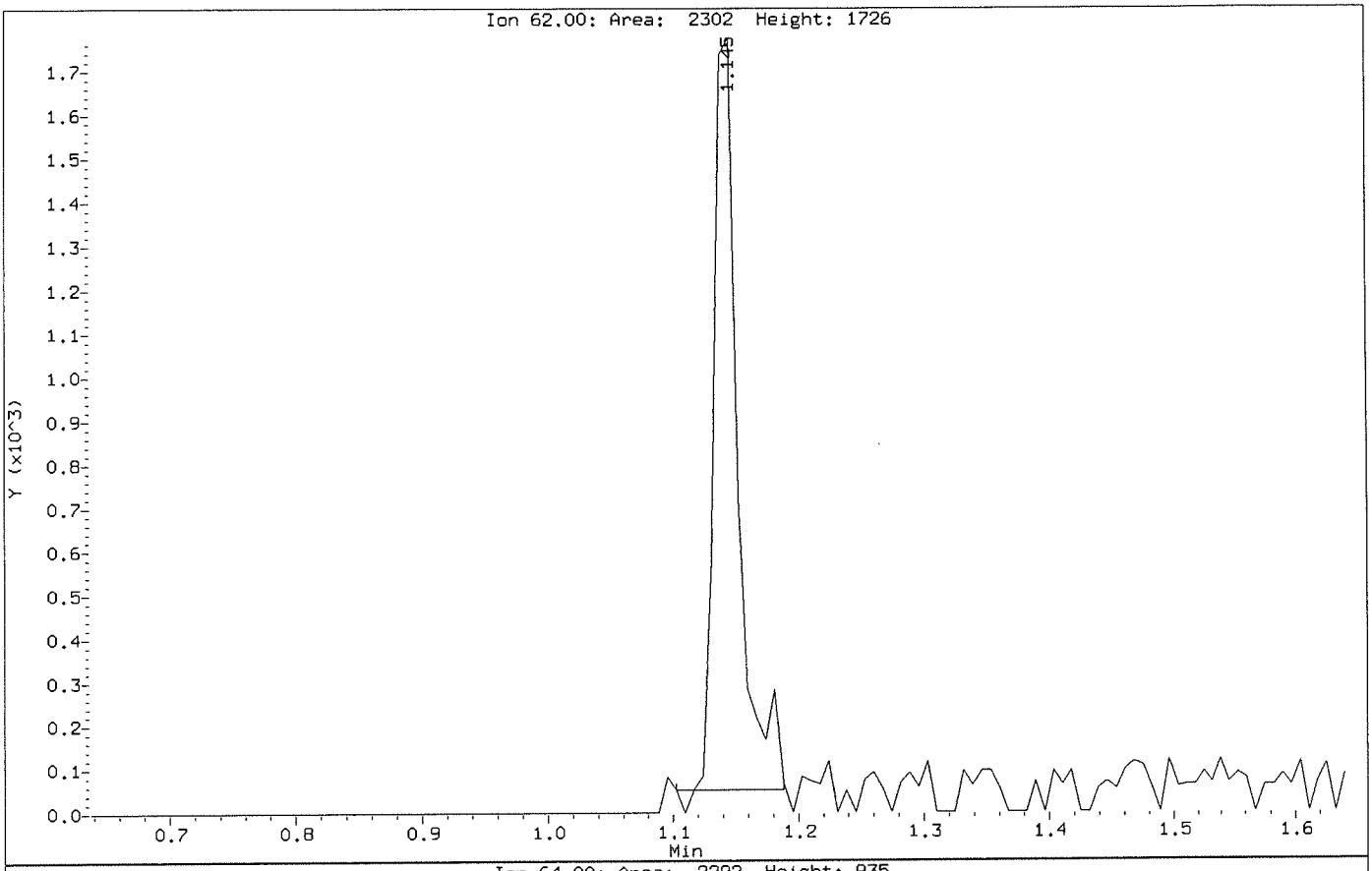
Instrument: voa6.i
Client Sample ID: VSTD000.5

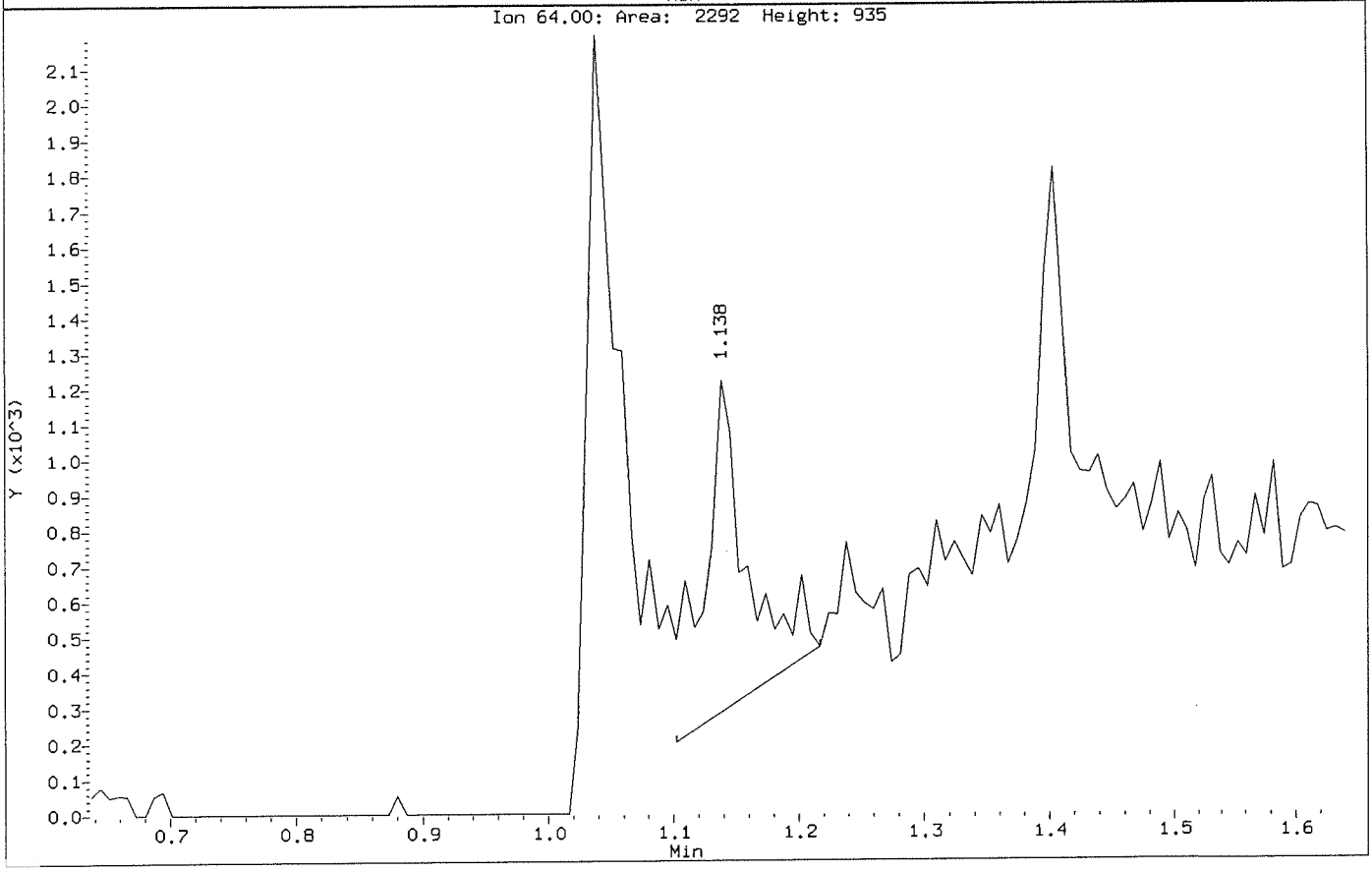
Compound: Toluene
CAS Number: 108-88-3



Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\BEFORE\X091103.D
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Vinyl Chloride
CAS Number: 75-01-4





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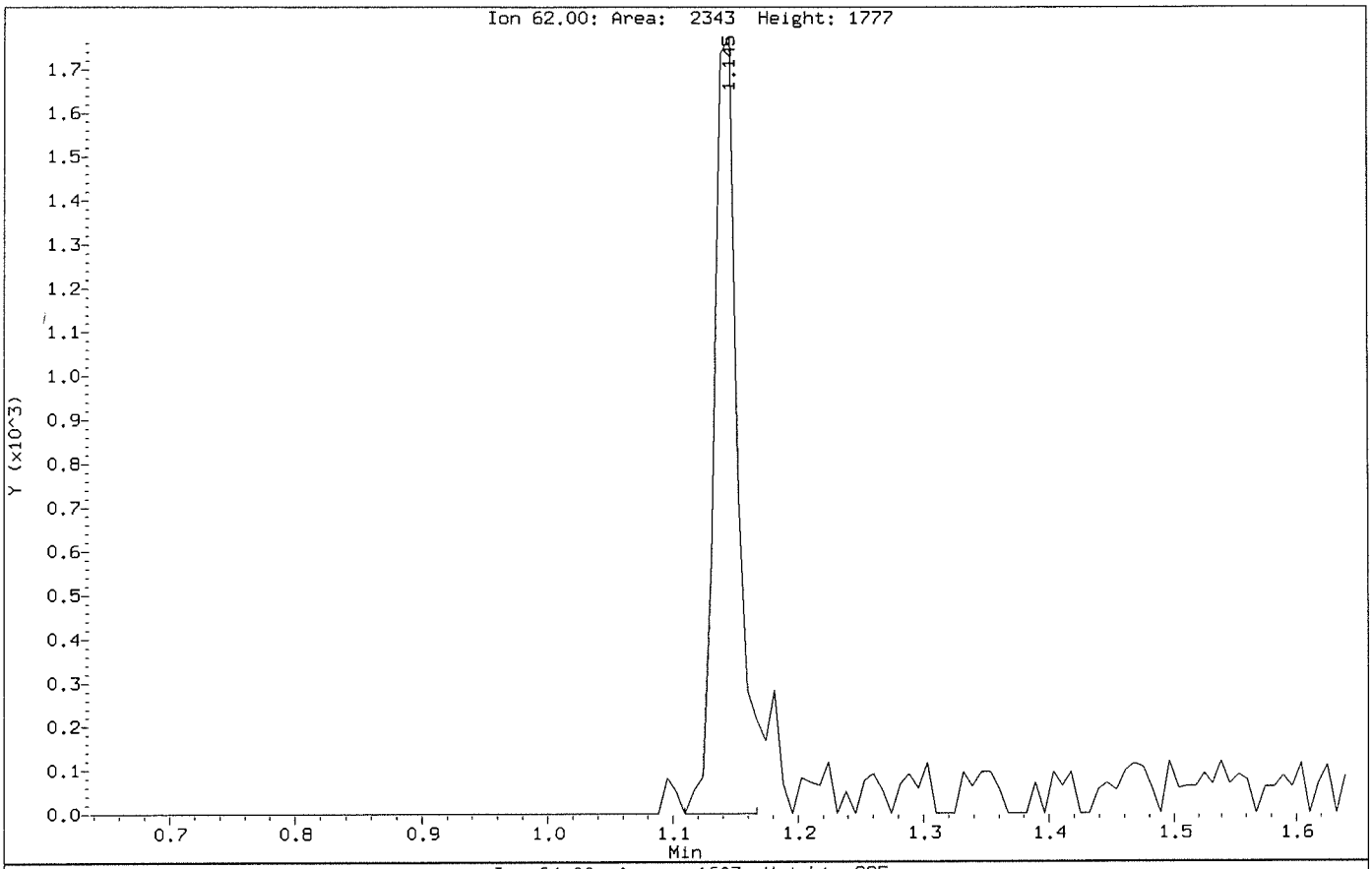
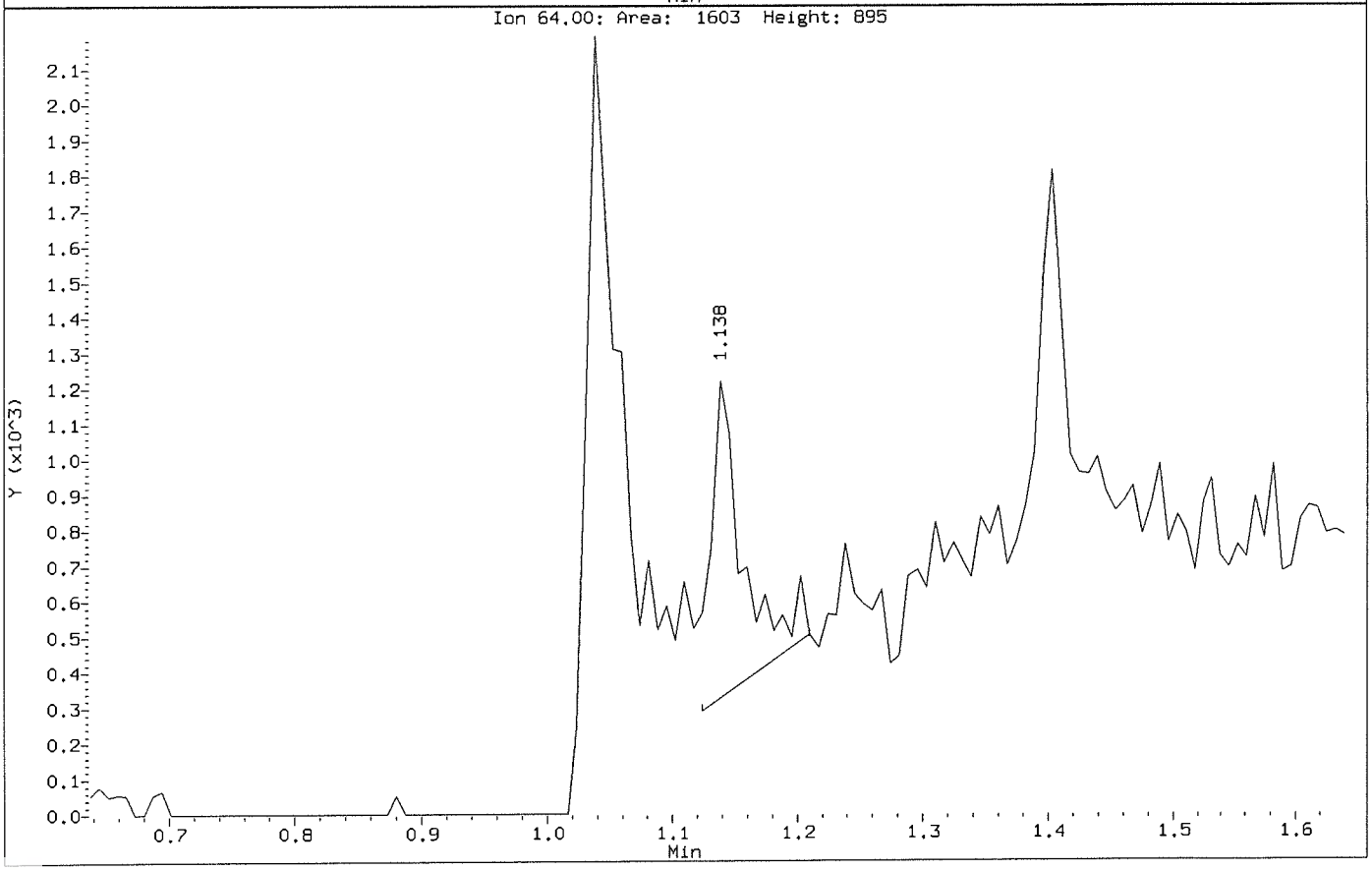
Injection Date: 11-SEP-2019 12:19
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Vinyl Chloride
CAS Number: 75-01-4





Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091104.D Page 1
Report Date: 24-Sep-2019 15:14

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091104.D
Lab Smp Id: VSTD001 Client Smp ID: VSTD001
Inj Date : 11-SEP-2019 12:43
Operator : PC Inst ID: voa6.i
Smp Info : VSTD001;VSTD001;1;3;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X190911.b\8260W.m
Meth Date : 24-Sep-2019 15:13 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 12:43 Cal File: X091104.D
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	362322	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	519147	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	464960	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	257912	50.0000	
$ 30 Dibromofluoromethane	113	4.111	4.103	(0.983)	3670	1.00000	0.36(a)
$ 35 1,2-Dichloroethane-d4	65	4.483	4.476	(1.072)	4149	1.00000	0.50(a)
$ 48 Toluene-d8	98	6.396	6.388	(0.834)	14549	1.00000	1.13(aM)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	5953	1.00000	0.77(a)
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	3449	1.00000	0.97(a)
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	4816	1.00000	0.97(a)
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	4019	1.00000	0.85(aM)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	2824	1.00000	1.10(a)
22 1,1-Dichloroethane	63	2.929	2.922	(0.700)	6367	1.00000	1.12(a)
11 1,1-Dichloroethene	96	1.919	1.912	(0.459)	3264	1.00000	1.05(a)
32 1,1-Dichloropropene	75	4.290	4.283	(0.863)	4429	1.00000	1.01(a)
93 1,2,3-Trichlorobenzene	180	11.754	11.746	(1.216)	2628	1.00000	0.95(a)
71 1,2,3-Trichloropropane	75	8.874	8.867	(0.918)	3243	1.00000	0.99(aM)
90 1,2,4-Trichlorobenzene	180	11.352	11.345	(1.174)	4048	1.00000	0.96(a)
79 1,2,4-Trimethylbenzene	105	9.383	9.383	(0.970)	13595	1.00000	1.01(a)
89 1,2-Dibromo-3-Chloropropane	155	10.665	10.658	(1.103)	627	1.00000	0.94(aM)
57 1,2-Dibromoethane	107	7.269	7.262	(0.948)	3601	1.00000	1.04(a)
88 1,2-Dichlorobenzene	146	9.999	9.999	(1.034)	8313	1.00000	1.08(a)
33 1,2-Dichloroethane	62	4.569	4.562	(0.919)	4525	1.00000	1.05(a)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091104.D Page 2
Report Date: 24-Sep-2019 15:14

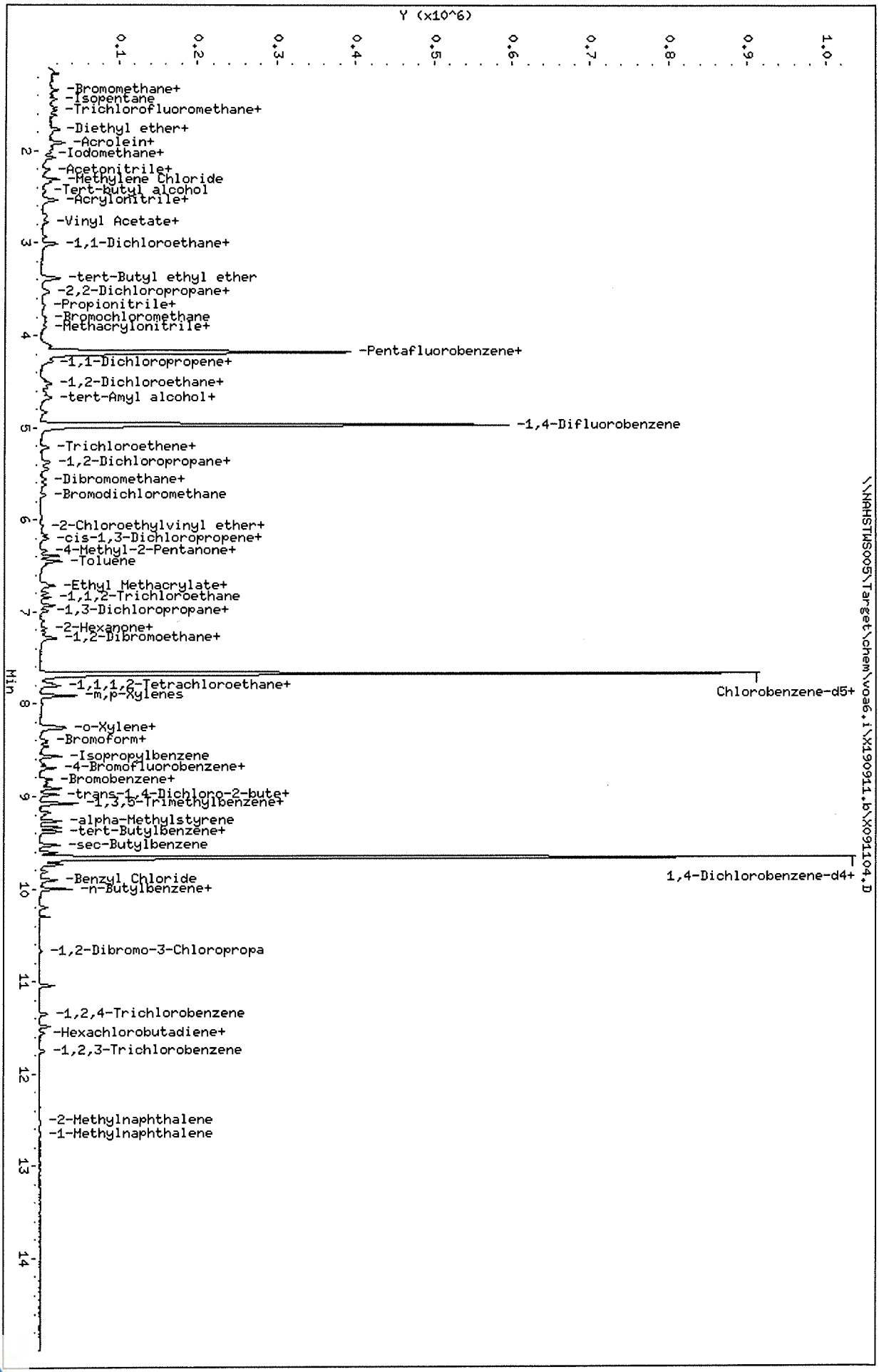
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42 1,2-Dichloropropane	63	5.443	5.443	(1.095)	3569	1.00000	1.09 (aM)
75 1,3,5-Trimethylbenzene	105	9.075	9.075	(0.939)	13475	1.00000	1.03 (a)
83 1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	8699	1.00000	1.07 (a)
54 1,3-Dichloropropane	76	6.983	6.983	(0.910)	5638	1.00000	1.06 (a)
84 1,4-Dichlorobenzene	146	9.691	9.691	(1.002)	8374	1.00000	1.02 (a)
26 2,2-Dichloropropane	77	3.516	3.516	(0.841)	5313	1.00000	1.11 (a)
24 2-Butanone	43	3.609	3.581	(0.863)	2114	2.00000	1.90 (a)
76 2-Chlorotoluene	91	8.981	8.981	(0.929)	11478	1.00000	1.23 (a)
52 2-Hexanone	43	7.098	7.090	(0.925)	3864	2.00000	2.06 (a)
77 4-Chlorotoluene	91	9.082	9.075	(0.939)	13248	1.00000	1.09 (a)
82 p-Isopropyltoluene	119	9.655	9.655	(0.999)	13548	1.00000	1.00 (a)
45 4-Methyl-2-Pentanone	43	6.338	6.331	(0.826)	5716	2.00000	2.06 (a)
10 Acetone	43	1.976	1.976	(0.473)	3677	2.00000	(a)
37 Benzene	78	4.519	4.519	(0.909)	14317	1.00000	1.07 (a)
74 Bromobenzene	156	8.817	8.810	(0.912)	4963	1.00000	1.04 (a)
29 Bromochloromethane	128	3.803	3.803	(0.909)	2196	1.00000	1.04 (aM)
39 Bromodichloromethane	83	5.737	5.729	(1.154)	4452	1.00000	1.00 (aM)
66 Bromoform	173	8.416	8.416	(1.097)	2472	1.00000	0.88 (Ta)
6 Bromomethane	94	1.338	1.339	(0.320)	3909	1.00000	(a)
19 Carbon Disulfide	76	2.069	2.069	(0.495)	18656	2.00000	2.04 (a)
34 Carbon Tetrachloride	117	4.268	4.268	(0.859)	5078	1.00000	1.09 (a)
59 Chlorobenzene	112	7.699	7.699	(1.004)	10673	1.00000	1.09 (a)
7 Chloroethane	64	1.403	1.403	(0.336)	2962	1.00000	(a)
28 Chloroform	83	3.917	3.910	(0.937)	5982	1.00000	1.03 (a)
3 Chloromethane	50	1.073	1.074	(0.257)	3564	1.00000	1.16 (aM)
27 cis-1,2-Dichloroethene	96	3.538	3.530	(0.846)	3664	1.00000	0.98 (a)
46 cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	5300	1.00000	0.98 (a)
55 Dibromochloromethane	129	7.184	7.184	(0.937)	3783	1.00000	1.00 (a)
44 Dibromomethane	93	5.557	5.558	(1.118)	2544	1.00000	1.08 (a)
2 Dichlorodifluoromethane	85	0.973	0.973	(0.233)	2651	1.00000	0.99 (a)
61 Ethylbenzene	106	7.807	7.807	(1.018)	5185	1.00000	1.02 (a)
91 Hexachlorobutadiene	225	11.488	11.489	(1.188)	2354	1.00000	1.89 (a)
67 Isopropylbenzene	105	8.566	8.566	(1.117)	15831	1.00000	1.05 (a)
62 m,p-Xylenes	106	7.907	7.907	(1.031)	12804	2.00000	2.09 (a)
17 Methylene Chloride	84	2.305	2.306	(0.551)	6231	1.00000	(aM)
87 n-Butylbenzene	91	10.006	9.999	(1.035)	10084	1.00000	0.97 (a)
73 n-Propylbenzene	91	8.917	8.917	(0.922)	17850	1.00000	1.05 (a)
92 Naphthalene	128	11.553	11.546	(1.195)	6192	1.00000	0.93 (a)
63 o-Xylene	106	8.251	8.244	(1.076)	6544	1.00000	1.09 (a)
81 sec-Butylbenzene	105	9.526	9.526	(0.985)	15784	1.00000	1.05 (a)
64 Styrene	104	8.265	8.265	(1.078)	10782	1.00000	1.05 (a)
78 tert-Butylbenzene	119	9.340	9.340	(0.966)	11100	1.00000	1.01 (a)
56 Tetrachloroethene	164	6.933	6.933	(0.904)	3425	1.00000	1.01 (a)
50 Toluene	91	6.453	6.453	(0.841)	15521	1.00000	1.08 (a)
20 trans-1,2-Dichloroethene	96	2.535	2.528	(0.606)	3489	1.00000	1.10 (a)
51 trans-1,3-Dichloropropene	75	6.689	6.682	(1.346)	4814	1.00000	0.99 (a)
38 Trichloroethene	130	5.214	5.214	(1.049)	3931	1.00000	0.98 (a)
8 Trichlorofluoromethane	101	1.561	1.561	(0.373)	5134	1.00000	0.94 (a)
5 Vinyl Chloride	62	1.138	1.138	(0.272)	4096	1.00000	1.08 (a)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

QC Flag Legend

M - Compound response manually integrated.



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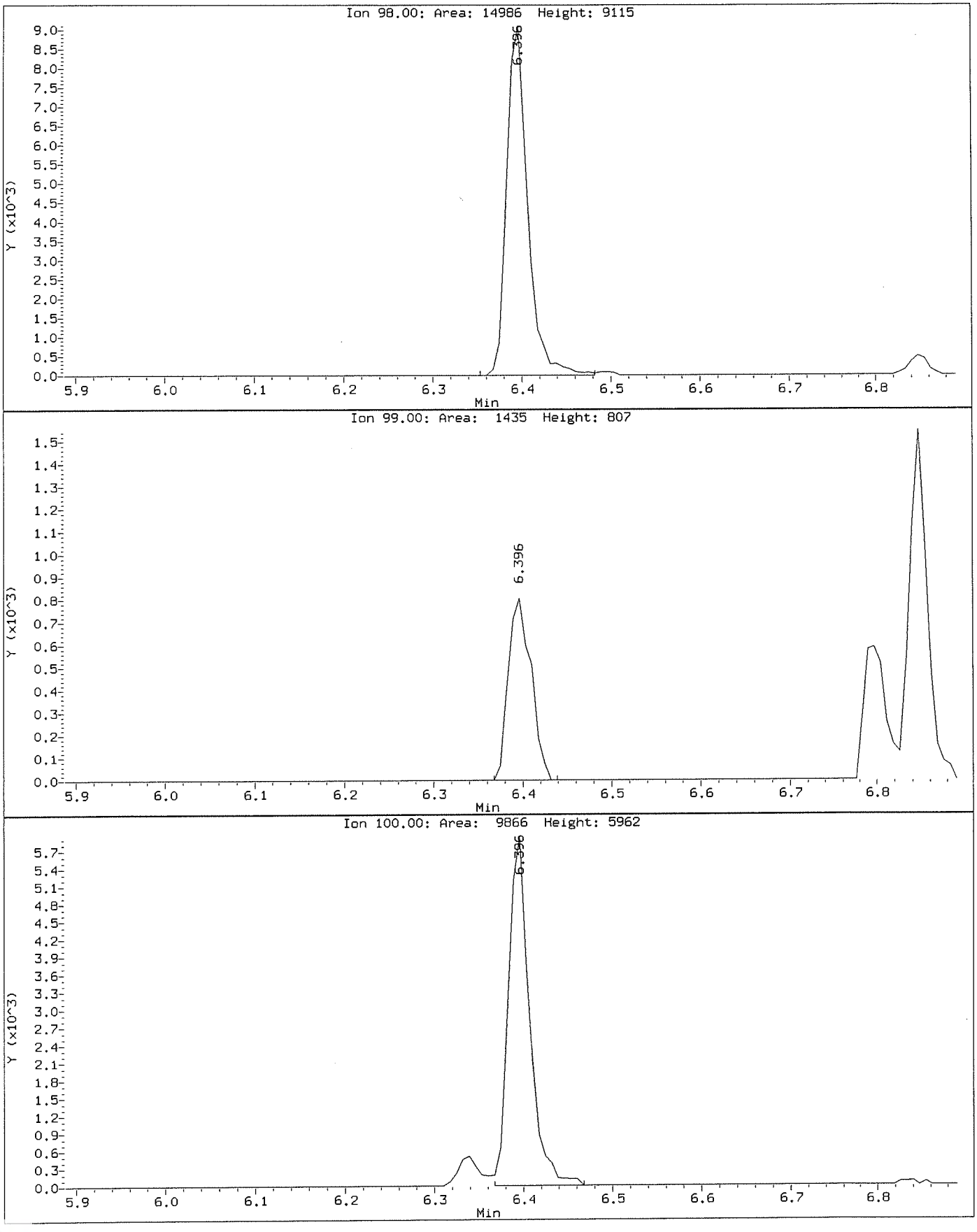
Sample Info: VSTD001;VSTD001;1;3;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\BEFORE\X091104.D
Injection Date: 11-SEP-2019 12:43
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: Toluene-d8
CAS Number: 2037-26-5



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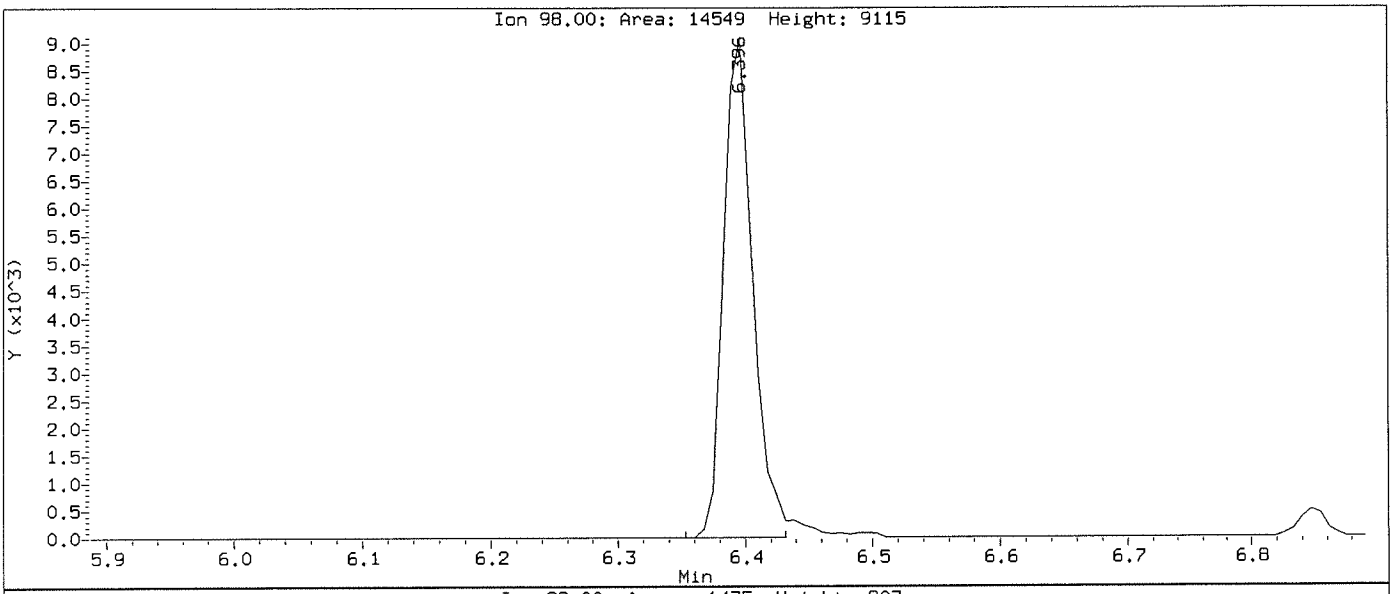
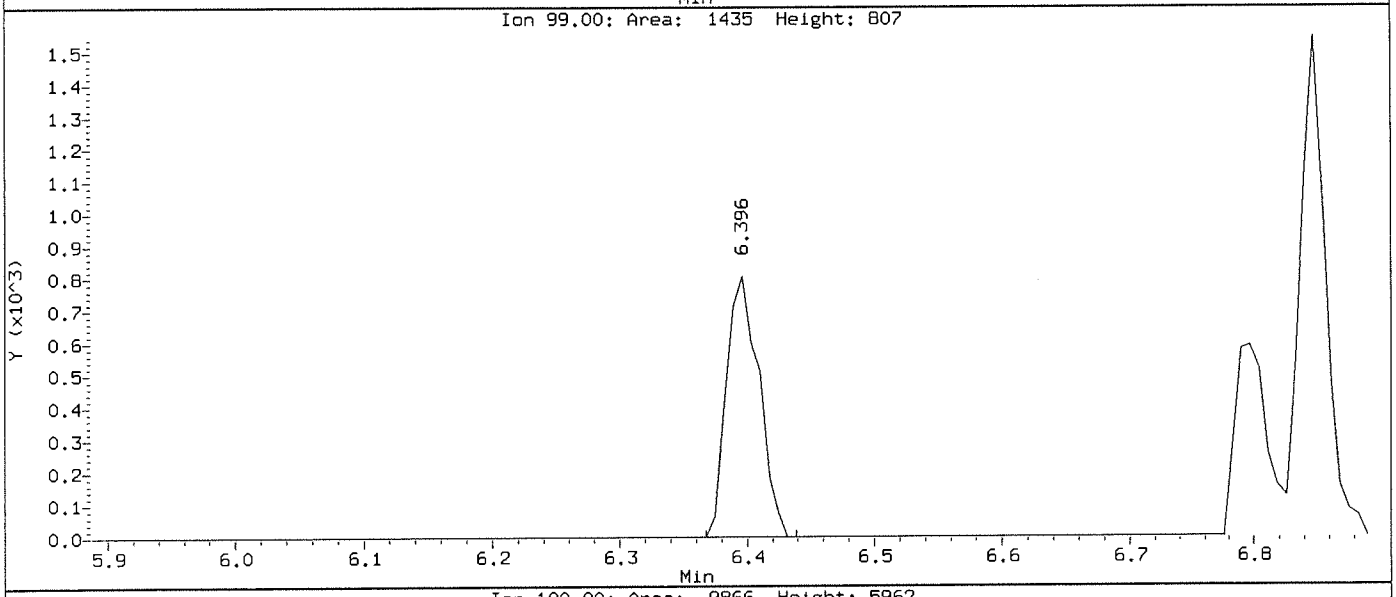
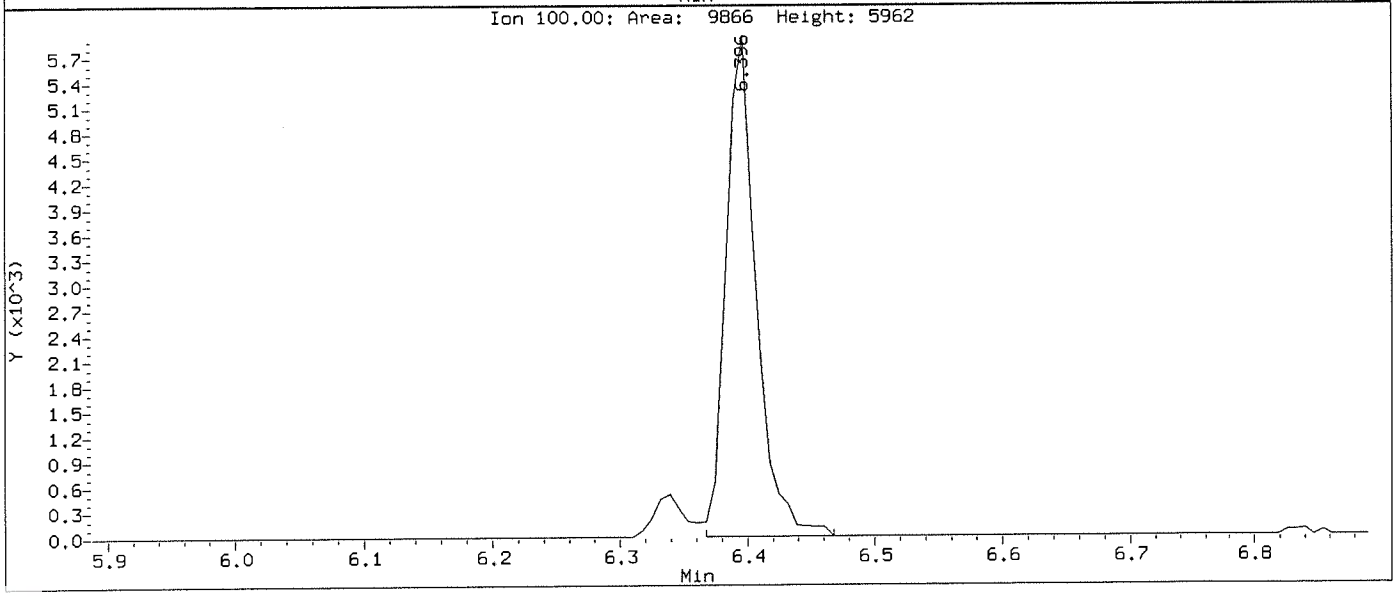
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: Toluene-d8
CAS Number: 2037-26-5







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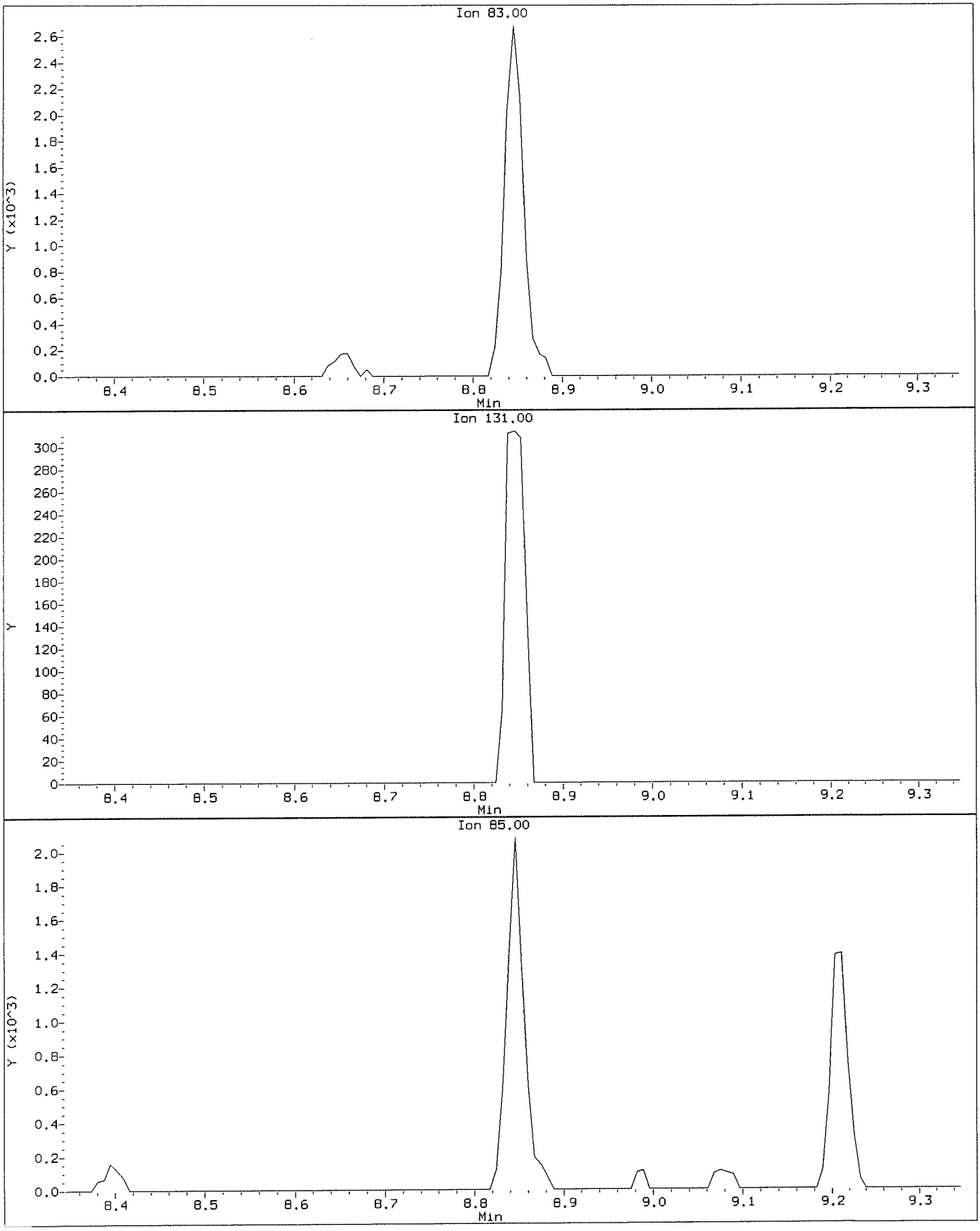
Injection Date: 11-SEP-2019 12:43
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: 1,1,2,2-Tetrachloroethane
CAS Number: 79-34-5



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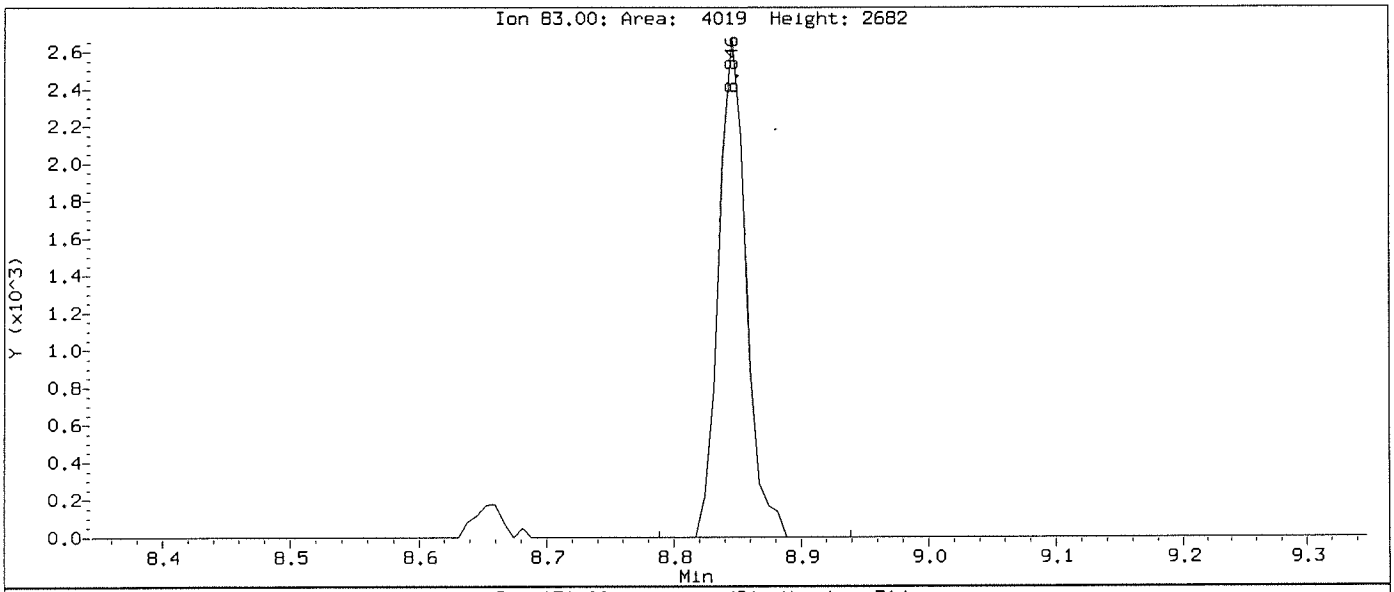
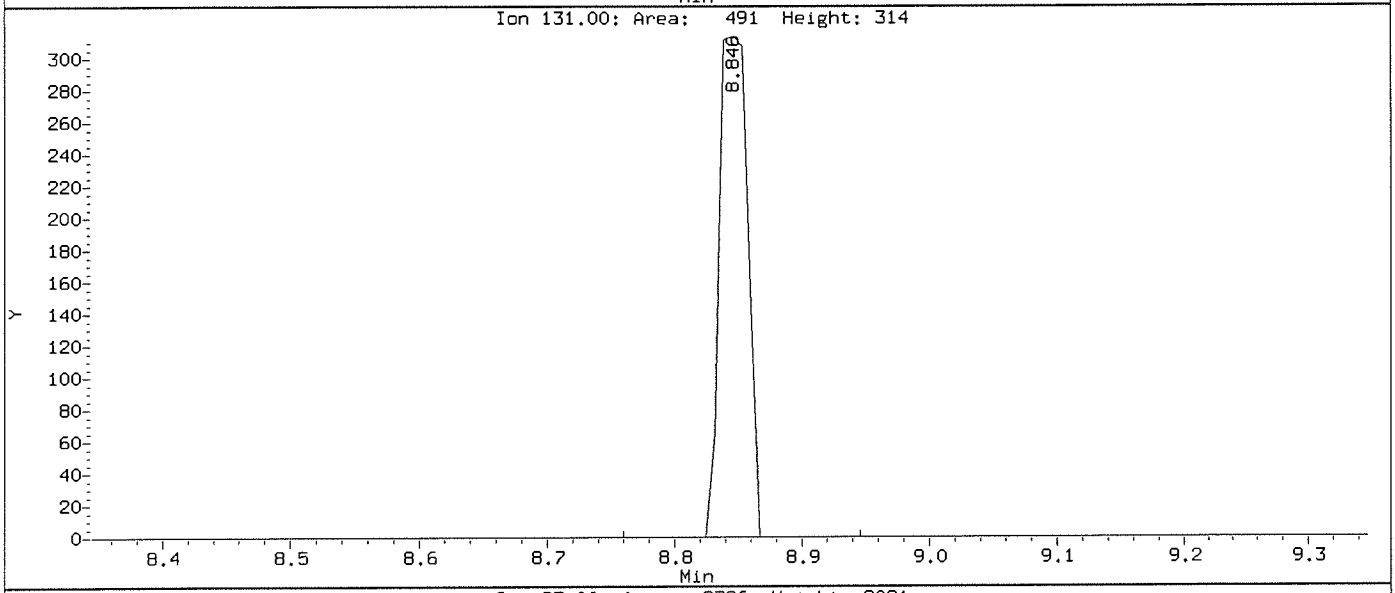
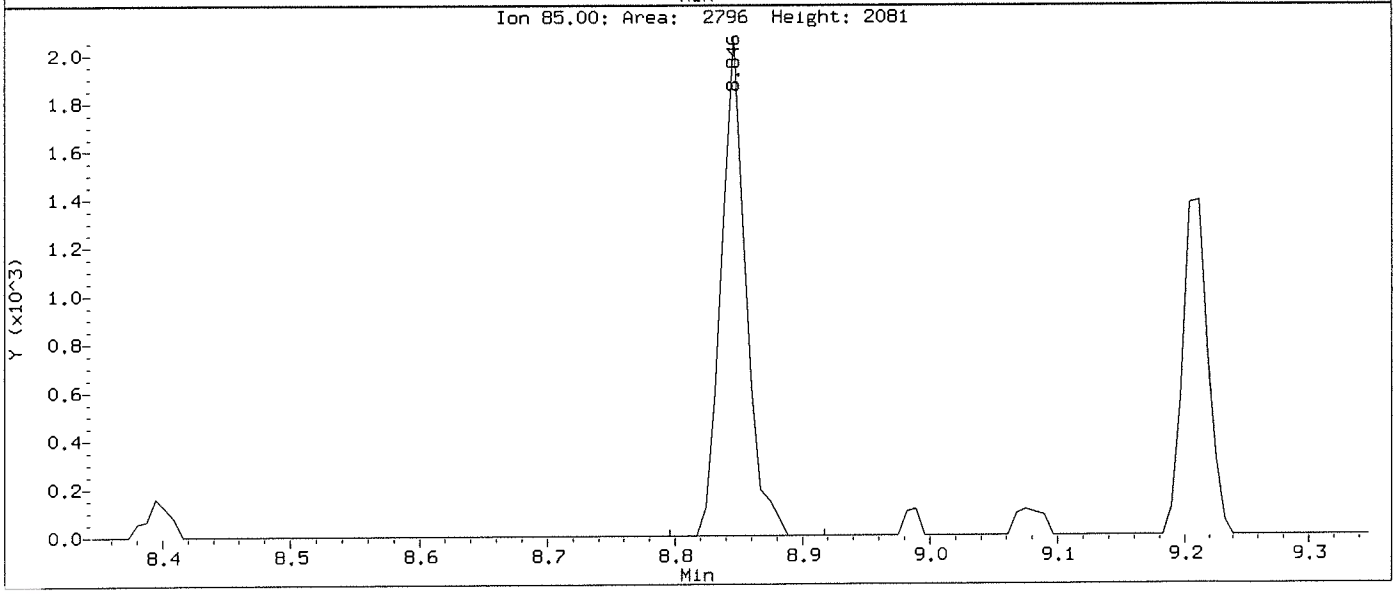
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: 1,1,2,2-Tetrachloroethane
CAS Number: 79-34-5







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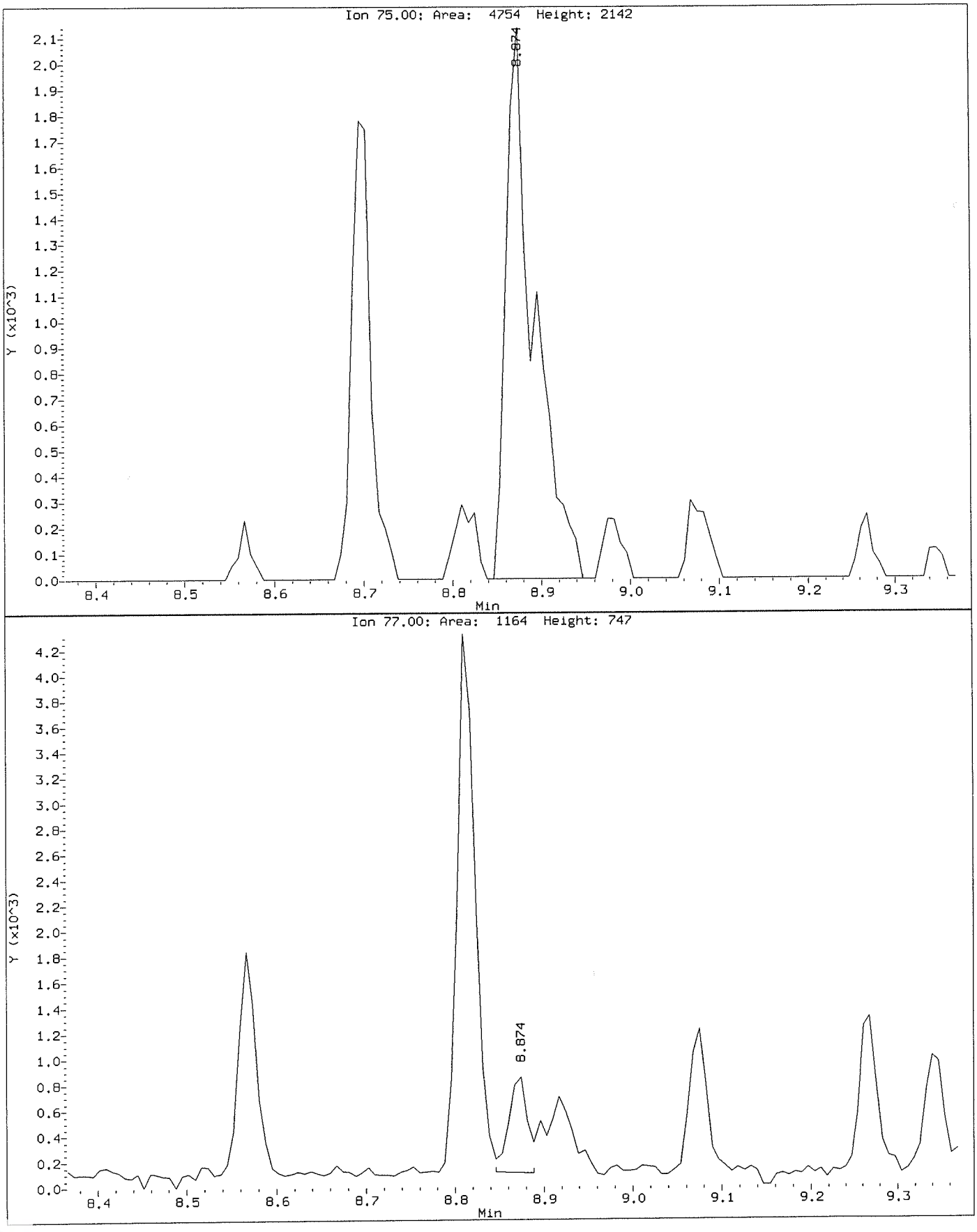
Injection Date: 11-SEP-2019 12:43
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



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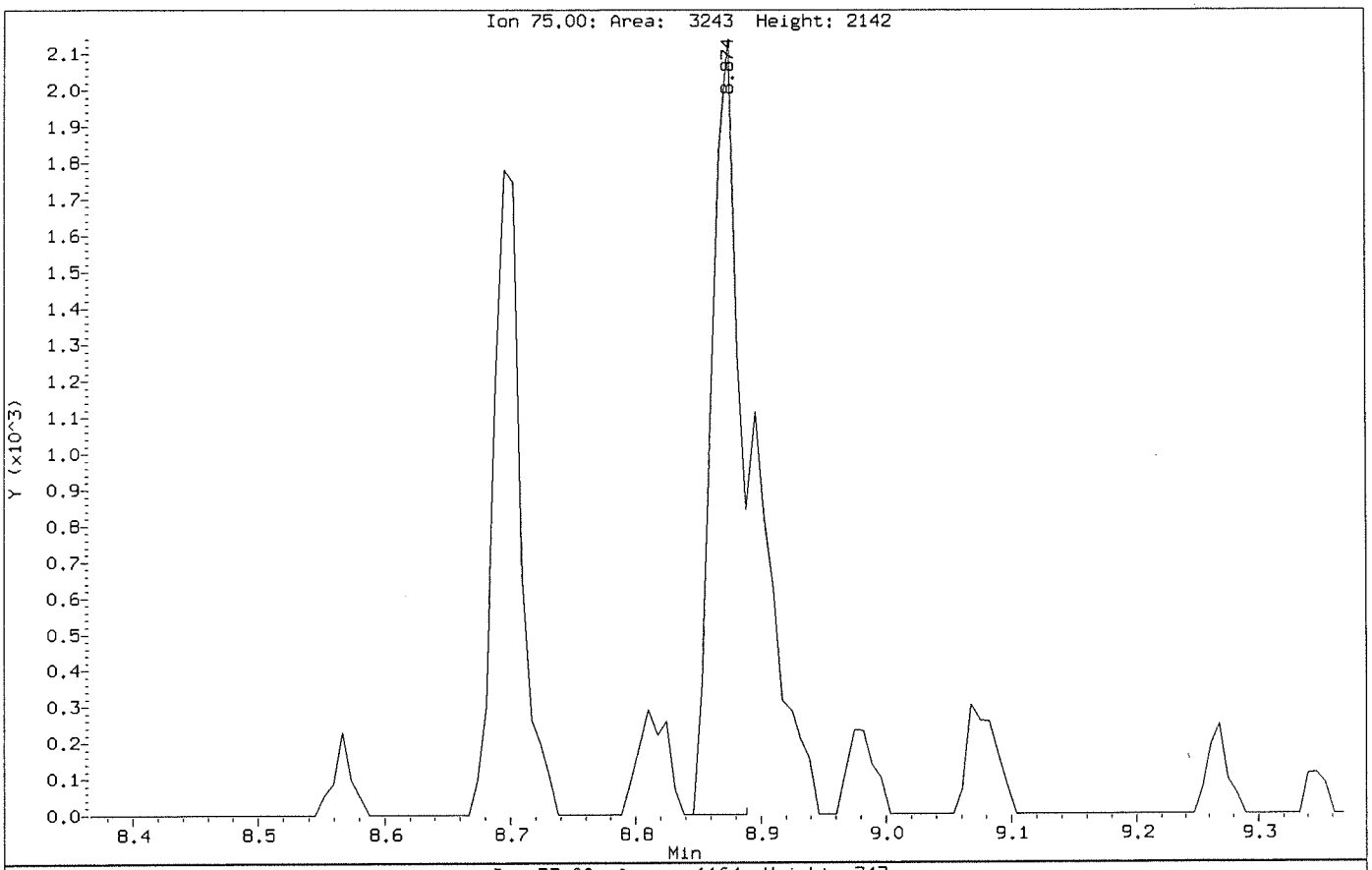
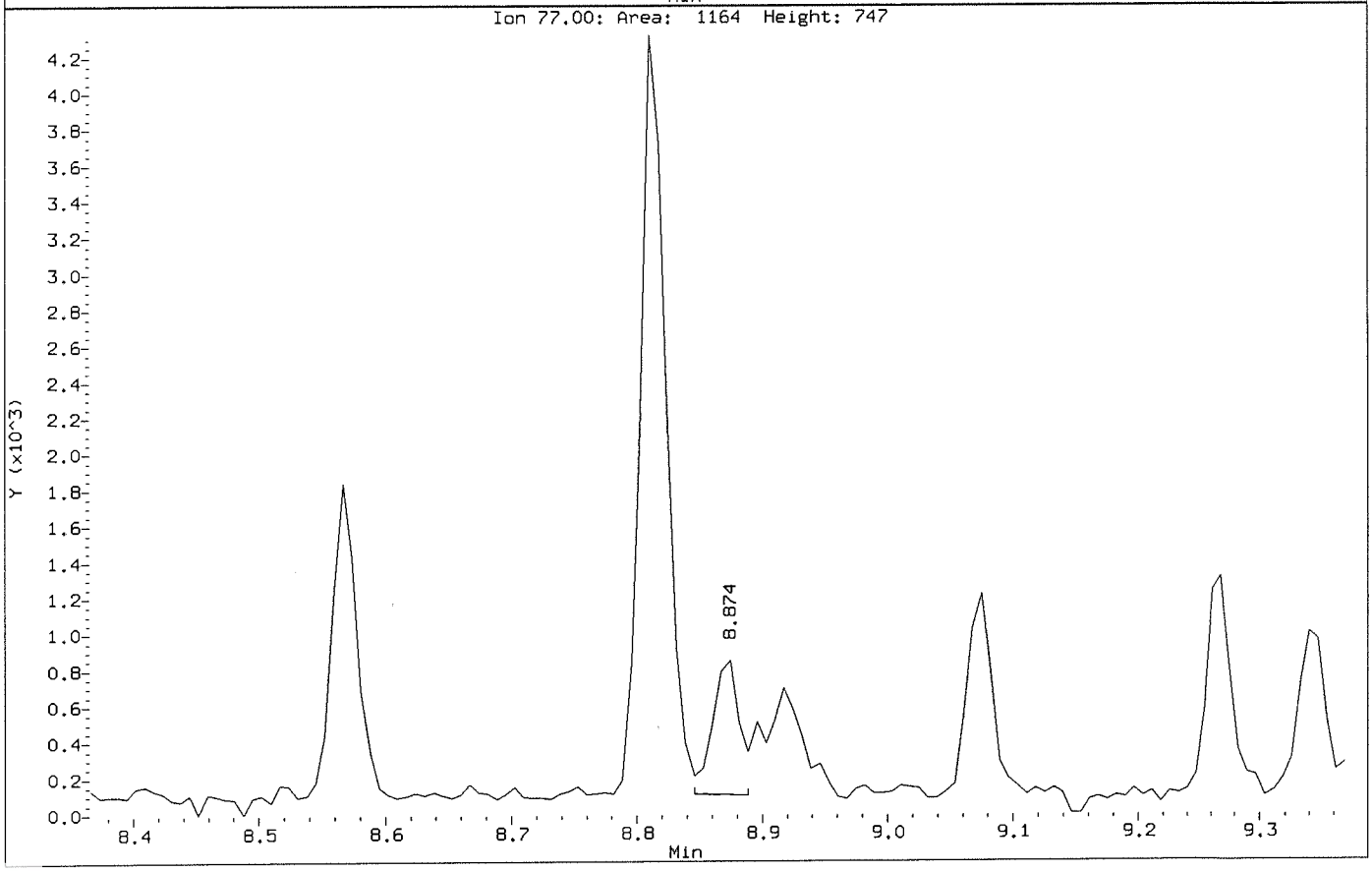
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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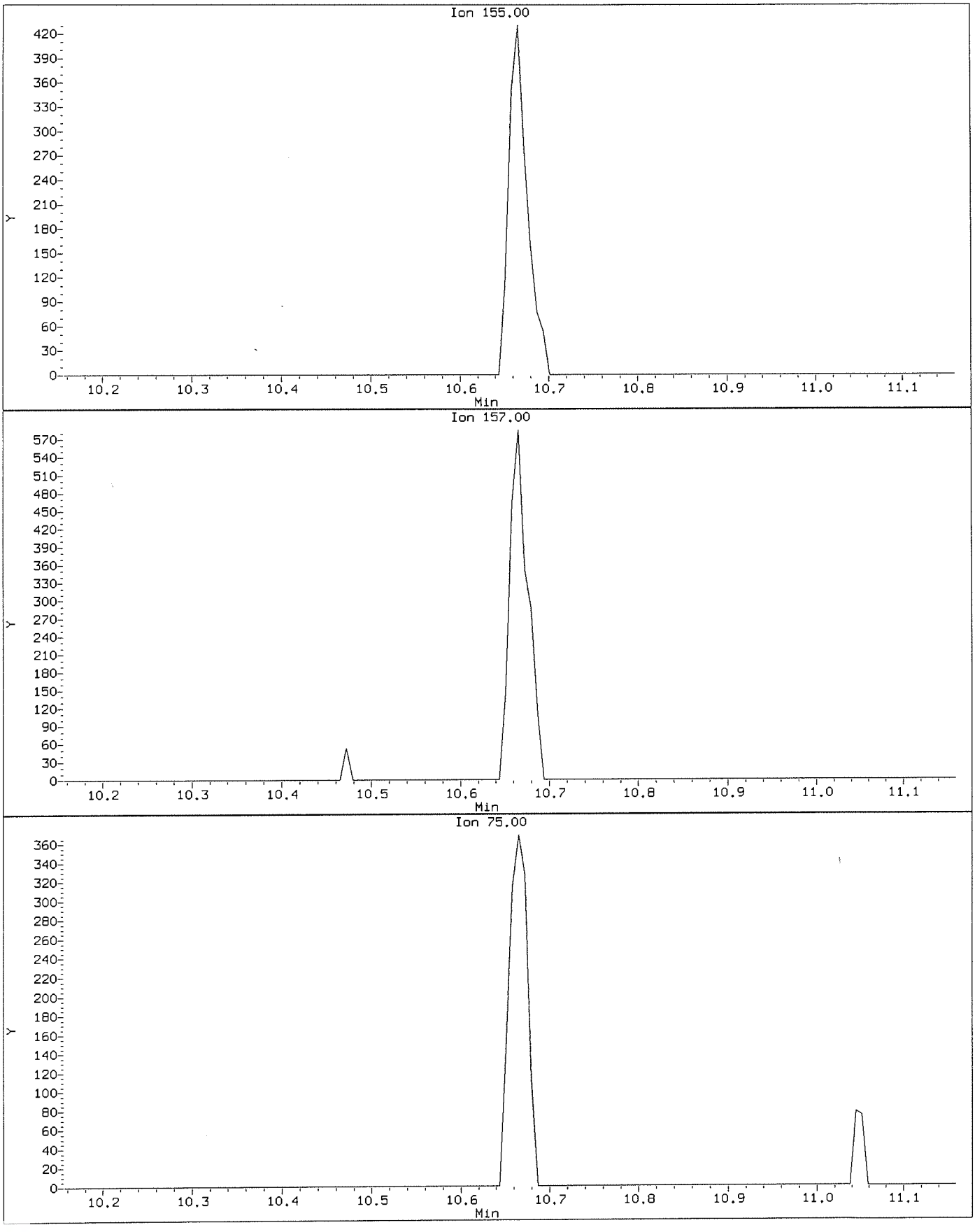
Injection Date: 11-SEP-2019 12:43
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: 1,2-Dibromo-3-Chloropropane
CAS Number: 96-12-8



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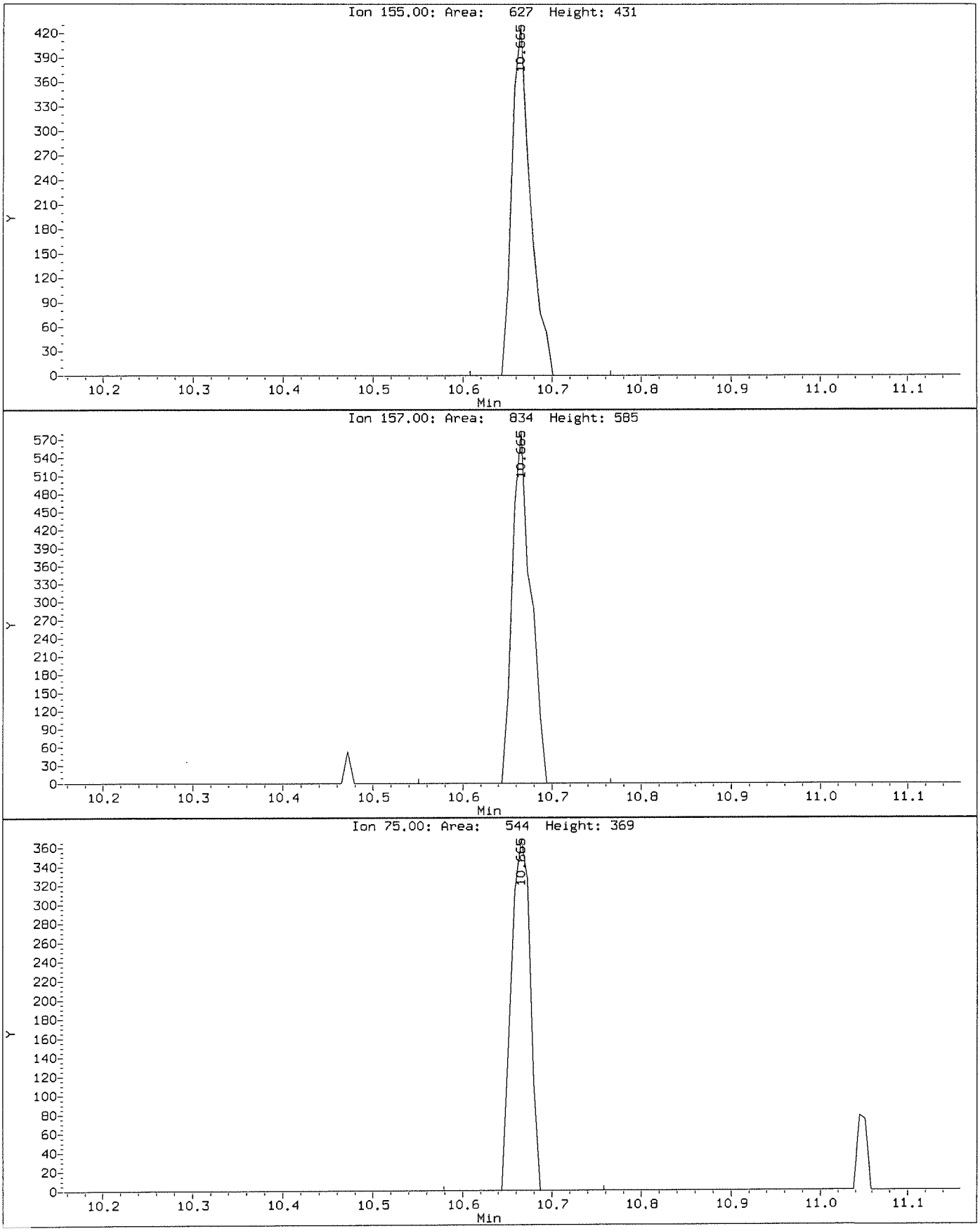
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: 1,2-Dibromo-3-Chloropropane
CAS Number: 96-12-8



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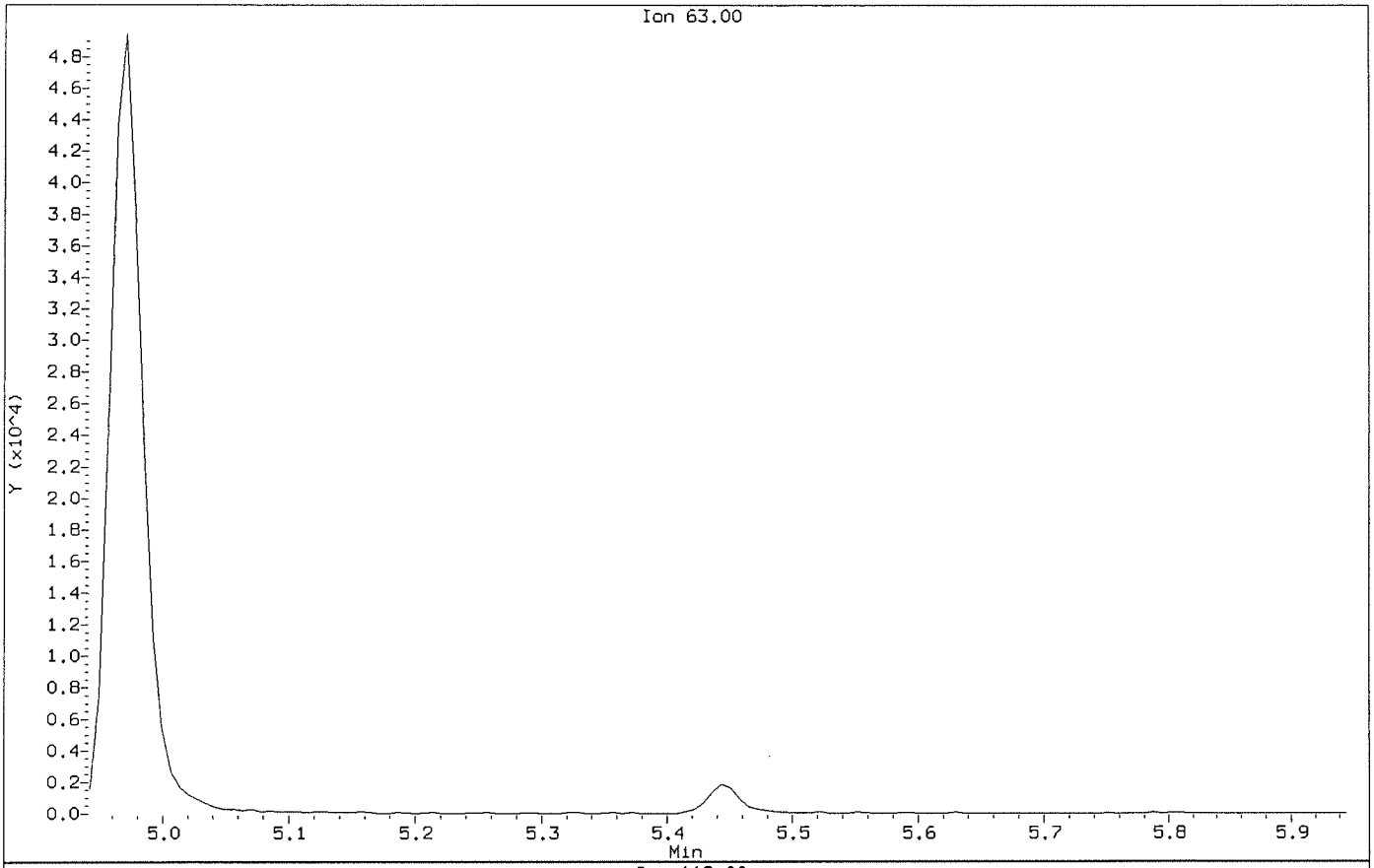
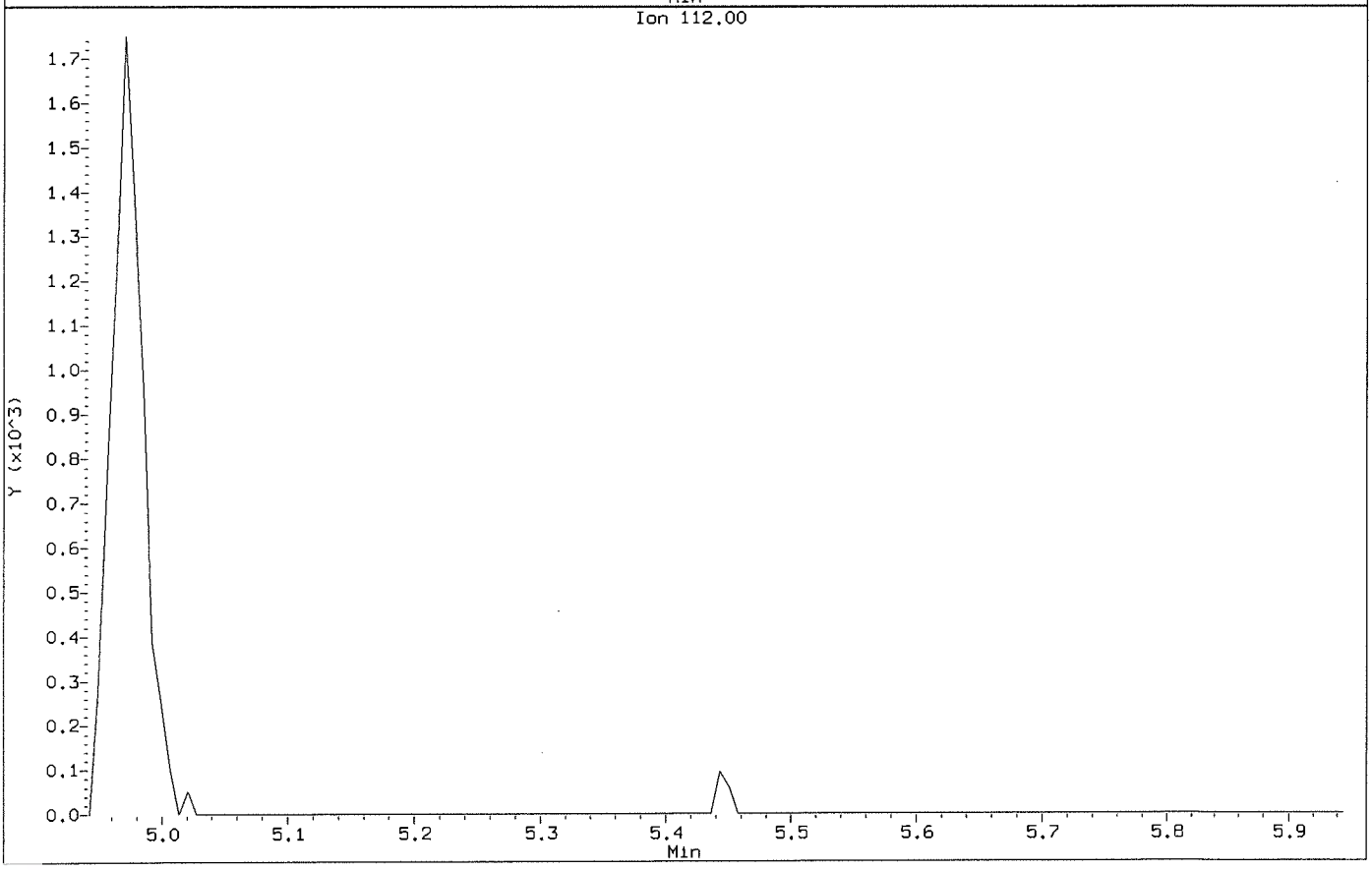
Injection Date: 11-SEP-2019 12:43
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: 1,2-Dichloropropane
CAS Number: 78-87-5





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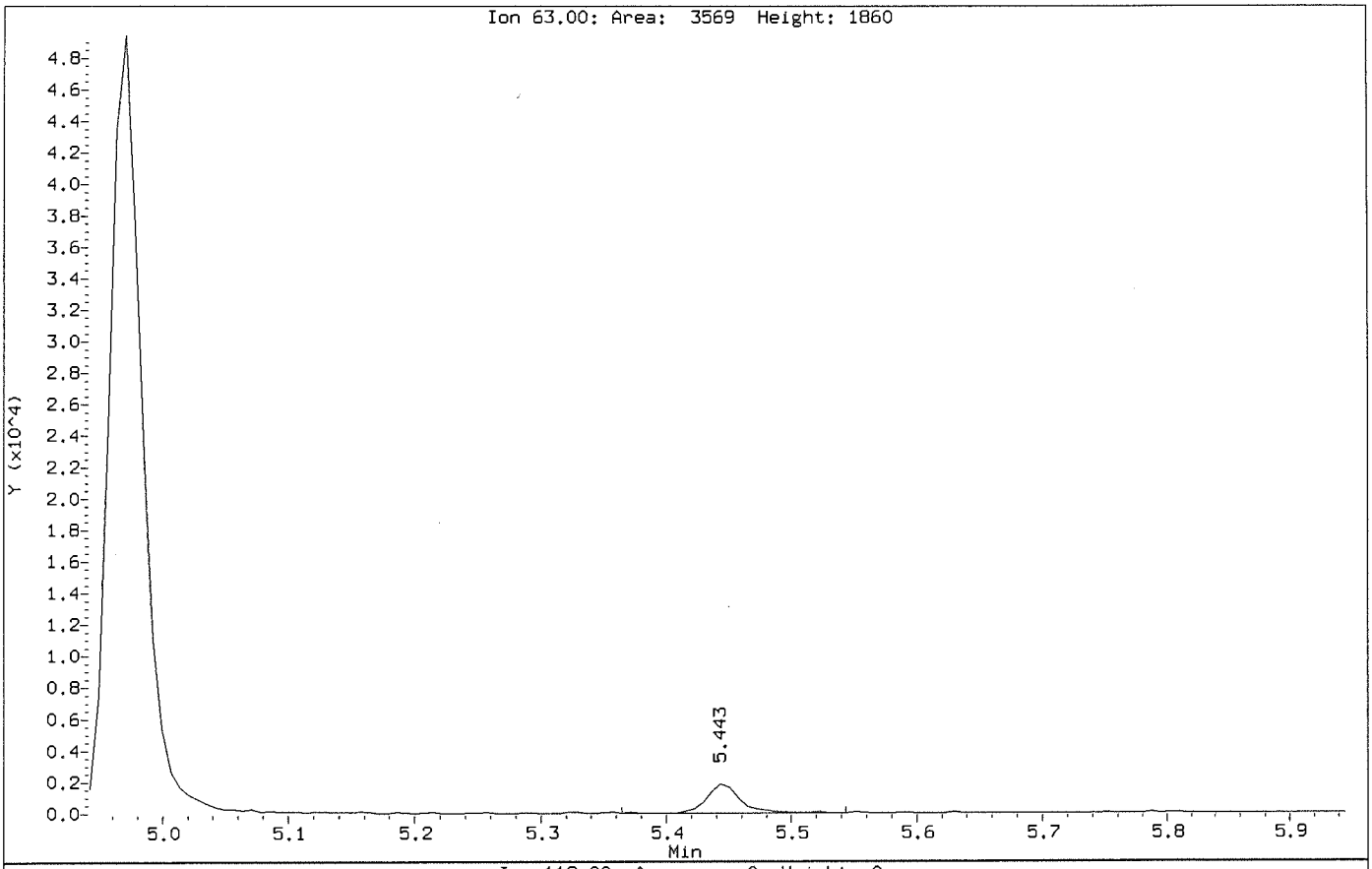
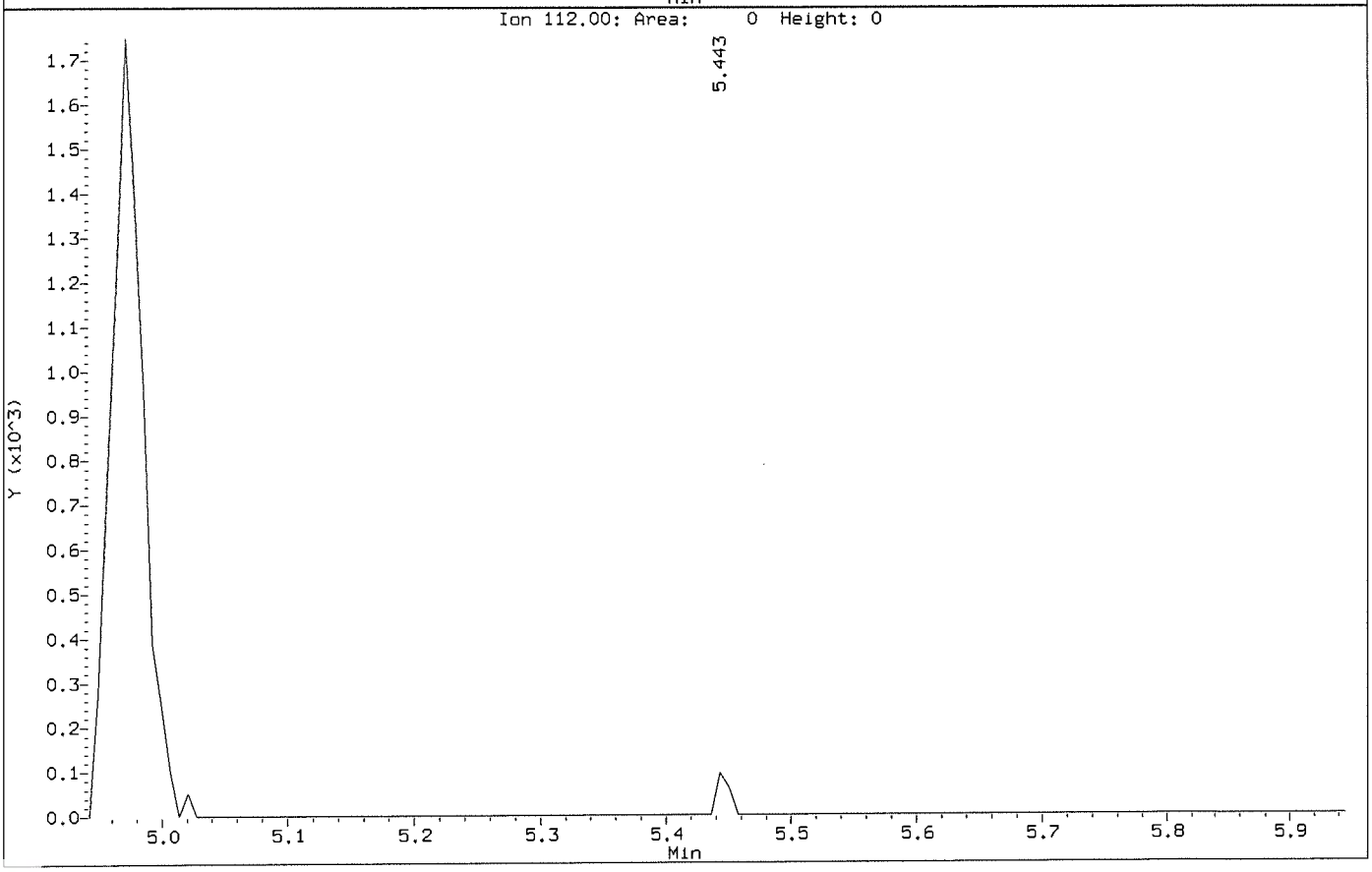
Injection Date: 11-SEP-2019 12:43
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: 1,2-Dichloropropane
CAS Number: 78-87-5





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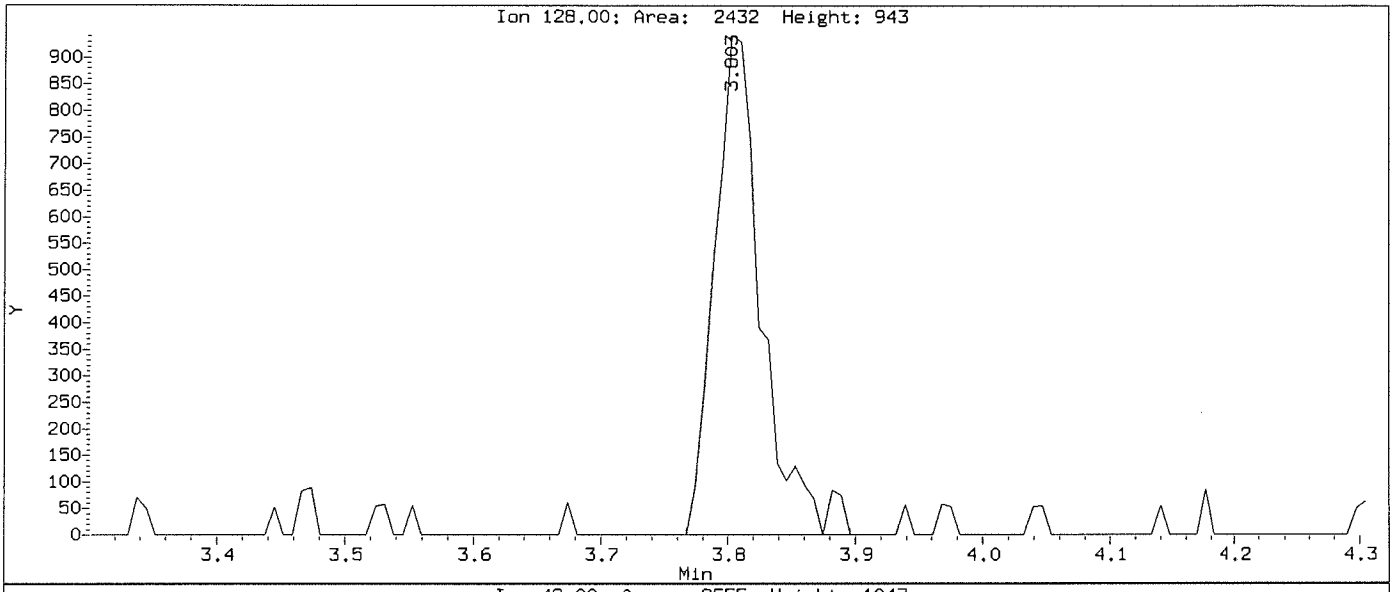
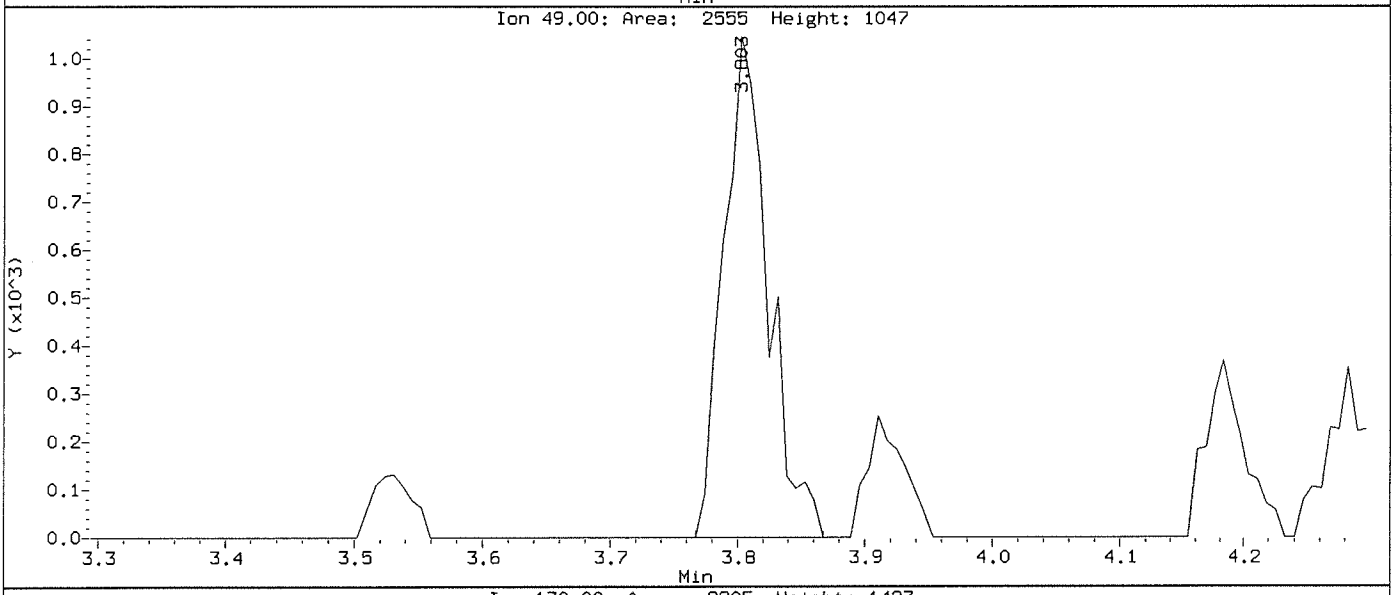
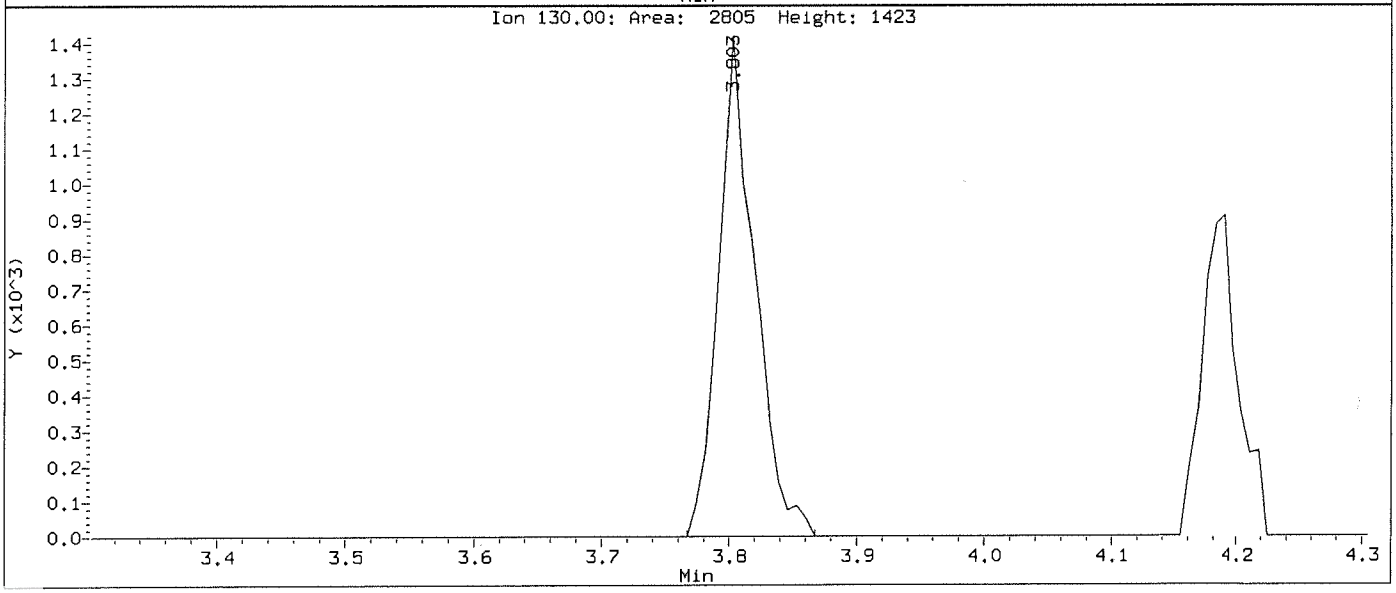
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: Bromochloromethane
CAS Number: 74-97-5







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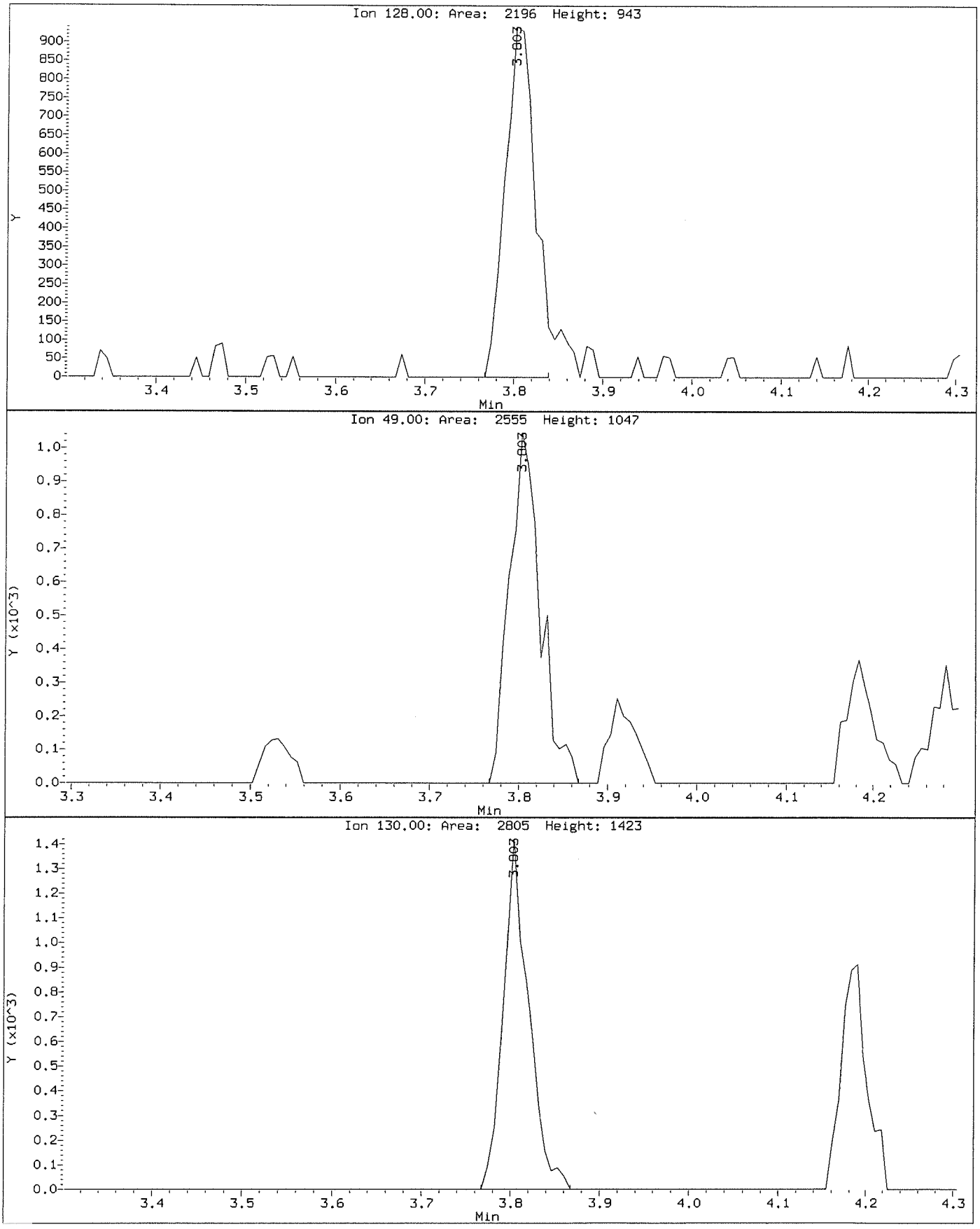
Injection Date: 11-SEP-2019 12:43
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: Bromochloromethane
CAS Number: 74-97-5



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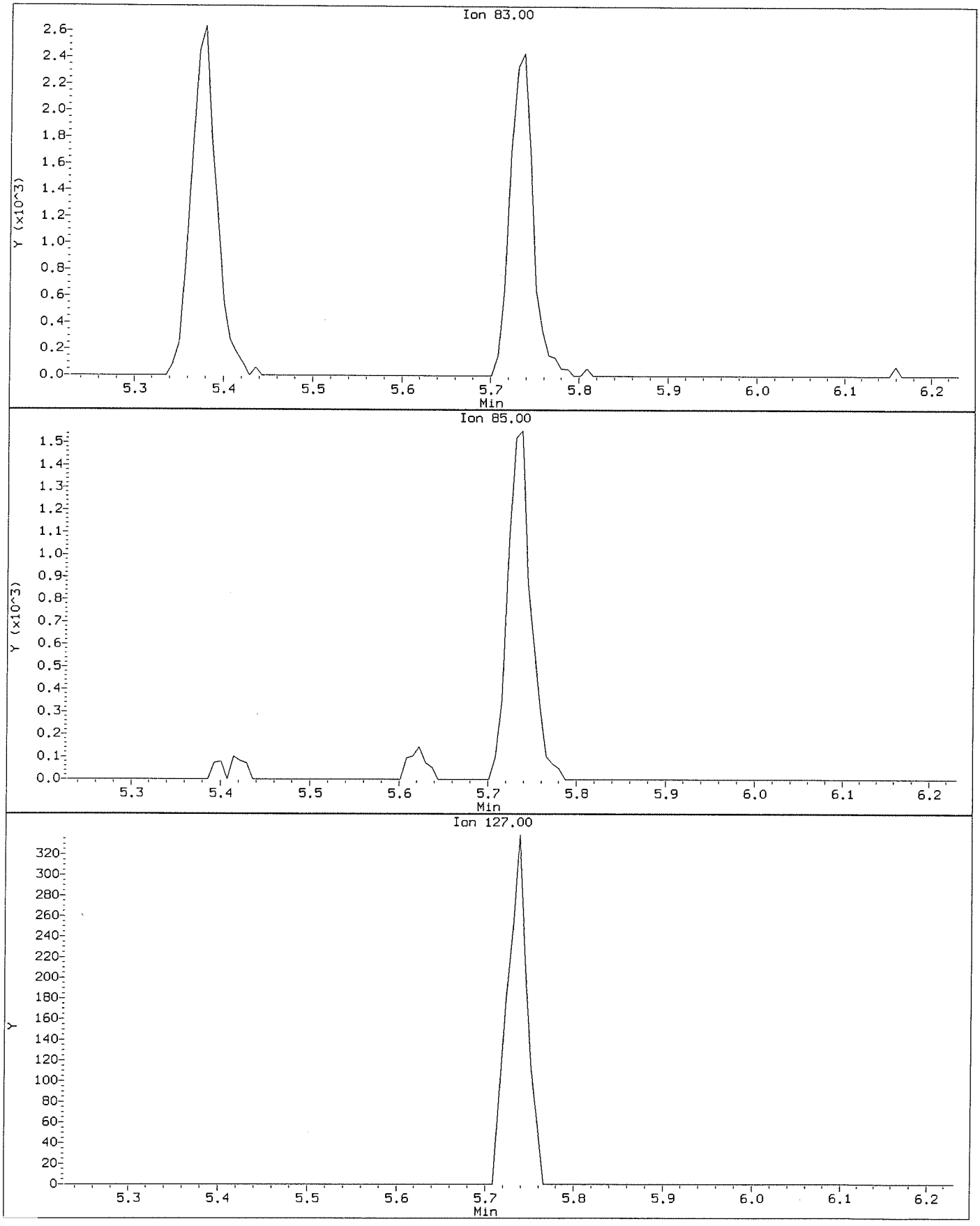
Injection Date: 11-SEP-2019 12:43
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: Bromodichloromethane
CAS Number: 75-27-4



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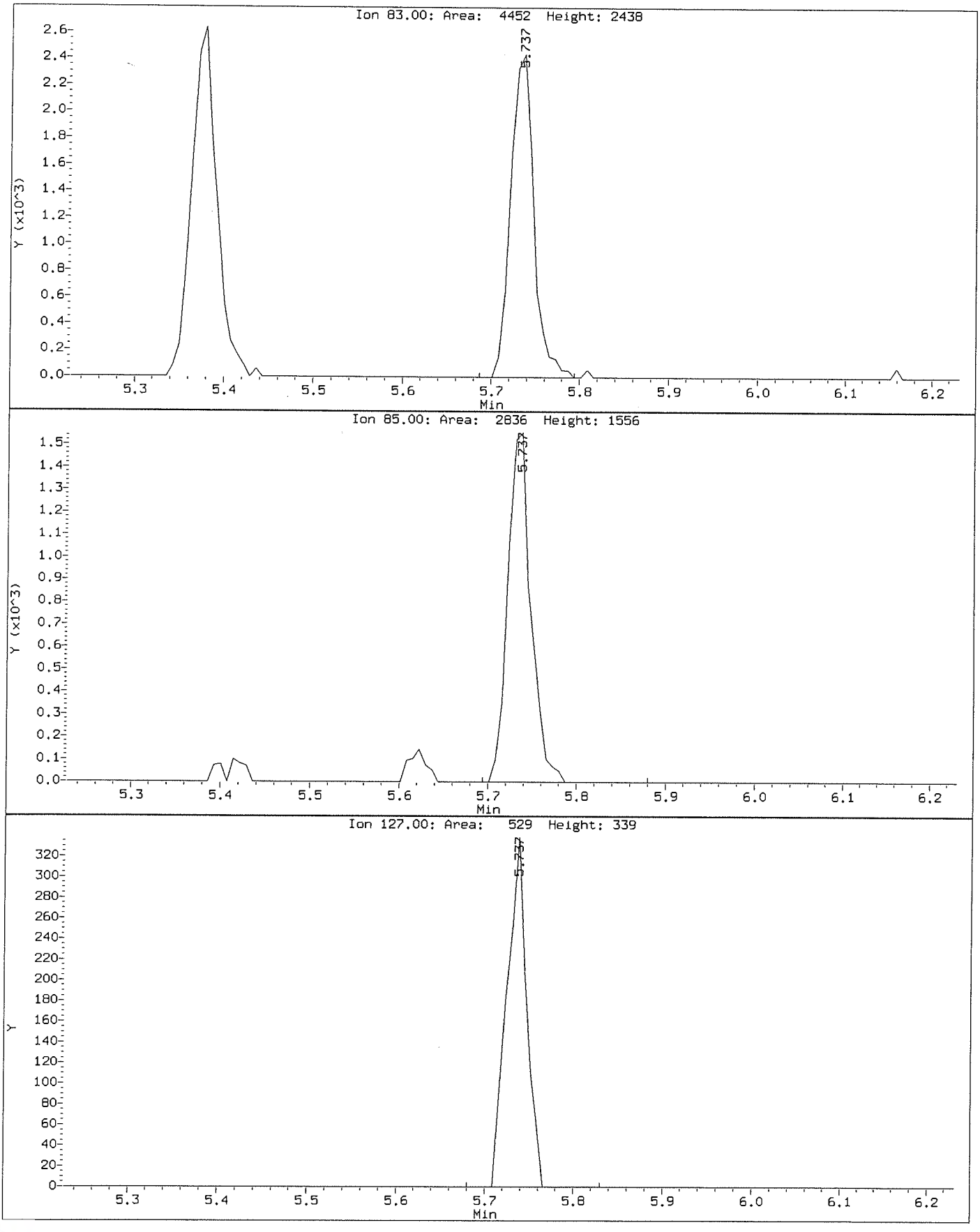
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: Bromodichloromethane
CAS Number: 75-27-4



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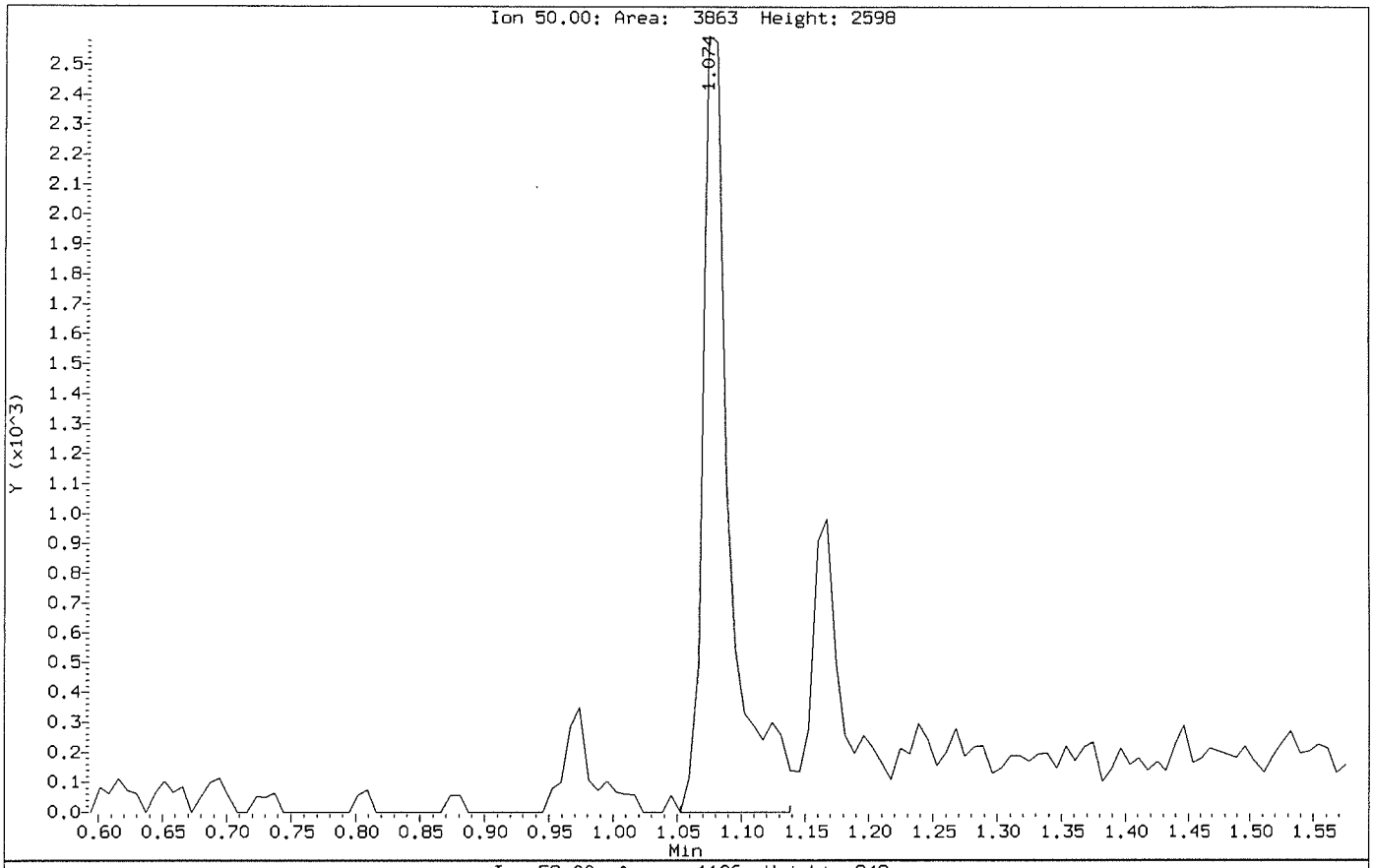
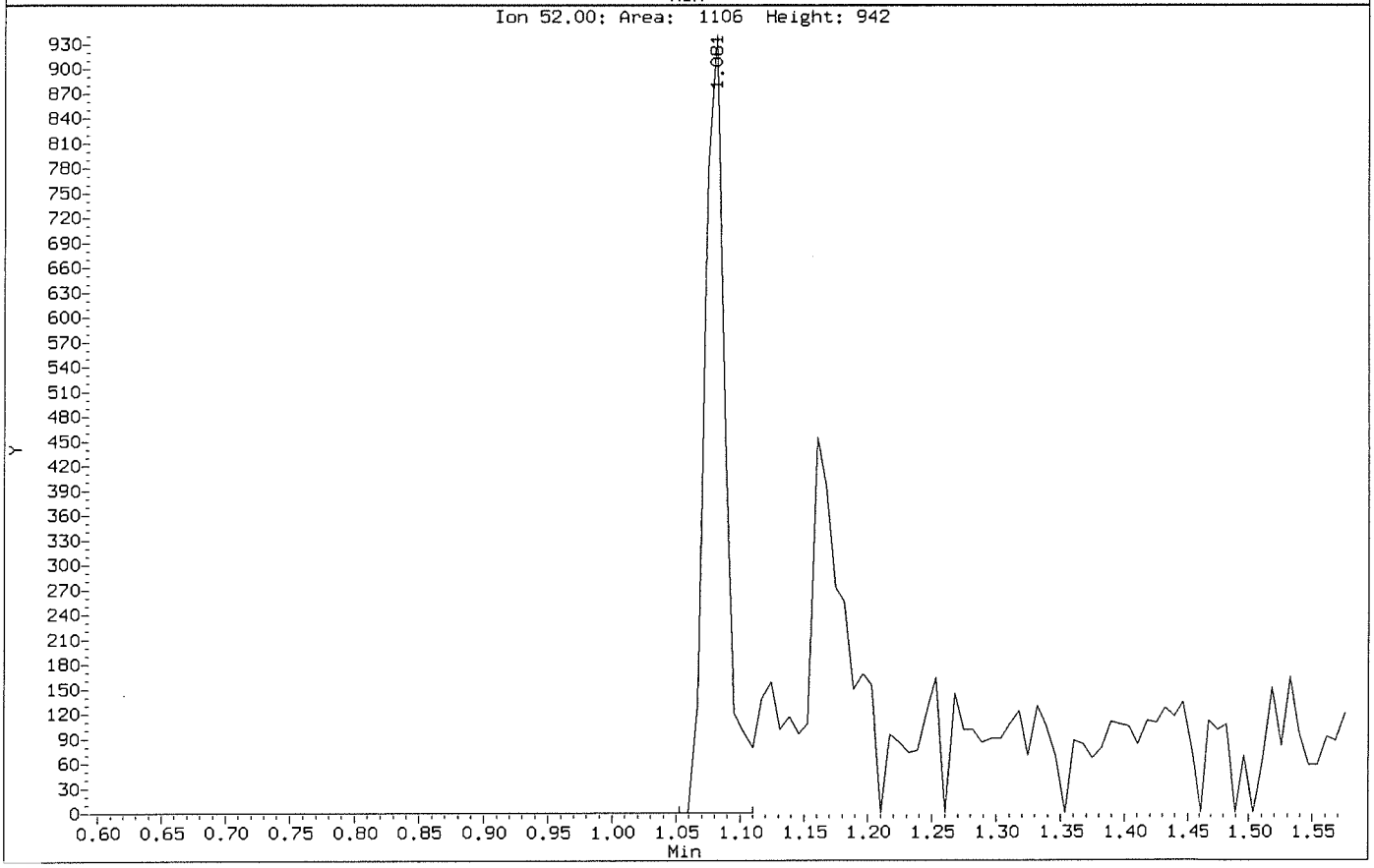
Injection Date: 11-SEP-2019 12:43
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: Chloromethane
CAS Number: 74-87-3





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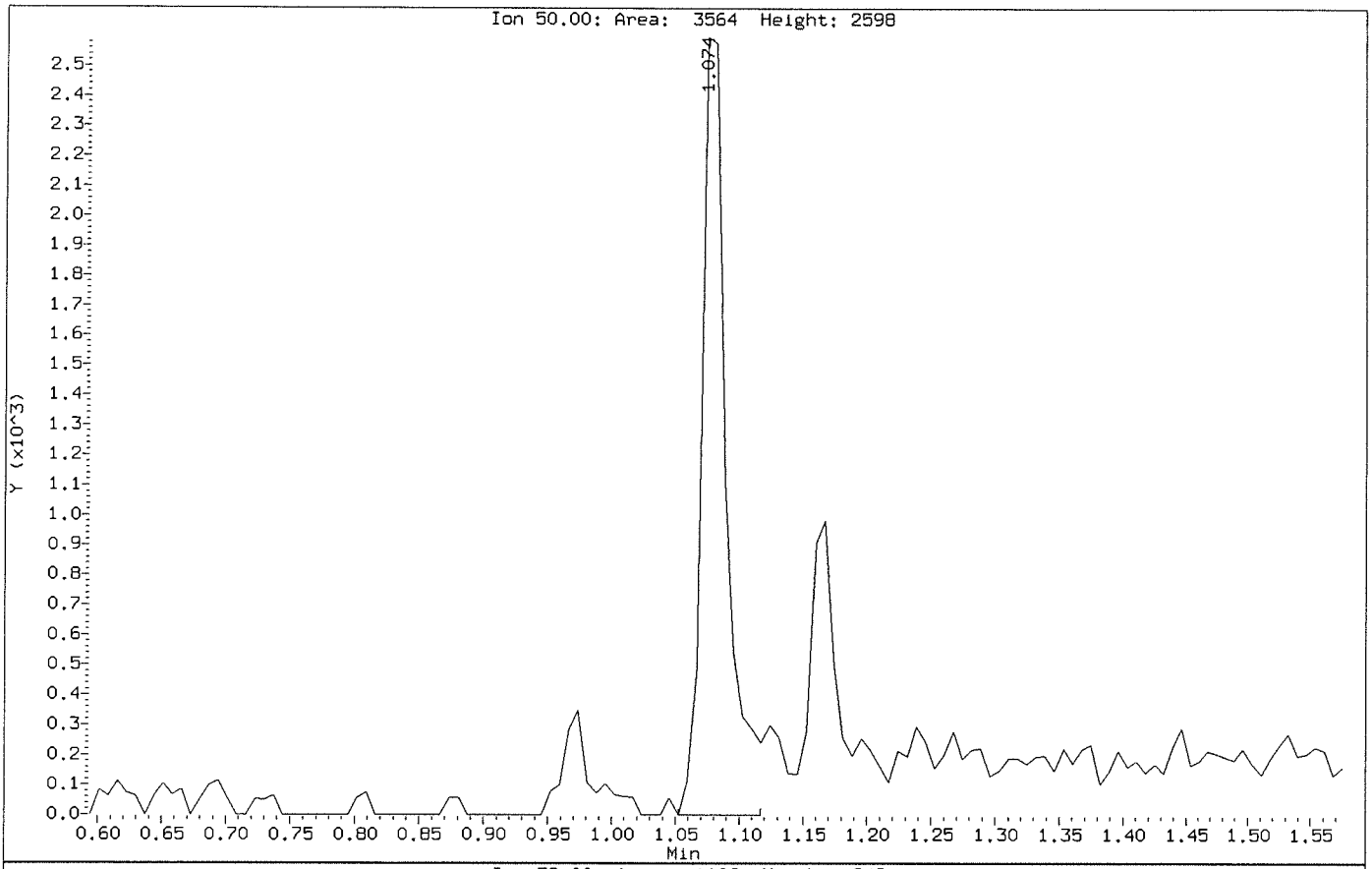
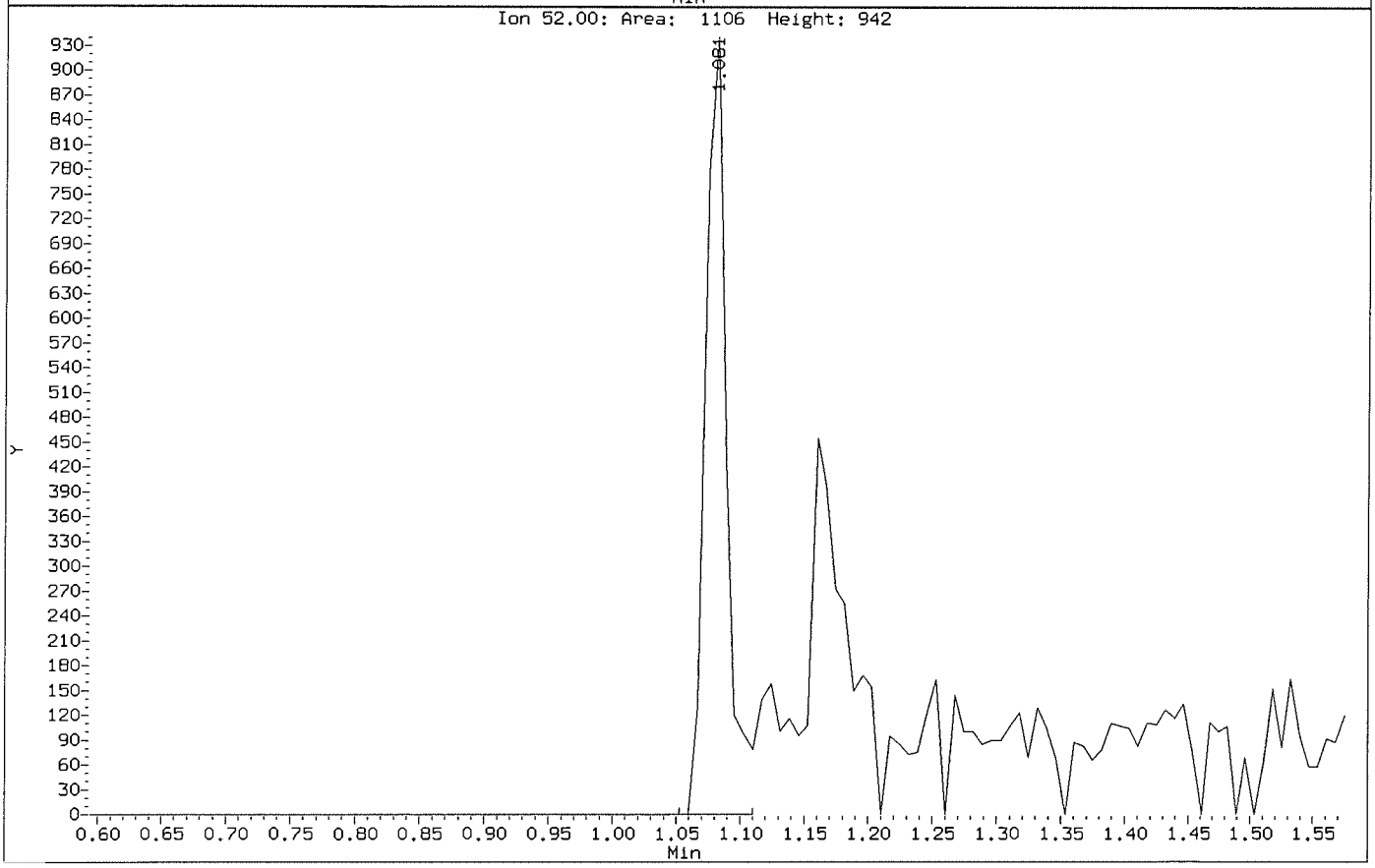
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: Chloromethane
CAS Number: 74-87-3





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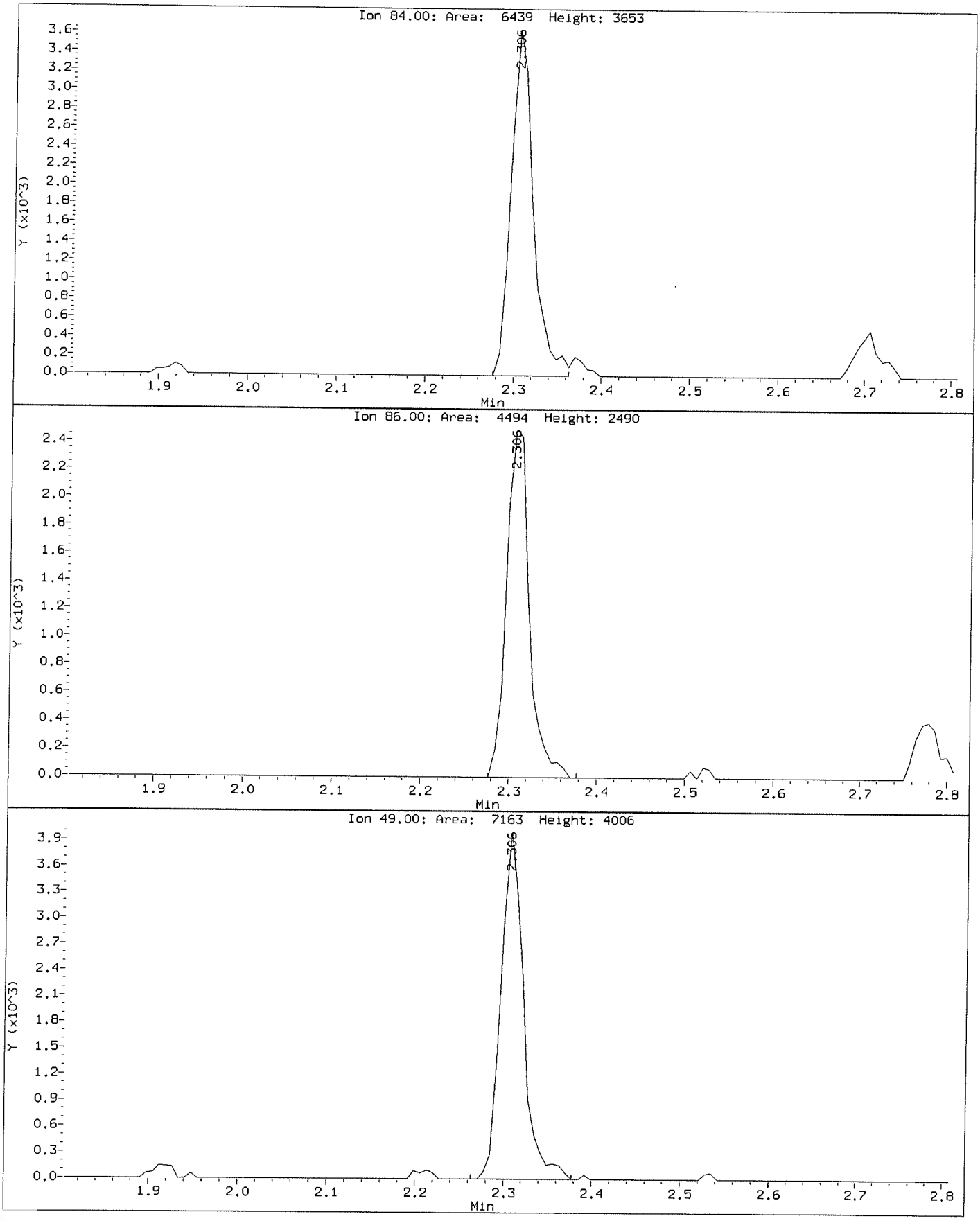
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: Methylene Chloride
CAS Number: 75-09-2



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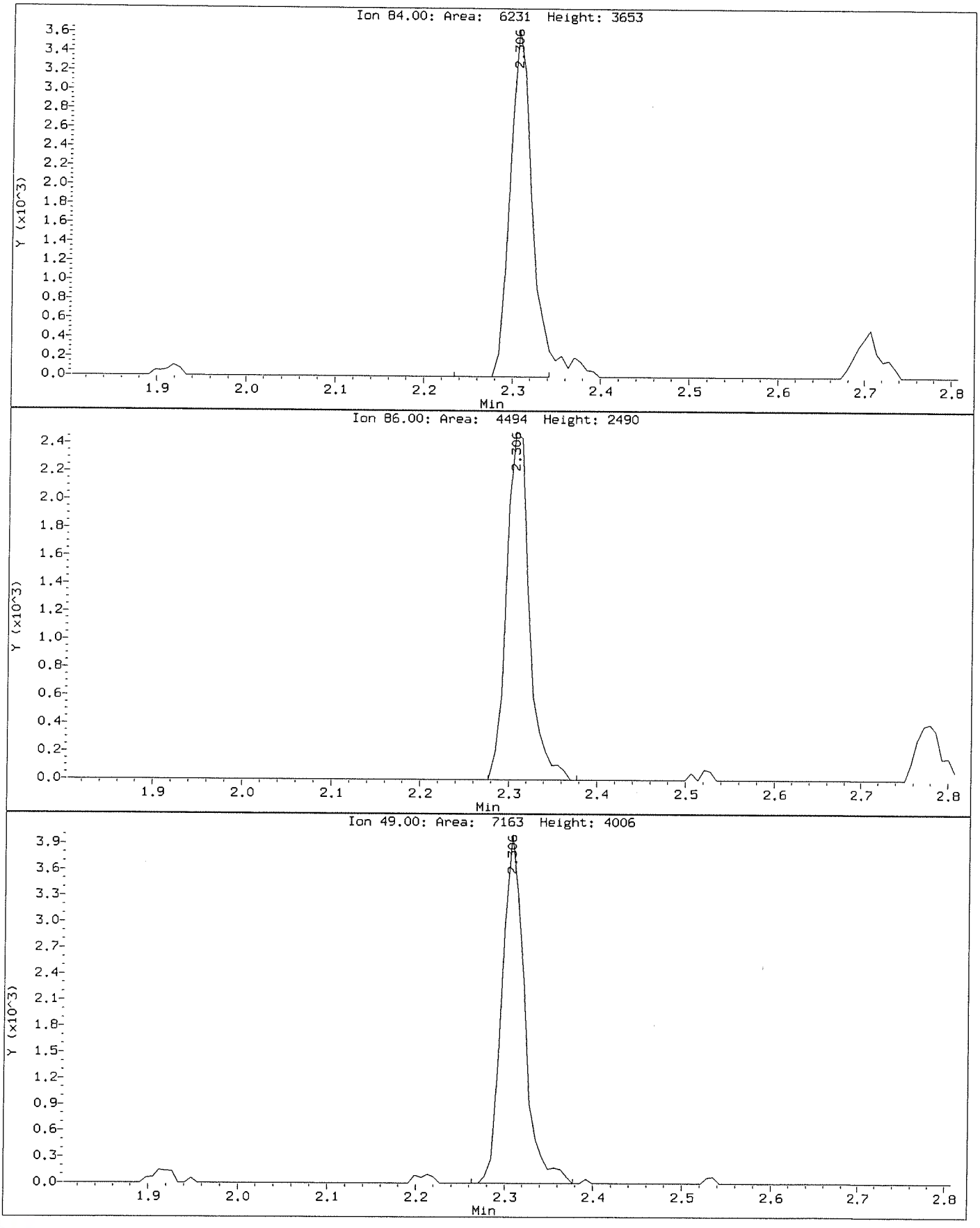
Instrument: voa6.1
Client Sample ID: VSTD001

Compound: Methylene Chloride
CAS Number: 75-09-2



ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091105.D
Lab Smp Id: VSTD002 Client Smp ID: VSTD002
Inj Date : 11-SEP-2019 13:07
Operator : PC Inst ID: voa6.i
Smp Info : VSTD002;VSTD002;1;4;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X190911.b\8260W.m
Meth Date : 24-Sep-2019 15:13 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 13:07 Cal File: X091105.D
Als bottle: 6 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	358821	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	522419	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	467458	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	263137	50.0000	
$ 30 Dibromofluoromethane	113	4.104	4.103	(0.981)	6526	2.00000	1.31(a)
$ 35 1,2-Dichloroethane-d4	65	4.483	4.476	(1.072)	7112	2.00000	1.42(a)
$ 48 Toluene-d8	98	6.396	6.388	(0.834)	25511	2.00000	1.97(a)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	10361	2.00000	1.78(a)
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	6536	2.00000	1.84(a)
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	9793	2.00000	1.99(a)
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	7917	2.00000	1.84(a)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	4897	2.00000	1.89(a)
22 1,1-Dichloroethane	63	2.929	2.922	(0.700)	11474	2.00000	2.03(a)
11 1,1-Dichloroethene	96	1.919	1.912	(0.459)	5748	2.00000	1.87(a)
32 1,1-Dichloropropene	75	4.283	4.283	(0.862)	8910	2.00000	2.03(a)
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	5018	2.00000	1.78(a)
71 1,2,3-Trichloropropane	75	8.874	8.867	(0.918)	6541	2.00000	1.96(aM)
90 1,2,4-Trichlorobenzene	180	11.345	11.345	(1.173)	7572	2.00000	1.77(a)
79 1,2,4-Trimethylbenzene	105	9.383	9.383	(0.970)	25882	2.00000	1.89(a)
89 1,2-Dibromo-3-Chloropropane	155	10.658	10.658	(1.102)	1186	2.00000	1.75(a)
57 1,2-Dibromoethane	107	7.270	7.262	(0.948)	6846	2.00000	1.97(a)
88 1,2-Dichlorobenzene	146	9.999	9.999	(1.034)	14953	2.00000	1.91(a)
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	8662	2.00000	2.00(a)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091105.D Page 2
Report Date: 24-Sep-2019 15:14

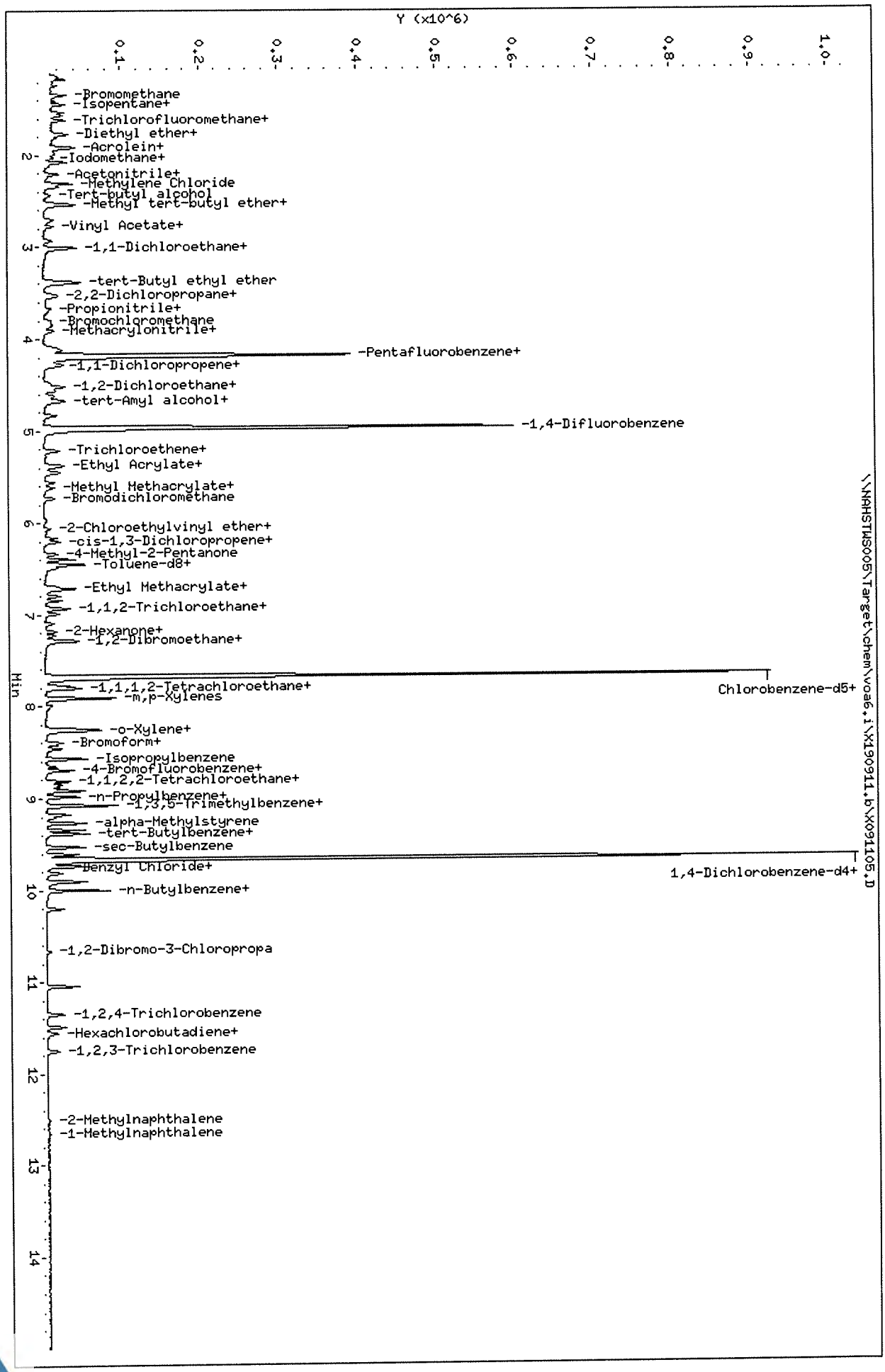
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42	1,2-Dichloropropane	63	5.443	5.443	(1.095)	6048	2.00000	1.84(aM)
75	1,3,5-Trimethylbenzene	105	9.075	9.075	(0.939)	25642	2.00000	1.92(a)
83	1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	15001	2.00000	1.81(a)
54	1,3-Dichloropropane	76	6.990	6.983	(0.911)	10581	2.00000	1.97(a)
84	1,4-Dichlorobenzene	146	9.691	9.691	(1.002)	16709	2.00000	1.99(a)
26	2,2-Dichloropropane	77	3.516	3.516	(0.841)	9444	2.00000	2.00(a)
24	2-Butanone	43	3.602	3.581	(0.861)	4084	4.00000	3.70(a)
76	2-Chlorotoluene	91	8.982	8.981	(0.929)	20963	2.00000	2.16(a)
52	2-Hexanone	43	7.098	7.090	(0.925)	7493	4.00000	3.97(a)
77	4-Chlorotoluene	91	9.075	9.075	(0.939)	24238	2.00000	1.97(a)
82	p-Isopropyltoluene	119	9.655	9.655	(0.999)	25360	2.00000	1.83(a)
45	4-Methyl-2-Pentanone	43	6.331	6.331	(0.825)	10941	4.00000	3.93(a)
10	Acetone	43	1.976	1.976	(0.473)	5543	4.00000	0.16(a)
37	Benzene	78	4.519	4.519	(0.909)	26061	2.00000	1.94(a)
74	Bromobenzene	156	8.810	8.810	(0.911)	9043	2.00000	1.86(a)
29	Bromochloromethane	128	3.803	3.803	(0.909)	4237	2.00000	2.03(a)
39	Bromodichloromethane	83	5.737	5.729	(1.154)	8291	2.00000	1.85(a)
66	Bromoform	173	8.416	8.416	(1.097)	4916	2.00000	1.75(a)
6	Bromomethane	94	1.339	1.339	(0.320)	7413	2.00000	1.15(a)
19	Carbon Disulfide	76	2.069	2.069	(0.495)	34937	4.00000	3.86(a)
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	9164	2.00000	1.95(a)
59	Chlorobenzene	112	7.699	7.699	(1.004)	19430	2.00000	1.98(a)
7	Chloroethane	64	1.403	1.403	(0.336)	5096	2.00000	0.06(aM)
28	Chloroform	83	3.917	3.910	(0.937)	11542	2.00000	2.02(a)
3	Chloromethane	50	1.074	1.074	(0.257)	6106	2.00000	2.12(a)
27	cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	7203	2.00000	1.95(a)
46	cis-1,3-Dichloropropene	75	6.166	6.159	(1.241)	10012	2.00000	1.83(a)
55	Dibromochloromethane	129	7.184	7.184	(0.937)	6851	2.00000	1.81(a)
44	Dibromomethane	93	5.558	5.558	(1.118)	4366	2.00000	1.85(a)
2	Dichlorodifluoromethane	85	0.973	0.973	(0.233)	5042	2.00000	1.91(a)
61	Ethylbenzene	106	7.807	7.807	(1.018)	9590	2.00000	1.88(a)
91	Hexachlorobutadiene	225	11.489	11.489	(1.188)	4709	2.00000	2.81(a)
67	Isopropylbenzene	105	8.566	8.566	(1.117)	29801	2.00000	1.97(a)
62	m,p-Xylenes	106	7.907	7.907	(1.031)	24080	4.00000	3.92(a)
17	Methylene Chloride	84	2.306	2.306	(0.551)	10011	2.00000	0.83(aM)
87	n-Butylbenzene	91	9.999	9.999	(1.034)	20028	2.00000	1.89(a)
73	n-Propylbenzene	91	8.917	8.917	(0.922)	32663	2.00000	1.88(a)
92	Naphthalene	128	11.553	11.546	(1.195)	11768	2.00000	1.73(a)
63	o-Xylene	106	8.251	8.244	(1.076)	11762	2.00000	1.95(a)
81	sec-Butylbenzene	105	9.526	9.526	(0.985)	29813	2.00000	1.94(a)
64	Styrene	104	8.265	8.265	(1.078)	20138	2.00000	1.95(a)
78	tert-Butylbenzene	119	9.340	9.340	(0.966)	21754	2.00000	1.94(a)
56	Tetrachloroethene	164	6.933	6.933	(0.904)	6463	2.00000	1.91(a)
50	Toluene	91	6.453	6.453	(0.841)	29123	2.00000	2.01(a)
20	trans-1,2-Dichloroethene	96	2.535	2.528	(0.606)	6097	2.00000	1.94(a)
51	trans-1,3-Dichloropropene	75	6.689	6.682	(1.346)	8782	2.00000	1.80(a)
38	Trichloroethene	130	5.214	5.214	(1.049)	7491	2.00000	1.85(a)
8	Trichlorofluoromethane	101	1.561	1.561	(0.373)	10368	2.00000	1.92(a)
5	Vinyl Chloride	62	1.138	1.138	(0.272)	7528	2.00000	2.01(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

QC Flag Legend

M - Compound response manually integrated.



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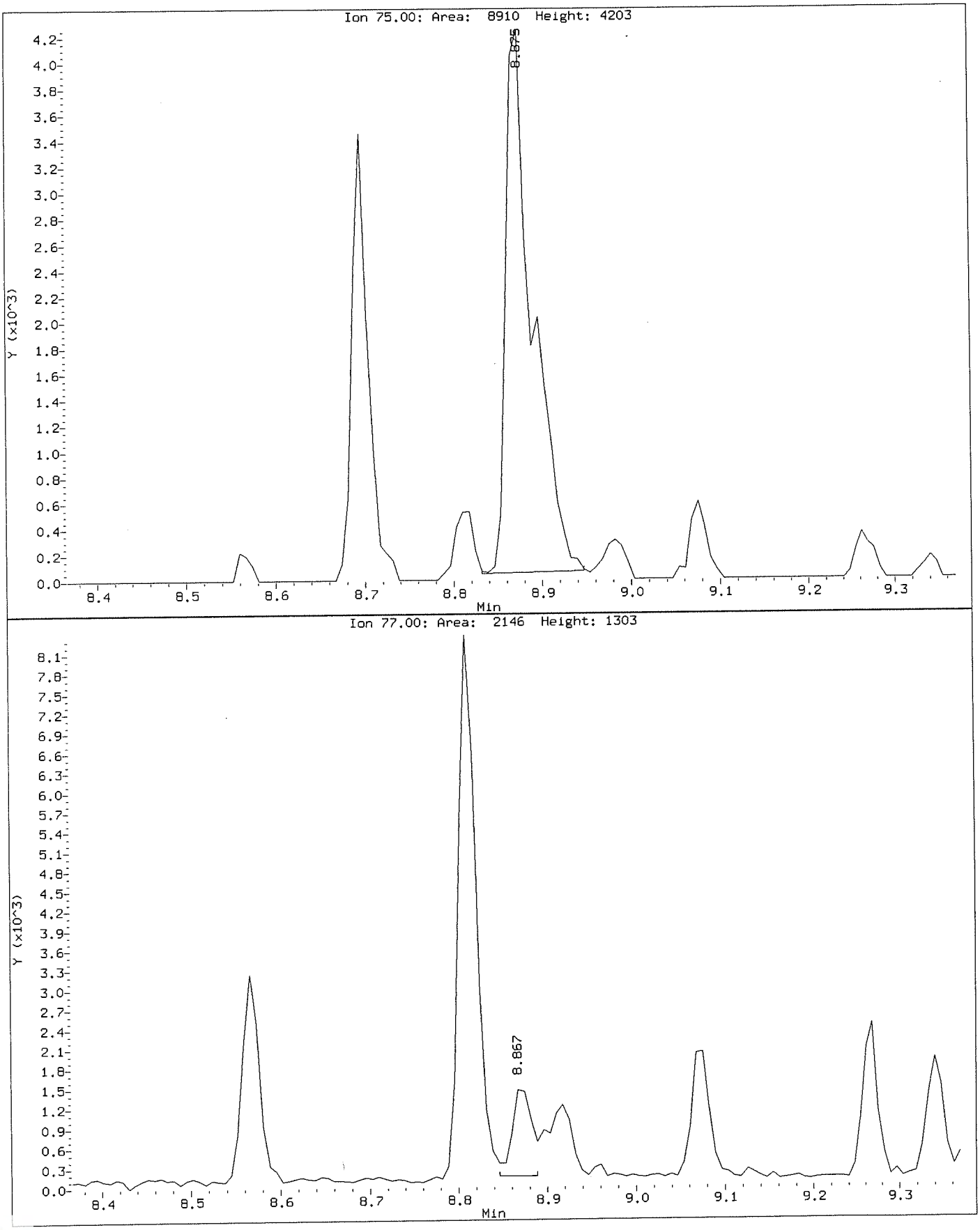
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\BEFORE\X091105.D
Injection Date: 11-SEP-2019 13:07
Instrument: voa6.i
Client Sample ID: VSTD002

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



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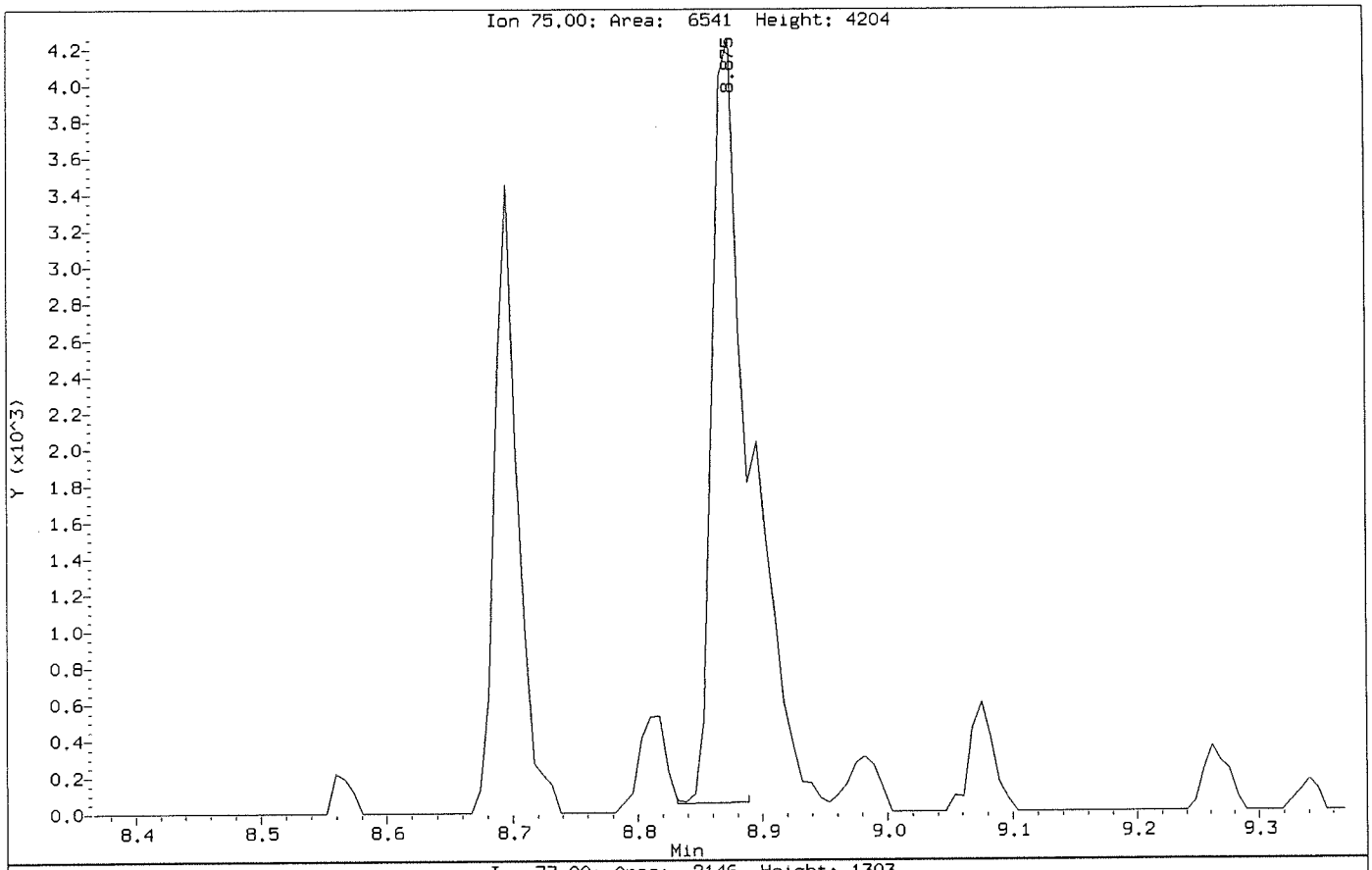
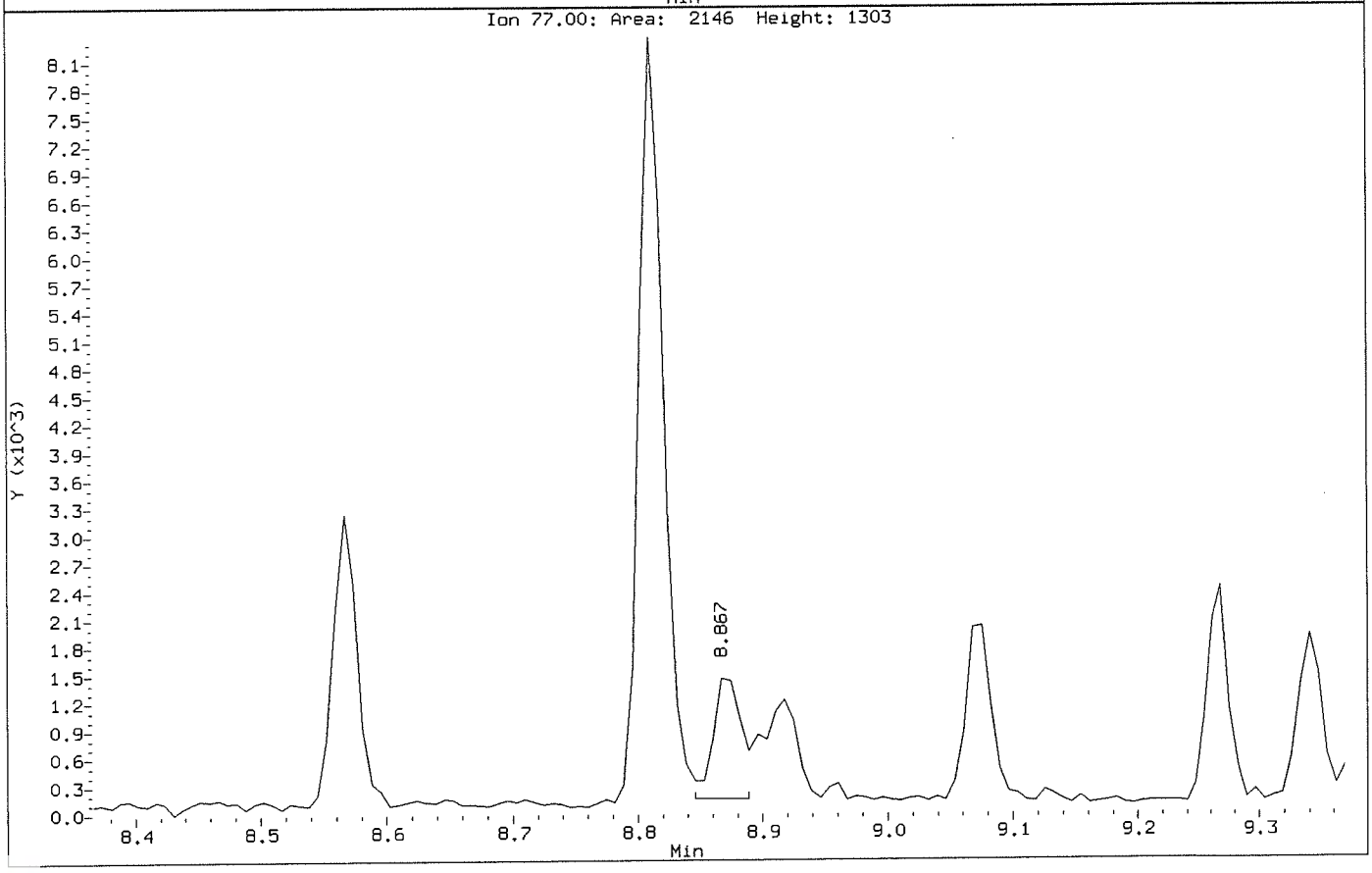
Injection Date: 11-SEP-2019 13:07
Instrument: voa6.i
Client Sample ID: VSTD002

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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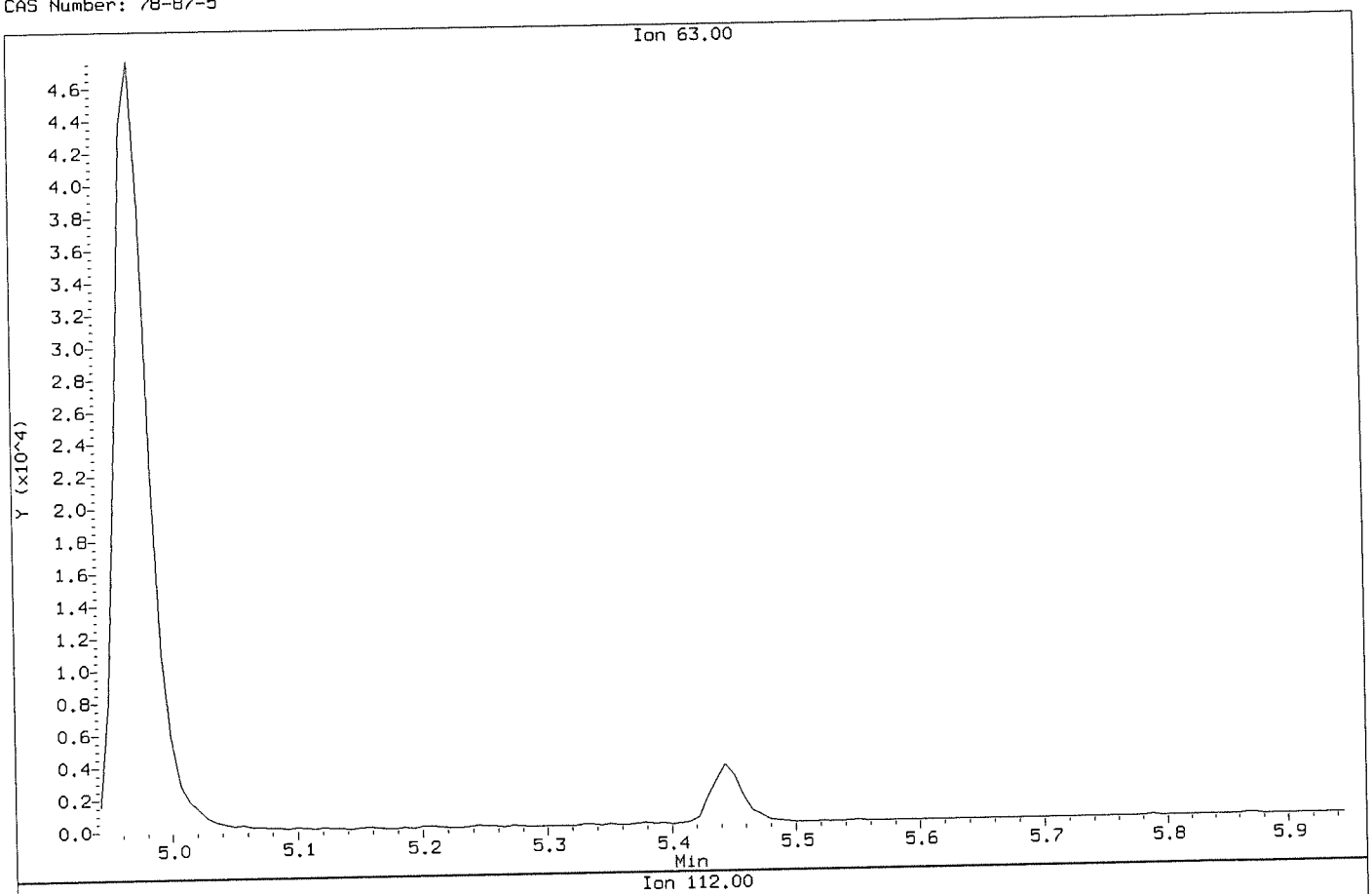
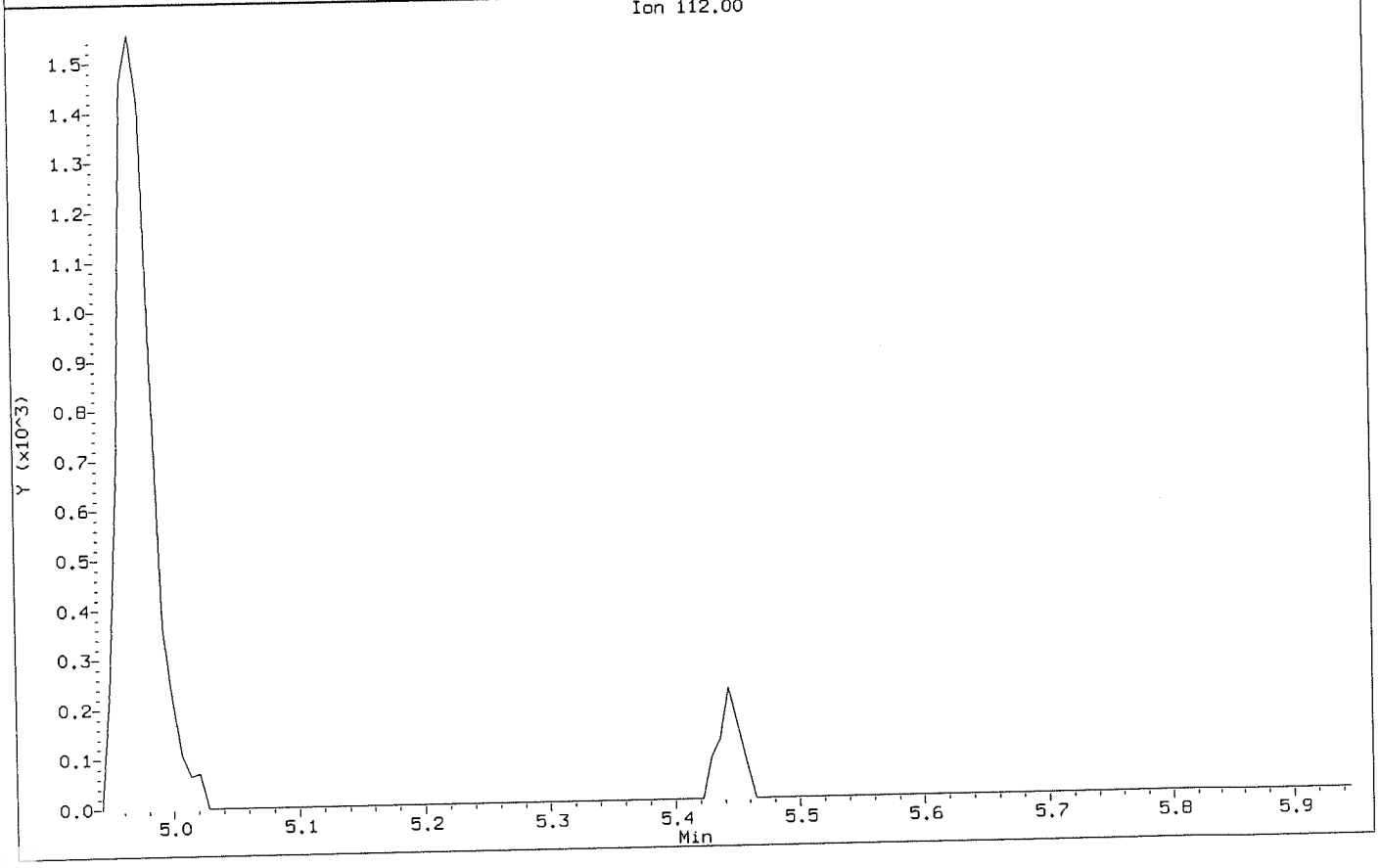
Injection Date: 11-SEP-2019 13:07
Instrument: voa6.i
Client Sample ID: VSTD002

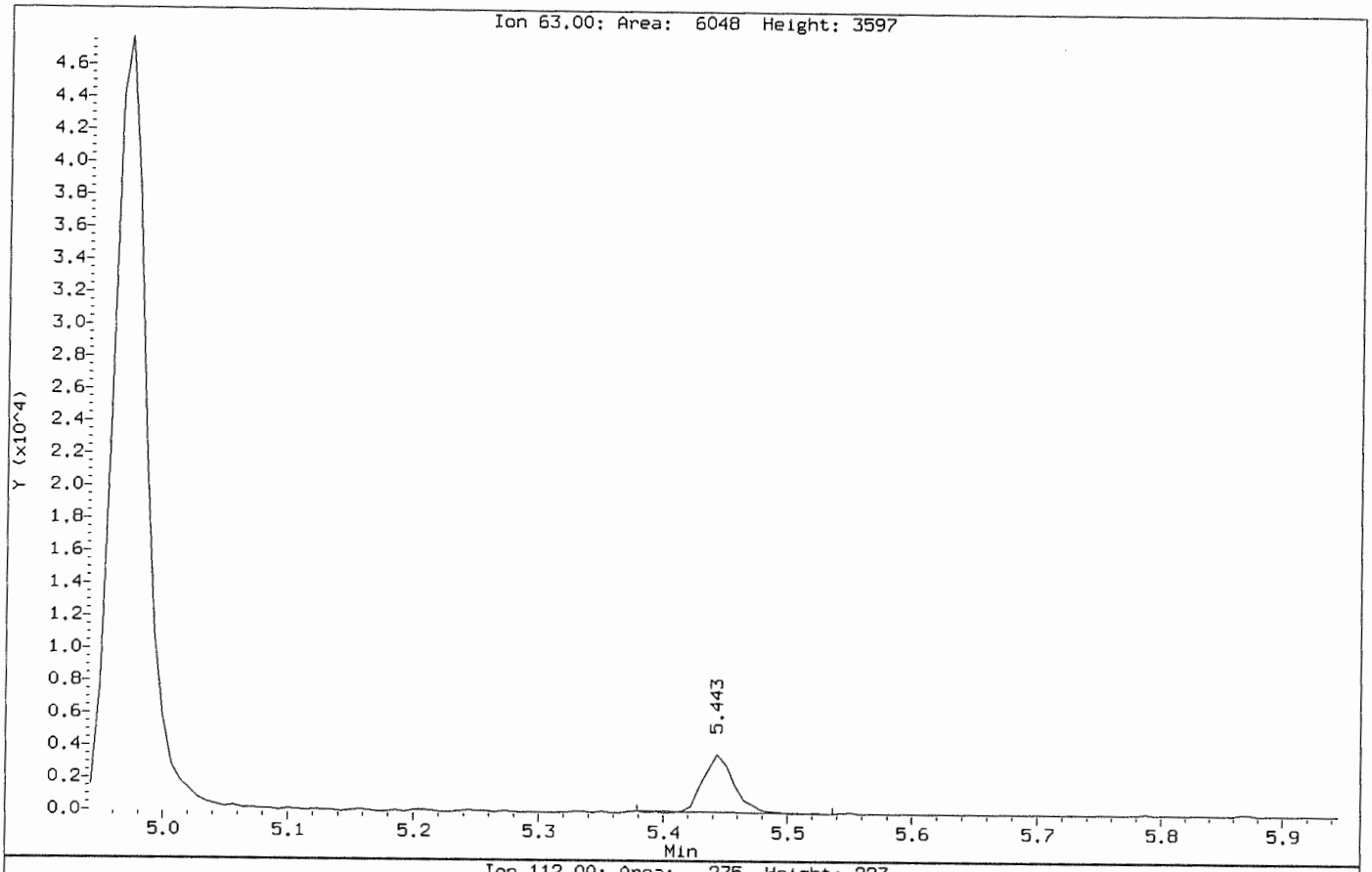
Compound: 1,2-Dichloropropane
CAS Number: 78-87-5

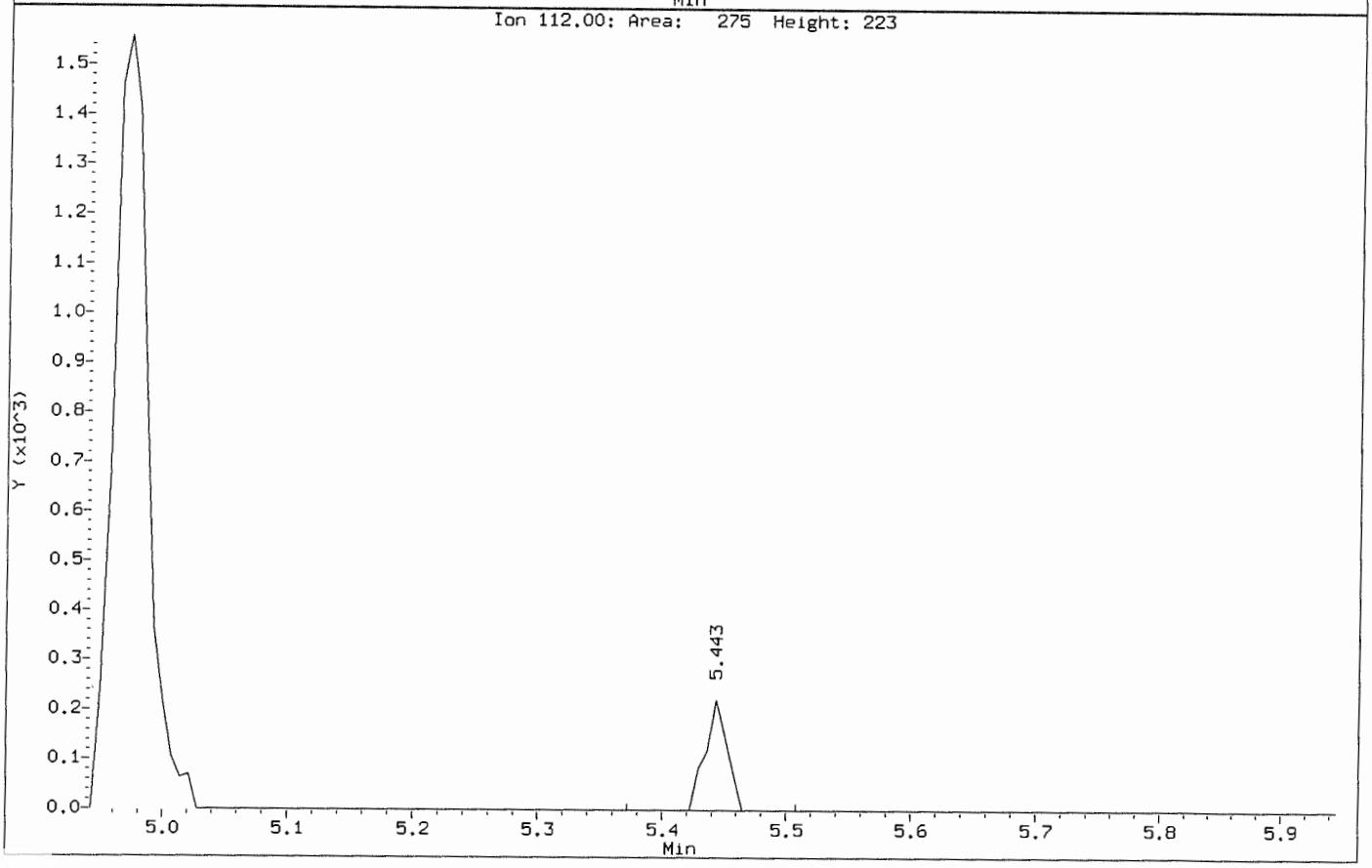




Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091105.D
Injection Date: 11-SEP-2019 13:07
Instrument: voa6.i
Client Sample ID: VSTD002

Compound: 1,2-Dichloropropane
CAS Number: 78-87-5





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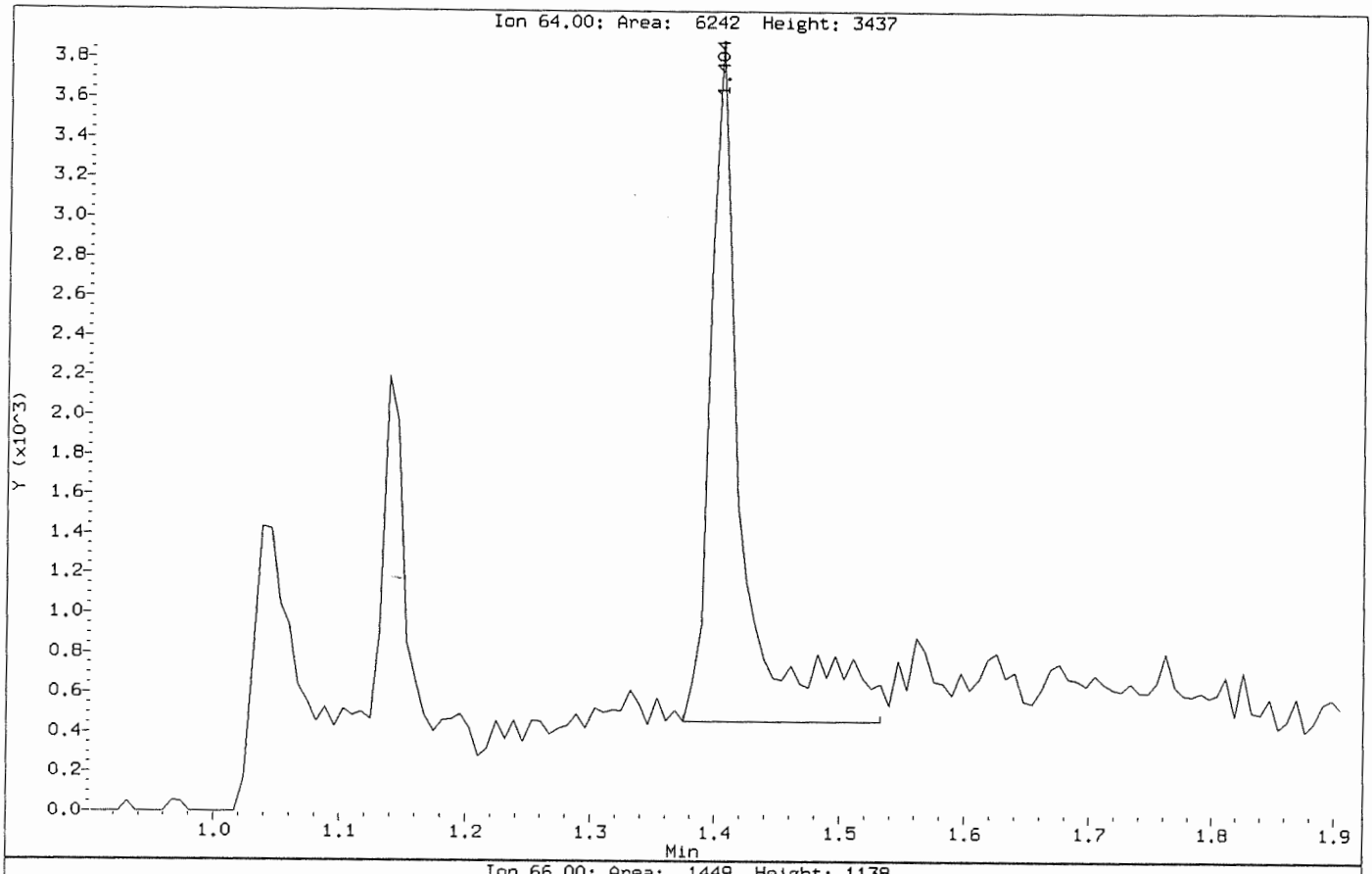
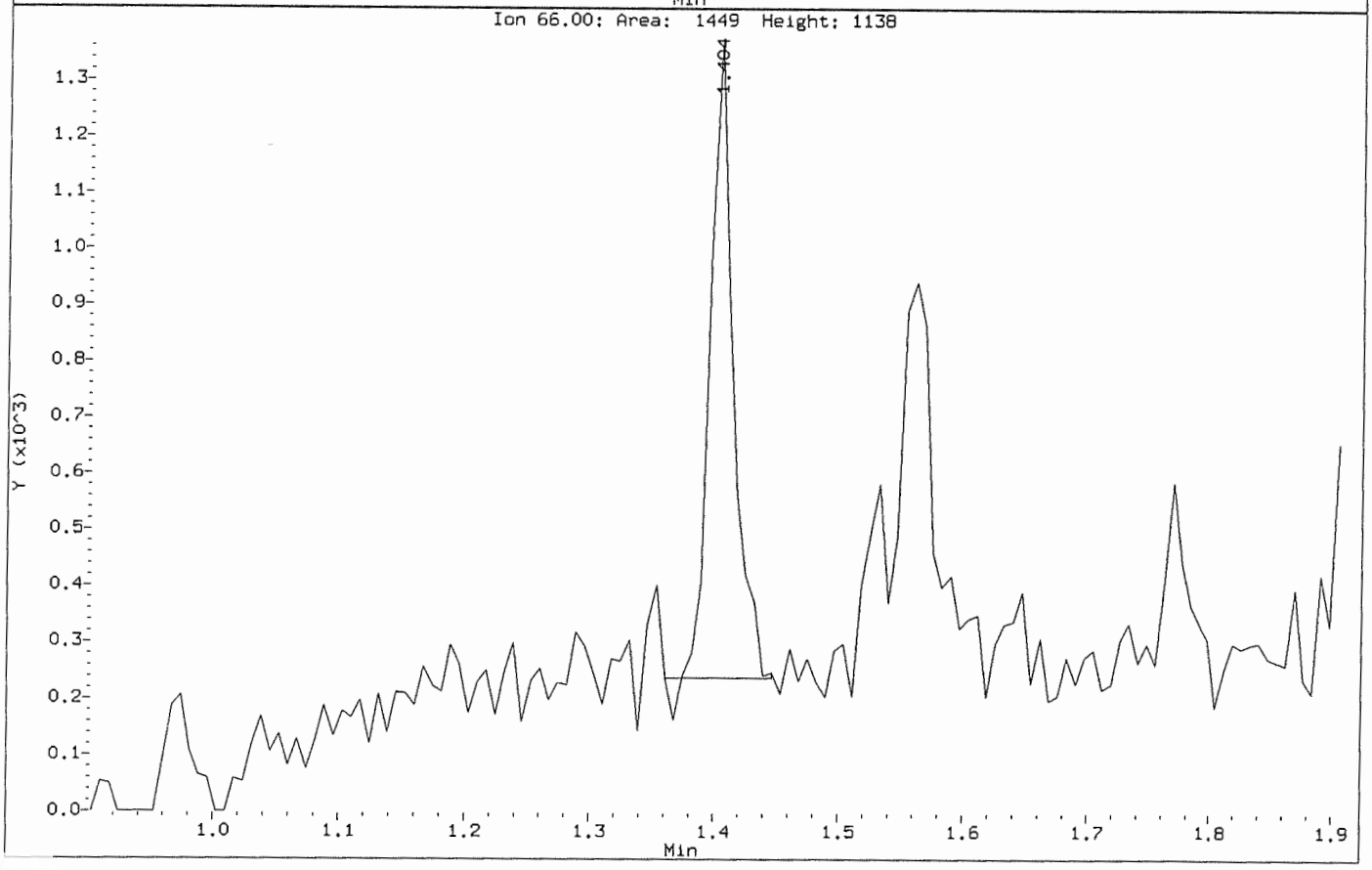
Injection Date: 11-SEP-2019 13:07
Instrument: voa6.i
Client Sample ID: VSTD002

Compound: Chloroethane
CAS Number: 75-00-3





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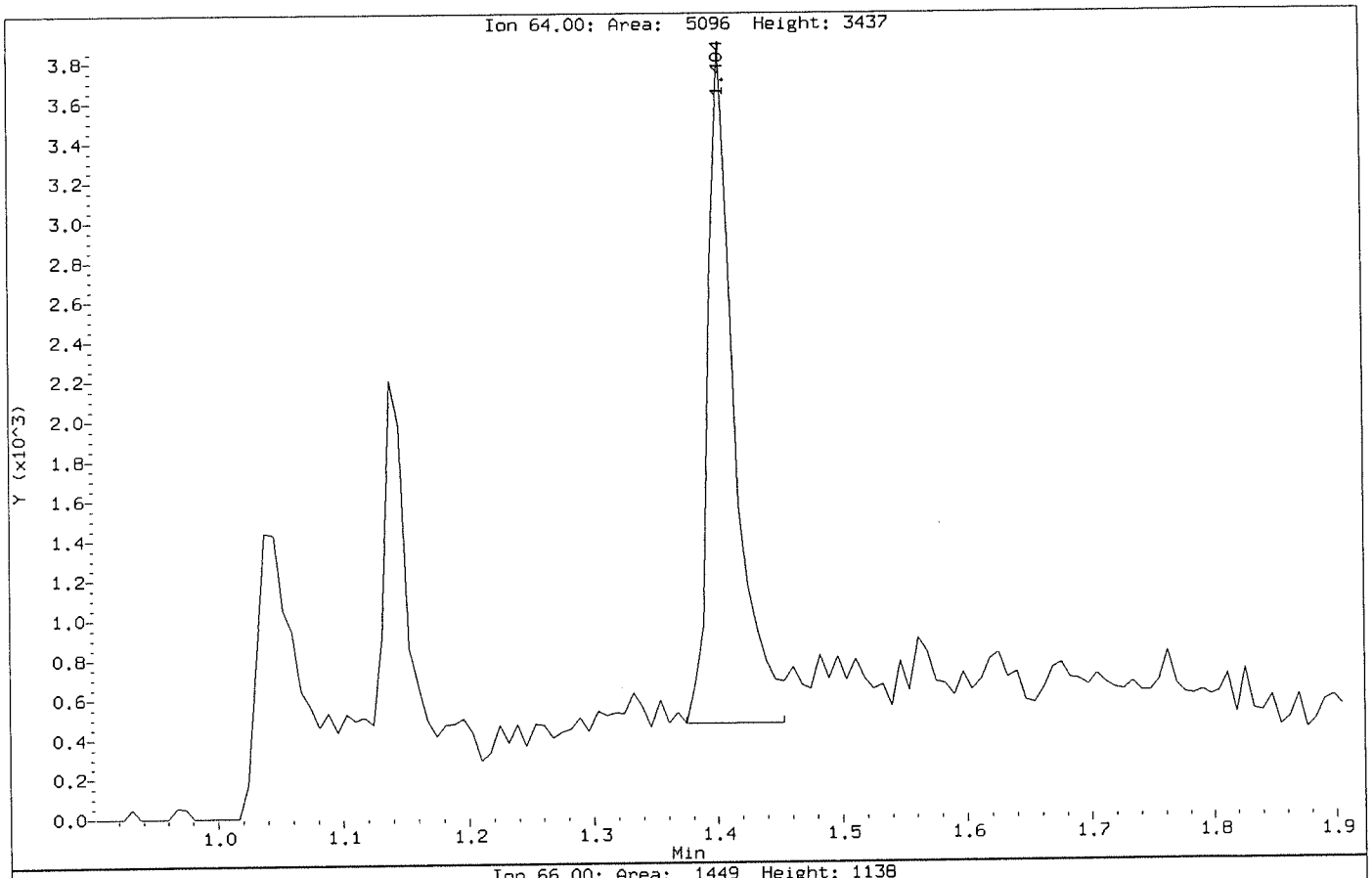
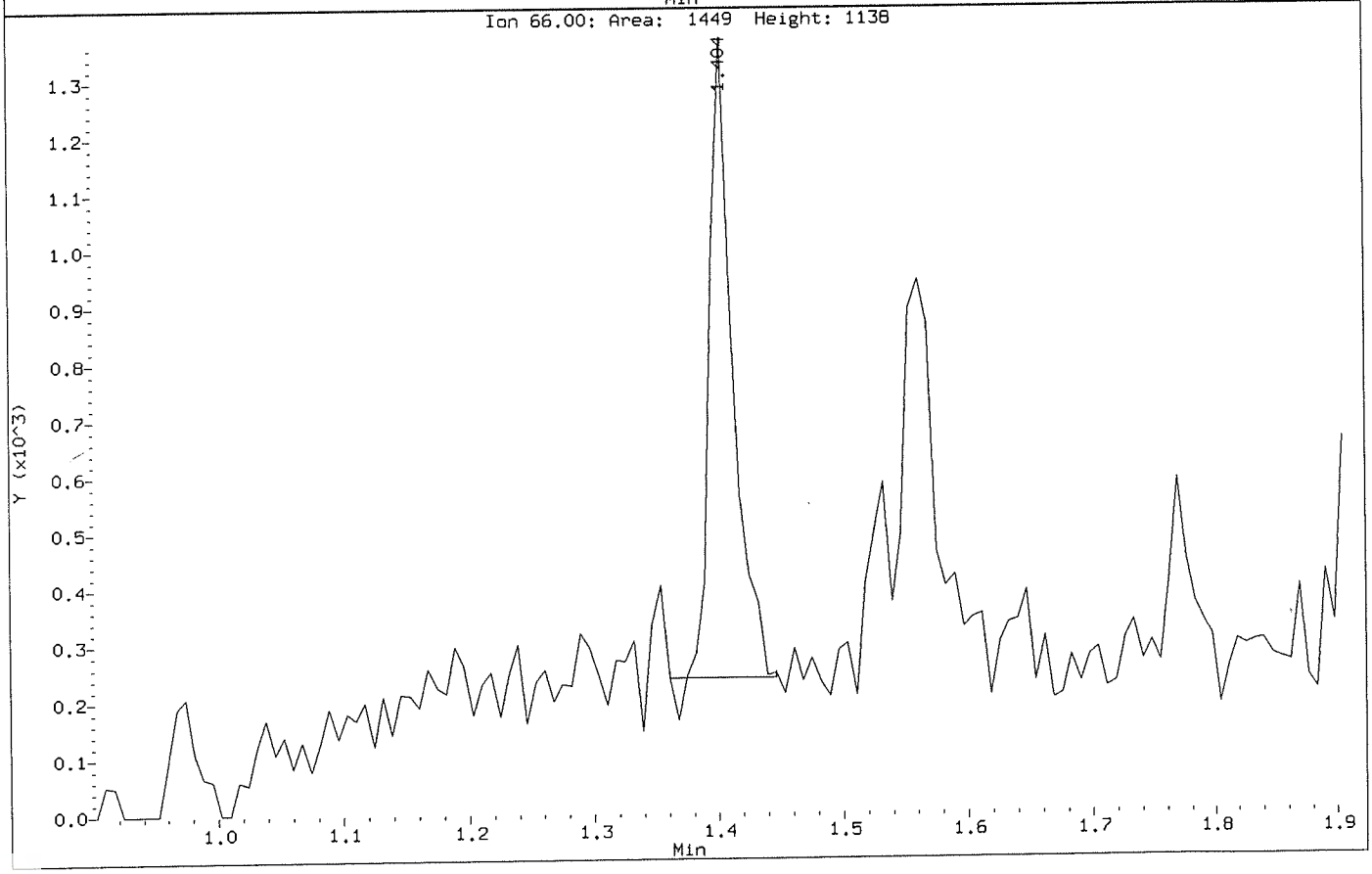
Instrument: voa6.i
Client Sample ID: VSTD002

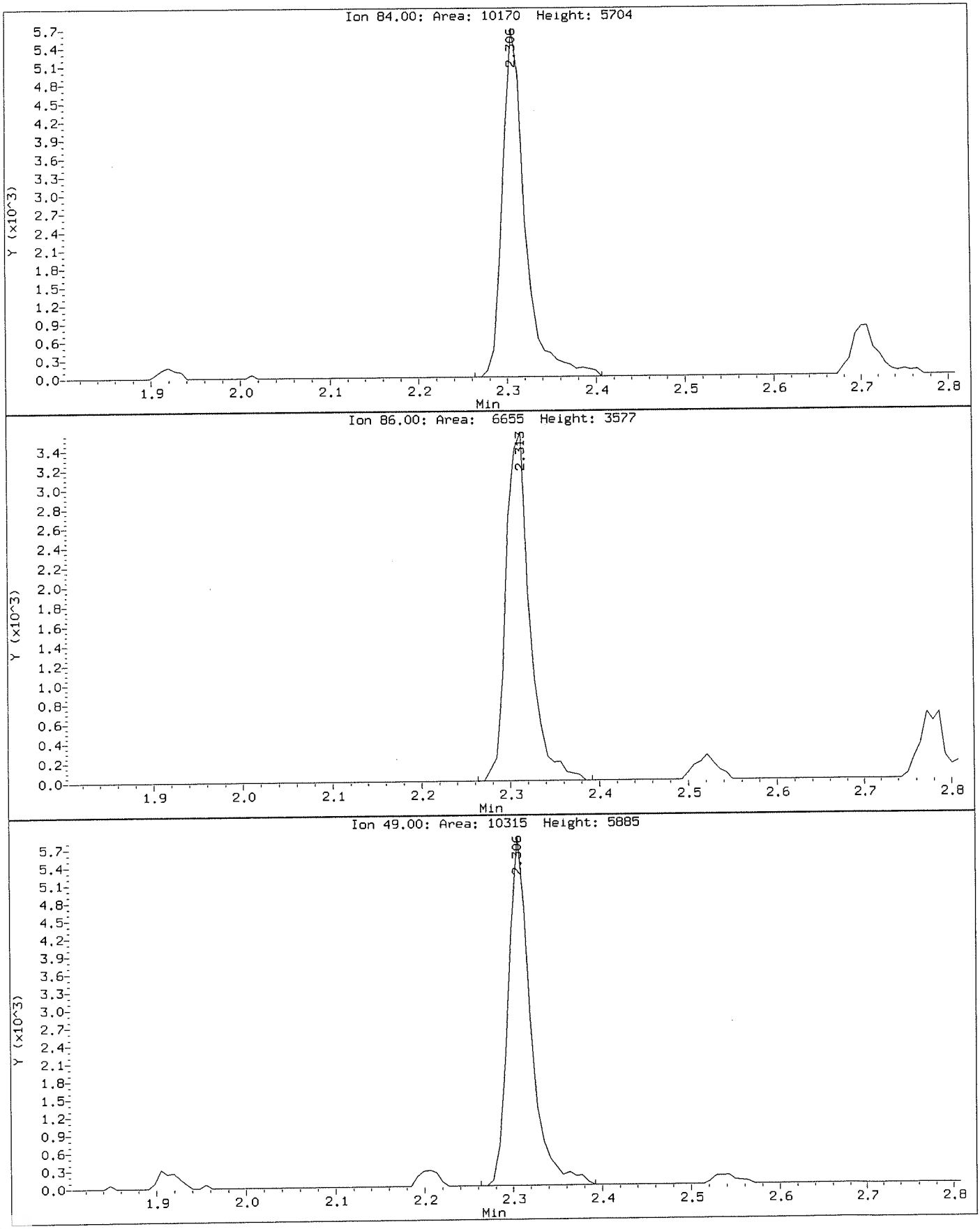
Compound: Chloroethane
CAS Number: 75-00-3





Data File: \\NAHSTWS005\Target\chem\voa6.1\X190911.b\BEFORE\X091105.D
Injection Date: 11-SEP-2019 13:07
Instrument: voa6.1
Client Sample ID: VSTD002

Compound: Methylene Chloride
CAS Number: 75-09-2



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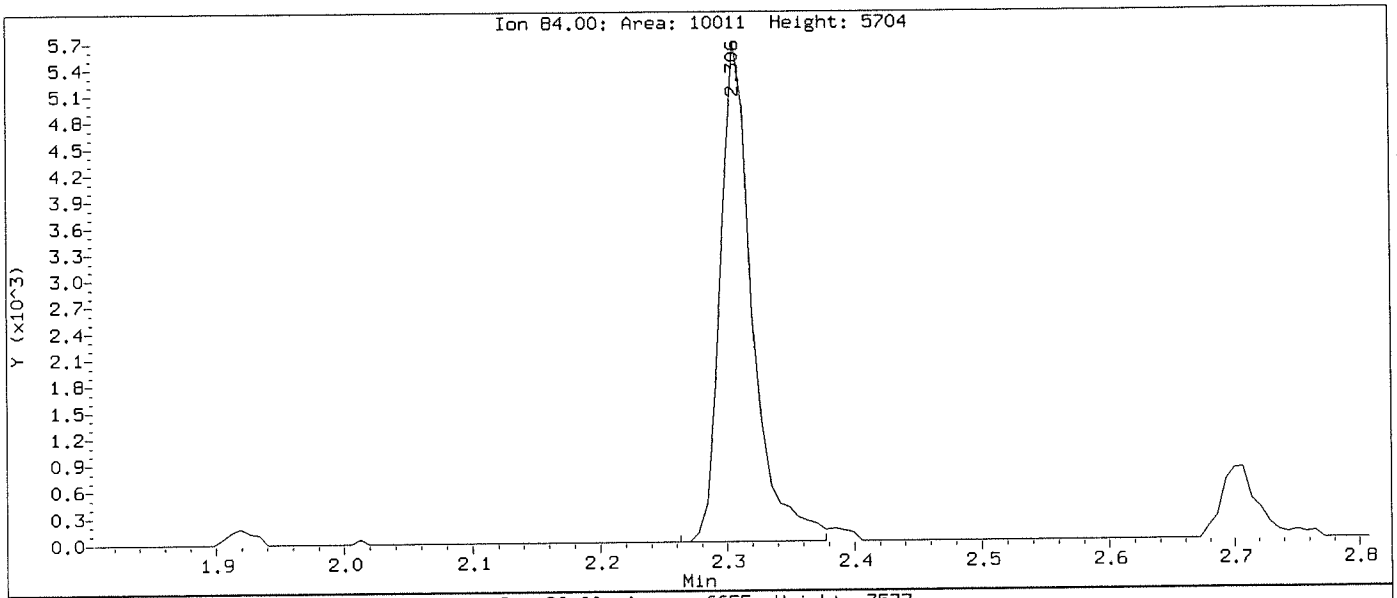
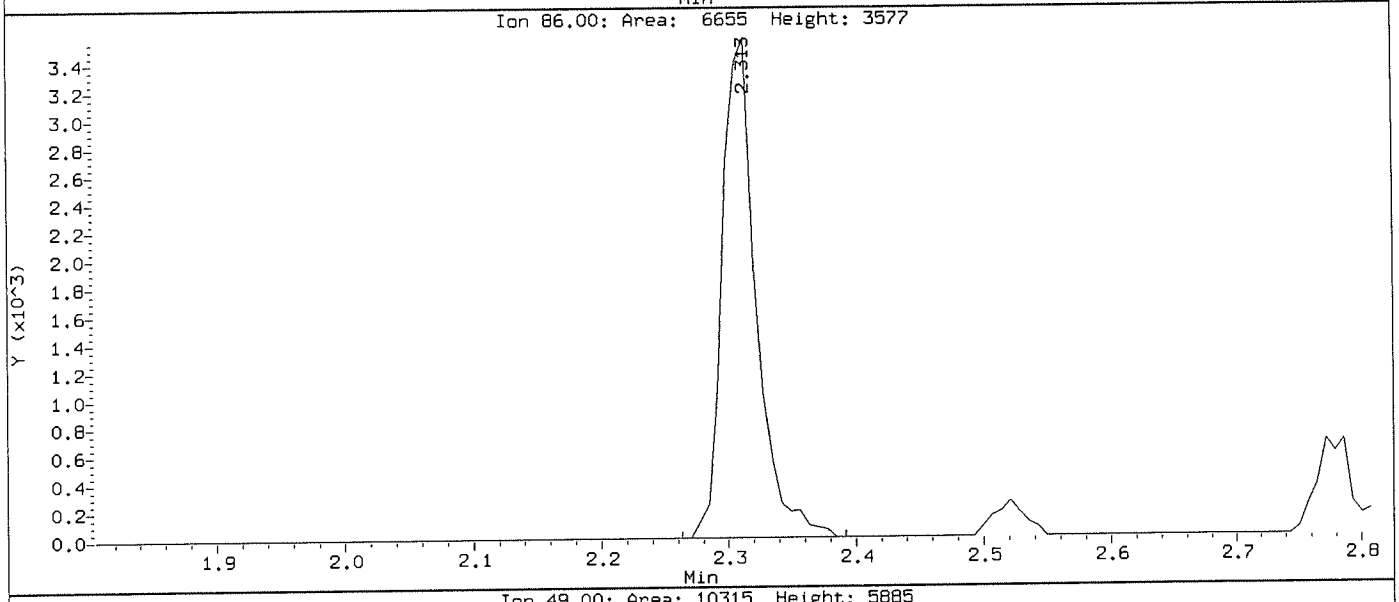
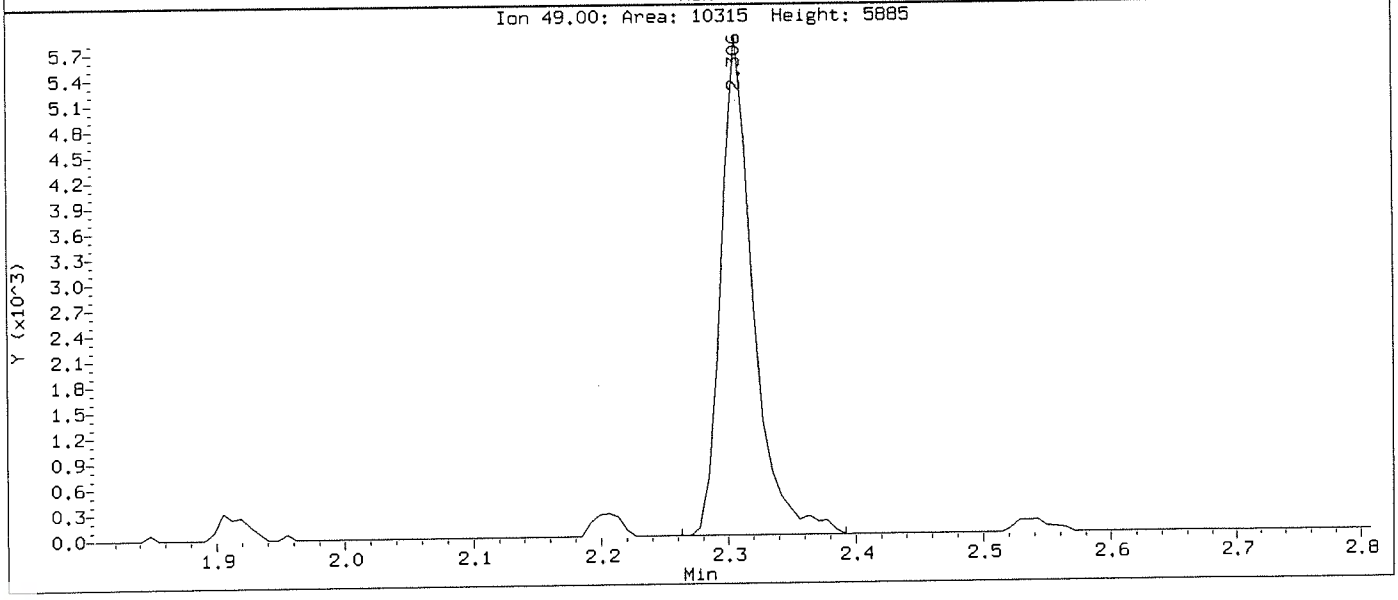
Injection Date: 11-SEP-2019 13:07
Instrument: voa6.i
Client Sample ID: VSTD002

Compound: Methylene Chloride
CAS Number: 75-09-2







Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091106.D Page 1
Report Date: 24-Sep-2019 15:14

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Data file : \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091106.D
Lab Smp Id: VSTD005 Client Smp ID: VSTD005
Inj Date : 11-SEP-2019 13:31
Operator : PC Inst ID: voa6.i
Smp Info : VSTD005;VSTD005;1;5;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X190911.b\8260W.m
Meth Date : 24-Sep-2019 15:13 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 13:31 Cal File: X091106.D
Als bottle: 7 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.182	(1.000)	355654	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	503681	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	455950	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	252630	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	17526	5.00000	4.96(a)
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	18091	5.00000	4.84(a)
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	65134	5.00000	5.17
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	24672	5.00000	5.21
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	17314	5.00000	5.00
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.976)	23761	5.00000	4.87(a)
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	20131	5.00000	5.26
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	12878	5.00000	5.11
22 1,1-Dichloroethane	63	2.929	2.922	(0.699)	28869	5.00000	5.17
11 1,1-Dichloroethene	96	1.919	1.912	(0.458)	14469	5.00000	4.77(a)
32 1,1-Dichloropropene	75	4.290	4.283	(0.863)	21597	5.00000	5.10
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	12616	5.00000	4.68(a)
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	16269	5.00000	5.08(M)
90 1,2,4-Trichlorobenzene	180	11.345	11.345	(1.173)	19561	5.00000	4.78(a)
79 1,2,4-Trimethylbenzene	105	9.383	9.383	(0.970)	67950	5.00000	5.17
89 1,2-Dibromo-3-Chloropropane	155	10.665	10.658	(1.103)	3117	5.00000	4.80(a)
57 1,2-Dibromoethane	107	7.270	7.262	(0.948)	17153	5.00000	5.07
88 1,2-Dichlorobenzene	146	9.999	9.999	(1.034)	38536	5.00000	5.13
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	20039	5.00000	4.81(a)

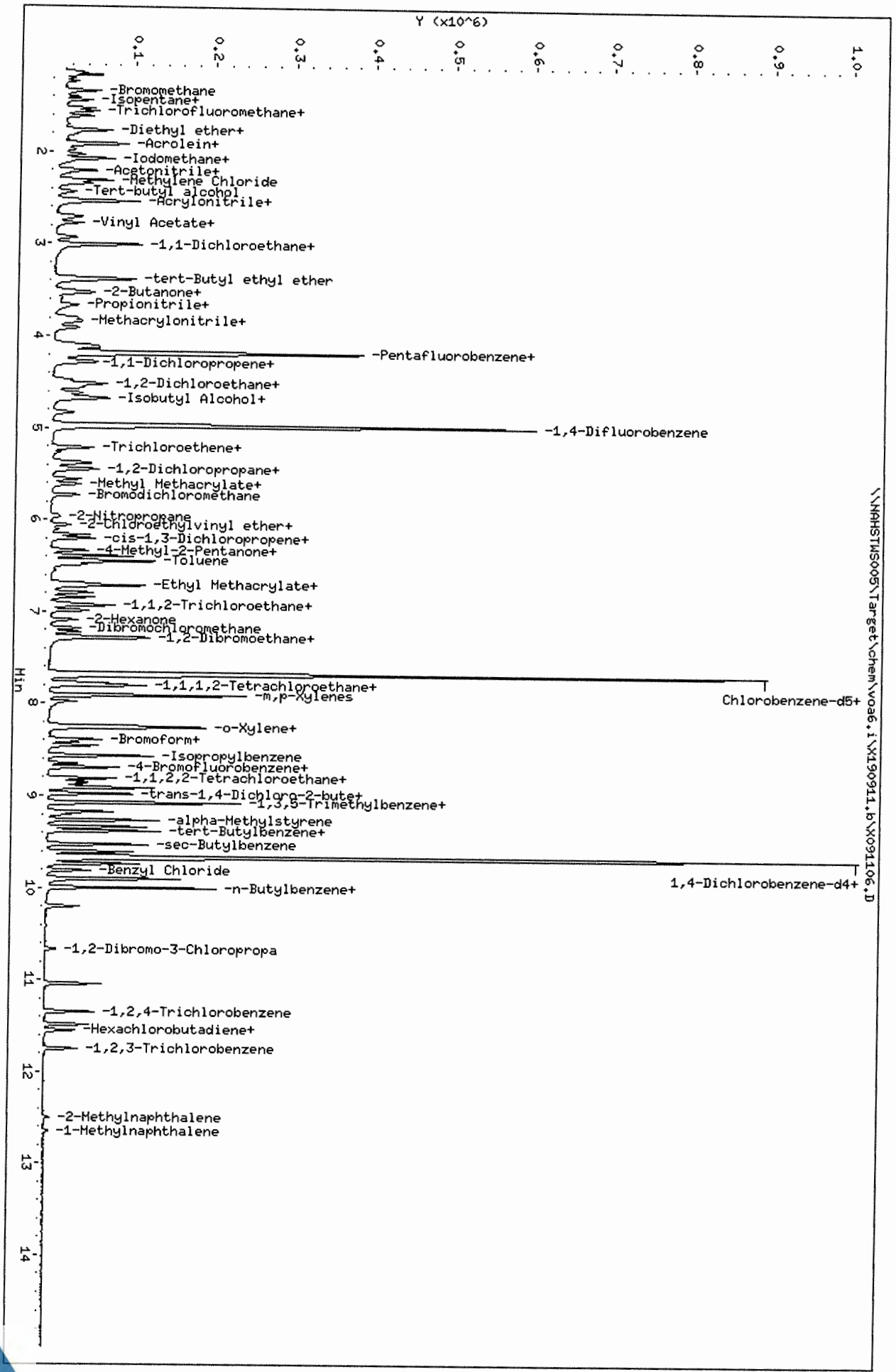
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42	1,2-Dichloropropane	63	5.443	5.443	(1.095)	16542	5.00000	5.24
75	1,3,5-Trimethylbenzene	105	9.075	9.075	(0.939)	64428	5.00000	5.03
83	1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	40372	5.00000	5.10
54	1,3-Dichloropropane	76	6.990	6.983	(0.911)	26577	5.00000	5.09
84	1,4-Dichlorobenzene	146	9.691	9.691	(1.002)	39172	5.00000	4.88(a)
26	2,2-Dichloropropane	77	3.516	3.516	(0.839)	23801	5.00000	5.10
24	2-Butanone	43	3.588	3.581	(0.856)	11082	10.0000	10.15
76	2-Chlorotoluene	91	8.981	8.981	(0.929)	52981	5.00000	5.63
52	2-Hexanone	43	7.090	7.090	(0.924)	19036	10.0000	10.36
77	4-Chlorotoluene	91	9.075	9.075	(0.939)	60412	5.00000	5.11
82	p-Isopropyltoluene	119	9.655	9.655	(0.999)	65623	5.00000	4.95(a)
45	4-Methyl-2-Pentanone	43	6.331	6.331	(0.825)	28262	10.0000	10.42
10	Acetone	43	1.976	1.976	(0.472)	12619	10.0000	7.97
37	Benzene	78	4.519	4.519	(0.909)	64967	5.00000	5.03
74	Bromobenzene	156	8.810	8.810	(0.911)	23230	5.00000	4.99(a)
29	Bromochloromethane	128	3.803	3.803	(0.908)	10256	5.00000	4.97(a)
39	Bromodichloromethane	83	5.729	5.729	(1.153)	21320	5.00000	4.93(a)
66	Bromoform	173	8.416	8.416	(1.097)	13120	5.00000	4.80(a)
6	Bromomethane	94	1.339	1.339	(0.320)	17822	5.00000	4.93(a)
19	Carbon Disulfide	76	2.069	2.069	(0.494)	87324	10.0000	9.74
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	21703	5.00000	4.80(a)
59	Chlorobenzene	112	7.699	7.699	(1.004)	47194	5.00000	4.94(a)
7	Chloroethane	64	1.403	1.403	(0.335)	12384	5.00000	3.83(aM)
28	Chloroform	83	3.917	3.910	(0.935)	29308	5.00000	5.17
3	Chloromethane	50	1.081	1.074	(0.258)	14767	5.00000	5.40
27	cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	18725	5.00000	5.13
46	cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	25919	5.00000	4.93(a)
55	Dibromochloromethane	129	7.184	7.184	(0.937)	18348	5.00000	4.98(a)
44	Dibromomethane	93	5.558	5.558	(1.118)	11358	5.00000	4.99(a)
2	Dichlorodifluoromethane	85	0.973	0.973	(0.232)	12389	5.00000	4.75(a)
61	Ethylbenzene	106	7.807	7.807	(1.018)	25480	5.00000	5.14
91	Hexachlorobutadiene	225	11.489	11.489	(1.188)	10747	5.00000	5.38
67	Isopropylbenzene	105	8.566	8.566	(1.117)	74197	5.00000	5.04
62	m,p-Xylenes	106	7.907	7.907	(1.031)	60343	10.0000	10.08
17	Methylene Chloride	84	2.306	2.306	(0.550)	20049	5.00000	4.32(a)
87	n-Butylbenzene	91	9.999	9.999	(1.034)	52380	5.00000	5.15
73	n-Propylbenzene	91	8.917	8.917	(0.922)	84453	5.00000	5.07
92	Naphthalene	128	11.546	11.546	(1.194)	31699	5.00000	4.87(a)
63	o-Xylene	106	8.244	8.244	(1.075)	29694	5.00000	5.06
81	sec-Butylbenzene	105	9.526	9.526	(0.985)	72394	5.00000	4.92(a)
64	Styrene	104	8.265	8.265	(1.078)	52571	5.00000	5.23
78	tert-Butylbenzene	119	9.340	9.340	(0.966)	54266	5.00000	5.05
56	Tetrachloroethene	164	6.933	6.933	(0.904)	16270	5.00000	4.93(a)
50	Toluene	91	6.453	6.453	(0.841)	72662	5.00000	5.16
20	trans-1,2-Dichloroethene	96	2.535	2.528	(0.605)	15594	5.00000	5.01
51	trans-1,3-Dichloropropene	75	6.689	6.682	(1.346)	23769	5.00000	5.06
38	Trichloroethene	130	5.214	5.214	(1.049)	18838	5.00000	4.84(a)
8	Trichlorofluoromethane	101	1.561	1.561	(0.373)	25739	5.00000	4.81(a)
5	Vinyl Chloride	62	1.138	1.138	(0.272)	17985	5.00000	4.85(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

QC Flag Legend

M - Compound response manually integrated.



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Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

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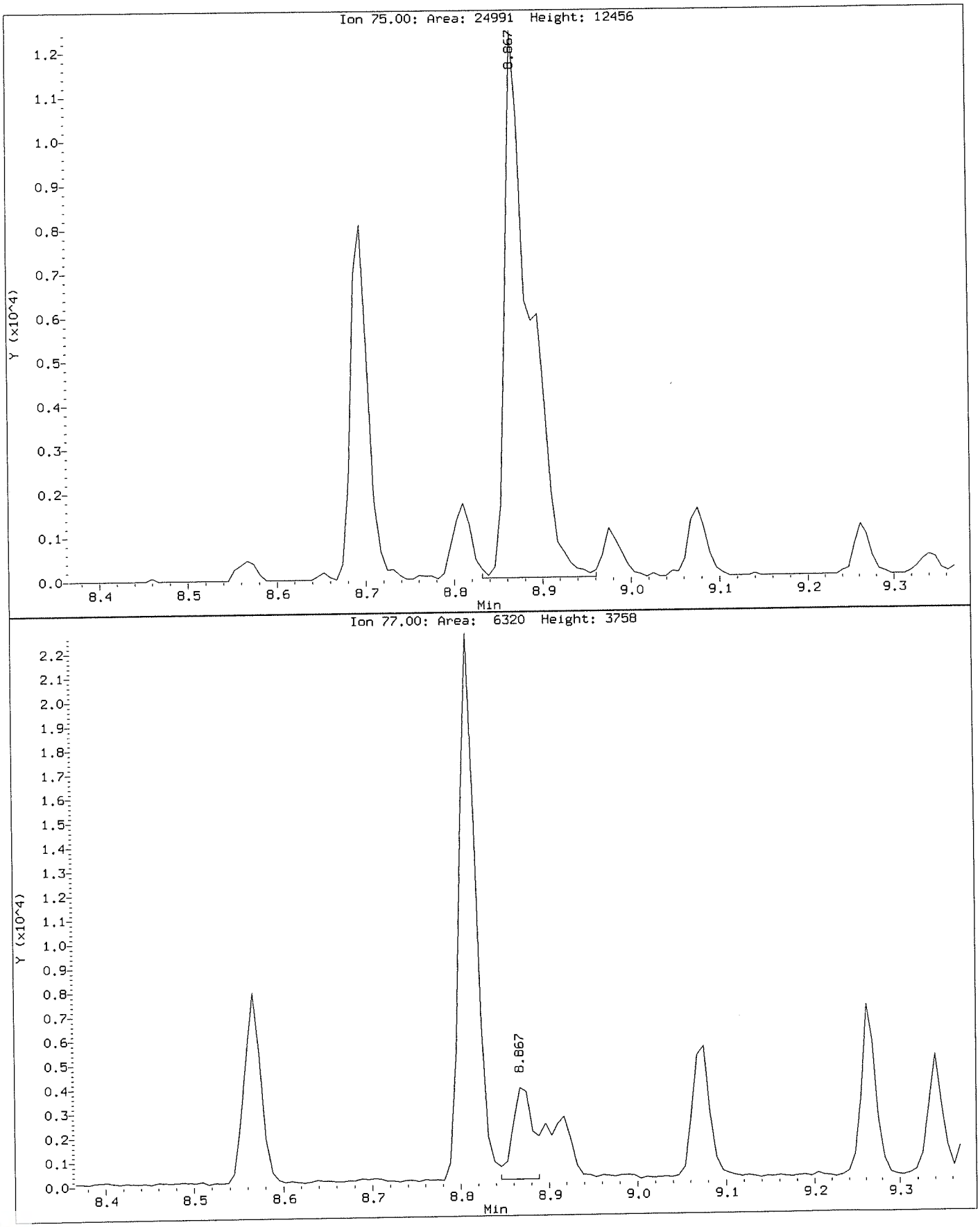
Injection Date: 11-SEP-2019 13:31
Instrument: voa6.i
Client Sample ID: VSTD005

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



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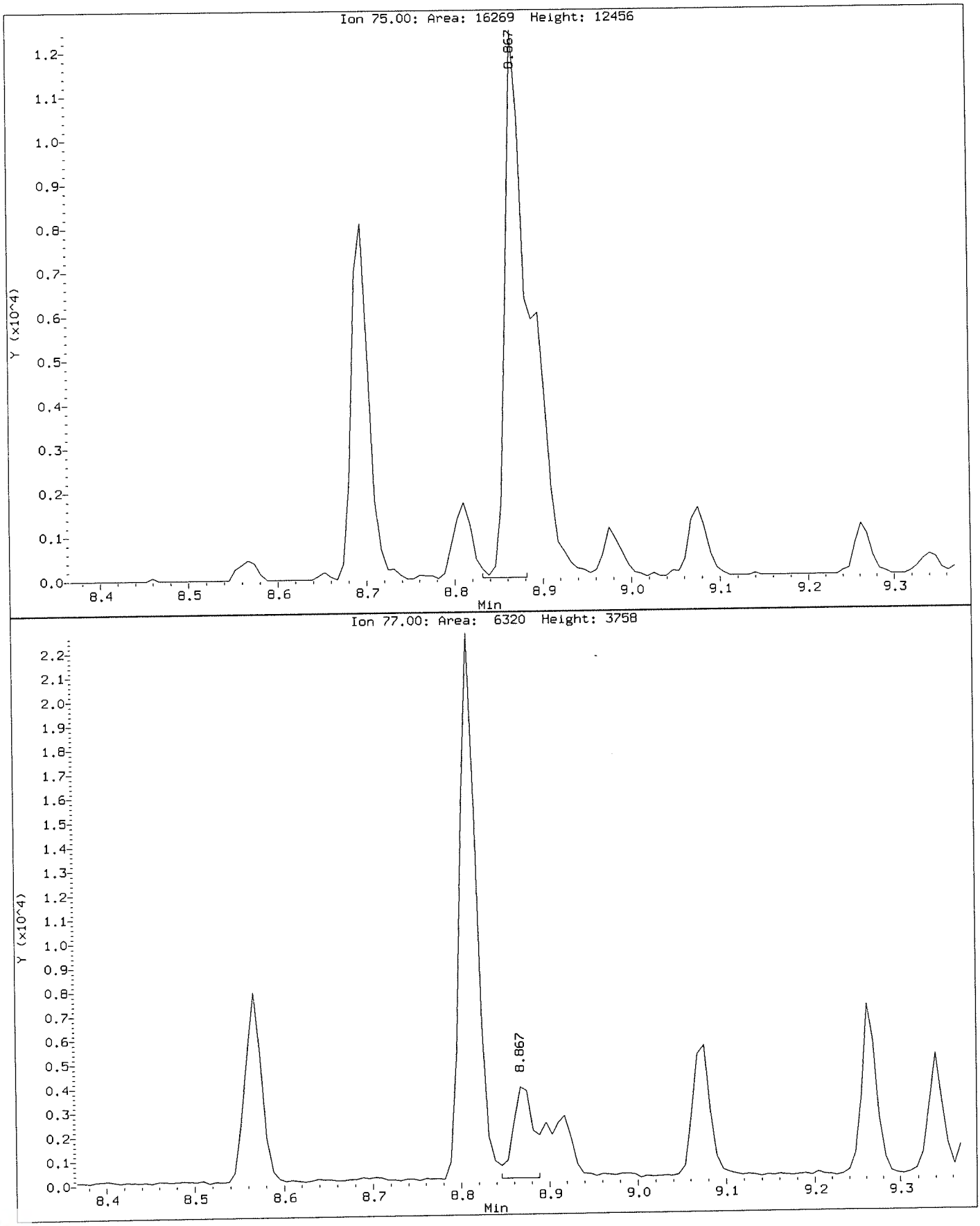
Instrument: voa6.i
Client Sample ID: VSTD005

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



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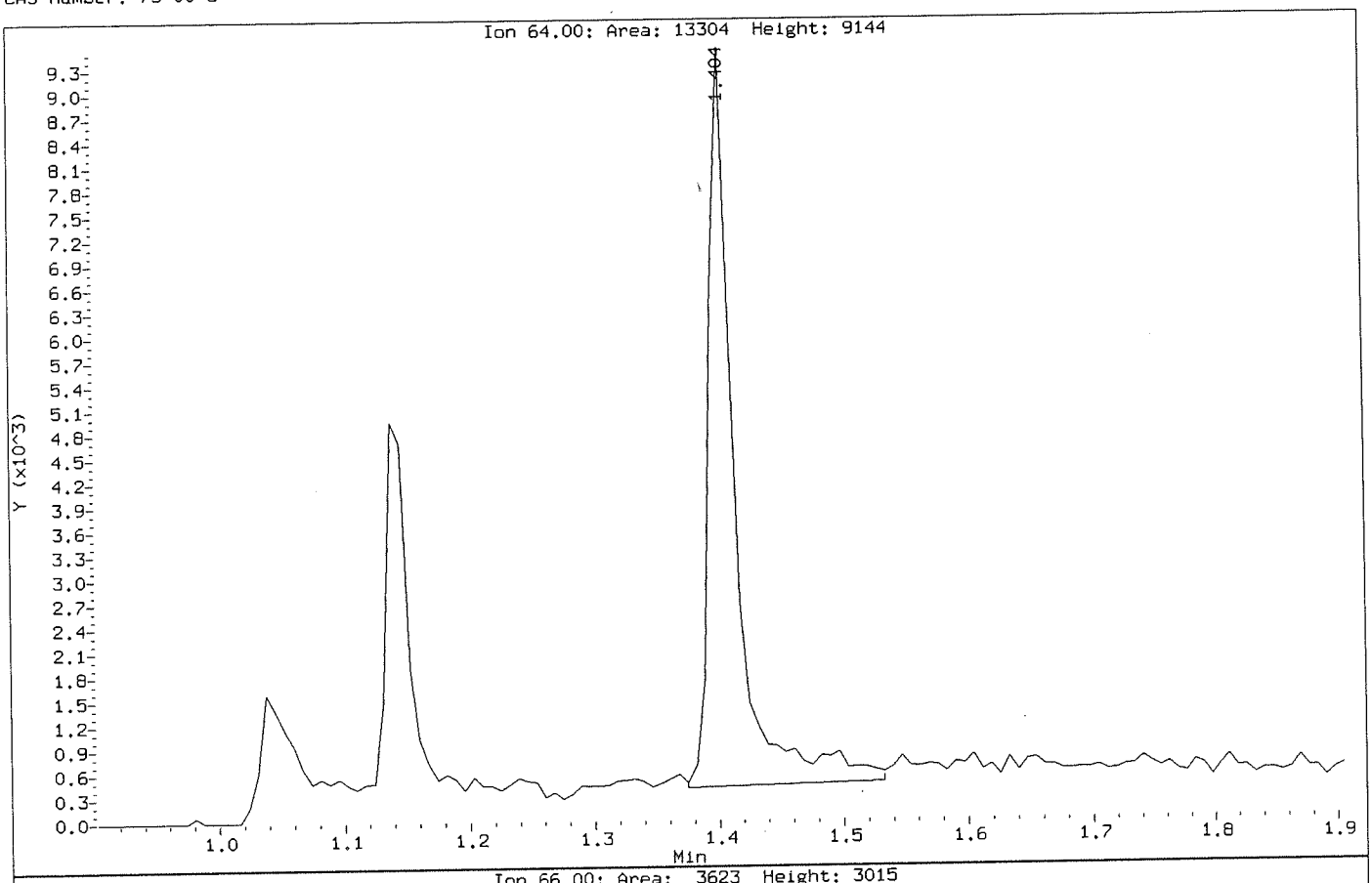
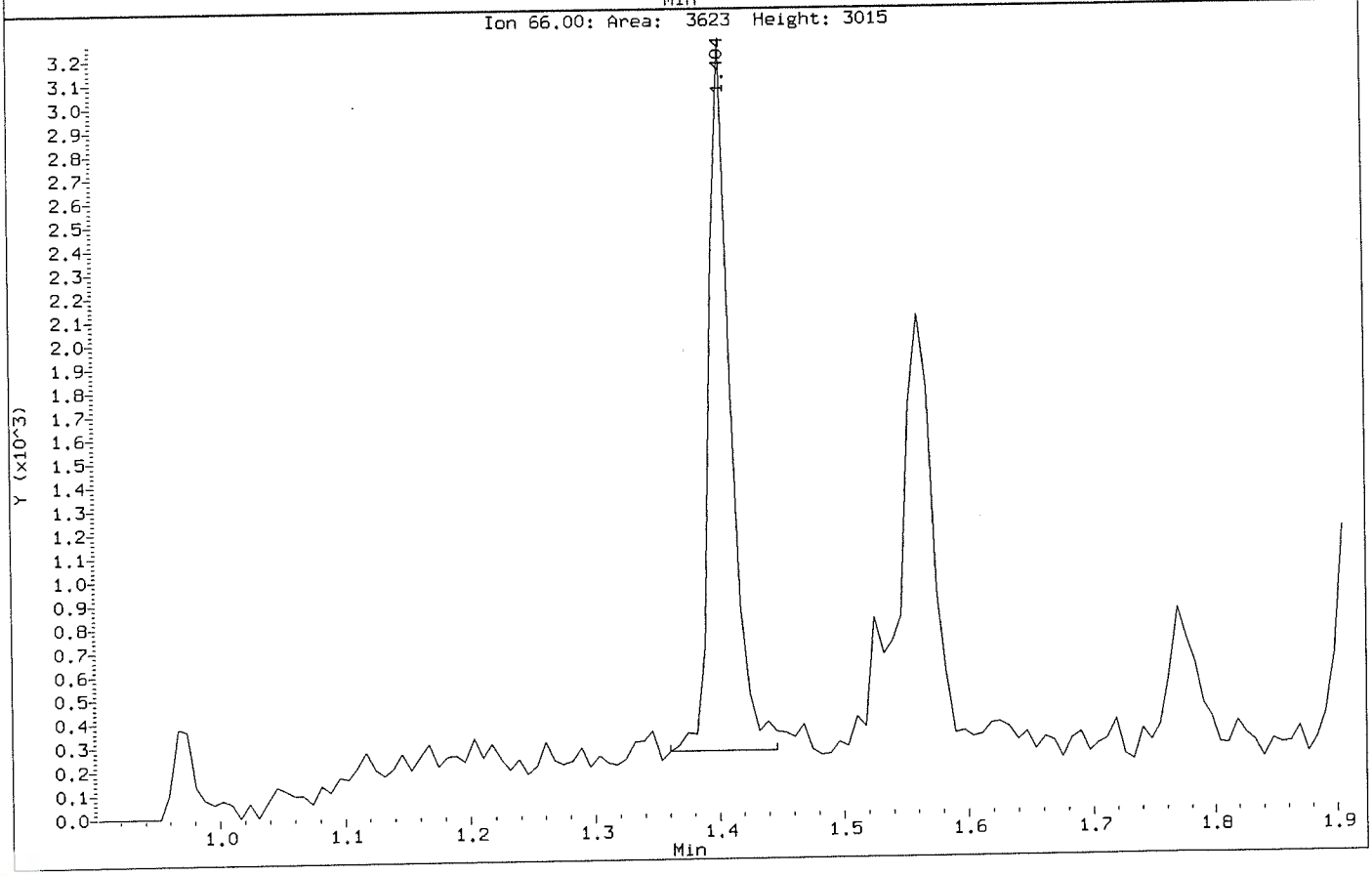
Injection Date: 11-SEP-2019 13:31
Instrument: voa6.i
Client Sample ID: VSTD005

Compound: Chloroethane
CAS Number: 75-00-3





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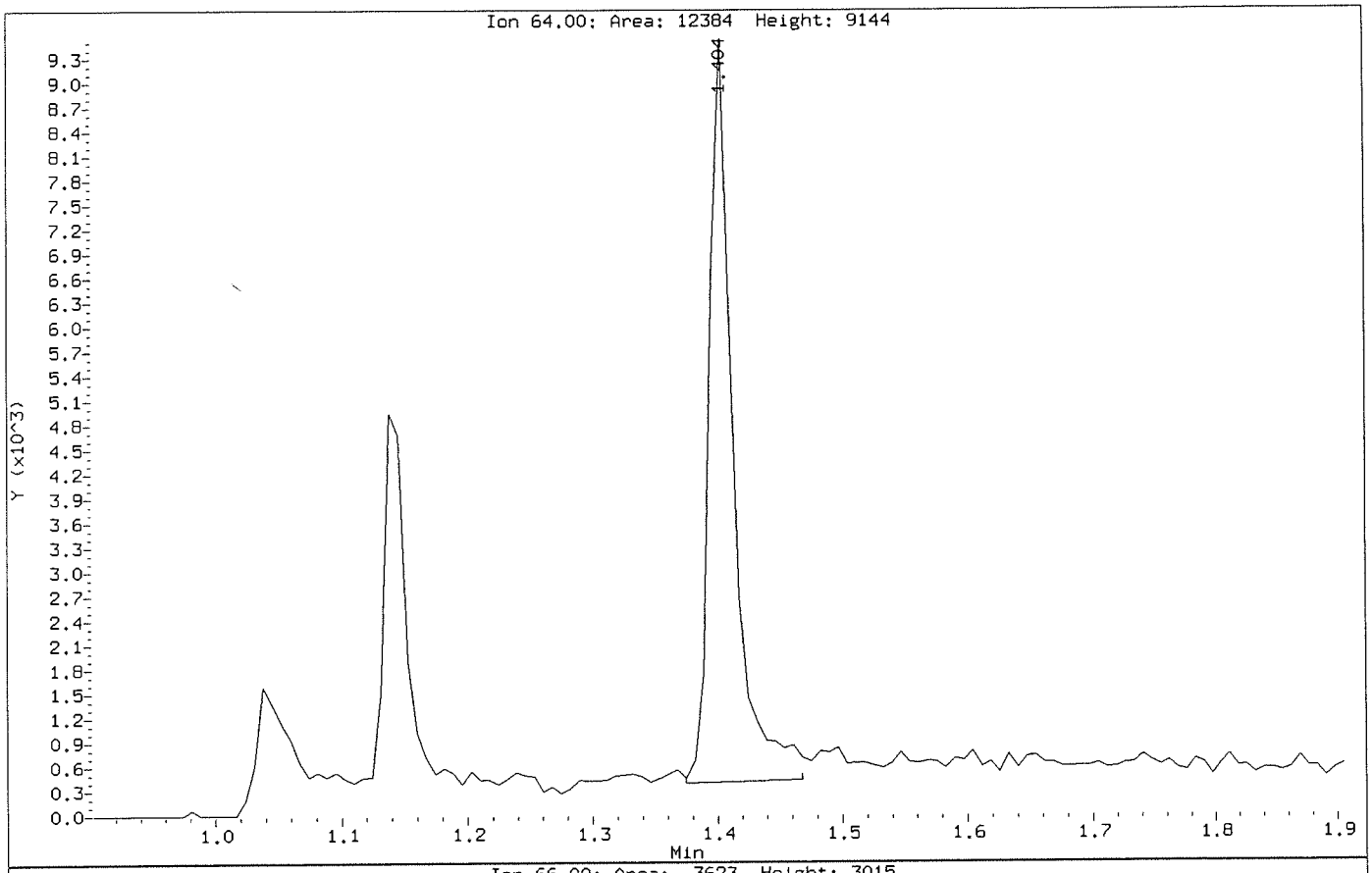
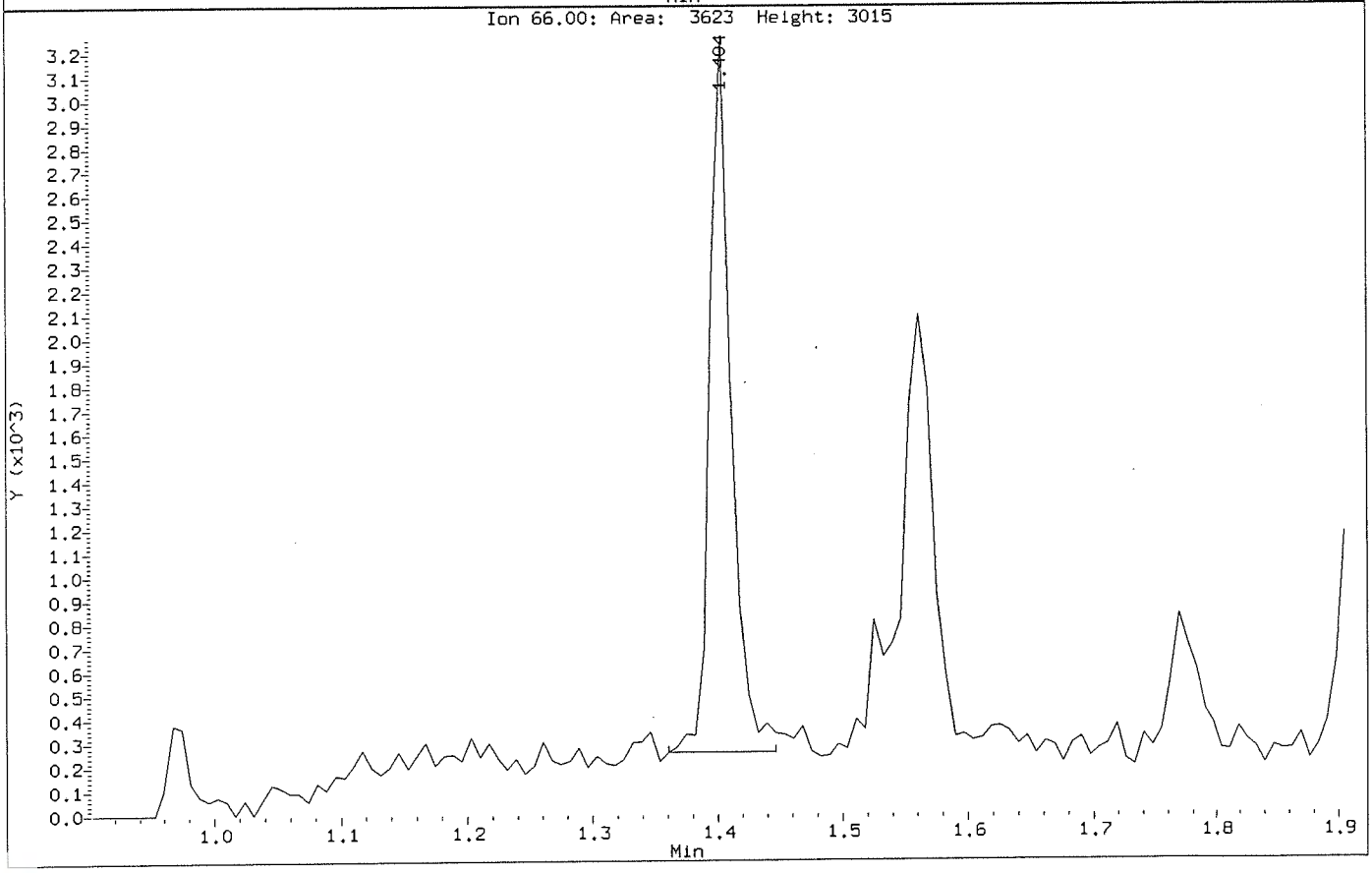
Injection Date: 11-SEP-2019 13:31
Instrument: voa6.i
Client Sample ID: VSTD005

Compound: Chloroethane
CAS Number: 75-00-3





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Data file : \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091107.D
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Inj Date : 11-SEP-2019 13:55
Operator : PC Inst ID: voa6.i
Smp Info : VSTD020;VSTD020;1;6;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X190911.b\8260W.m
Meth Date : 24-Sep-2019 15:13 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 13:55 Cal File: X091107.D
Als bottle: 8 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

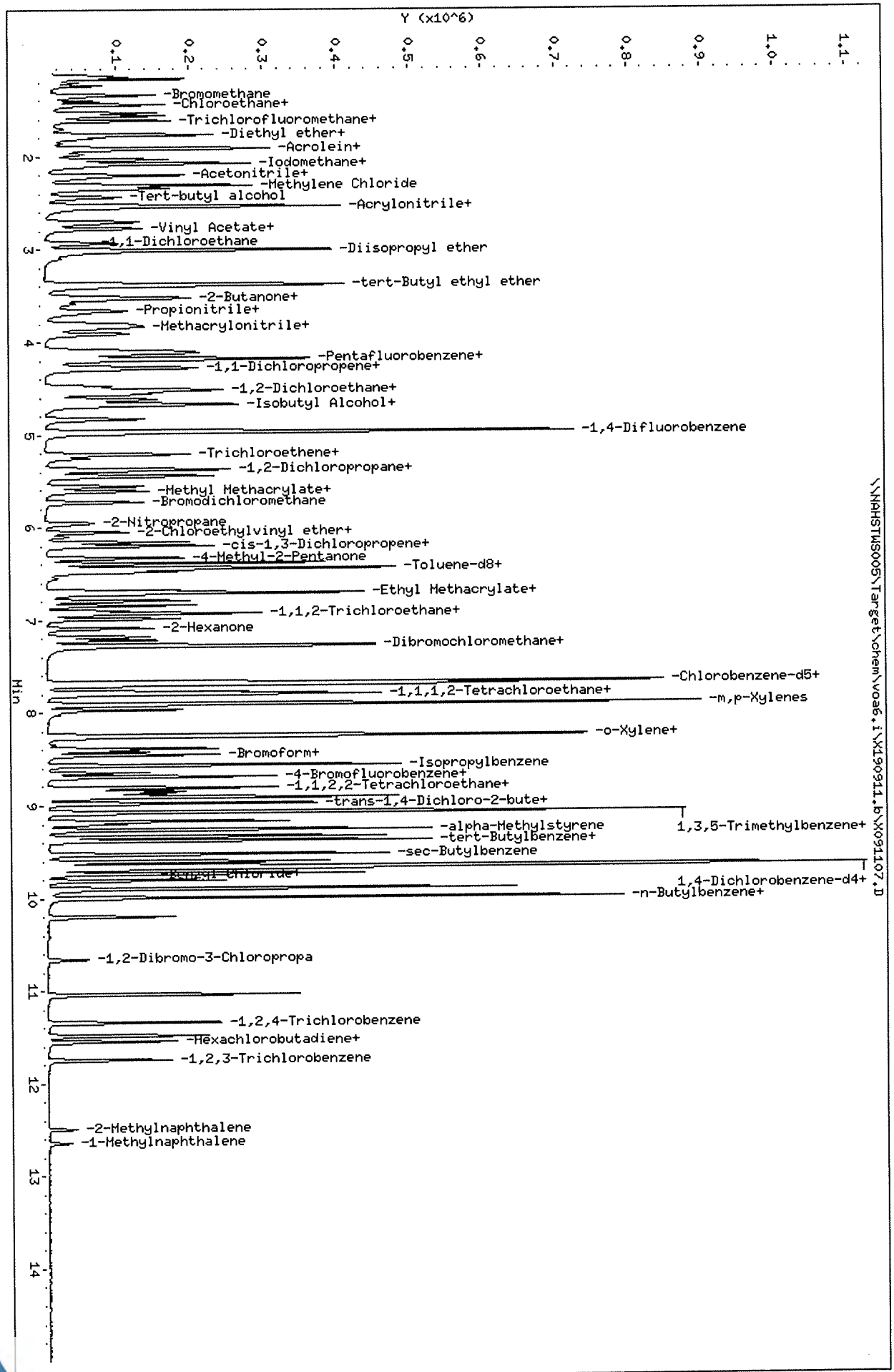
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.182	(1.000)	331972	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	474040	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	426620	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	235067	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	63931	20.0000	21.79
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	66450	20.0000	21.28
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	228754	20.0000	19.41
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	85758	20.0000	20.97
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	65058	20.0000	20.10
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.976)	91549	20.0000	20.14
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	74445	20.0000	21.56
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	49055	20.0000	20.84
22 1,1-Dichloroethane	63	2.929	2.922	(0.699)	106163	20.0000	20.39
11 1,1-Dichloroethene	96	1.911	1.912	(0.456)	57338	20.0000	20.26
32 1,1-Dichloropropene	75	4.282	4.283	(0.862)	79773	20.0000	20.03
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	48141	20.0000	19.20
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	59808	20.0000	20.09(M)
90 1,2,4-Trichlorobenzene	180	11.345	11.345	(1.173)	78051	20.0000	20.50
79 1,2,4-Trimethylbenzene	105	9.382	9.383	(0.970)	241259	20.0000	19.75
89 1,2-Dibromo-3-Chloropropane	155	10.658	10.658	(1.102)	12583	20.0000	20.83
57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	64011	20.0000	20.23
88 1,2-Dichlorobenzene	146	9.999	9.999	(1.034)	136156	20.0000	19.48
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	79002	20.0000	20.16

Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091107.D Page 2
Report Date: 24-Sep-2019 15:14

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42 1,2-Dichloropropane	63	5.443	5.443	(1.095)	59578	20.0000	20.05
75 1,3,5-Trimethylbenzene	105	9.074	9.075	(0.939)	234686	20.0000	19.72
83 1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	145815	20.0000	19.80
54 1,3-Dichloropropane	76	6.983	6.983	(0.910)	97158	20.0000	19.91
84 1,4-Dichlorobenzene	146	9.683	9.691	(1.001)	146608	20.0000	19.63
26 2,2-Dichloropropane	77	3.516	3.516	(0.839)	86692	20.0000	19.93
24 2-Butanone	43	3.580	3.581	(0.855)	46550	40.0000	45.67
76 2-Chlorotoluene	91	8.981	8.981	(0.929)	183313	20.0000	20.81
52 2-Hexanone	43	7.090	7.090	(0.924)	71999	40.0000	41.90
77 4-Chlorotoluene	91	9.074	9.075	(0.939)	215650	20.0000	19.63
82 p-Isopropyltoluene	119	9.655	9.655	(0.999)	246163	20.0000	19.96
45 4-Methyl-2-Pentanone	43	6.331	6.331	(0.825)	105445	40.0000	41.56
10 Acetone	43	1.976	1.976	(0.472)	38329	40.0000	39.15
37 Benzene	78	4.519	4.519	(0.909)	238234	20.0000	19.62
74 Bromobenzene	156	8.809	8.810	(0.911)	86973	20.0000	20.10
29 Bromochloromethane	128	3.802	3.803	(0.908)	38830	20.0000	20.19
39 Bromodichloromethane	83	5.729	5.729	(1.153)	79574	20.0000	19.58
66 Bromoform	173	8.415	8.416	(1.097)	52304	20.0000	20.46
6 Bromomethane	94	1.338	1.339	(0.320)	58243	20.0000	21.00
19 Carbon Disulfide	76	2.069	2.069	(0.494)	340228	40.0000	40.66
34 Carbon Tetrachloride	117	4.268	4.268	(0.859)	82554	20.0000	19.41
59 Chlorobenzene	112	7.699	7.699	(1.004)	172707	20.0000	19.32
7 Chloroethane	64	1.403	1.403	(0.335)	44628	20.0000	22.04
28 Chloroform	83	3.910	3.910	(0.933)	108418	20.0000	20.52
3 Chloromethane	50	1.081	1.074	(0.258)	51588	20.0000	20.65
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	71370	20.0000	20.96
46 cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	99857	20.0000	20.22
55 Dibromochloromethane	129	7.183	7.184	(0.937)	69917	20.0000	20.31
44 Dibromomethane	93	5.557	5.558	(1.118)	41907	20.0000	19.57
2 Dichlorodifluoromethane	85	0.973	0.973	(0.232)	50415	20.0000	20.72
61 Ethylbenzene	106	7.807	7.807	(1.018)	91857	20.0000	19.80
91 Hexachlorobutadiene	225	11.488	11.489	(1.188)	42707	20.0000	19.92
67 Isopropylbenzene	105	8.566	8.566	(1.117)	270292	20.0000	19.65
62 m,p-Xylenes	106	7.907	7.907	(1.031)	221663	40.0000	39.59
17 Methylene Chloride	84	2.305	2.306	(0.550)	67157	20.0000	22.21
87 n-Butylbenzene	91	9.999	9.999	(1.034)	194932	20.0000	20.59
73 n-Propylbenzene	91	8.917	8.917	(0.922)	304341	20.0000	19.65
92 Naphthalene	128	11.546	11.546	(1.194)	120310	20.0000	19.87
63 o-Xylene	106	8.244	8.244	(1.075)	107767	20.0000	19.65
81 sec-Butylbenzene	105	9.526	9.526	(0.985)	267880	20.0000	19.58
64 Styrene	104	8.265	8.265	(1.078)	188015	20.0000	20.00
78 tert-Butylbenzene	119	9.340	9.340	(0.966)	195715	20.0000	19.57
56 Tetrachloroethene	164	6.933	6.933	(0.904)	61220	20.0000	19.84
50 Toluene	91	6.453	6.453	(0.841)	262136	20.0000	19.91
20 trans-1,2-Dichloroethene	96	2.535	2.528	(0.605)	59737	20.0000	20.57
51 trans-1,3-Dichloropropene	75	6.689	6.682	(1.346)	89246	20.0000	20.19
38 Trichloroethene	130	5.214	5.214	(1.049)	72548	20.0000	19.84
8 Trichlorofluoromethane	101	1.560	1.561	(0.373)	101031	20.0000	20.23
5 Vinyl Chloride	62	1.138	1.138	(0.272)	68133	20.0000	19.68

QC Flag Legend

M - Compound response manually integrated.

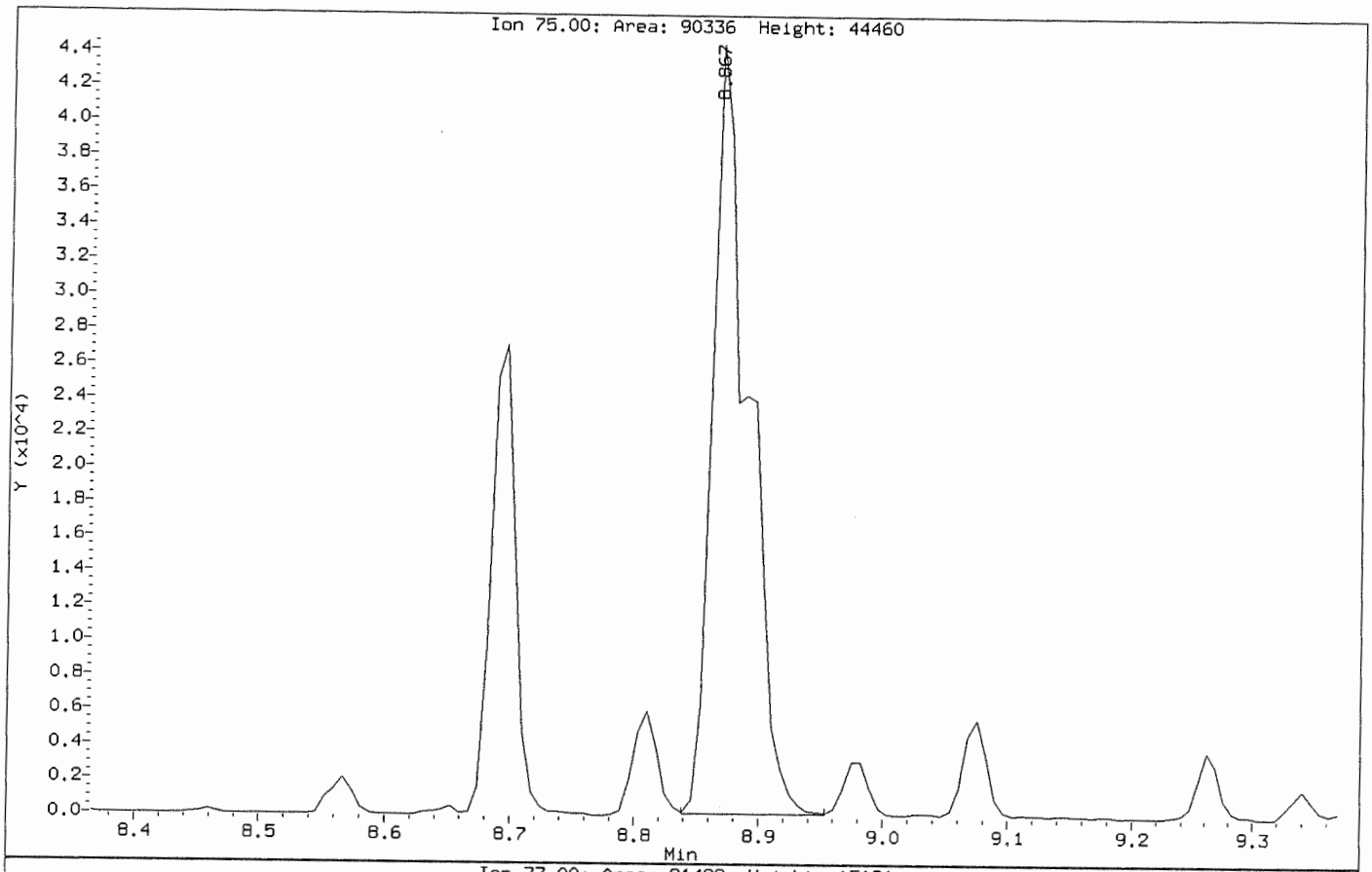


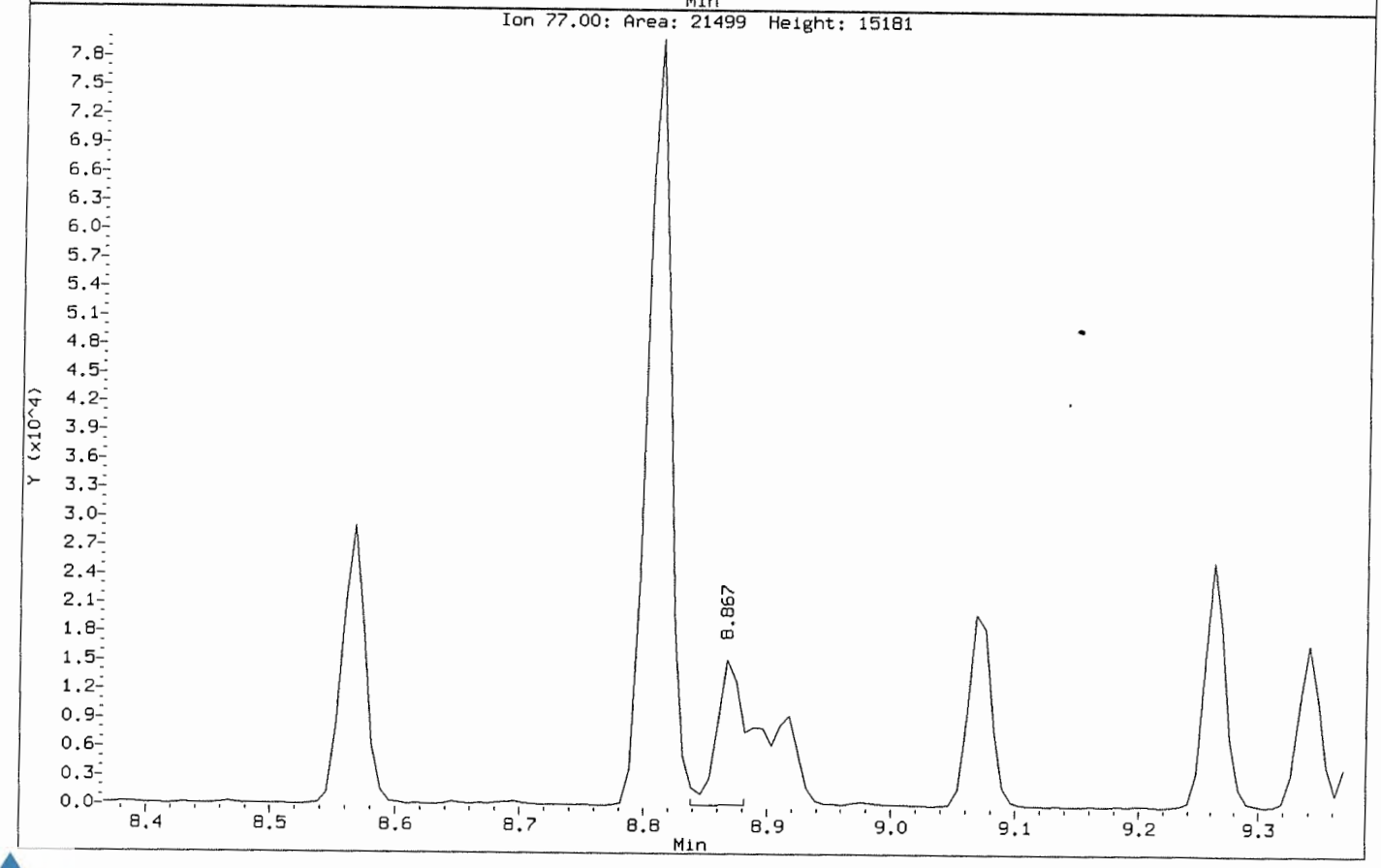
Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091107.D
Date : 11-SEP-2019 13:55
Client ID: VSTD020
Sample Info: VSTD020;VSTD020;1;6;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\BEFORE\X091107.D
Injection Date: 11-SEP-2019 13:55
Instrument: voa6.i
Client Sample ID: VSTD020

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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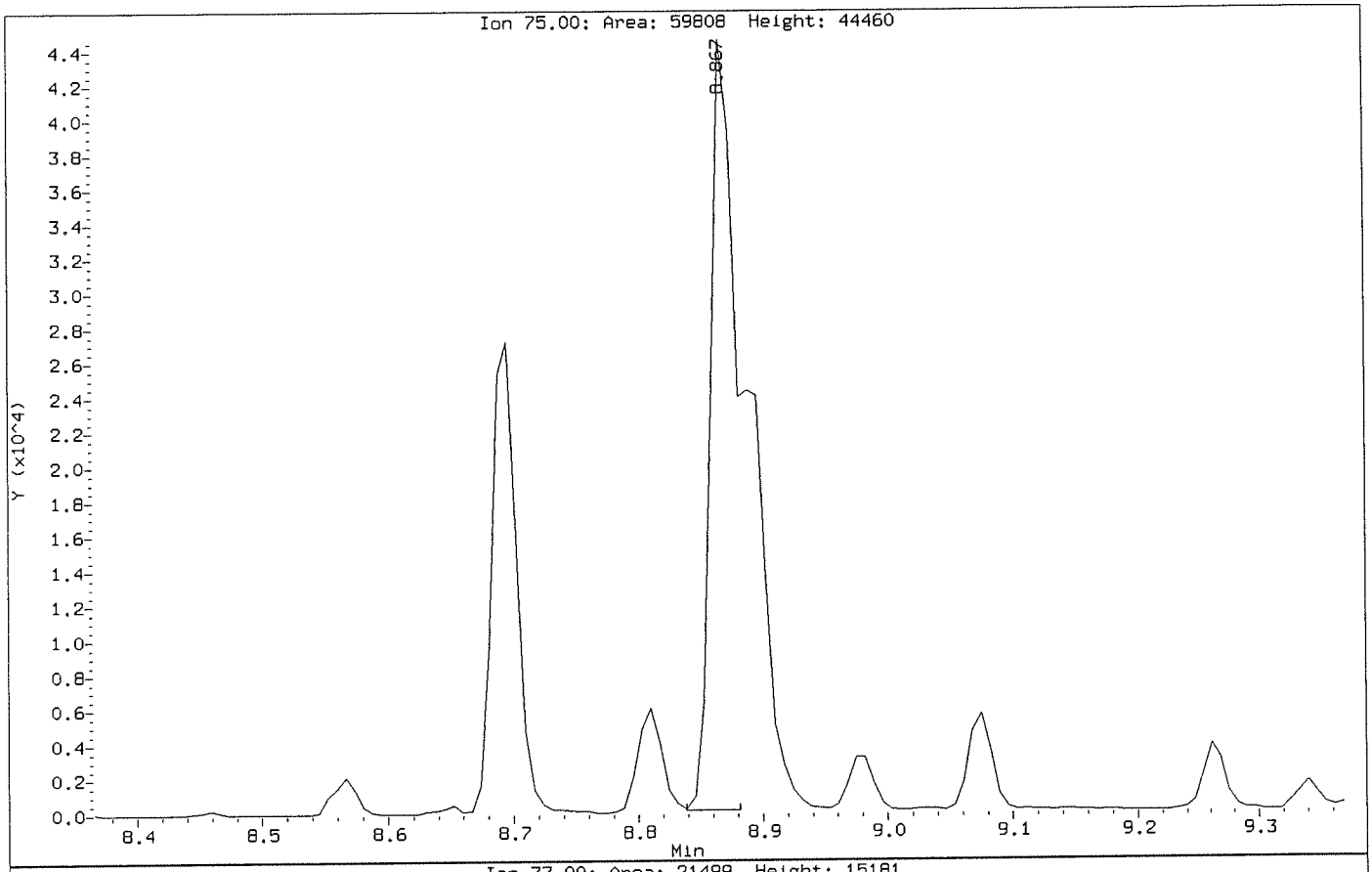
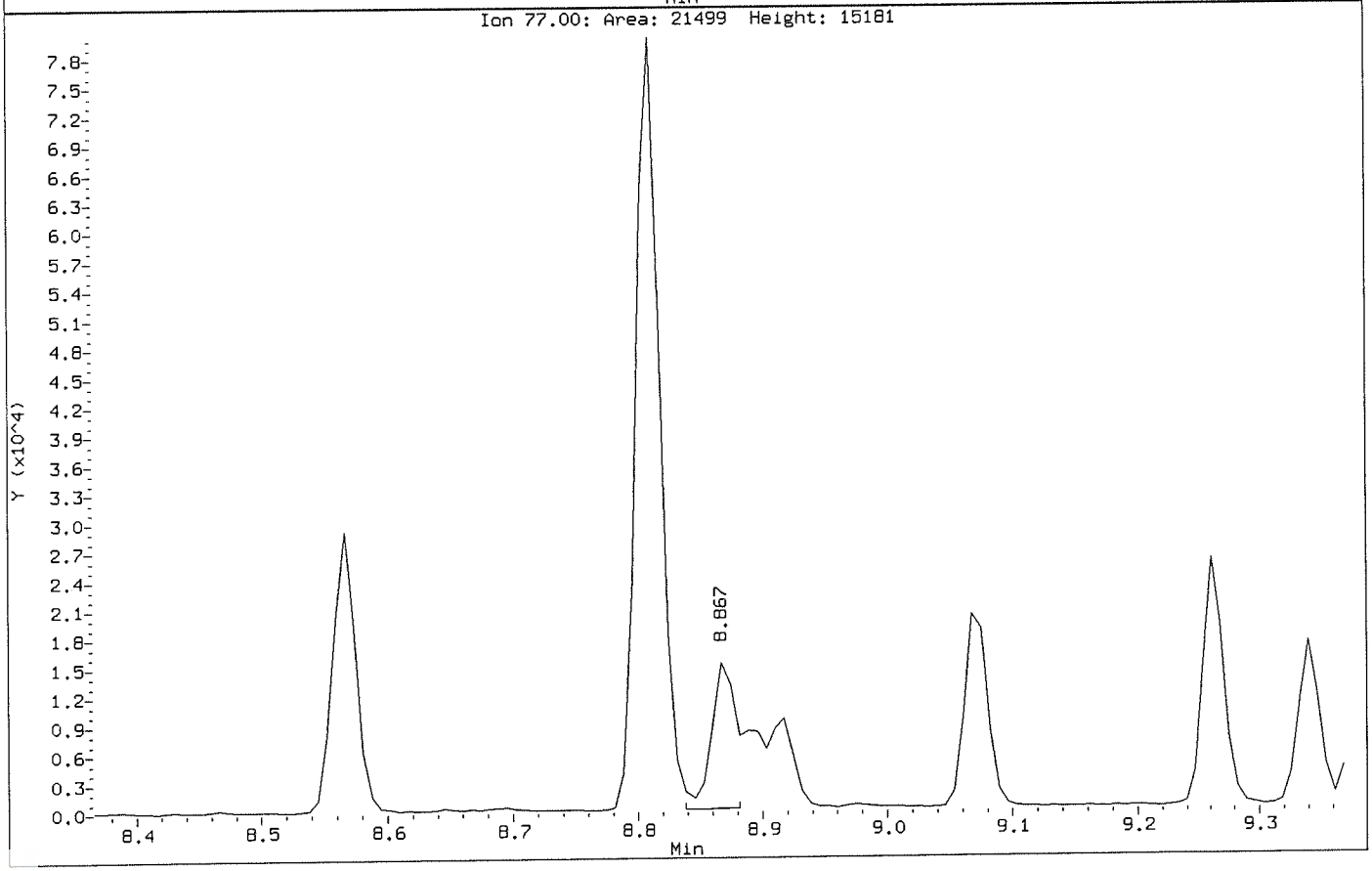
Injection Date: 11-SEP-2019 13:55
Instrument: voa6.i
Client Sample ID: VSTD020

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091108.D Page 1
Report Date: 24-Sep-2019 15:14

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091108.D
Lab Smp Id: VSTD050 Client Smp ID: VSTD050
Inj Date : 11-SEP-2019 14:19
Operator : PC Inst ID: voa6.i
Smp Info : VSTD050;VSTD050;1;7;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X190911.b\8260W.m
Meth Date : 24-Sep-2019 15:13 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 9 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

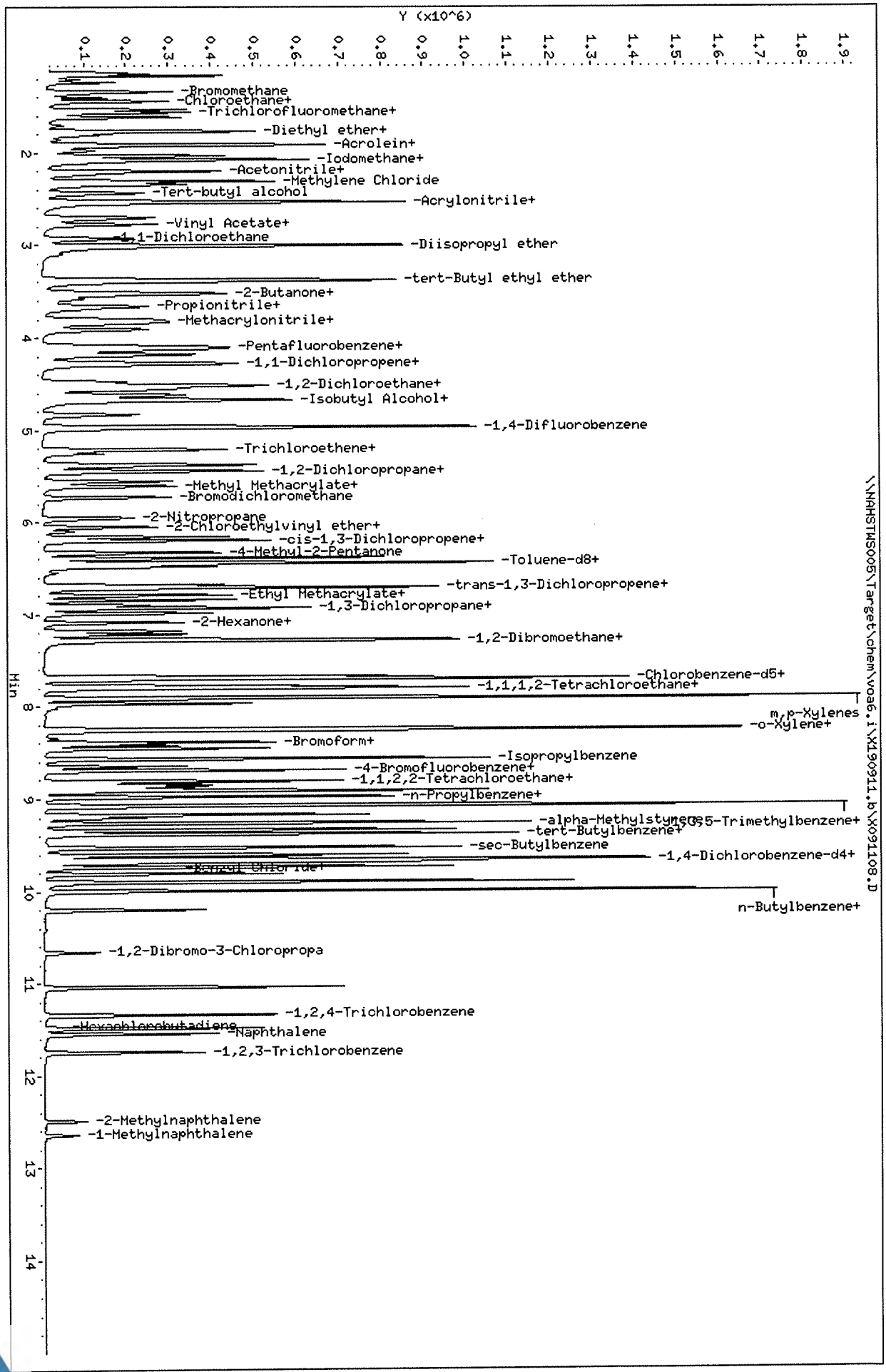
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.182	4.182	(1.000)	323411	50.0000	
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	441288	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	397565	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	218838	50.0000	
$	30 Dibromofluoromethane	113	4.103	4.103	(0.981)	137410	50.0000	49.07
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	146423	50.0000	49.11
$	48 Toluene-d8	98	6.388	6.388	(0.833)	489411	50.0000	44.57
$	69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	185823	50.0000	49.56
	60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	146012	50.0000	48.42
	31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	203083	50.0000	45.86
	68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	160783	50.0000	50.32
	53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	104811	50.0000	47.78
	22 1,1-Dichloroethane	63	2.929	2.922	(0.700)	231573	50.0000	45.67
	11 1,1-Dichloroethene	96	1.919	1.912	(0.459)	127221	50.0000	46.15
	32 1,1-Dichloropropene	75	4.282	4.283	(0.862)	170657	50.0000	46.03
	93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	109133	50.0000	46.76
	71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	131701	50.0000	47.54(M)
	90 1,2,4-Trichlorobenzene	180	11.345	11.345	(1.173)	173120	50.0000	48.85
	79 1,2,4-Trimethylbenzene	105	9.383	9.383	(0.970)	519539	50.0000	45.69
	89 1,2-Dibromo-3-Chloropropane	155	10.658	10.658	(1.102)	29069	50.0000	51.70
	57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	142079	50.0000	48.18
	88 1,2-Dichlorobenzene	146	9.999	9.999	(1.034)	300318	50.0000	46.16
	33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	170274	50.0000	46.67

Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091108.D Page 2
Report Date: 24-Sep-2019 15:14

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42	1,2-Dichloropropane	63	5.443	5.443	(1.095)	126860	50.0000	45.87
75	1,3,5-Trimethylbenzene	105	9.075	9.075	(0.939)	507696	50.0000	45.83
83	1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	320030	50.0000	46.68
54	1,3-Dichloropropane	76	6.983	6.983	(0.910)	211800	50.0000	46.58
84	1,4-Dichlorobenzene	146	9.683	9.691	(1.001)	320348	50.0000	46.08
26	2,2-Dichloropropane	77	3.516	3.516	(0.841)	188148	50.0000	44.41
24	2-Butanone	43	3.580	3.581	(0.856)	103324	100.000	104.07
76	2-Chlorotoluene	91	8.981	8.981	(0.929)	400143	50.0000	48.74
52	2-Hexanone	43	7.090	7.090	(0.924)	155856	100.000	97.33
77	4-Chlorotoluene	91	9.075	9.075	(0.939)	467061	50.0000	45.68
82	p-Isopropyltoluene	119	9.655	9.655	(0.999)	534550	50.0000	46.57
45	4-Methyl-2-Pentanone	43	6.331	6.331	(0.825)	223115	100.000	94.38
10	Acetone	43	1.976	1.976	(0.473)	97100	100.000	111.17
37	Benzene	78	4.519	4.519	(0.909)	520645	50.0000	46.07
74	Bromobenzene	156	8.809	8.810	(0.911)	192193	50.0000	47.73
29	Bromochloromethane	128	3.803	3.803	(0.909)	86162	50.0000	46.00
39	Bromodichloromethane	83	5.729	5.729	(1.153)	179782	50.0000	47.53
66	Bromoform	173	8.416	8.416	(1.097)	120609	50.0000	50.64
6	Bromomethane	94	1.338	1.339	(0.320)	132892	50.0000	51.19
19	Carbon Disulfide	76	2.069	2.069	(0.495)	759310	100.000	93.16
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	181775	50.0000	45.91
59	Chlorobenzene	112	7.699	7.699	(1.004)	378388	50.0000	45.42
7	Chloroethane	64	1.403	1.403	(0.336)	98550	50.0000	53.18
28	Chloroform	83	3.910	3.910	(0.935)	241439	50.0000	46.92
3	Chloromethane	50	1.081	1.074	(0.258)	116359	50.0000	48.02
27	cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	155701	50.0000	46.95
46	cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	224367	50.0000	48.80
55	Dibromochloromethane	129	7.183	7.184	(0.937)	157133	50.0000	48.99
44	Dibromomethane	93	5.557	5.558	(1.118)	94810	50.0000	47.57
2	Dichlorodifluoromethane	85	0.973	0.973	(0.233)	107012	50.0000	45.14
61	Ethylbenzene	106	7.807	7.807	(1.018)	199111	50.0000	46.07
91	Hexachlorobutadiene	225	11.488	11.489	(1.188)	96426	50.0000	46.97
67	Isopropylbenzene	105	8.566	8.566	(1.117)	579470	50.0000	45.21
62	m,p-Xylenes	106	7.907	7.907	(1.031)	480631	100.000	92.13
17	Methylene Chloride	84	2.305	2.306	(0.551)	142480	50.0000	51.43
87	n-Butylbenzene	91	9.999	9.999	(1.034)	416992	50.0000	47.33
73	n-Propylbenzene	91	8.917	8.917	(0.922)	658000	50.0000	45.65
92	Naphthalene	128	11.546	11.546	(1.194)	275675	50.0000	48.92
63	o-Xylene	106	8.244	8.244	(1.075)	234502	50.0000	45.90
81	sec-Butylbenzene	105	9.526	9.526	(0.985)	573268	50.0000	45.03
64	Styrene	104	8.265	8.265	(1.078)	415749	50.0000	47.47
78	tert-Butylbenzene	119	9.340	9.340	(0.966)	420773	50.0000	45.21
56	Tetrachloroethene	164	6.933	6.933	(0.904)	131000	50.0000	45.57
50	Toluene	91	6.453	6.453	(0.841)	556172	50.0000	45.34
20	trans-1,2-Dichloroethene	96	2.528	2.528	(0.604)	129503	50.0000	45.78
51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.344)	200527	50.0000	48.73
38	Trichloroethene	130	5.214	5.214	(1.049)	159803	50.0000	46.95
8	Trichlorofluoromethane	101	1.560	1.561	(0.373)	225812	50.0000	46.41
5	Vinyl Chloride	62	1.138	1.138	(0.272)	152980	50.0000	45.37

QC Flag Legend

M - Compound response manually integrated.



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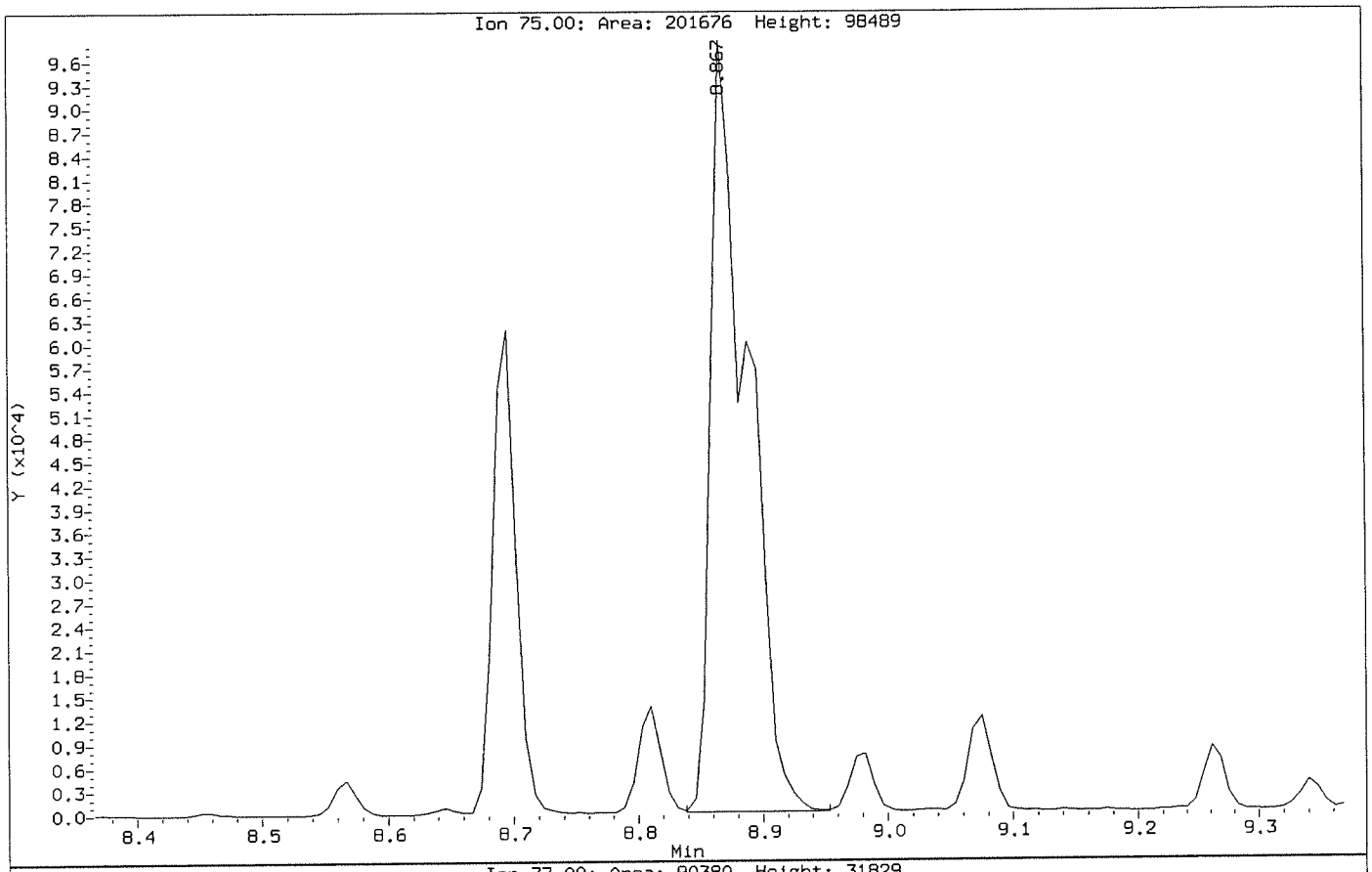
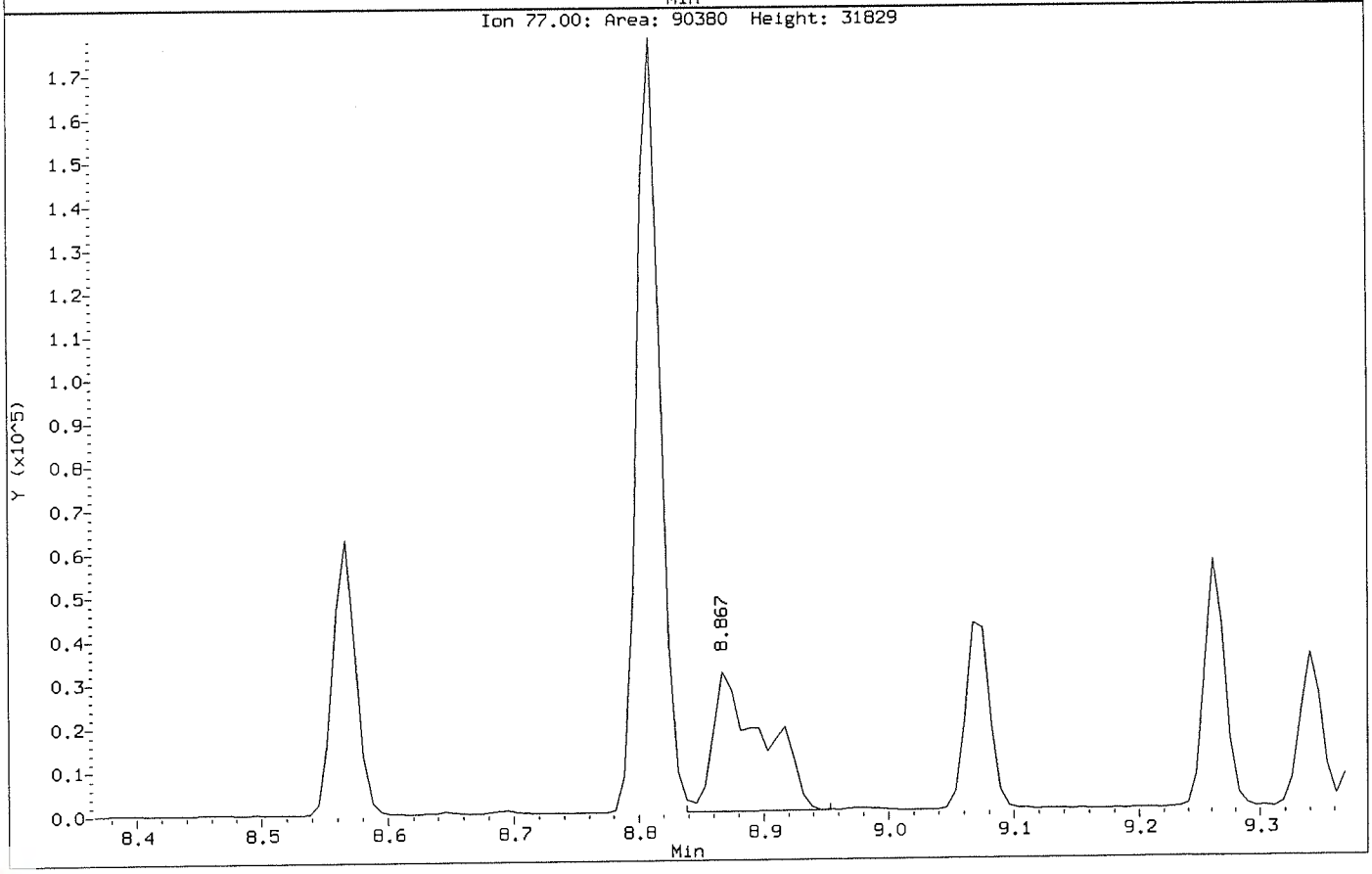
Date : 11-SEP-2019 14:19
Client ID: VSTD050
Sample Info: VSTD050;VSTD050;1;7;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\BEFORE\X091108.D
Injection Date: 11-SEP-2019 14:19
Instrument: voa6.i
Client Sample ID: VSTD050

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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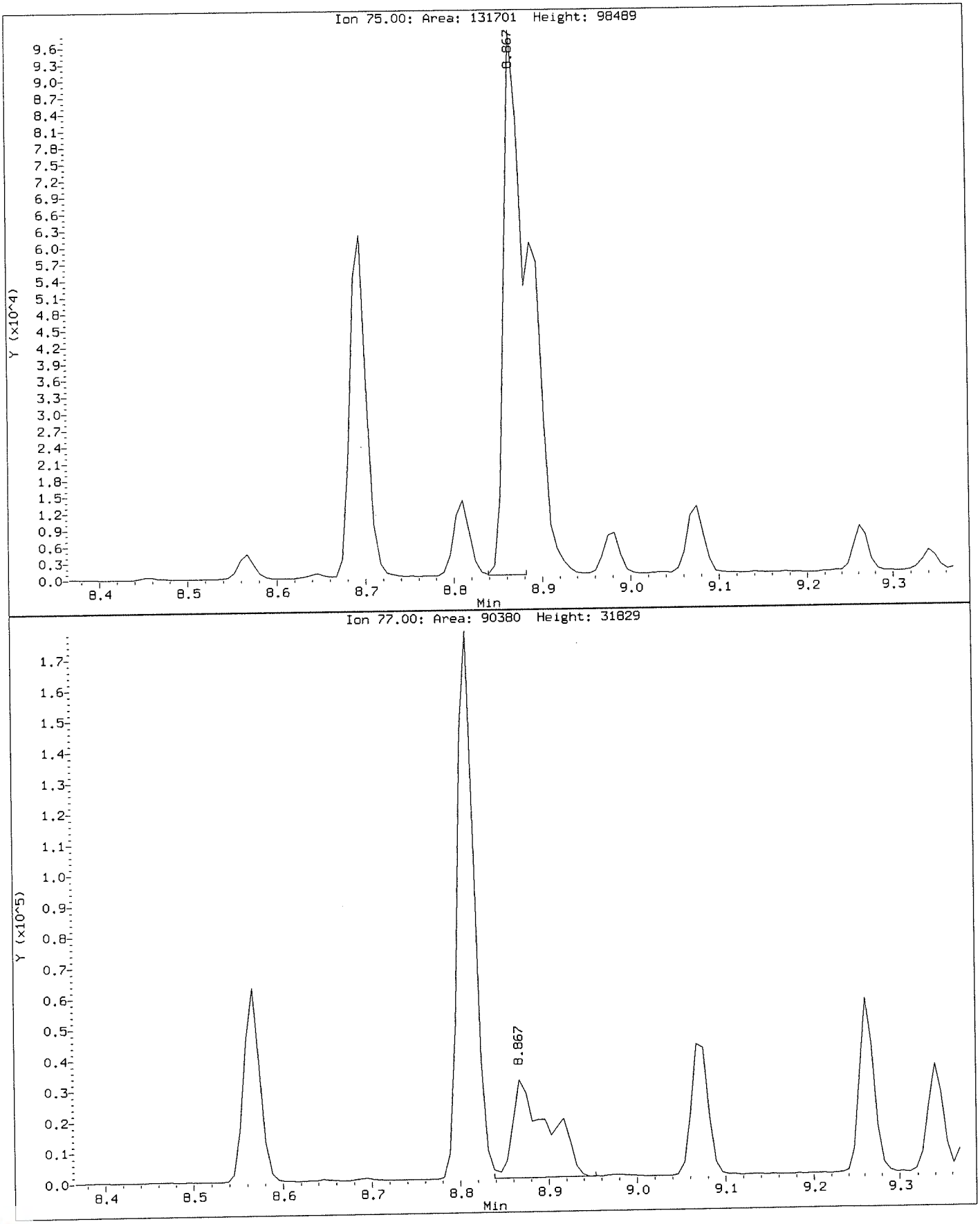
Injection Date: 11-SEP-2019 14:19
Instrument: voa6.i
Client Sample ID: VSTD050

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091109.D Page 1
Report Date: 24-Sep-2019 15:14

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091109.D
Lab Smp Id: VSTD100 Client Smp ID: VSTD100
Inj Date : 11-SEP-2019 14:43
Operator : PC Inst ID: voa6.i
Smp Info : VSTD100;VSTD100;1;8;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X190911.b\8260W.m
Meth Date : 24-Sep-2019 15:13 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:43 Cal File: X091109.D
Als bottle: 10 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	300838	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	410403	50.0000	
* 47 Chlorobenzene-d5	117	7.678	7.671	(1.000)	384762	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	211715	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	261669	100.000	101.31
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	278768	100.000	101.31
$ 48 Toluene-d8	98	6.388	6.388	(0.832)	946282	100.000	89.04
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.132)	357809	100.000	99.20
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.013)	280574	100.000	96.14
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	397376	100.000	96.48
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	298413	100.000	96.75
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.892)	190402	100.000	89.69
22 1,1-Dichloroethane	63	2.921	2.922	(0.699)	427306	100.000	90.59
11 1,1-Dichloroethene	96	1.911	1.912	(0.457)	247490	100.000	96.51
32 1,1-Dichloropropene	75	4.282	4.283	(0.862)	334087	100.000	96.89
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	214605	100.000	95.04
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	244934	100.000	91.39(M)
90 1,2,4-Trichlorobenzene	180	11.338	11.345	(1.173)	335970	100.000	97.99
79 1,2,4-Trimethylbenzene	105	9.382	9.383	(0.970)	1019609	100.000	92.68
89 1,2-Dibromo-3-Chloropropane	155	10.657	10.658	(1.102)	53412	100.000	98.20
57 1,2-Dibromoethane	107	7.262	7.262	(0.946)	265580	100.000	93.06
88 1,2-Dichlorobenzene	146	9.998	9.999	(1.034)	567904	100.000	90.23
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	316092	100.000	93.16

Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091109.D Page 2
Report Date: 24-Sep-2019 15:14

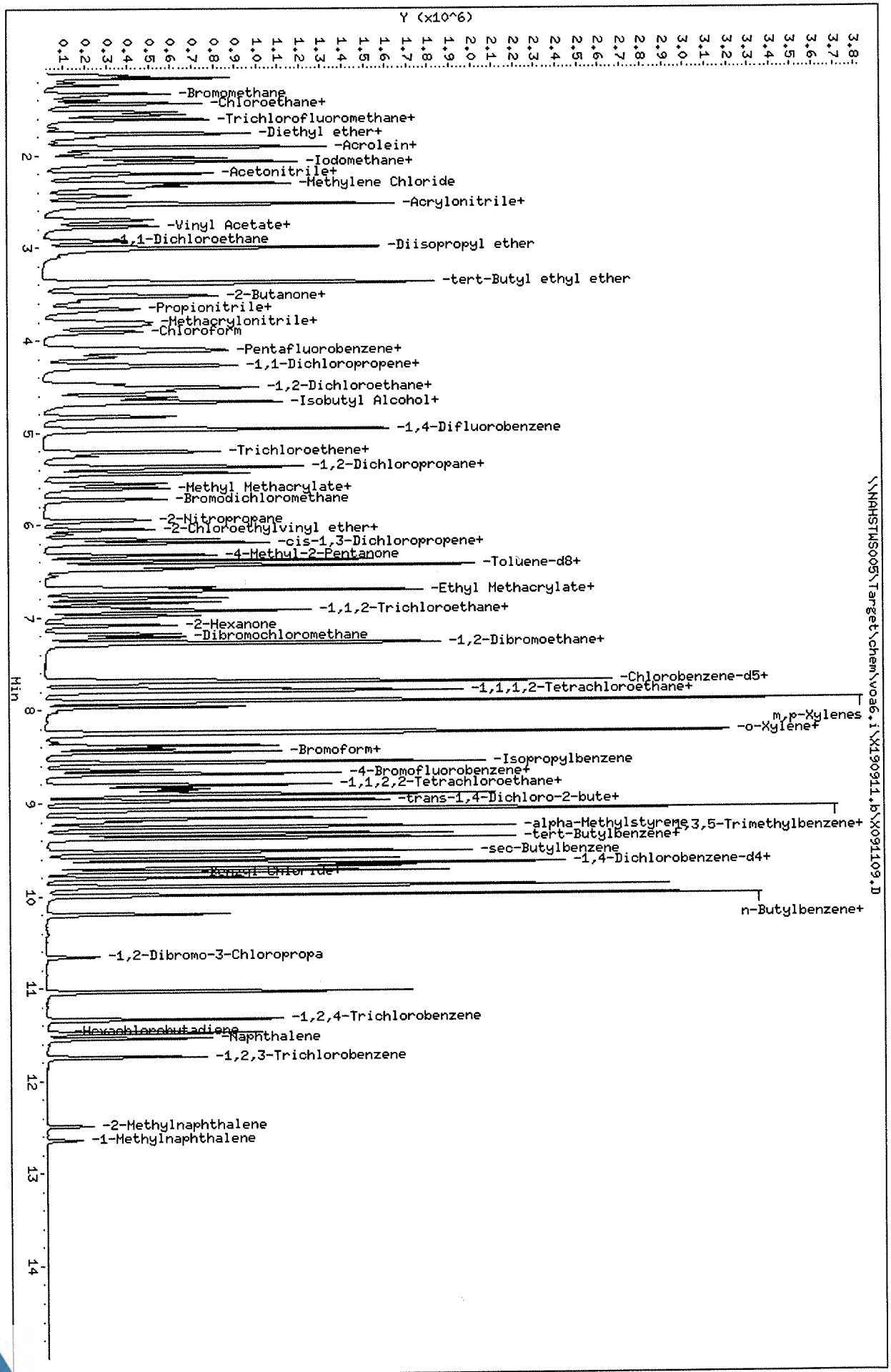
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42 1,2-Dichloropropane	63	5.443	5.443	(1.095)	231640	100.000	90.07
75 1,3,5-Trimethylbenzene	105	9.074	9.075	(0.939)	981652	100.000	91.60
83 1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	618496	100.000	93.26
54 1,3-Dichloropropane	76	6.983	6.983	(0.910)	391140	100.000	88.88
84 1,4-Dichlorobenzene	146	9.690	9.691	(1.002)	621798	100.000	92.46
26 2,2-Dichloropropane	77	3.516	3.516	(0.841)	358880	100.000	91.07
24 2-Butanone	43	3.580	3.581	(0.856)	177551	200.000	192.25
76 2-Chlorotoluene	91	8.981	8.981	(0.929)	776530	100.000	97.73
52 2-Hexanone	43	7.090	7.090	(0.924)	287244	200.000	185.34
77 4-Chlorotoluene	91	9.074	9.075	(0.939)	894813	100.000	90.46
82 p-Isopropyltoluene	119	9.655	9.655	(0.999)	1054414	100.000	94.95
45 4-Methyl-2-Pentanone	43	6.331	6.331	(0.825)	407018	200.000	177.90
10 Acetone	43	1.976	1.976	(0.473)	166654	200.000	210.07(A)
37 Benzene	78	4.519	4.519	(0.909)	984037	100.000	93.63
74 Bromobenzene	156	8.809	8.810	(0.911)	366194	100.000	94.00
29 Bromochloromethane	128	3.795	3.803	(0.908)	160077	100.000	91.87
39 Bromodichloromethane	83	5.729	5.729	(1.153)	338979	100.000	96.38
66 Bromoform	173	8.415	8.416	(1.096)	231395	100.000	100.40
6 Bromomethane	94	1.331	1.339	(0.318)	250871	100.000	105.44
19 Carbon Disulfide	76	2.069	2.069	(0.495)	1453518	200.000	191.72
34 Carbon Tetrachloride	117	4.268	4.268	(0.859)	367107	100.000	99.71
59 Chlorobenzene	112	7.699	7.699	(1.003)	723376	100.000	89.73
7 Chloroethane	64	1.396	1.403	(0.334)	178684	100.000	106.06
28 Chloroform	83	3.910	3.910	(0.935)	439982	100.000	91.92
3 Chloromethane	50	1.073	1.074	(0.257)	225494	100.000	100.21
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	286641	100.000	92.93
46 cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	419055	100.000	98.01
55 Dibromochloromethane	129	7.183	7.184	(0.936)	299231	100.000	96.41
44 Dibromomethane	93	5.557	5.558	(1.118)	171833	100.000	92.71
2 Dichlorodifluoromethane	85	0.973	0.973	(0.233)	221576	100.000	100.50
61 Ethylbenzene	106	7.807	7.807	(1.017)	389604	100.000	93.16
91 Hexachlorobutadiene	225	11.488	11.489	(1.188)	195659	100.000	97.49
67 Isopropylbenzene	105	8.566	8.566	(1.116)	1148748	100.000	92.61
62 m,p-Xylenes	106	7.907	7.907	(1.030)	927762	200.000	183.77
17 Methylene Chloride	84	2.305	2.306	(0.551)	258129	100.000	102.62
87 n-Butylbenzene	91	9.998	9.999	(1.034)	823656	100.000	96.64
73 n-Propylbenzene	91	8.917	8.917	(0.922)	1304633	100.000	93.55
92 Naphthalene	128	11.546	11.546	(1.194)	528246	100.000	96.90
63 o-Xylene	106	8.244	8.244	(1.074)	451131	100.000	91.24
81 sec-Butylbenzene	105	9.526	9.526	(0.985)	1148133	100.000	93.22
64 Styrene	104	8.265	8.265	(1.076)	785110	100.000	92.63
78 tert-Butylbenzene	119	9.339	9.340	(0.966)	832989	100.000	92.51
56 Tetrachloroethene	164	6.933	6.933	(0.903)	262011	100.000	94.18
50 Toluene	91	6.453	6.453	(0.840)	1065842	100.000	89.78
20 trans-1,2-Dichloroethene	96	2.527	2.528	(0.604)	245415	100.000	93.27
51 trans-1,3-Dichloropropene	75	6.682	6.682	(1.344)	370910	100.000	96.92
38 Trichloroethene	130	5.214	5.214	(1.049)	310383	100.000	98.06
8 Trichlorofluoromethane	101	1.560	1.561	(0.373)	458712	100.000	101.35
5 Vinyl Chloride	62	1.138	1.138	(0.272)	302711	100.000	96.53

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

QC Flag Legend

M - Compound response manually integrated.



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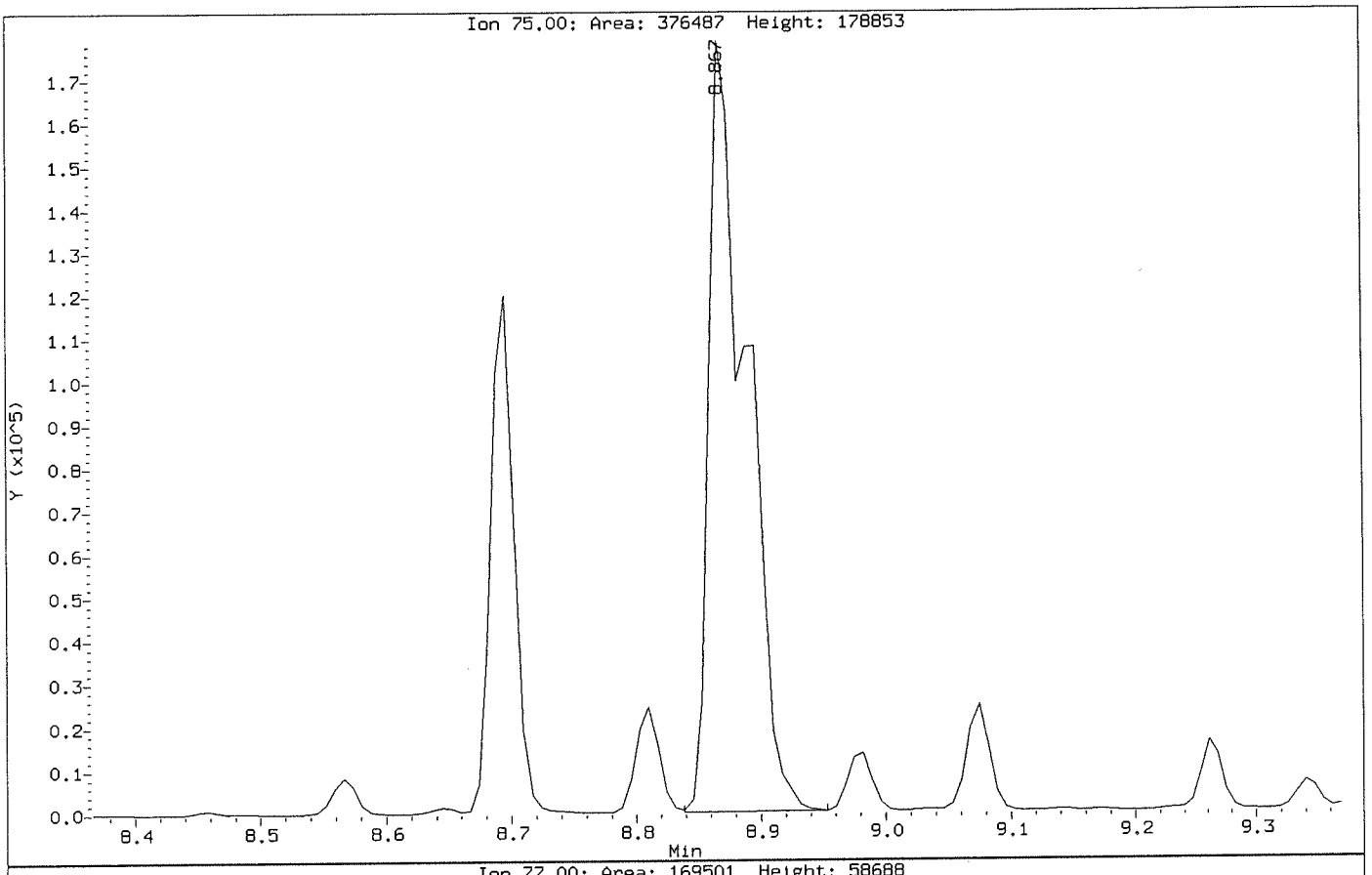
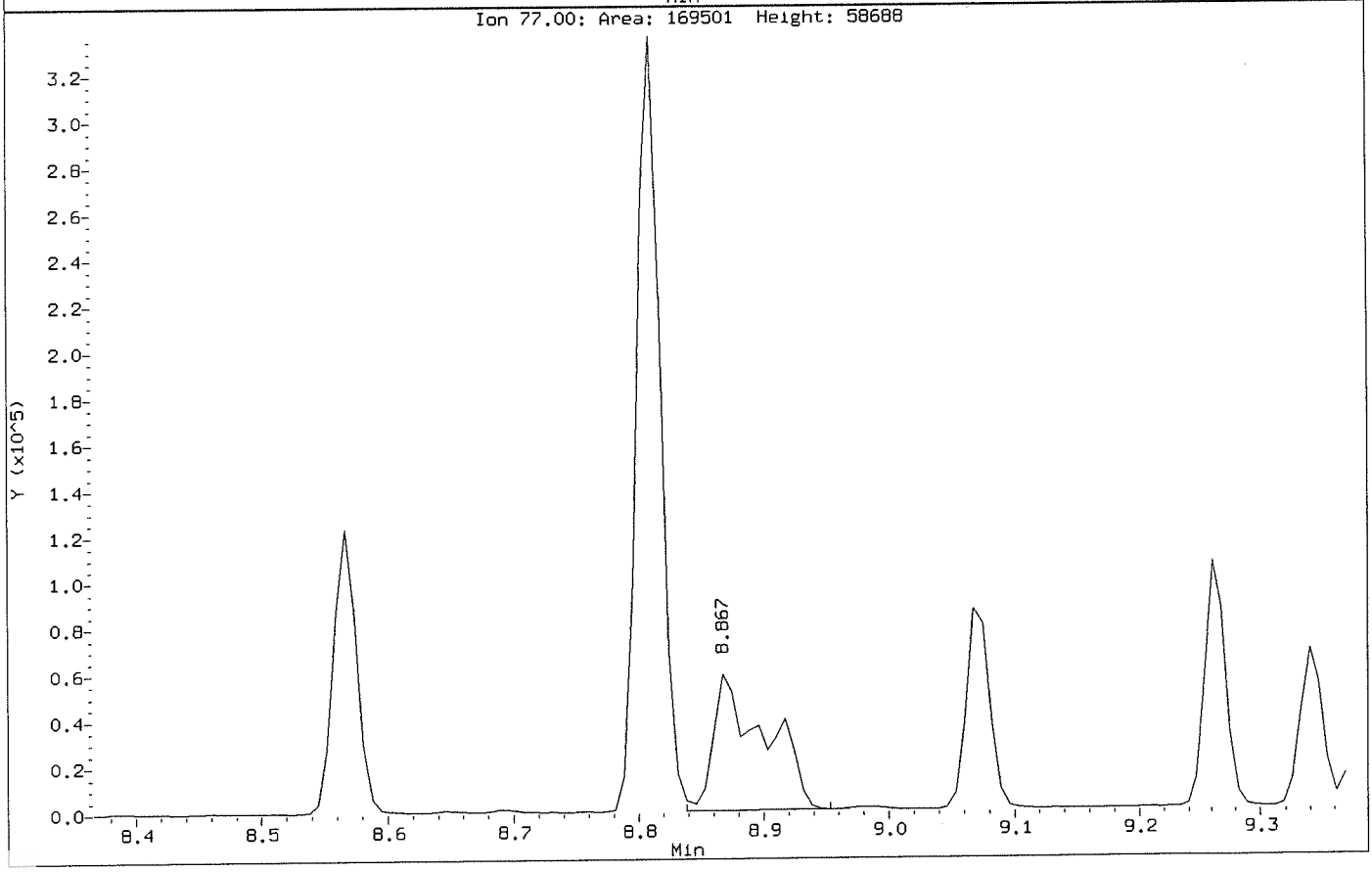
Date : 11-SEP-2019 14:43
Client ID: VSTD100
Sample Info: VSTD100;VSTD100;1;8;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\BEFORE\X091109.D
Injection Date: 11-SEP-2019 14:43
Instrument: voa6.i
Client Sample ID: VSTD100

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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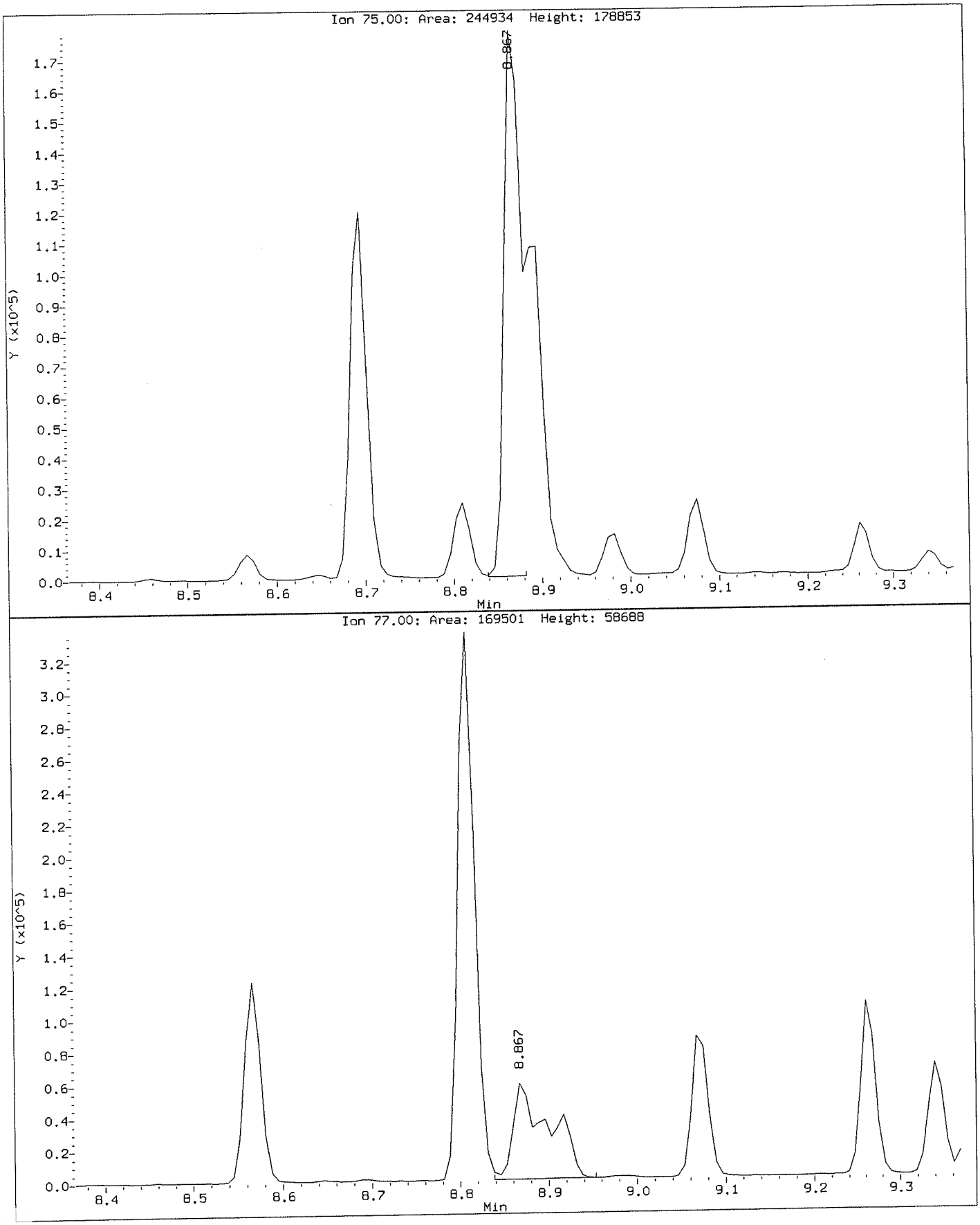
Injection Date: 11-SEP-2019 14:43
Instrument: voa6.i
Client Sample ID: VSTD100

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



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Data file : \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091110.D
Lab Smp Id: VSTD150 Client Smp ID: VSTD150
Inj Date : 11-SEP-2019 15:07
Operator : PC Inst ID: voa6.i
Smp Info : VSTD150;VSTD150;1;9;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X190911.b\8260W.m
Meth Date : 24-Sep-2019 15:13 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 15:07 Cal File: X091110.D
Als bottle: 11 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.182	(1.000)	286749	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	384964	50.0000	
* 47 Chlorobenzene-d5	117	7.678	7.671	(1.000)	361735	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	197013	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	373457	150.000	152.11
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	397673	150.000	152.00
$ 48 Toluene-d8	98	6.388	6.388	(0.832)	1359096	150.000	136.03
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.132)	511799	150.000	151.24
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.013)	408253	150.000	148.80
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.976)	565169	150.000	143.96
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	431707	150.000	150.53
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.892)	276197	150.000	138.39
22 1,1-Dichloroethane	63	2.921	2.922	(0.697)	600461	150.000	133.56
11 1,1-Dichloroethene	96	1.911	1.912	(0.456)	344251	150.000	140.85
32 1,1-Dichloropropene	75	4.282	4.283	(0.862)	473120	150.000	146.28
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	319893	150.000	152.24
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	349245	150.000	140.03(M)
90 1,2,4-Trichlorobenzene	180	11.345	11.345	(1.173)	495156	150.000	155.20
79 1,2,4-Trimethylbenzene	105	9.382	9.383	(0.970)	1430482	150.000	139.74
89 1,2-Dibromo-3-Chloropropane	155	10.657	10.658	(1.102)	81805	150.000	161.62
57 1,2-Dibromoethane	107	7.262	7.262	(0.946)	382862	150.000	142.70
88 1,2-Dichlorobenzene	146	9.998	9.999	(1.034)	807146	150.000	137.81
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	463915	150.000	145.77

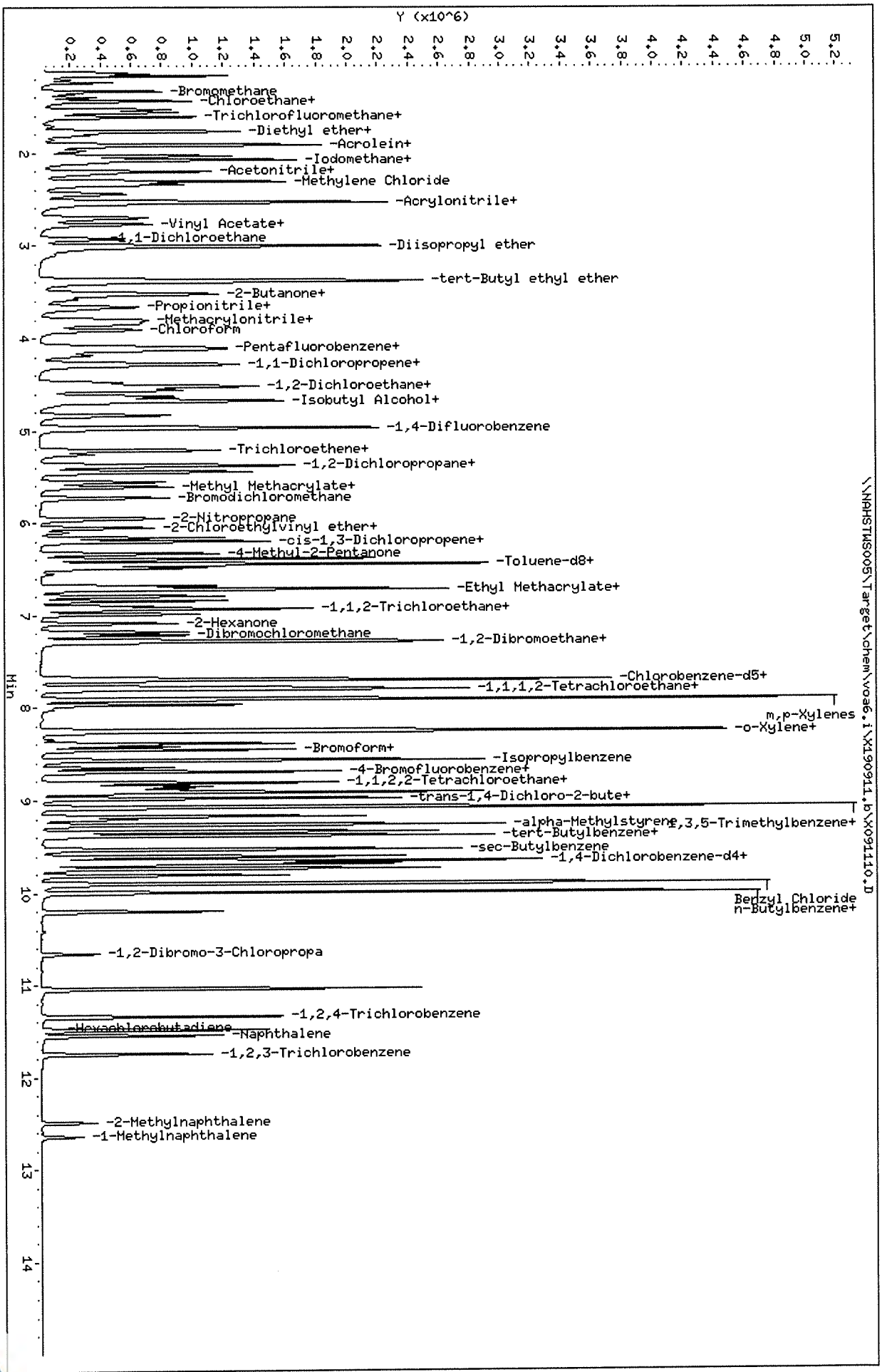
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42	1,2-Dichloropropane	63	5.443	5.443	(1.095)	327133	150.000	135.61
75	1,3,5-Trimethylbenzene	105	9.074	9.075	(0.939)	1396420	150.000	140.02
83	1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	878503	150.000	142.35
54	1,3-Dichloropropane	76	6.990	6.983	(0.910)	559991	150.000	135.35
84	1,4-Dichlorobenzene	146	9.690	9.691	(1.002)	887767	150.000	141.86
26	2,2-Dichloropropane	77	3.516	3.516	(0.839)	511186	150.000	136.10
24	2-Butanone	43	3.580	3.581	(0.855)	255500	300.000	290.25(A)
76	2-Chlorotoluene	91	8.981	8.981	(0.929)	1111118	150.000	150.25
52	2-Hexanone	43	7.090	7.090	(0.923)	413563	300.000	283.84(A)
77	4-Chlorotoluene	91	9.074	9.075	(0.939)	1269085	150.000	137.87
82	p-Isopropyltoluene	119	9.655	9.655	(0.999)	1492407	150.000	144.42
45	4-Methyl-2-Pentanone	43	6.331	6.331	(0.825)	591486	300.000	274.98(A)
10	Acetone	43	1.976	1.976	(0.472)	232352	300.000	309.98(A)
37	Benzene	78	4.519	4.519	(0.909)	1408911	150.000	142.92
74	Bromobenzene	156	8.809	8.810	(0.911)	526352	150.000	145.20
29	Bromochloromethane	128	3.802	3.803	(0.908)	231574	150.000	139.44
39	Bromodichloromethane	83	5.729	5.729	(1.153)	484249	150.000	146.78
66	Bromoform	173	8.415	8.416	(1.096)	343843	150.000	158.68
6	Bromomethane	94	1.331	1.339	(0.318)	328661	150.000	145.48
19	Carbon Disulfide	76	2.069	2.069	(0.494)	2054089	300.000	284.25(A)
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	527251	150.000	152.67
59	Chlorobenzene	112	7.699	7.699	(1.003)	1037817	150.000	136.93
7	Chloroethane	64	1.396	1.403	(0.333)	244145	150.000	153.14
28	Chloroform	83	3.910	3.910	(0.933)	632590	150.000	138.66
3	Chloromethane	50	1.073	1.074	(0.256)	322071	150.000	150.24
27	cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	409291	150.000	139.21
46	cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	594980	150.000	148.36
55	Dibromochloromethane	129	7.183	7.184	(0.936)	434723	150.000	148.98
44	Dibromomethane	93	5.557	5.558	(1.118)	248963	150.000	143.20
2	Dichlorodifluoromethane	85	0.973	0.973	(0.232)	317253	150.000	150.96
61	Ethylbenzene	106	7.807	7.807	(1.017)	558427	150.000	142.03
91	Hexachlorobutadiene	225	11.488	11.489	(1.188)	282920	150.000	150.97
67	Isopropylbenzene	105	8.566	8.566	(1.116)	1639293	150.000	140.56
62	m,p-Xylenes	106	7.907	7.907	(1.030)	1307363	300.000	275.45(A)
17	Methylene Chloride	84	2.305	2.306	(0.550)	362490	150.000	152.42
87	n-Butylbenzene	91	9.998	9.999	(1.034)	1146978	150.000	144.62
73	n-Propylbenzene	91	8.917	8.917	(0.922)	1853723	150.000	142.85
92	Naphthalene	128	11.546	11.546	(1.194)	800405	150.000	157.79
63	o-Xylene	106	8.244	8.244	(1.074)	636815	150.000	136.99
81	sec-Butylbenzene	105	9.526	9.526	(0.985)	1604237	150.000	139.97
64	Styrene	104	8.265	8.265	(1.076)	1098185	150.000	137.82
78	tert-Butylbenzene	119	9.339	9.340	(0.966)	1207160	150.000	144.07
56	Tetrachloroethene	164	6.933	6.933	(0.903)	372151	150.000	142.29
50	Toluene	91	6.453	6.453	(0.840)	1517436	150.000	135.95
20	trans-1,2-Dichloroethene	96	2.527	2.528	(0.603)	345412	150.000	137.73
51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.344)	539807	150.000	150.38
38	Trichloroethene	130	5.214	5.214	(1.049)	441921	150.000	148.85
8	Trichlorofluoromethane	101	1.560	1.561	(0.373)	643908	150.000	149.27
5	Vinyl Chloride	62	1.138	1.138	(0.272)	422770	150.000	141.43

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

QC Flag Legend

M - Compound response manually integrated.



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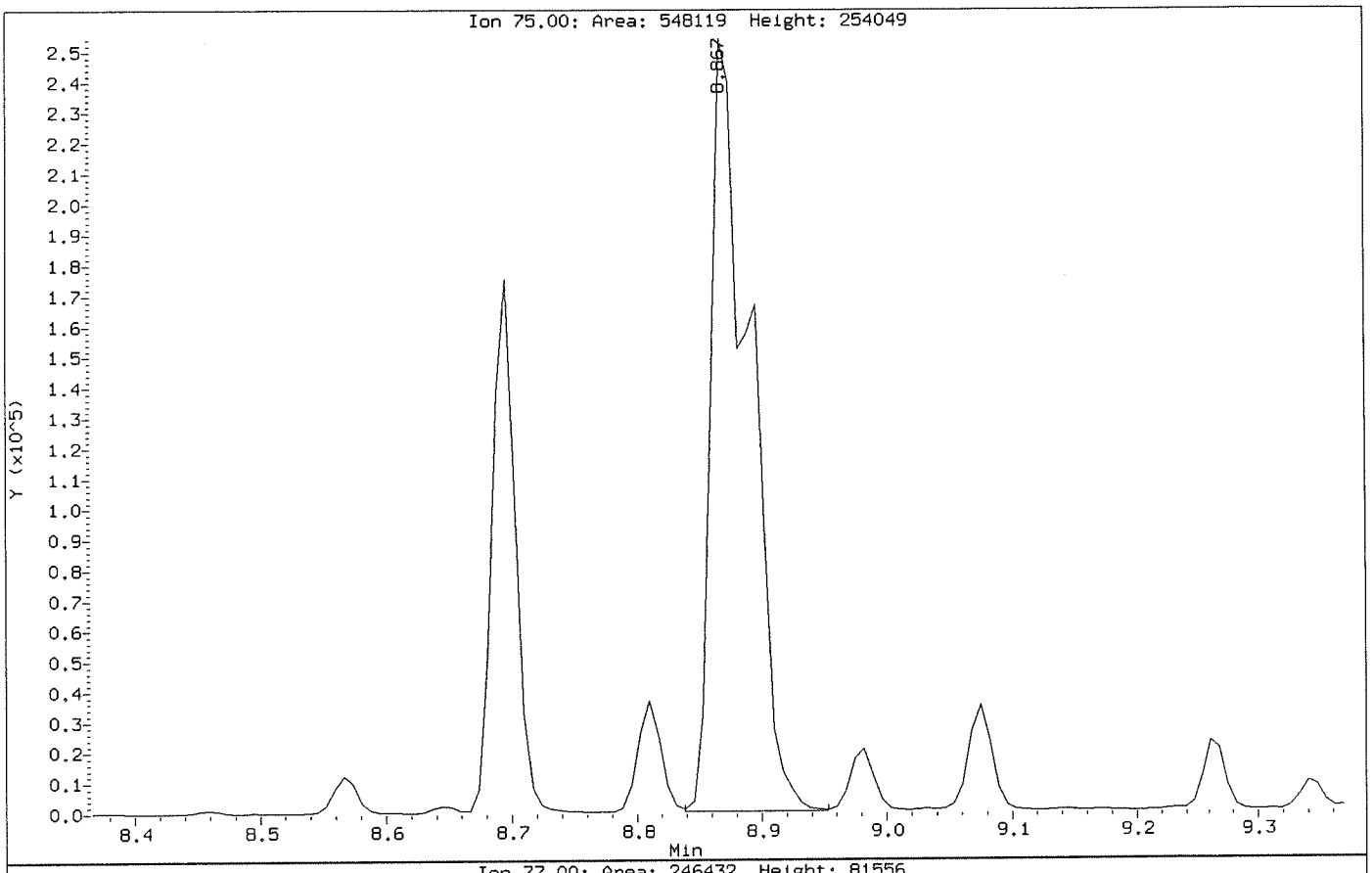
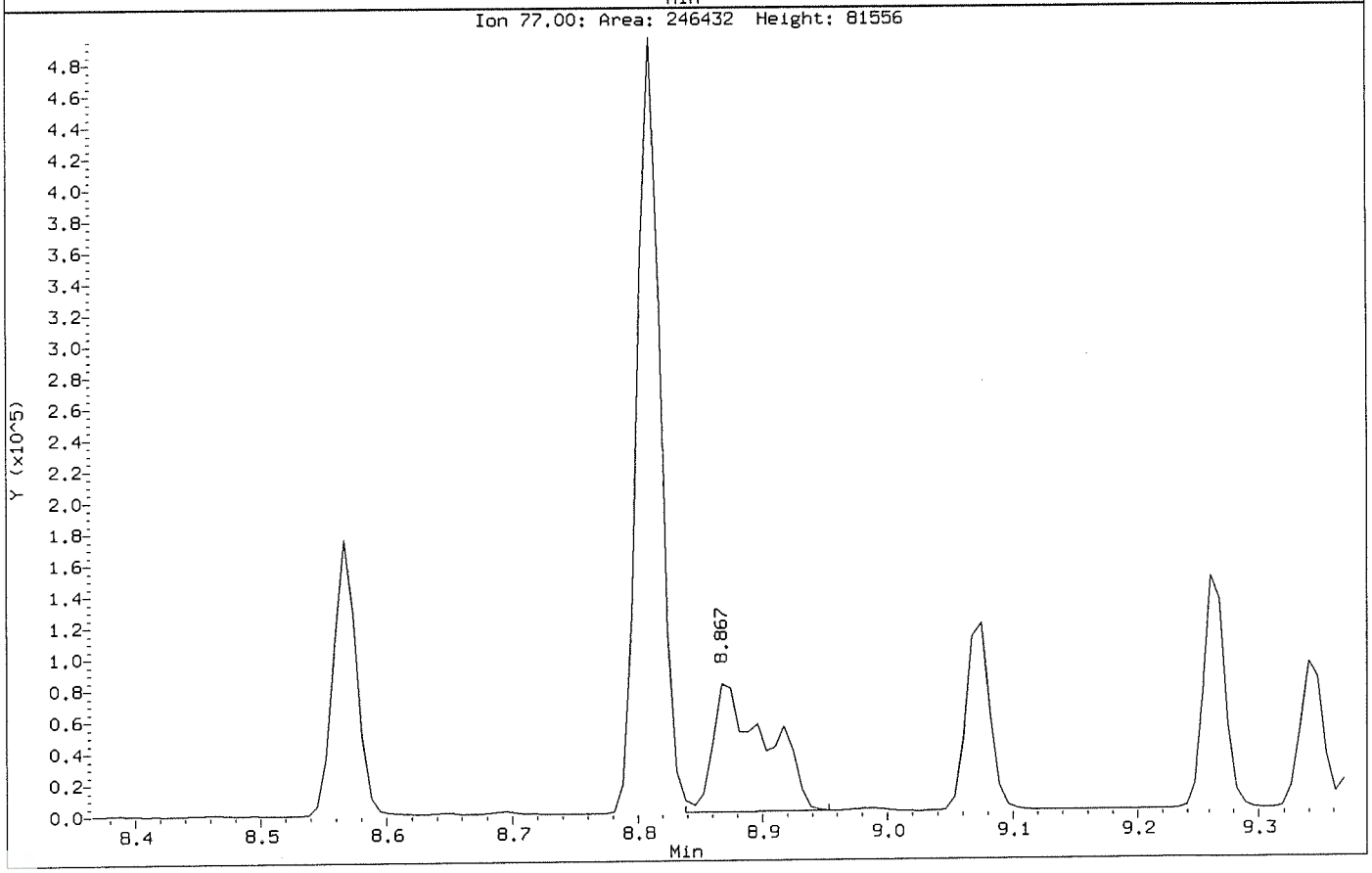
Date : 11-SEP-2019 15:07
Client ID: VSTD150
Sample Info: VSTD150;VSTD150;1;9;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\BEFORE\X091110.D
Injection Date: 11-SEP-2019 15:07
Instrument: voa6.i
Client Sample ID: VSTD150

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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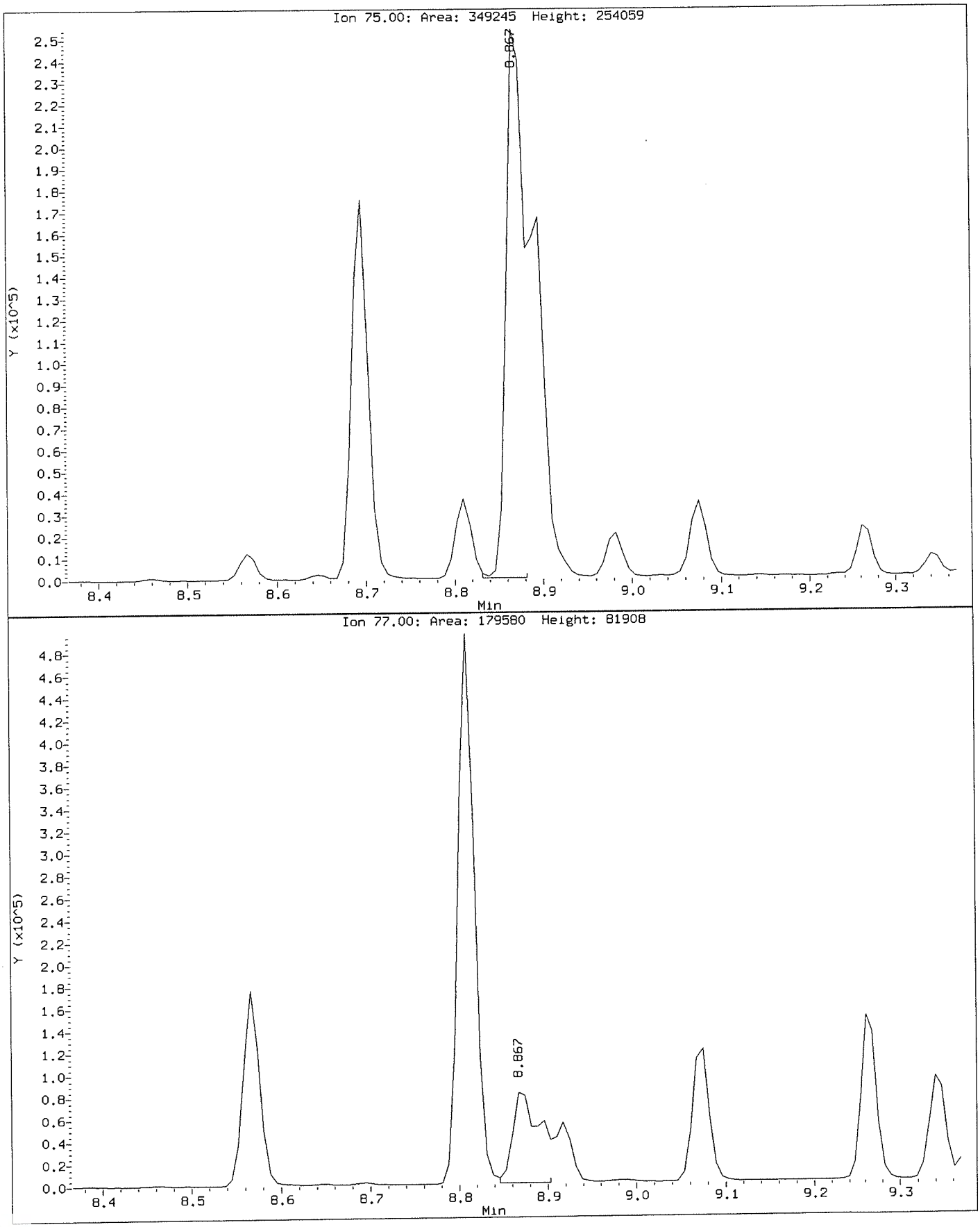
Instrument: voa6.i
Client Sample ID: VSTD150

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091111.D Page 1
Report Date: 24-Sep-2019 15:14

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091111.D
Lab Smp Id: VSTD200 Client Smp ID: VSTD200
Inj Date : 11-SEP-2019 15:31
Operator : PC Inst ID: voa6.i
Smp Info : VSTD200;VSTD200;1;10;
Misc Info : HS18090001;WATER;0;1;
Comment :
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Meth Date : 24-Sep-2019 15:13 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 15:31 Cal File: X091111.D
Als bottle: 12 Calibration Sample, Level: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	284559	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	376643	50.0000	
* 47 Chlorobenzene-d5	117	7.678	7.671	(1.000)	356240	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	191678	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	481166	200.000	197.73
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	513160	200.000	197.88
$ 48 Toluene-d8	98	6.388	6.388	(0.832)	1738740	200.000	176.72
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.132)	664062	200.000	199.45
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.013)	528390	200.000	195.56
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	740916	200.000	190.18
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	560360	200.000	200.90(A)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.892)	351698	200.000	178.94
22 1,1-Dichloroethane	63	2.922	2.922	(0.699)	768495	200.000	172.26
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	439821	200.000	181.34
32 1,1-Dichloropropene	75	4.283	4.283	(0.862)	616734	200.000	194.90
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	419359	200.000	205.14(A)
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	446103	200.000	183.85(M)
90 1,2,4-Trichlorobenzene	180	11.345	11.345	(1.173)	648268	200.000	208.84(A)
79 1,2,4-Trimethylbenzene	105	9.383	9.383	(0.970)	1847764	200.000	185.53
89 1,2-Dibromo-3-Chloropropane	155	10.658	10.658	(1.102)	106019	200.000	215.29(A)
57 1,2-Dibromoethane	107	7.270	7.262	(0.947)	492799	200.000	186.51
88 1,2-Dichlorobenzene	146	9.999	9.999	(1.034)	1032264	200.000	181.15
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	598057	200.000	192.08

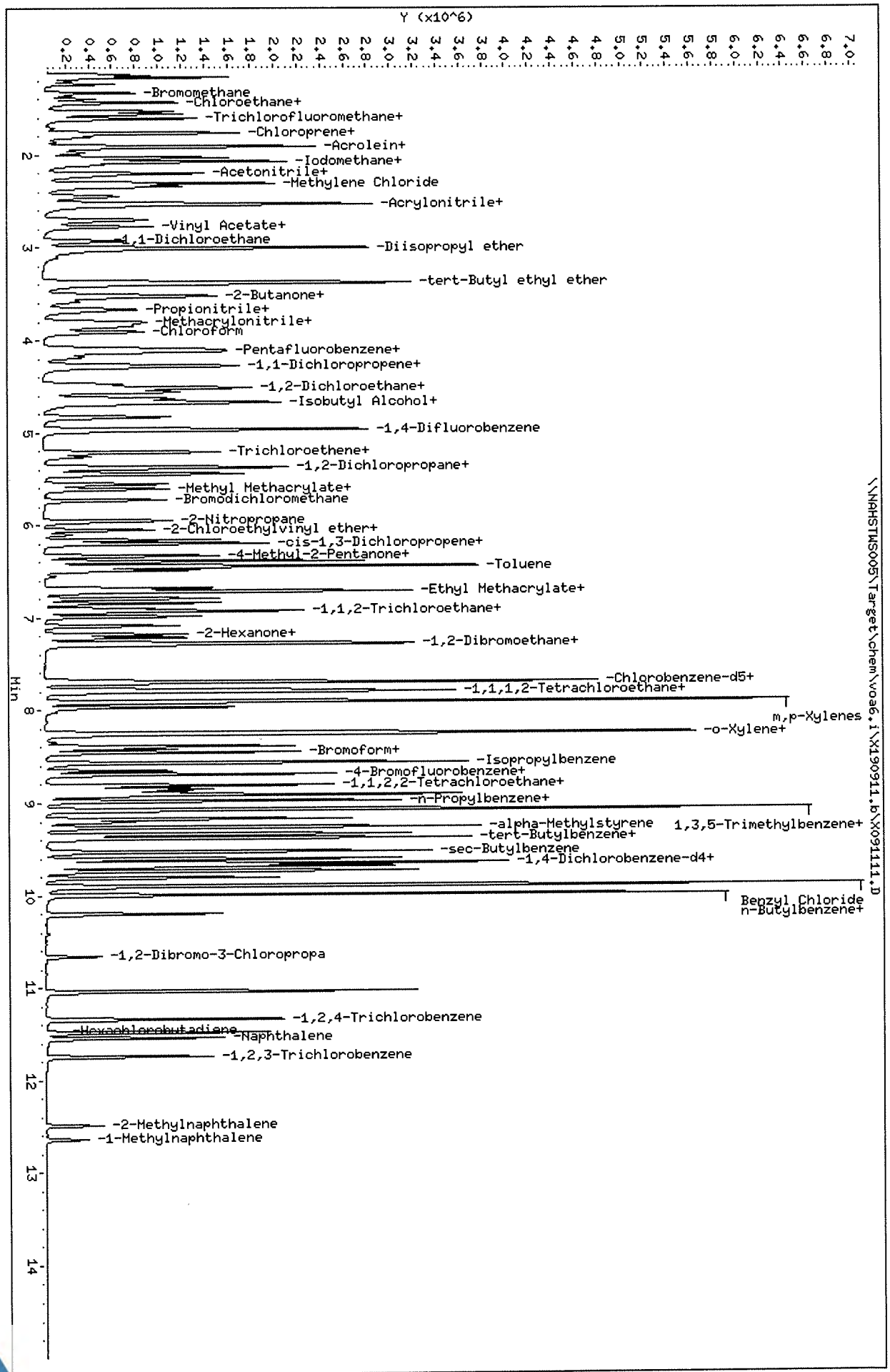
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42	1,2-Dichloropropane	63	5.443	5.443	(1.095)	423833	200.000	179.58
75	1,3,5-Trimethylbenzene	105	9.075	9.075	(0.939)	1777114	200.000	183.16
83	1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	1140192	200.000	189.90
54	1,3-Dichloropropane	76	6.990	6.983	(0.910)	722784	200.000	177.40
84	1,4-Dichlorobenzene	146	9.691	9.691	(1.002)	1141465	200.000	187.48
26	2,2-Dichloropropane	77	3.516	3.516	(0.841)	661994	200.000	177.61
24	2-Butanone	43	3.581	3.581	(0.856)	324093	400.000	371.00(A)
76	2-Chlorotoluene	91	8.982	8.981	(0.929)	1446997	200.000	201.10(A)
52	2-Hexanone	43	7.090	7.090	(0.924)	535128	400.000	372.94(A)
77	4-Chlorotoluene	91	9.075	9.075	(0.939)	1632796	200.000	182.33
82	p-Isopropyltoluene	119	9.655	9.655	(0.999)	1927575	200.000	191.73
45	4-Methyl-2-Pentanone	43	6.331	6.331	(0.825)	768068	400.000	362.59(A)
10	Acetone	43	1.976	1.976	(0.473)	284066	400.000	383.24(A)
37	Benzene	78	4.519	4.519	(0.909)	1811944	200.000	187.87
74	Bromobenzene	156	8.810	8.810	(0.911)	683702	200.000	193.86
29	Bromochloromethane	128	3.803	3.803	(0.909)	292396	200.000	177.42
39	Bromodichloromethane	83	5.729	5.729	(1.153)	634353	200.000	196.52
66	Bromoform	173	8.416	8.416	(1.096)	446837	200.000	209.40(A)
6	Bromomethane	94	1.331	1.339	(0.318)	294065	200.000	131.02
19	Carbon Disulfide	76	2.069	2.069	(0.495)	2628472	400.000	366.53(A)
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	694845	200.000	205.65(A)
59	Chlorobenzene	112	7.699	7.699	(1.003)	1330684	200.000	178.29
7	Chloroethane	64	1.396	1.403	(0.334)	304376	200.000	193.04
28	Chloroform	83	3.910	3.910	(0.935)	818998	200.000	180.91
3	Chloromethane	50	1.074	1.074	(0.257)	425541	200.000	200.09(A)
27	cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	524499	200.000	179.78
46	cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	780154	200.000	198.84
55	Dibromochloromethane	129	7.184	7.184	(0.936)	562499	200.000	195.75
44	Dibromomethane	93	5.558	5.558	(1.118)	322678	200.000	189.71
2	Dichlorodifluoromethane	85	0.966	0.973	(0.231)	413560	200.000	198.31
61	Ethylbenzene	106	7.807	7.807	(1.017)	714321	200.000	184.48
91	Hexachlorobutadiene	225	11.489	11.489	(1.188)	367338	200.000	201.15(A)
67	Isopropylbenzene	105	8.566	8.566	(1.116)	2110161	200.000	183.73
62	m,p-Xylenes	106	7.907	7.907	(1.030)	1664322	400.000	356.06(A)
17	Methylene Chloride	84	2.306	2.306	(0.551)	461146	200.000	196.12
87	n-Butylbenzene	91	9.999	9.999	(1.034)	1467854	200.000	190.23
73	n-Propylbenzene	91	8.917	8.917	(0.922)	2357752	200.000	186.75
92	Naphthalene	128	11.546	11.546	(1.194)	1047840	200.000	212.32(A)
63	o-Xylene	106	8.244	8.244	(1.074)	806821	200.000	176.24
81	sec-Butylbenzene	105	9.526	9.526	(0.985)	2069102	200.000	185.56
64	Styrene	104	8.265	8.265	(1.076)	1414770	200.000	180.29
78	tert-Butylbenzene	119	9.347	9.340	(0.967)	1503361	200.000	184.42
56	Tetrachloroethene	164	6.933	6.933	(0.903)	480943	200.000	186.73
50	Toluene	91	6.453	6.453	(0.840)	1926547	200.000	175.27
20	trans-1,2-Dichloroethene	96	2.528	2.528	(0.604)	443034	200.000	178.02
51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.344)	698314	200.000	198.83
38	Trichloroethene	130	5.214	5.214	(1.049)	575938	200.000	198.28
8	Trichlorofluoromethane	101	1.553	1.561	(0.372)	836165	200.000	195.33
5	Vinyl Chloride	62	1.138	1.138	(0.272)	540781	200.000	182.31

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

QC Flag Legend

M - Compound response manually integrated.

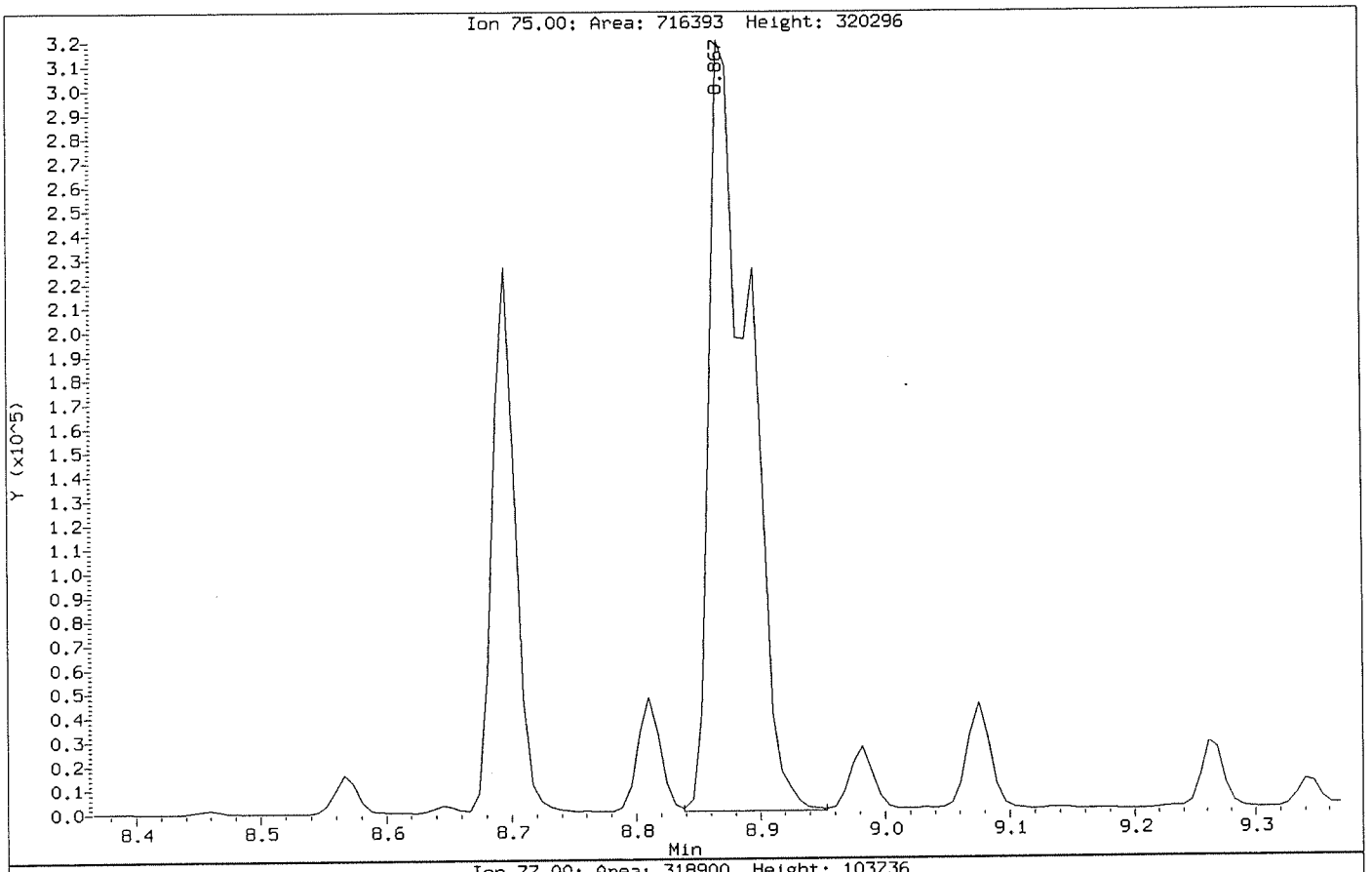


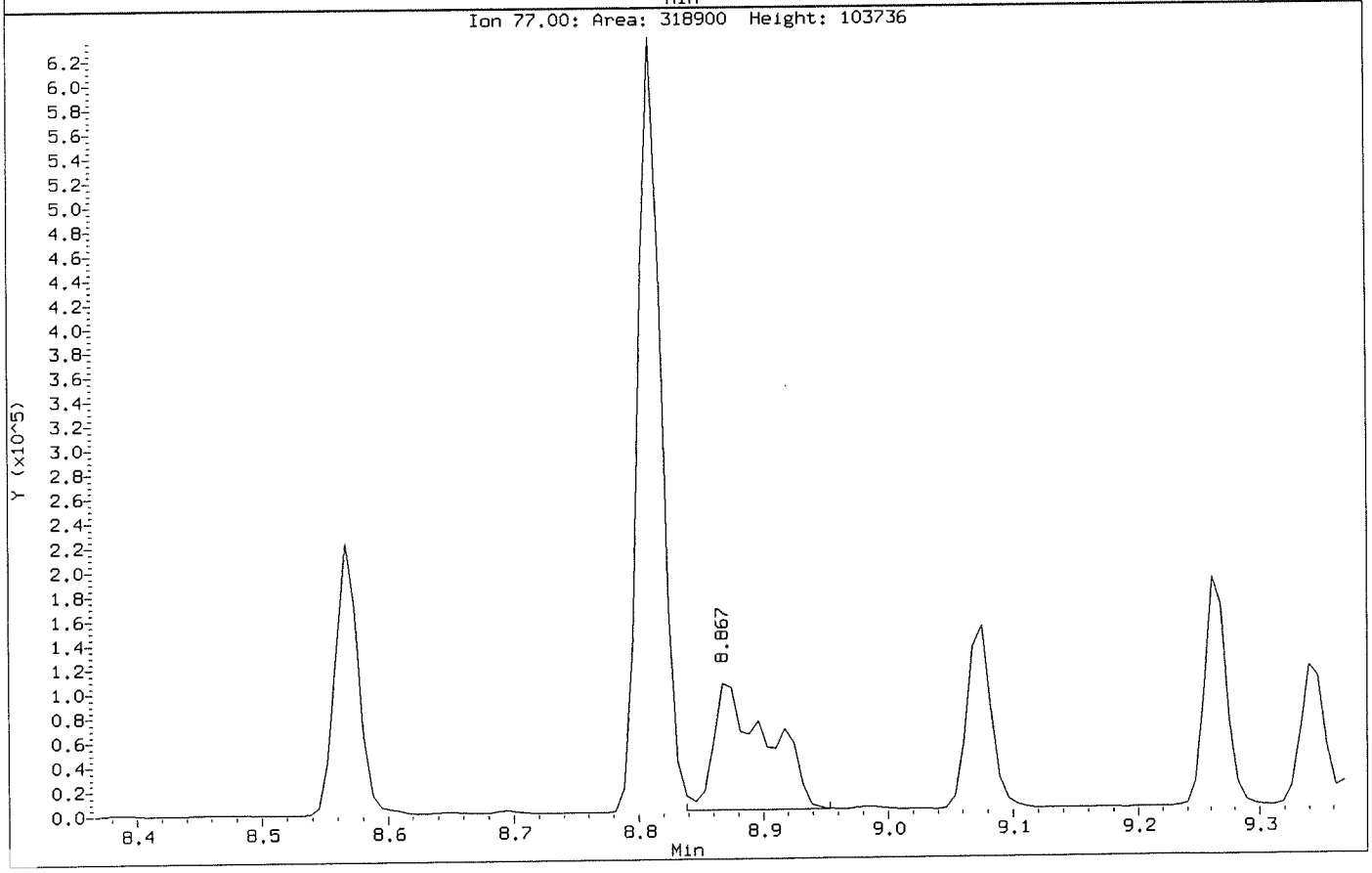
Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091111.D
Date : 11-SEP-2019 15:31
Client ID: VSTD200
Sample Info: VSTD200;VSTD200;1;10;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\BEFORE\X091111.D
Injection Date: 11-SEP-2019 15:31
Instrument: voa6.i
Client Sample ID: VSTD200

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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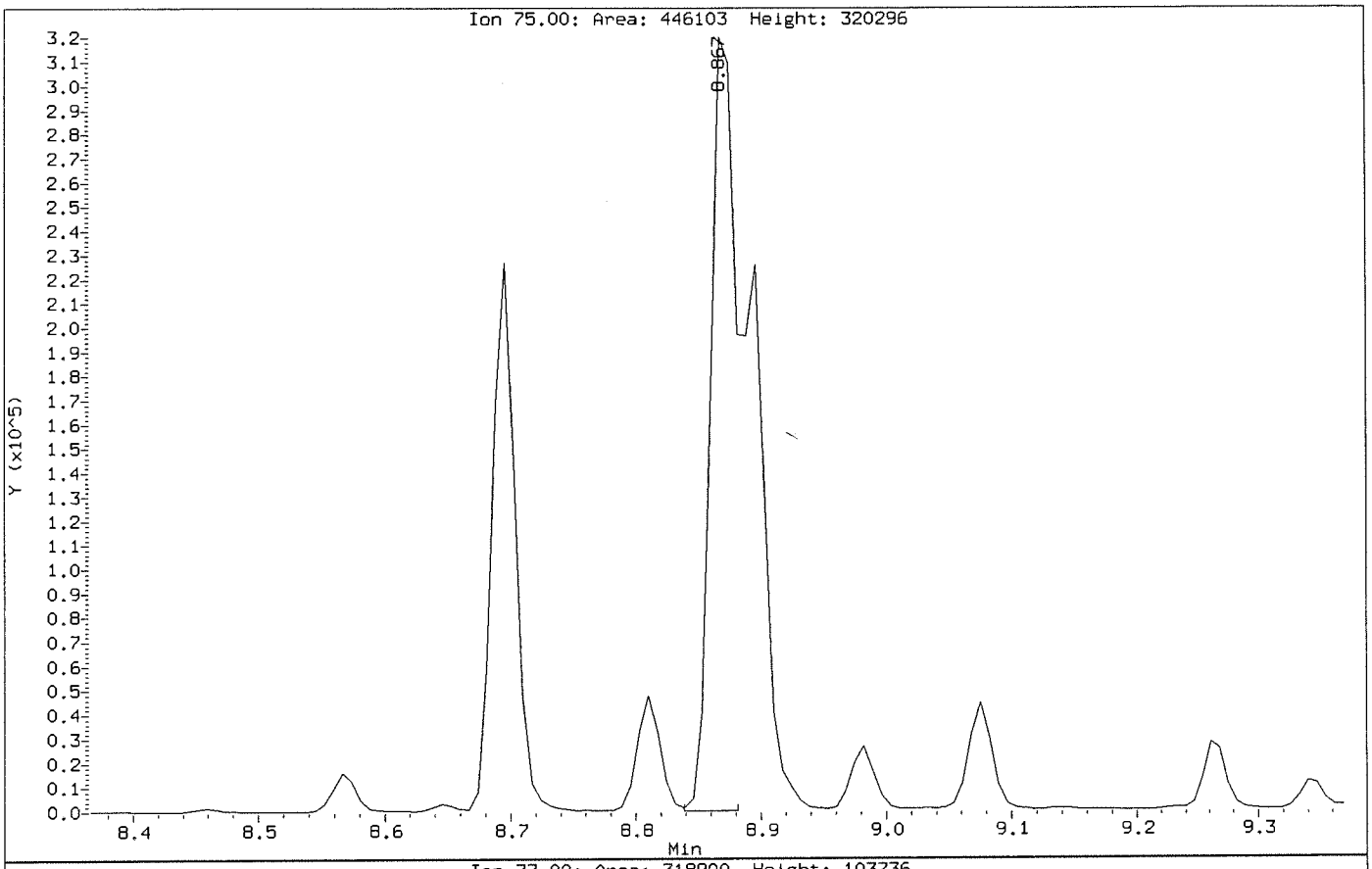
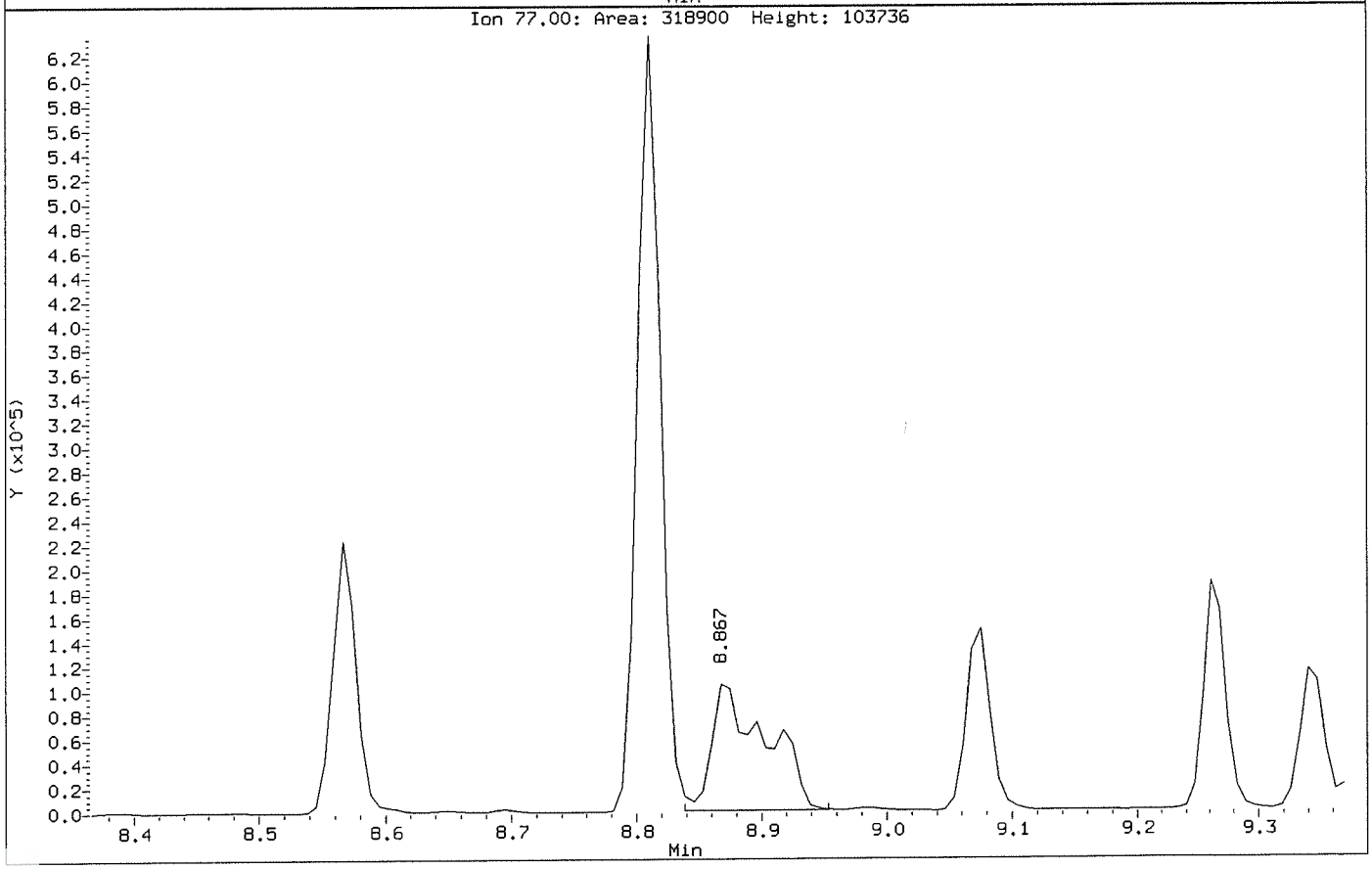
Injection Date: 11-SEP-2019 15:31
Instrument: voa6.i
Client Sample ID: VSTD200

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X190911.b\X091114.D
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 11-SEP-2019 16:43
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;ICV
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X190911.b\8260W.m
Meth Date : 24-Sep-2019 15:13 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 15:31 Cal File: X091111.D
Als bottle: 15 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

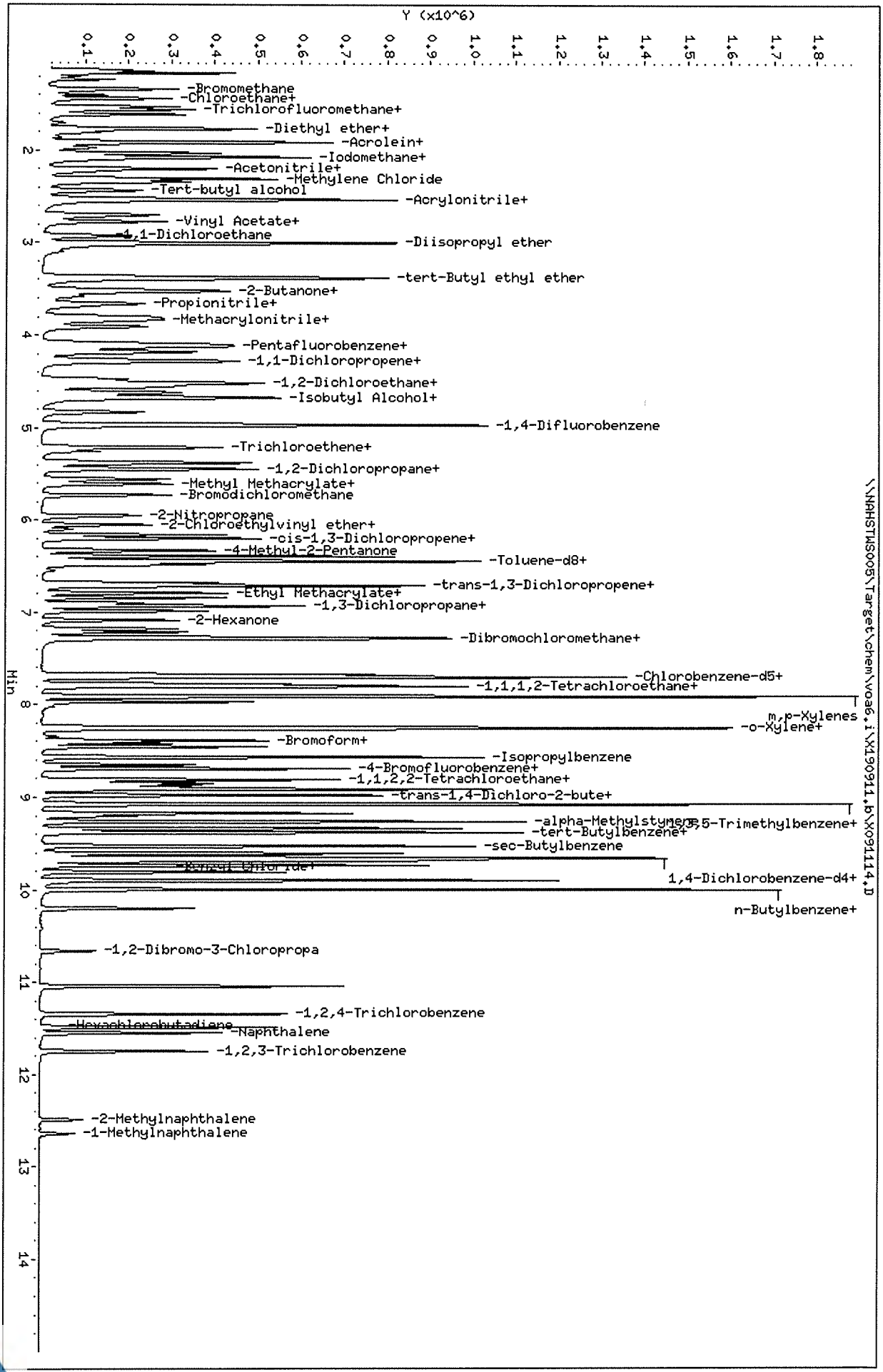
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	321779	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	433268	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	395523	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	216215	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	140044	50.0000	50.28
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	145776	50.0000	49.14
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	493311	50.0000	45.15
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	187205	50.0000	50.19
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	141548	50.0000	47.18
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	200837	50.0000	45.58
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	155828	50.0000	49.36
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	100270	50.0000	45.95
22 1,1-Dichloroethane	63	2.922	2.922	(0.699)	222263	50.0000	44.05
11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	125655	50.0000	45.81
32 1,1-Dichloropropene	75	4.283	4.283	(0.862)	169279	50.0000	46.50
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	112761	50.0000	48.90
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	127582	50.0000	46.61(M)
90 1,2,4-Trichlorobenzene	180	11.345	11.345	(1.173)	177623	50.0000	50.72
79 1,2,4-Trimethylbenzene	105	9.383	9.383	(0.970)	516979	50.0000	46.01
89 1,2-Dibromo-3-Chloropropane	155	10.658	10.658	(1.102)	28025	50.0000	50.45
57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	137422	50.0000	46.84
88 1,2-Dichlorobenzene	146	9.999	9.999	(1.034)	291227	50.0000	45.30
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	165655	50.0000	46.25

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42	1,2-Dichloropropane	63	5.443	5.443	(1.095)	122605	50.0000	45.15
75	1,3,5-Trimethylbenzene	105	9.075	9.075	(0.939)	503243	50.0000	45.98
83	1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	316467	50.0000	46.72
54	1,3-Dichloropropane	76	6.983	6.983	(0.910)	203218	50.0000	44.92
84	1,4-Dichlorobenzene	146	9.691	9.691	(1.002)	316104	50.0000	46.02
26	2,2-Dichloropropane	77	3.516	3.516	(0.841)	194761	50.0000	46.21
24	2-Butanone	43	3.581	3.581	(0.856)	98387	100.000	99.60
76	2-Chlorotoluene	91	8.981	8.981	(0.929)	389475	50.0000	48.02
52	2-Hexanone	43	7.090	7.090	(0.924)	152163	100.000	95.51
77	4-Chlorotoluene	91	9.075	9.075	(0.939)	458294	50.0000	45.36
82	p-Isopropyltoluene	119	9.655	9.655	(0.999)	540087	50.0000	47.62
45	4-Methyl-2-Pentanone	43	6.331	6.331	(0.825)	212292	100.000	90.26
10	Acetone	43	1.976	1.976	(0.473)	96184	100.000	110.65
37	Benzene	78	4.519	4.519	(0.909)	501951	50.0000	45.24
74	Bromobenzene	156	8.810	8.810	(0.911)	187416	50.0000	47.11
29	Bromochloromethane	128	3.803	3.803	(0.909)	83609	50.0000	44.86
39	Bromodichloromethane	83	5.729	5.729	(1.153)	174152	50.0000	46.90
66	Bromoform	173	8.416	8.416	(1.097)	116649	50.0000	49.23
6	Bromomethane	94	1.339	1.339	(0.320)	142530	50.0000	55.30
19	Carbon Disulfide	76	2.069	2.069	(0.495)	748227	100.000	92.26
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	181503	50.0000	46.69
59	Chlorobenzene	112	7.699	7.699	(1.004)	371068	50.0000	44.77
7	Chloroethane	64	1.403	1.403	(0.336)	93650	50.0000	50.68
28	Chloroform	83	3.910	3.910	(0.935)	233051	50.0000	45.52
3	Chloromethane	50	1.074	1.074	(0.257)	116157	50.0000	48.18
27	cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	149096	50.0000	45.19
46	cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	216023	50.0000	47.86
55	Dibromochloromethane	129	7.184	7.184	(0.937)	152371	50.0000	47.75
44	Dibromomethane	93	5.558	5.558	(1.118)	88977	50.0000	45.47
2	Dichlorodifluoromethane	85	0.973	0.973	(0.233)	111583	50.0000	47.31
61	Ethylbenzene	106	7.807	7.807	(1.018)	195243	50.0000	45.41
91	Hexachlorobutadiene	225	11.489	11.489	(1.188)	105127	50.0000	51.74
67	Isopropylbenzene	105	8.566	8.566	(1.117)	578116	50.0000	45.33
62	m,p-Xylenes	106	7.907	7.907	(1.031)	476052	100.000	91.73
17	Methylene Chloride	84	2.306	2.306	(0.551)	138779	50.0000	50.29
87	n-Butylbenzene	91	9.999	9.999	(1.034)	428011	50.0000	49.17
73	n-Propylbenzene	91	8.917	8.917	(0.922)	655753	50.0000	46.04
92	Naphthalene	128	11.546	11.546	(1.194)	279155	50.0000	50.14
63	o-Xylene	106	8.244	8.244	(1.075)	238850	50.0000	46.99
81	sec-Butylbenzene	105	9.526	9.526	(0.985)	576141	50.0000	45.80
64	Styrene	104	8.265	8.265	(1.078)	407093	50.0000	46.72
78	tert-Butylbenzene	119	9.340	9.340	(0.966)	416262	50.0000	45.27
56	Tetrachloroethene	164	6.933	6.933	(0.904)	131270	50.0000	45.90
50	Toluene	91	6.453	6.453	(0.841)	541509	50.0000	44.37
20	trans-1,2-Dichloroethene	96	2.528	2.528	(0.604)	126586	50.0000	44.98
51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.344)	191949	50.0000	47.51
38	Trichloroethene	130	5.214	5.214	(1.049)	156664	50.0000	46.88
8	Trichlorofluoromethane	101	1.561	1.561	(0.373)	229327	50.0000	47.37
5	Vinyl Chloride	62	1.138	1.138	(0.272)	152086	50.0000	45.34

QC Flag Legend

M - Compound response manually integrated.



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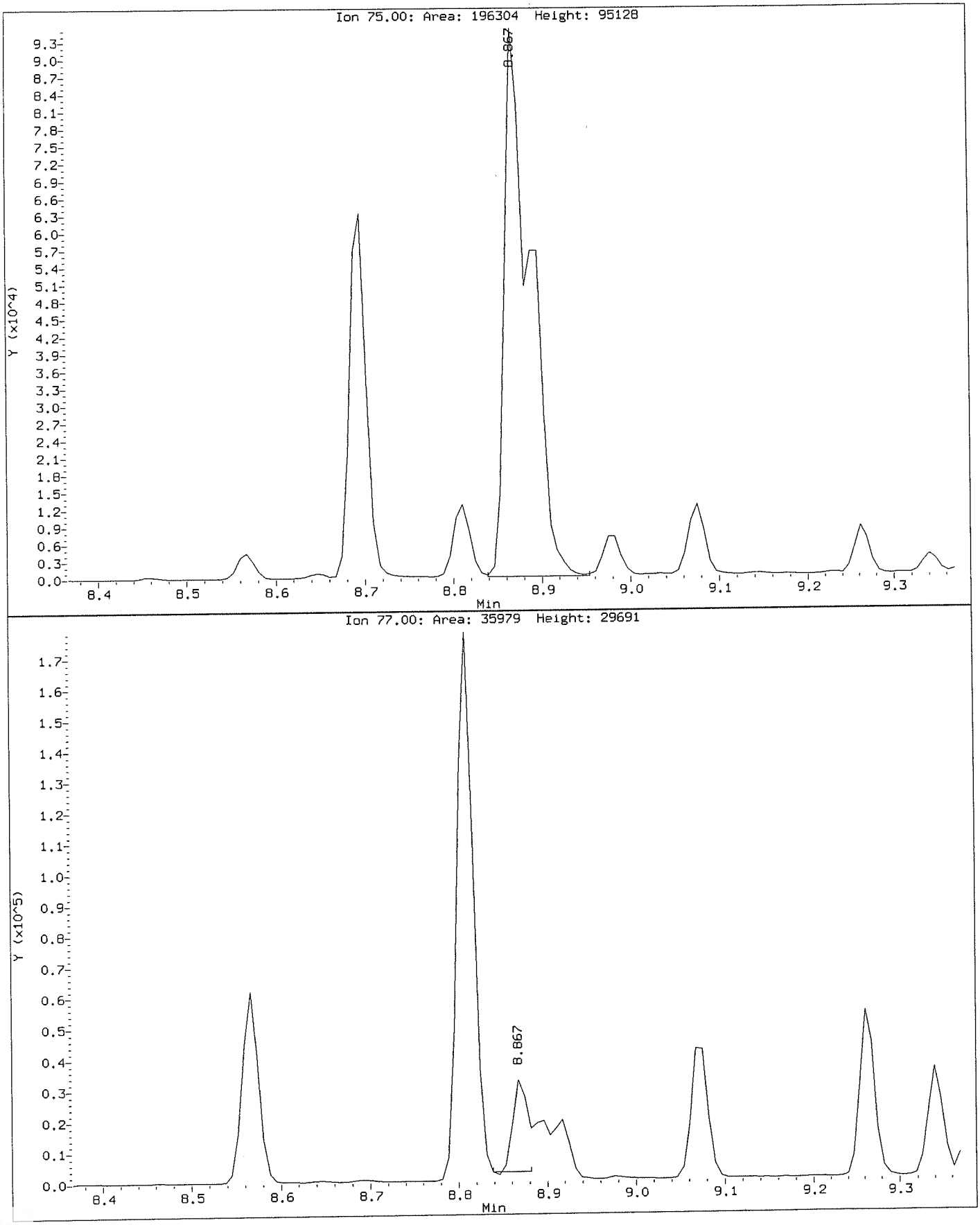
Date : 11-SEP-2019 16:43
Client ID: ICV
Sample Info: CCV;CCV;2;;ICV
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X190911.b\BEFORE\X091114.D
Injection Date: 11-SEP-2019 16:43
Instrument: voa6.i
Client Sample ID: ICV

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



MSVOA06 -Logbook

Batch: 37517
Date: 09-12-2019
Method: 8260
Comments:

Analyst: Devak Giga
Reviewer:
Laboratory: Houston

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	09-12-2019 11:38 am	1.00	0.00 mL	0.00 mL	X091201.D	Liquid	Y	NA
	Auto find/purged									
2	CCV	CCV	09-12-2019 12:02 pm	1.00	5.00 mL	0.00 mL	X091202.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
3	BLANK	SAMP	09-12-2019 12:26 pm	1.00	5.00 mL	0.00 mL	X091203.D	Liquid	Y	NA
	Cleanup blk									
4	CCB	SAMP	09-12-2019 12:50 pm	1.00	5.00 mL	0.00 mL	X091204.D	Liquid	Y	NA
	CCB									
5	VLCSW-190912	LCS	09-12-2019 01:14 pm	1.00	5.00 mL	0.00 mL	X091205.D	Liquid	Y	NA
	4 uL LCS std/50 mL DI									
6	BLK	SAMP	09-12-2019 01:38 pm	1.00	5.00 mL	0.00 mL	X091206.D	Liquid	Y	NA
	Cleanup blk									
7	VBLKW-190912	MBLK	09-12-2019 02:16 pm	1.00	5.00 mL	0.00 mL	X091207.D	Liquid	Y	NA
8	MBLK-145127 091119	MBLK	09-12-2019 02:40 pm	20.00	5.00 mL	0.00 mL	X091208.D	Liquid	Y	NA
9	HS19090459-01	SAMP	09-12-2019 03:04 pm	20.00	5.00 mL	0.00 mL	X091209.D	Liquid	Y	<2
10	HS19090511-08	SAMP	09-12-2019 03:28 pm	1.00	5.00 mL	0.00 mL	X091210.D	Liquid	Y	<2
11	HS19090511-01	SAMP	09-12-2019 03:52 pm	1.00	5.00 mL	0.00 mL	X091211.D	Liquid	Y	<2
12	HS19090511-02	SAMP	09-12-2019 04:16 pm	1.00	5.00 mL	0.00 mL	X091212.D	Liquid	Y	<2
13	HS19090434-06	SAMP	09-12-2019 04:40 pm	1.00	5.00 mL	0.00 mL	X091213.D	Liquid	Y	<2
14	HS19090511-02	SAMP	09-12-2019 05:04 pm	25.00	5.00 mL	0.00 mL	X091214.D	Liquid	Y	<2
15	HS19090511-02MS	MS	09-12-2019 05:28 pm	25.00	5.00 mL	0.00 mL	X091215.D	Liquid	Y	NA
	3.2 uL cal std/40 mL sample									
16	HS19090511-02MSD	MSD	09-12-2019 05:52 pm	25.00	5.00 mL	0.00 mL	X091216.D	Liquid	Y	NA
	3.2 uL cal std/40 mL sample									
17	HS19090434-08	SAMP	09-12-2019 06:16 pm	1.00	5.00 mL	0.00 mL	X091217.D	Liquid	Y	<2
18	HS19090511-03	SAMP	09-12-2019 06:40 pm	1.00	5.00 mL	0.00 mL	X091218.D	Liquid	Y	<2
19	HS19090511-04	SAMP	09-12-2019 07:04 pm	1.00	5.00 mL	0.00 mL	X091219.D	Liquid	Y	<2
20	HS19090511-05	SAMP	09-12-2019 07:28 pm	1.00	5.00 mL	0.00 mL	X091220.D	Liquid	Y	<2
21	HS19090511-06	SAMP	09-12-2019 07:52 pm	1.00	5.00 mL	0.00 mL	X091221.D	Liquid	Y	<2
22	HS19090511-07	SAMP	09-12-2019 08:17 pm	1.00	5.00 mL	0.00 mL	X091222.D	Liquid	Y	<2
23	HS19090434-10	SAMP	09-12-2019 08:41 pm	1.00	5.00 mL	0.00 mL	X091223.D	Liquid	Y	<2
24	HS19090434-11	SAMP	09-12-2019 09:05 pm	1.00	5.00 mL	0.00 mL	X091224.D	Liquid	Y	<2
25	CCV-END	CCV	09-12-2019 09:29 pm	1.00	5.00 mL	0.00 mL	X091225.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									

Chemical	Value
SURR SPK ID	30502-90-03
IS ID	30502-90-04
ICV STD ID	30603-83-01
LCS/MS ID	30603-83-01
CAL STD ID	30502-93-01/02
BFB ID	30502-90-03
pH Paper	634-64-11

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19090511

	CLIENT SAMPLE NO.	SMC1 (DCE) #	SMC2 #	SMC3 (TOL) #	OTHER #	TOT OUT
01	VLCSW-190912	100	102	91	103	0
02	VBLKW-190912	91	94	97	103	0
03	HS19090511-0	90	93	96	101	0
04	HS19090511-0	90	92	96	102	0
05	HS19090511-0	93	94	94	103	0
06	HS19090511-0	90	94	96	101	0
07	HS19090511-0	93	94	96	100	0
08	HS19090511-0	91	93	97	100	0
09	HS19090511-0	91	92	95	103	0
10	HS19090511-0	91	93	95	100	0
11	HS19090511-0	92	94	96	103	0
12	HS19090511-0	90	93	95	104	0
13	HS19090511-0	92	95	97	101	0
14						
15						
16						
17						
18						
19						
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21						
22						
23						
24						
25						
26						
27						
28						

		QC LIMITS
SMC1 (DCE)	= 1,2-Dichloroethane-d4	(0-130)
SMC2	= Dibromofluoromethane	(0-130)
SMC3 (TOL)	= Toluene-d8	(0-130)
OTHER	= 4-Bromofluorobenzene	(0-130)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKW-190912

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19090511

Lab File ID: X091207 Lab Sample ID: VBLKW-190912

Date Analyzed: 09/12/19 Time Analyzed: 1416

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

Instrument ID: VOA6

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VLCSW-190912	VLCSW-190912	X091205	1314
02	HS19090511-0	HS19090511-08	X091210	1528
03	HS19090511-0	HS19090511-01	X091211	1552
04	HS19090511-0	HS19090511-02	X091212	1616
05	HS19090511-0	HS19090511-02	X091214	1704
06	HS19090511-0	HS19090511-02M	X091215	1728
07	HS19090511-0	HS19090511-02M	X091216	1752
08	HS19090511-0	HS19090511-03	X091218	1840
09	HS19090511-0	HS19090511-04	X091219	1904
10	HS19090511-0	HS19090511-05	X091220	1928
11	HS19090511-0	HS19090511-06	X091221	1952
12	HS19090511-0	HS19090511-07	X091222	2017
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COMMENTS:

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19090511

Lab File ID: X091201 BFB Injection Date: 09/12/19

Instrument ID: VOA6 BFB Injection Time: 1138

GC Column: DB624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.2
75	30.0 - 60.0% of mass 95	46.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.7 (0.8)1
174	Greater than 50.0% of mass 95	83.0
175	5.0 - 9.0% of mass 174	6.3 (7.6)1
176	95.0 - 101.0% of mass 174	79.3 (95.6)1
177	5.0 - 9.0% of mass 176	5.4 (6.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV	CCV	X091202	09/12/19	1202
02	VLCSW-190912	VLCSW-190912	X091205	09/12/19	1314
03	VBLKW-190912	VBLKW-190912	X091207	09/12/19	1416
04	HS19090511-0	HS19090511-08	X091210	09/12/19	1528
05	HS19090511-0	HS19090511-01	X091211	09/12/19	1552
06	HS19090511-0	HS19090511-02	X091212	09/12/19	1616
07	HS19090511-0	HS19090511-02	X091214	09/12/19	1704
08	HS19090511-0	HS19090511-02M	X091215	09/12/19	1728
09	HS19090511-0	HS19090511-02M	X091216	09/12/19	1752
10	HS19090511-0	HS19090511-03	X091218	09/12/19	1840
11	HS19090511-0	HS19090511-04	X091219	09/12/19	1904
12	HS19090511-0	HS19090511-05	X091220	09/12/19	1928
13	HS19090511-0	HS19090511-06	X091221	09/12/19	1952
14	HS19090511-0	HS19090511-07	X091222	09/12/19	2017
15	CCV-END	CCV-END	X091225	09/12/19	2129
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19090511

Instrument ID: VOA6 Calibration Date: 09/12/19 Time: 1202

Lab File ID: X091202 Init. Calib. Date(s): 09/11/19 09/11/19

Init. Calib. Times: 1131 1531

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
cis-1,3-Dichloropropene	0.5210000	0.5015492	0.5015492	0.2	3.73	20.00	AVRG	
trans-1,3-Dichloropropene	0.4660000	0.4425079	0.4425079	0.1	5.04	20.00	AVRG	
1,3-Dichlorobenzene	1.5660000	1.4085228	1.4085228	0.6	10.06	20.00	AVRG	
2,2-Dichloropropane	0.6550000	0.6142448	0.6142448	0.1	6.22	20.00	AVRG	
1,1-Dichloropropene	0.4200000	0.3728708	0.3728708	0.1	11.22	20.00	AVRG	
Dibromomethane	0.2260000	0.2035243	0.2035243	0.1	9.94	20.00	AVRG	
1,2-Dibromoethane	0.3710000	0.3441306	0.3441306	0.1	7.24	20.00	AVRG	
trans-1,2-Dichloroethene	0.4370000	0.4027310	0.4027310	0.1	7.84	20.00	AVRG	
1,1,1,2-Tetrachloroethane	0.3790000	0.3615833	0.3615833	0.1	4.60	20.00	AVRG	
1,1,1-Trichloroethane	0.6840000	0.6217505	0.6217505	0.1	9.10	20.00	AVRG	
1,1,2,2-Tetrachloroethane	47.723358	50.000000	0.6968672	0.3	4.55	20.00	LINR	
1,1,2-Trichloroethane	0.2760000	0.2536771	0.2536771	0.1	8.09	20.00	AVRG	
1,1-Dichloroethane	0.7840000	0.6866414	0.6866414	0.2	12.42	20.00	AVRG	
1,1-Dichloroethene	0.4260000	0.4375628	0.4375628	0.1	-2.71	20.00	AVRG	
Trichloroethene	0.3860000	0.3553049	0.3553049	0.2	7.95	20.00	AVRG	
1,2,3-Trichlorobenzene	0.5330000	0.4744884	0.4744884	0.1	10.98	20.00	AVRG	
Trichlorofluoromethane	0.7520000	0.7741317	0.7741317	0.1	-2.94	20.00	AVRG	
1,2,4-Trichlorobenzene	0.8100000	0.7410736	0.7410736	0.2	8.51	20.00	AVRG	
1,2,4-Trimethylbenzene	2.5980000	2.2537115	2.2537115	0.1	13.25	20.00	AVRG	
Tetrachloroethene	0.3620000	0.3240316	0.3240316	0.2	10.49	20.00	AVRG	
1,2-Dichlorobenzene	1.4860000	1.3150924	1.3150924	0.4	11.50	20.00	AVRG	
1,2-Dichloroethane	0.4130000	0.3850617	0.3850617	0.1	6.76	20.00	AVRG	
1,2-Dichloropropane	0.3130000	0.2827526	0.2827526	0.1	9.66	20.00	AVRG	
1,3,5-Trimethylbenzene	2.5310000	2.1899830	2.1899830	0.1	13.47	20.00	AVRG	
1,3-Dichloropropane	0.5720000	0.5112228	0.5112228	0.1	10.62	20.00	AVRG	
1,4-Dichlorobenzene	1.5880000	1.4139109	1.4139109	0.4	10.96	20.00	AVRG	
Toluene	1.5430000	1.3624398	1.3624398	0.4	11.70	20.00	AVRG	
2-Butanone	0.1530000	0.1436436	0.1436436	0.1	6.12	20.00	AVRG	
2-Chlorotoluene	46.535376	50.000000	1.7455091	0.1	6.93	20.00	LINR	
2-Hexanone	0.2010000	0.1806896	0.1806896	0.1	10.10	20.00	AVRG	
4-Chlorotoluene	2.3360000	2.0345030	2.0345030	0.1	12.91	20.00	AVRG	
tert-Butylbenzene	2.1260000	1.7709053	1.7709053	0.1	16.70	20.00	AVRG	
4-Methyl-2-Pentanone	0.2970000	0.2580694	0.2580694	0.1	13.11	20.00	AVRG	
Acetone	119.36434	100.00000	0.1606259	0.1	-19.36	20.00	LINR	
Benzene	1.2800000	1.1479018	1.1479018	0.5	10.32	20.00	AVRG	
Bromobenzene	0.9200000	0.8583462	0.8583462	0.1	6.70	20.00	AVRG	
Bromochloromethane	0.2890000	0.2668690	0.2668690	0.1	7.66	20.00	AVRG	
Bromodichloromethane	0.4280000	0.4014301	0.4014301	0.2	6.21	20.00	AVRG	
Bromoform	0.3000000	0.2931645	0.2931645	0.1	2.28	20.00	AVRG	
Bromomethane	61.969467	50.000000	0.4948889	0.1	-23.94	20.00	LINR	<-
Carbon Disulfide	1.2600000	1.1375684	1.1375684	0.1	9.72	20.00	AVRG	
Carbon Tetrachloride	0.4480000	0.4081905	0.4081905	0.1	8.89	20.00	AVRG	

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1909051

Instrument ID: VOA6 Calibration Date: 09/12/19 Time: 1202

Lab File ID: X091202 Init. Calib. Date(s): 09/11/19 09/11/19

Init. Calib. Times: 1131 1531

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Chlorobenzene	1.0480000	0.9306452	0.9306452	0.5	11.20	20.00	AVRG
Chloroethane	58.146188	50.000000	0.3318683	0.1	-16.29	20.00	LINR
Chloroform	0.7950000	0.7325791	0.7325791	0.2	7.85	20.00	AVRG
Chloromethane	45.881163	50.000000	0.3437921	0.1	8.24	20.00	LINR
cis-1,2-Dichloroethene	0.5120000	0.4762904	0.4762904	0.1	6.97	20.00	AVRG
Dibromochloromethane	0.4030000	0.3879003	0.3879003	0.1	3.75	20.00	AVRG
Dichlorodifluoromethane	0.3660000	0.3330180	0.3330180	0.1	9.01	20.00	AVRG
Ethylbenzene	0.5430000	0.4831479	0.4831479	0.1	11.02	20.00	AVRG
Hexachlorobutadiene	44.866601	50.000000	0.4204199	0.1	10.27	20.00	LINR
Isopropylbenzene	1.6120000	1.3876829	1.3876829	0.1	13.92	20.00	AVRG
m,p-Xylenes	0.6560000	0.5775933	0.5775933	0.1	11.95	20.00	AVRG
Methylene Chloride	51.258586	50.000000	0.4391461	0.1	-2.52	20.00	LINR
n-Butylbenzene	2.0130000	1.7330636	1.7330636	0.5	13.91	20.00	AVRG
n-Propylbenzene	3.2930000	2.8241848	2.8241848	0.1	14.24	20.00	AVRG
Naphthalene	1.2870000	1.1867838	1.1867838	0.2	7.79	20.00	AVRG
o-Xylene	0.6420000	0.5707880	0.5707880	0.3	11.09	20.00	AVRG
sec-Butylbenzene	2.9090000	2.3778059	2.3778059	0.1	18.26	20.00	AVRG
Styrene	1.1010000	1.0129000	1.0129000	0.3	8.00	20.00	AVRG
Vinyl Chloride	0.5210000	0.5394765	0.5394765	0.1	-3.55	20.00	AVRG
1,2,3-Trichloropropane	0.6330000	0.5705839	0.5705839	0.1	9.86	20.00	AVRG
p-Isopropyltoluene	2.6220000	2.2174815	2.2174815	0.1	15.43	20.00	AVRG
1,2-Dibromo-3-Chloropropane	0.1280000	0.1216938	0.1216938	0.05	4.93	20.00	AVRG
1,2-Dichloroethane-d4	49.541863	50.000000	0.4566638	0.1	0.92	20.00	LINR
Dibromofluoromethane	50.711061	50.000000	0.4388406	0.1	-1.42	20.00	LINR
Toluene-d8	1.3810000	1.2301628	1.2301628	0.1	10.92	20.00	AVRG
4-Bromofluorobenzene	49.249668	50.000000	0.4644595	0.1	1.50	20.00	LINR

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19090511

Instrument ID: VOA6 Calibration Date: 09/12/19 Time: 2129

Lab File ID: X091225 Init. Calib. Date(s): 09/11/19 09/11/19

Init. Calib. Times: 1131 1531

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
cis-1,3-Dichloropropene	0.5210000	0.4822932	0.4822932	0.2	7.43	50.00	AVRG
trans-1,3-Dichloropropene	0.4660000	0.4282244	0.4282244	0.1	8.11	50.00	AVRG
1,3-Dichlorobenzene	1.5660000	1.3490028	1.3490028	0.6	13.86	50.00	AVRG
2,2-Dichloropropane	0.6550000	0.5308061	0.5308061	0.1	18.96	50.00	AVRG
1,1-Dichloropropene	0.4200000	0.3526679	0.3526679	0.1	16.03	50.00	AVRG
Dibromomethane	0.2260000	0.2068423	0.2068423	0.1	8.48	50.00	AVRG
1,2-Dibromoethane	0.3710000	0.3493527	0.3493527	0.1	5.83	50.00	AVRG
trans-1,2-Dichloroethene	0.4370000	0.3869715	0.3869715	0.1	11.45	50.00	AVRG
1,1,1,2-Tetrachloroethane	0.3790000	0.3581234	0.3581234	0.1	5.51	50.00	AVRG
1,1,1-Trichloroethane	0.6840000	0.5906453	0.5906453	0.1	13.65	50.00	AVRG
1,1,2,2-Tetrachloroethane	49.335157	50.000000	0.7202951	0.3	1.33	50.00	LINR
1,1,2-Trichloroethane	0.2760000	0.2554268	0.2554268	0.1	7.45	50.00	AVRG
1,1-Dichloroethane	0.7840000	0.6861548	0.6861548	0.2	12.48	50.00	AVRG
1,1-Dichloroethene	0.4260000	0.3861434	0.3861434	0.1	9.36	50.00	AVRG
Trichloroethene	0.3860000	0.3462526	0.3462526	0.2	10.30	50.00	AVRG
1,2,3-Trichlorobenzene	0.5330000	0.4618433	0.4618433	0.1	13.35	50.00	AVRG
Trichlorofluoromethane	0.7520000	0.6758229	0.6758229	0.1	10.13	50.00	AVRG
1,2,4-Trichlorobenzene	0.8100000	0.7202013	0.7202013	0.2	11.09	50.00	AVRG
1,2,4-Trimethylbenzene	2.5980000	2.1047745	2.1047745	0.1	18.98	50.00	AVRG
Tetrachloroethene	0.3620000	0.2949959	0.2949959	0.2	18.51	50.00	AVRG
1,2-Dichlorobenzene	1.4860000	1.2871989	1.2871989	0.4	13.38	50.00	AVRG
1,2-Dichloroethane	0.4130000	0.3784100	0.3784100	0.1	8.38	50.00	AVRG
1,2-Dichloropropane	0.3130000	0.2736305	0.2736305	0.1	12.58	50.00	AVRG
1,3,5-Trimethylbenzene	2.5310000	2.0194758	2.0194758	0.1	20.21	50.00	AVRG
1,3-Dichloropropane	0.5720000	0.5205034	0.5205034	0.1	9.00	50.00	AVRG
1,4-Dichlorobenzene	1.5880000	1.3425921	1.3425921	0.4	15.45	50.00	AVRG
Toluene	1.5430000	1.3364293	1.3364293	0.4	13.39	50.00	AVRG
2-Butanone	0.1530000	0.1503644	0.1503644	0.1	1.72	50.00	AVRG
2-Chlorotoluene	44.191396	50.000000	1.6575017	0.1	11.62	50.00	LINR
2-Hexanone	0.2010000	0.1919049	0.1919049	0.1	4.52	50.00	AVRG
4-Chlorotoluene	2.3360000	1.9411036	1.9411036	0.1	16.90	50.00	AVRG
tert-Butylbenzene	2.1260000	1.5894325	1.5894325	0.1	25.24	50.00	AVRG
4-Methyl-2-Pentanone	0.2970000	0.2777311	0.2777311	0.1	6.49	50.00	AVRG
Acetone	97.630398	100.00000	0.1327458	0.1	2.37	50.00	LINR
Benzene	1.2800000	1.1333100	1.1333100	0.5	11.46	50.00	AVRG
Bromobenzene	0.9200000	0.8323431	0.8323431	0.1	9.53	50.00	AVRG
Bromochloromethane	0.2890000	0.2627893	0.2627893	0.1	9.07	50.00	AVRG
Bromodichloromethane	0.4280000	0.3922873	0.3922873	0.2	8.34	50.00	AVRG
Bromoform	0.3000000	0.2989727	0.2989727	0.1	0.34	50.00	AVRG
Bromomethane	43.295781	50.000000	0.3492753	0.1	13.41	50.00	LINR
Carbon Disulfide	1.2600000	1.0947177	1.0947177	0.1	13.12	50.00	AVRG
Carbon Tetrachloride	0.4480000	0.3750356	0.3750356	0.1	16.29	50.00	AVRG

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1909051

Instrument ID: VOA6 Calibration Date: 09/12/19 Time: 2129

Lab File ID: X091225 Init. Calib. Date(s): 09/11/19 09/11/19

Init. Calib. Times: 1131 1531

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Chlorobenzene	1.0480000	0.9099630	0.9099630	0.5	13.17	50.00	AVRG
Chloroethane	51.993432	50.000000	0.2982193	0.1	-3.99	50.00	LINR
Chloroform	0.7950000	0.7218314	0.7218314	0.2	9.20	50.00	AVRG
Chloromethane	42.648460	50.000000	0.3196512	0.1	14.70	50.00	LINR
cis-1,2-Dichloroethene	0.5120000	0.4702558	0.4702558	0.1	8.15	50.00	AVRG
Dibromochloromethane	0.4030000	0.3865714	0.3865714	0.1	4.08	50.00	AVRG
Dichlorodifluoromethane	0.3660000	0.3085260	0.3085260	0.1	15.70	50.00	AVRG
Ethylbenzene	0.5430000	0.4557236	0.4557236	0.1	16.07	50.00	AVRG
Hexachlorobutadiene	35.391488	50.000000	0.3297239	0.1	29.22	50.00	LINR
Isopropylbenzene	1.6120000	1.2515585	1.2515585	0.1	22.36	50.00	AVRG
m,p-Xylenes	0.6560000	0.5515668	0.5515668	0.1	15.92	50.00	AVRG
Methylene Chloride	50.295134	50.000000	0.4312891	0.1	-0.59	50.00	LINR
n-Butylbenzene	2.0130000	1.4953034	1.4953034	0.5	25.72	50.00	AVRG
n-Propylbenzene	3.2930000	2.5355306	2.5355306	0.1	23.00	50.00	AVRG
Naphthalene	1.2870000	1.2307317	1.2307317	0.2	4.37	50.00	AVRG
o-Xylene	0.6420000	0.5492979	0.5492979	0.3	14.44	50.00	AVRG
sec-Butylbenzene	2.9090000	2.0923189	2.0923189	0.1	28.07	50.00	AVRG
Styrene	1.1010000	0.9859932	0.9859932	0.3	10.44	50.00	AVRG
Vinyl Chloride	0.5210000	0.4934513	0.4934513	0.1	5.29	50.00	AVRG
1,2,3-Trichloropropane	0.6330000	0.5991399	0.5991399	0.1	5.35	50.00	AVRG
p-Isopropyltoluene	2.6220000	1.9918730	1.9918730	0.1	24.03	50.00	AVRG
1,2-Dibromo-3-Chloropropane	0.1280000	0.1316223	0.1316223	0.05	-2.83	50.00	AVRG
1,2-Dichloroethane-d4	49.005885	50.000000	0.4517981	0.1	1.99	50.00	LINR
Dibromofluoromethane	50.431118	50.000000	0.4364566	0.1	-0.86	50.00	LINR
Toluene-d8	1.3810000	1.2598716	1.2598716	0.1	8.77	50.00	AVRG
4-Bromofluorobenzene	49.950749	50.000000	0.4709922	0.1	0.10	50.00	LINR

FORM VII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19090511

Lab File ID (Standard): X091202 Date Analyzed: 09/12/19

Instrument ID: VOA6 Time Analyzed: 1202

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS1(CBZ) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(DCB) AREA #	RT #
	12 HOUR STD	377133	7.67	415066	4.97	207866	9.67
	UPPER LIMIT	754266	8.17	830132	5.47	415732	10.17
	LOWER LIMIT	188567	7.17	207533	4.47	103933	9.17
	CLIENT SAMPLE NO.						
01	VLCSW-190912	391949	7.67	429270	4.97	218888	9.67
02	VBLKW-190912	467161	7.68	552949	4.97	255563	9.67
03	HS19090511-0	477107	7.67	560409	4.97	260861	9.67
04	HS19090511-0	482470	7.67	563749	4.97	269839	9.67
05	HS19090511-0	444840	7.67	509686	4.97	252226	9.67
06	HS19090511-0	471229	7.67	550349	4.97	258182	9.67
07	HS19090511-0	456590	7.67	529940	4.97	251844	9.67
08	HS19090511-0	433105	7.67	507712	4.97	234381	9.67
09	HS19090511-0	474852	7.67	541490	4.97	263524	9.67
10	HS19090511-0	477886	7.67	545698	4.97	264283	9.67
11	HS19090511-0	457765	7.67	534740	4.97	260599	9.67
12	HS19090511-0	485419	7.67	558674	4.97	276387	9.67
13	HS19090511-0	456218	7.67	536880	4.97	253308	9.67
14							
15							
16							
17							
18							
19							
20							

IS1 (CBZ) = Chlorobenzene-d5
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (DCB) = 1,4-Dichlorobenzene-d4

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

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19090511

Lab File ID (Standard): X091202 Date Analyzed: 09/12/19

Instrument ID: VOA6 Time Analyzed: 1202

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS4 AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	304434	4.18				
	UPPER LIMIT	608868	4.68				
	LOWER LIMIT	152217	3.68				
	CLIENT SAMPLE NO.						
01	VLCSW-190912	317181	4.18				
02	VBLKW-190912	421777	4.19				
03	HS19090511-0	424959	4.18				
04	HS19090511-0	430759	4.18				
05	HS19090511-0	381515	4.18				
06	HS19090511-0	419630	4.18				
07	HS19090511-0	406603	4.18				
08	HS19090511-0	392858	4.18				
09	HS19090511-0	414009	4.18				
10	HS19090511-0	417385	4.18				
11	HS19090511-0	408918	4.18				
12	HS19090511-0	419942	4.18				
13	HS19090511-0	406289	4.19				
14							
15							
16							
17							
18							
19							
20							

IS4 = Pentafluorobenzene

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

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM VIII VOA

Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091201.D

Date : 12-SEP-2019 11:38

Client ID: BFB

Instrument: voa6.i

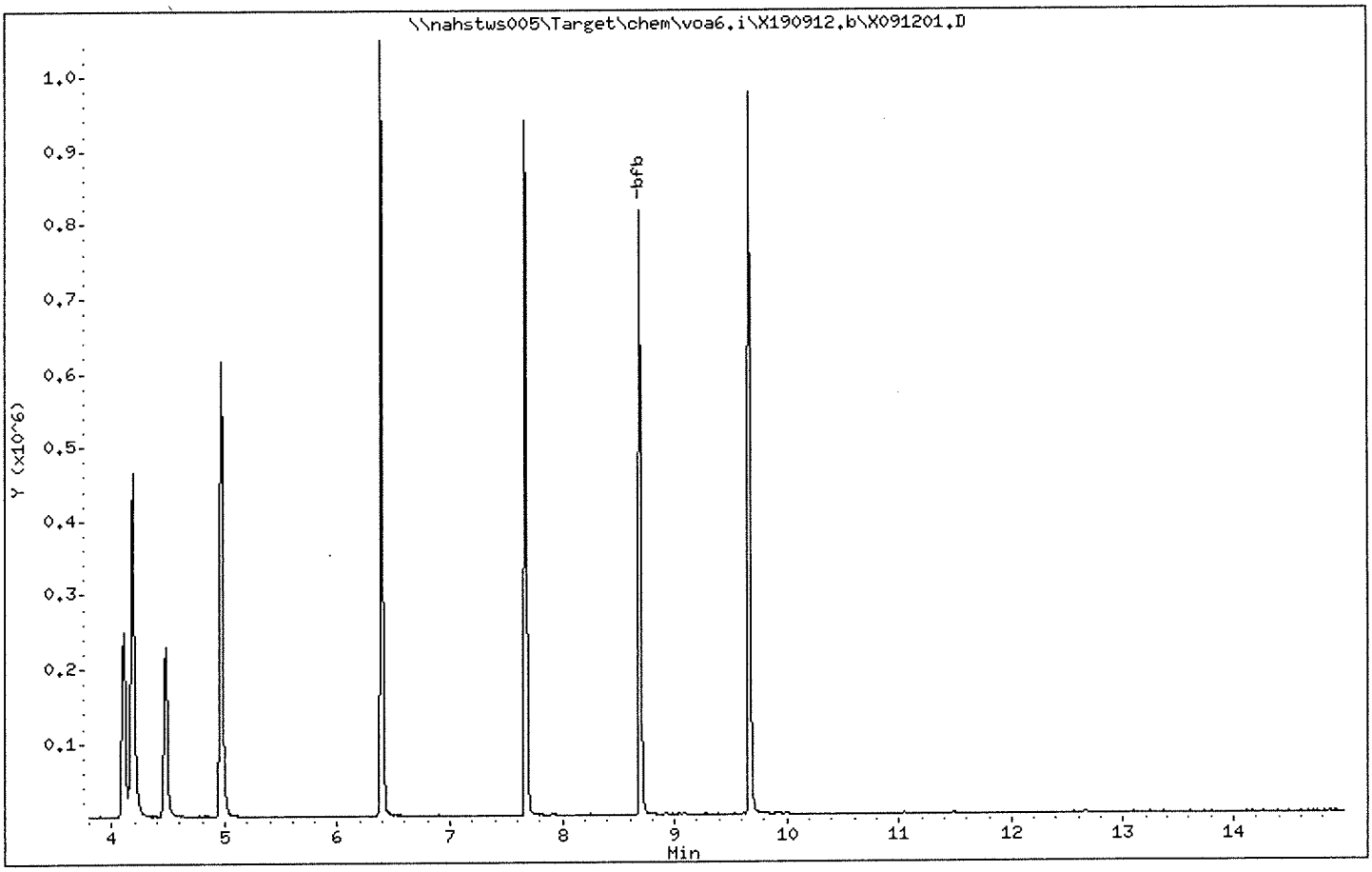
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091201.D

Date : 12-SEP-2019 11:38

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

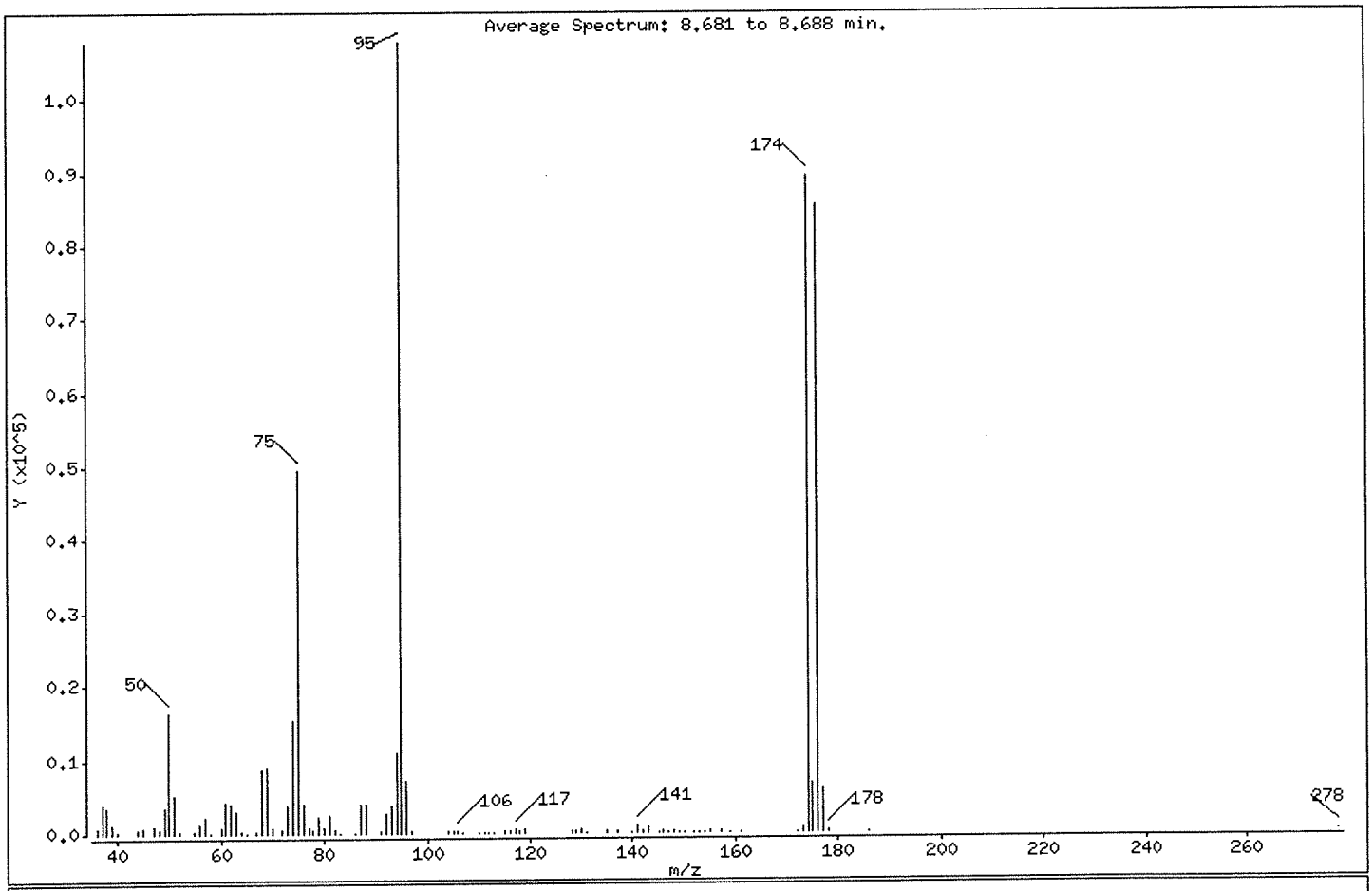
Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	15.23
75	30.00 - 60.00% of mass 95	46.01
96	5.00 - 9.00% of mass 95	6.78
173	Less than 2.00% of mass 174	0.65 (0.79)
174	Greater than 50.00% of mass 95	82.97
175	5.00 - 9.00% of mass 174	6.32 (7.62)
176	95.00 - 101.00% of mass 174	79.34 (95.63)
177	5.00 - 9.00% of mass 176	5.43 (6.84)

Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091201.D

Date : 12-SEP-2019 11:38

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

Data File: X091201.D
Spectrum: Average Spectrum: 8.681 to 8.688 min.
Location of Maximum: 95.00
Number of points: 94

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	816	68.00	8782	97.00	283	145.00	83
37.00	3856	69.00	8965	104.00	354	146.00	152
38.00	3426	70.00	636	105.00	146	147.00	54
39.00	1289	72.00	493	106.00	359	148.00	250
40.00	249	73.00	3775	107.00	53	149.00	60
44.00	612	74.00	15269	110.00	30	150.00	65
45.00	670	75.00	49560	111.00	59	152.00	45
47.00	999	76.00	3952	112.00	47	153.00	76
48.00	543	77.00	698	113.00	70	154.00	63
49.00	3549	78.00	496	115.00	141	155.00	267
50.00	16400	79.00	2286	116.00	289	157.00	159
51.00	5206	80.00	757	117.00	608	159.00	119
52.00	200	81.00	2354	118.00	336	161.00	112
55.00	222	82.00	497	119.00	470	172.00	45
56.00	1211	83.00	30	128.00	319	173.00	704
57.00	2253	86.00	66	129.00	175	174.00	89360
58.00	101	87.00	3998	130.00	432	175.00	6805
60.00	820	88.00	4004	131.00	117	176.00	85456
61.00	4277	91.00	356	135.00	274	177.00	5846
62.00	4085	92.00	2752	137.00	127	178.00	171
63.00	3056	93.00	3632	140.00	31	186.00	103
64.00	226	94.00	10823	141.00	909	278.00	97
65.00	77	95.00	107704	142.00	127		
67.00	235	96.00	7303	143.00	766		

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X190912.b\X091202.D
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 12-SEP-2019 12:02
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X190912.b\8260W.m
Meth Date : 25-Sep-2019 14:03 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.189	(1.000)	304434	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	415066	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	377133	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	207866	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	133598	50.0000	50.71
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	139024	50.0000	49.54
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	463935	50.0000	44.54
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	175163	50.0000	49.24
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	136365	50.0000	47.67
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	189282	50.0000	45.41
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	144855	50.0000	47.72
53 1,1,2-Trichloroethane	83	6.840	6.847	(0.892)	95670	50.0000	45.98
22 1,1-Dichloroethane	63	2.921	2.929	(0.699)	209037	50.0000	43.79
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	133209	50.0000	51.33
32 1,1-Dichloropropene	75	4.282	4.282	(0.862)	154766	50.0000	44.38
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	98630	50.0000	44.49
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	118605	50.0000	45.07(M)
90 1,2,4-Trichlorobenzene	180	11.345	11.345	(1.173)	154044	50.0000	45.76
79 1,2,4-Trimethylbenzene	105	9.383	9.382	(0.970)	468470	50.0000	43.37
89 1,2-Dibromo-3-Chloropropane	155	10.658	10.658	(1.102)	25296	50.0000	47.36
57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	129783	50.0000	46.40
88 1,2-Dichlorobenzene	146	9.999	9.999	(1.034)	273363	50.0000	44.23
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	159826	50.0000	46.58

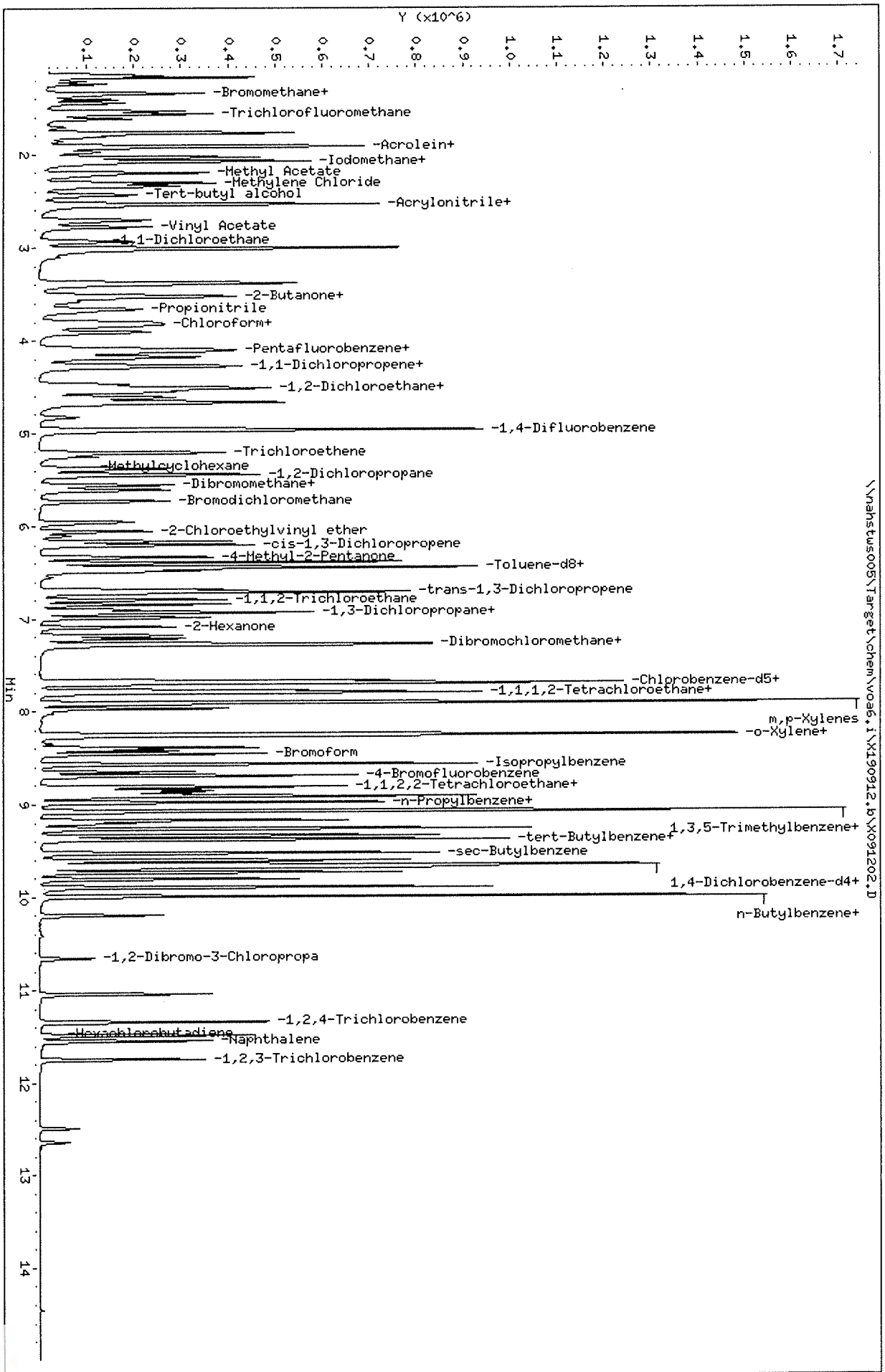
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42	1,2-Dichloropropane	63	5.443	5.443	(1.095)	117361	50.0000	45.12
75	1,3,5-Trimethylbenzene	105	9.074	9.074	(0.939)	455223	50.0000	43.26
83	1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	292784	50.0000	44.96
54	1,3-Dichloropropane	76	6.983	6.983	(0.910)	192799	50.0000	44.69
84	1,4-Dichlorobenzene	146	9.691	9.683	(1.002)	293904	50.0000	44.51
26	2,2-Dichloropropane	77	3.516	3.516	(0.841)	186997	50.0000	46.89
24	2-Butanone	43	3.580	3.580	(0.856)	87460	100.000	93.58
76	2-Chlorotoluene	91	8.981	8.981	(0.929)	362832	50.0000	46.53
52	2-Hexanone	43	7.090	7.090	(0.924)	136288	100.000	89.72
77	4-Chlorotoluene	91	9.074	9.074	(0.939)	422904	50.0000	43.54
82	p-Isopropyltoluene	119	9.655	9.655	(0.999)	460939	50.0000	42.27
45	4-Methyl-2-Pentanone	43	6.331	6.331	(0.825)	194653	100.000	86.80
10	Acetone	43	1.976	1.976	(0.473)	97800	100.000	119.36
37	Benzene	78	4.519	4.519	(0.909)	476455	50.0000	44.82
74	Bromobenzene	156	8.809	8.809	(0.911)	178421	50.0000	46.65
29	Bromochloromethane	128	3.802	3.802	(0.909)	81244	50.0000	46.08
39	Bromodichloromethane	83	5.729	5.729	(1.153)	166620	50.0000	46.84
66	Bromoform	173	8.415	8.415	(1.097)	110562	50.0000	48.94
6	Bromomethane	94	1.338	1.338	(0.320)	150661	50.0000	61.96
19	Carbon Disulfide	76	2.069	2.069	(0.495)	692629	100.000	90.28
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	169426	50.0000	45.50
59	Chlorobenzene	112	7.699	7.699	(1.004)	350977	50.0000	44.42
7	Chloroethane	64	1.403	1.403	(0.336)	101032	50.0000	58.14
28	Chloroform	83	3.910	3.910	(0.935)	223022	50.0000	46.04
3	Chloromethane	50	1.073	1.081	(0.257)	104662	50.0000	45.88
27	cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	144999	50.0000	46.45
46	cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	208176	50.0000	48.14
55	Dibromochloromethane	129	7.183	7.183	(0.937)	146290	50.0000	48.08
44	Dibromomethane	93	5.557	5.557	(1.118)	84476	50.0000	45.06
2	Dichlorodifluoromethane	85	0.973	0.973	(0.233)	101382	50.0000	45.44
61	Ethylbenzene	106	7.807	7.799	(1.018)	182211	50.0000	44.45
91	Hexachlorobutadiene	225	11.488	11.488	(1.188)	87391	50.0000	44.86
67	Isopropylbenzene	105	8.566	8.566	(1.117)	523341	50.0000	43.04
62	m,p-Xylenes	106	7.907	7.907	(1.031)	435659	100.000	88.04
17	Methylene Chloride	84	2.305	2.305	(0.551)	133691	50.0000	51.25
87	n-Butylbenzene	91	9.999	9.999	(1.034)	360245	50.0000	43.05
73	n-Propylbenzene	91	8.917	8.917	(0.922)	587052	50.0000	42.87
92	Naphthalene	128	11.546	11.546	(1.194)	246692	50.0000	46.09
63	o-Xylene	106	8.244	8.244	(1.075)	215263	50.0000	44.41
81	sec-Butylbenzene	105	9.526	9.526	(0.985)	494265	50.0000	40.87
64	Styrene	104	8.265	8.265	(1.078)	381998	50.0000	45.98
78	tert-Butylbenzene	119	9.340	9.340	(0.966)	368111	50.0000	41.64
56	Tetrachloroethene	164	6.933	6.933	(0.904)	122203	50.0000	44.81
50	Toluene	91	6.453	6.453	(0.841)	513821	50.0000	44.15
20	trans-1,2-Dichloroethene	96	2.535	2.527	(0.606)	122605	50.0000	46.04
51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.344)	183670	50.0000	47.45
38	Trichloroethene	130	5.214	5.214	(1.049)	147475	50.0000	46.07
8	Trichlorofluoromethane	101	1.560	1.560	(0.373)	235672	50.0000	51.46
5	Vinyl Chloride	62	1.138	1.138	(0.272)	164235	50.0000	51.75

QC Flag Legend

M - Compound response manually integrated.

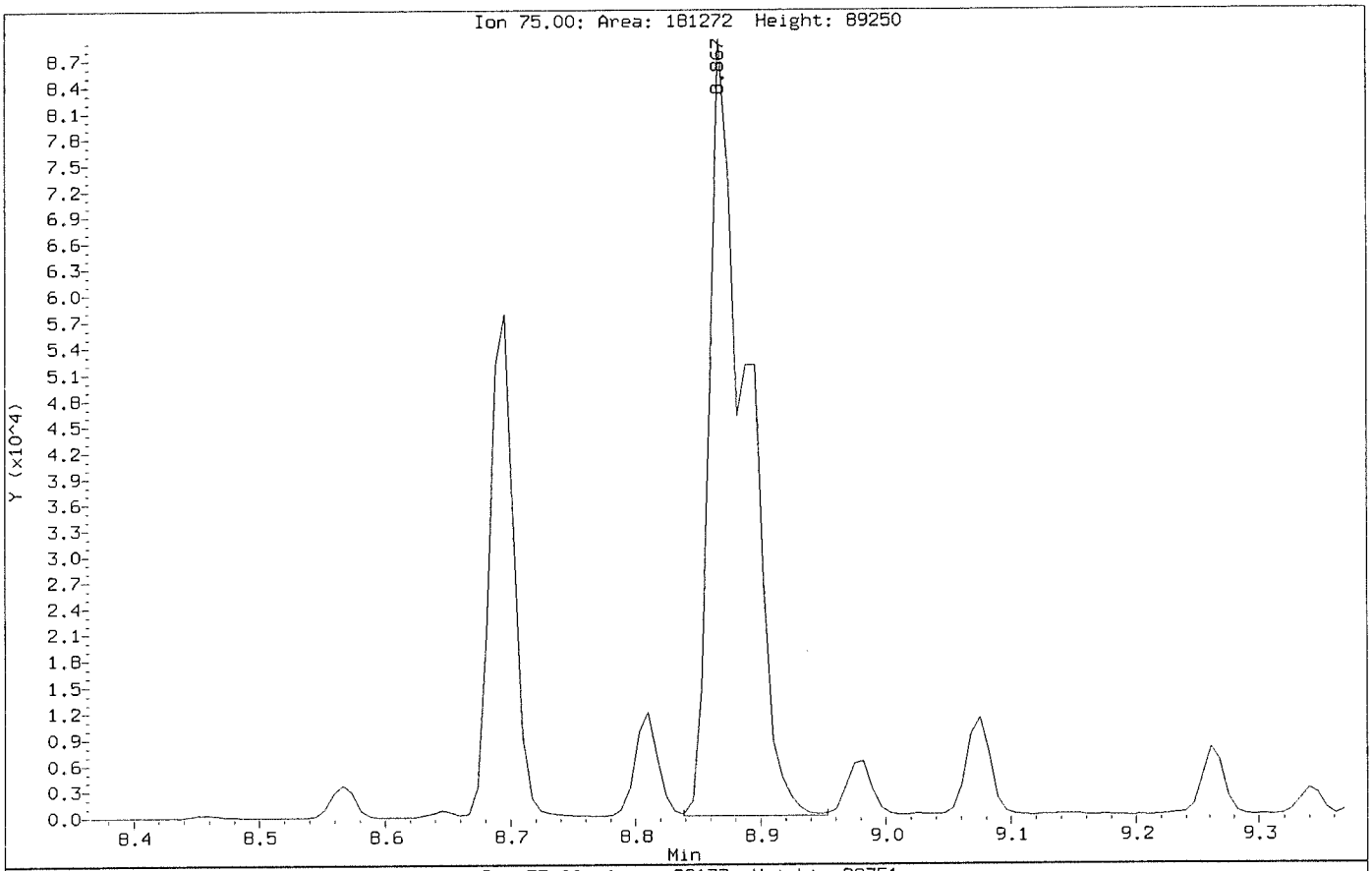
Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091202.D
Date : 12-SEP-2019 12:02
Client ID: CCV
Sample Info: CCV;CCV;2;;
Purge Volume: 5.0
Column phase: DB624

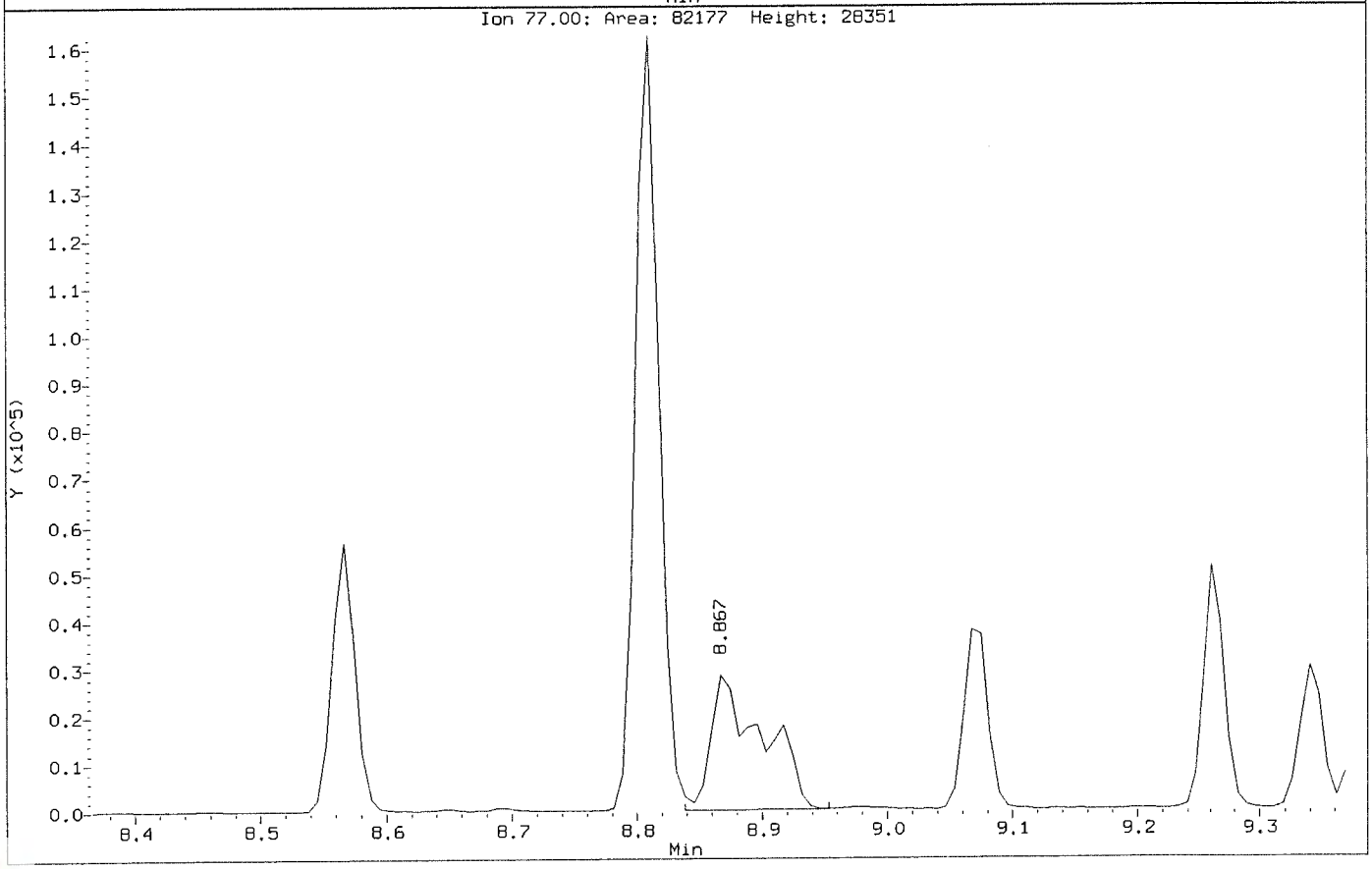
Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\BEFORE\X091202.D
Injection Date: 12-SEP-2019 12:02
Instrument: voa6.i
Client Sample ID: CCV

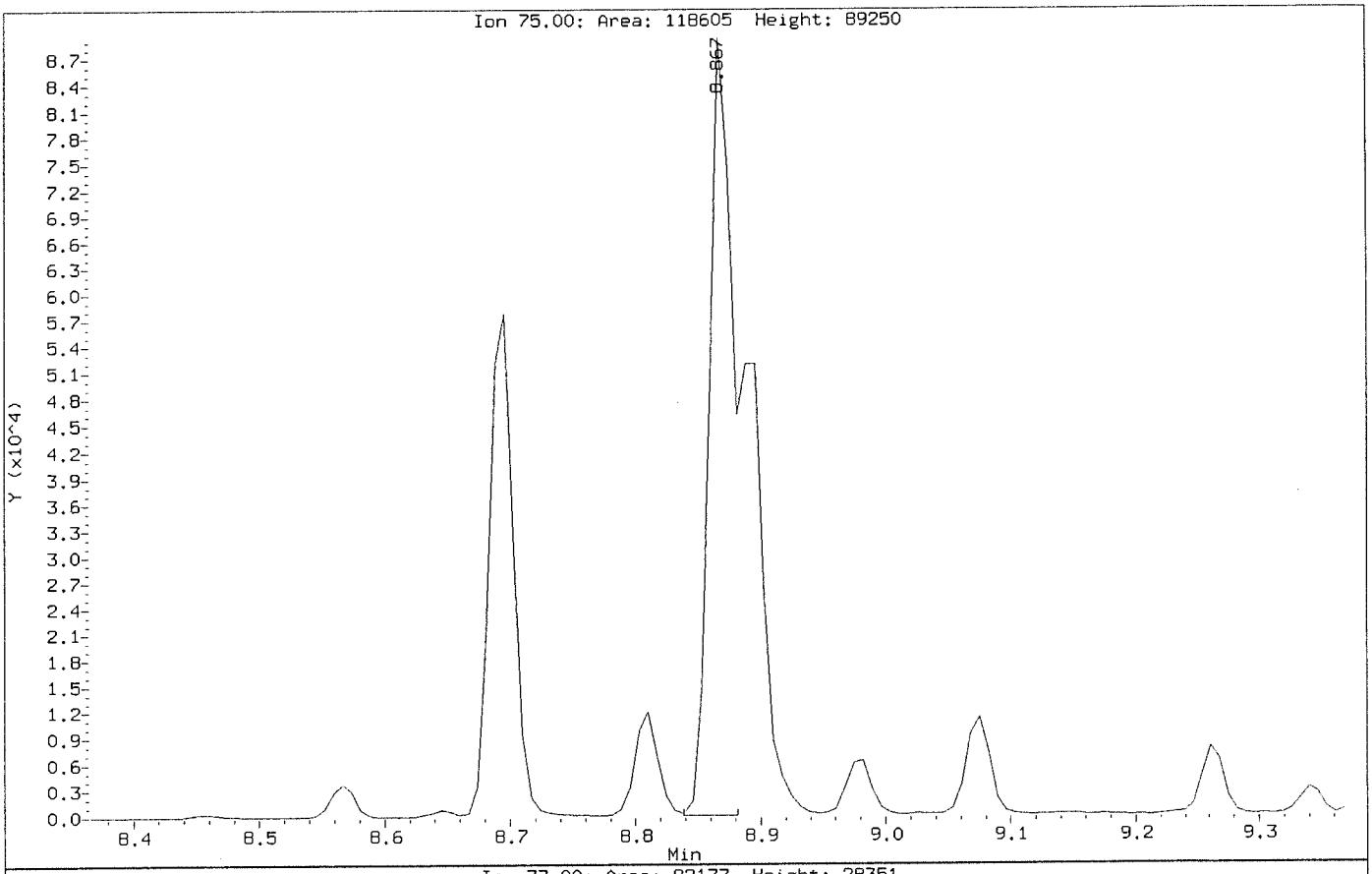
Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4

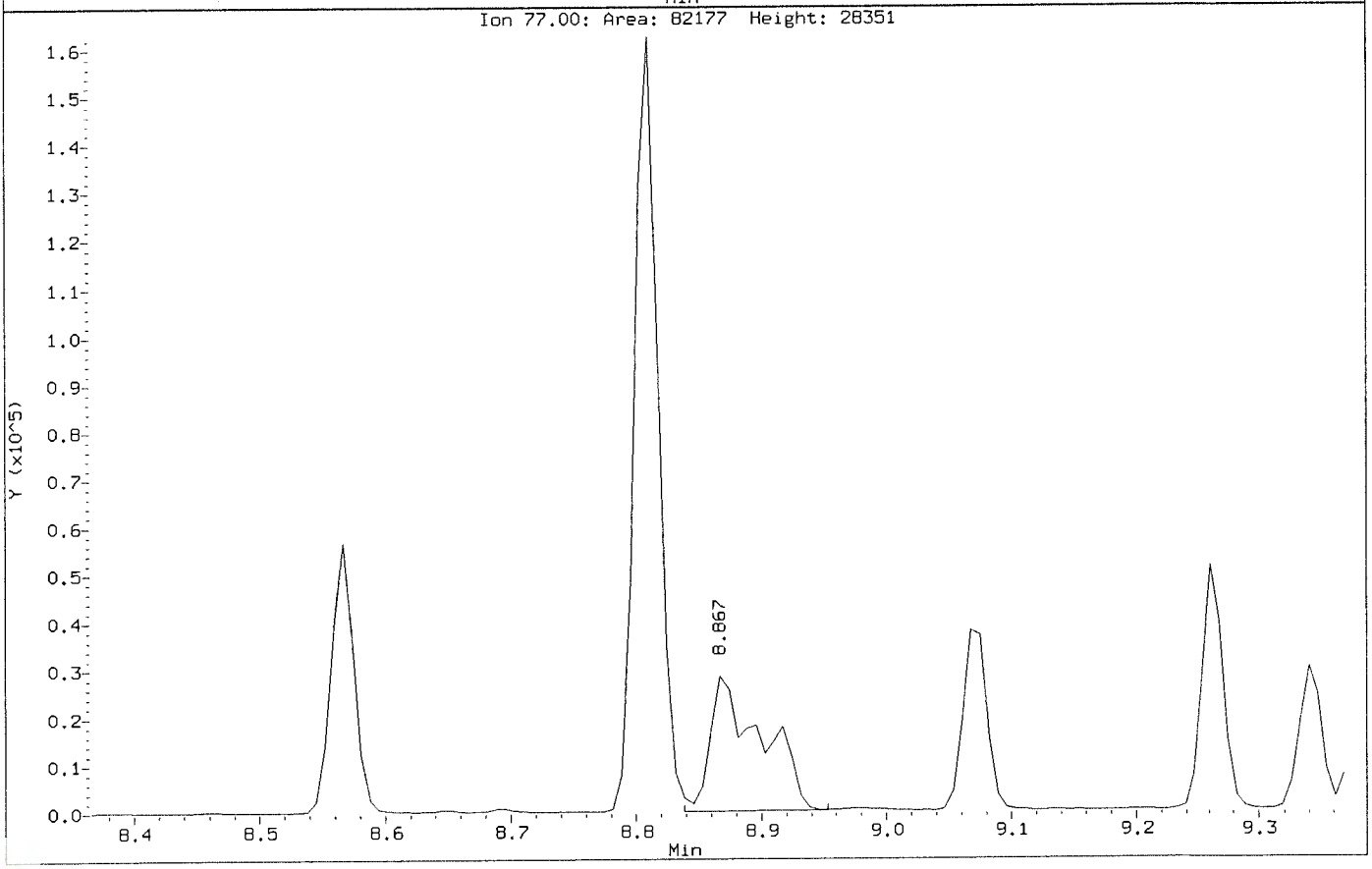




Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091202.D
Injection Date: 12-SEP-2019 12:02
Instrument: voa6.i
Client Sample ID: CCV

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091205.D Page 1
Report Date: 25-Sep-2019 14:04

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X190912.b\X091205.D
Lab Smp Id: VLCSW-190912 Client Smp ID: VLCSW-190912
Inj Date : 12-SEP-2019 13:14
Operator : PC Inst ID: voa6.i
Smp Info : VLCSW-190912;VLCSW-190912;3;;LCS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X190912.b\8260W.m
Meth Date : 25-Sep-2019 14:03 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 5 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

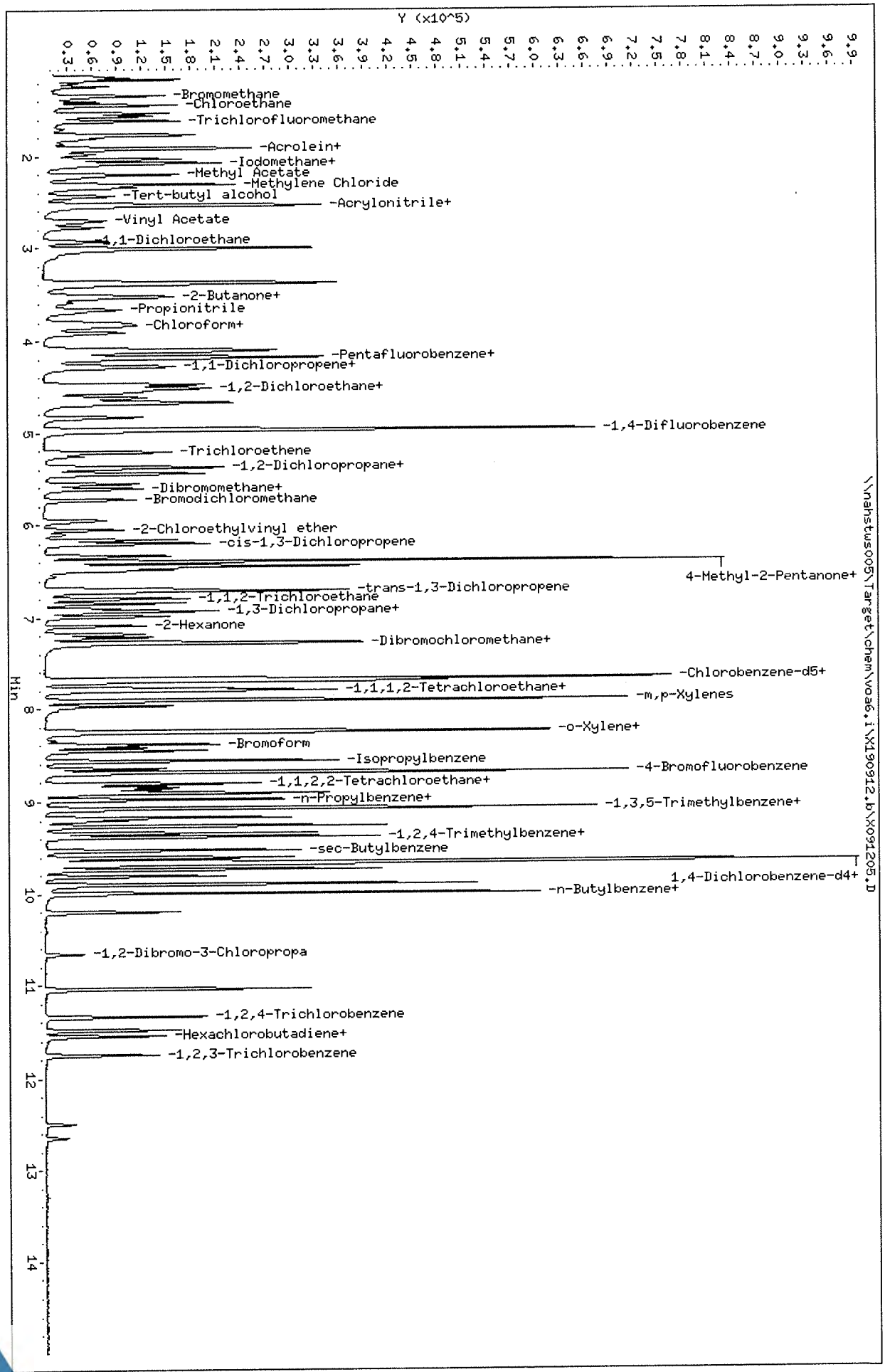
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.189	(1.000)	317181	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	429270	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	391949	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	218888	50.0000	
$ 30 Dibromofluoromethane	113	4.104	4.103	(0.981)	139871	50.9625	50.96
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	145650	49.8214	49.82
$ 48 Toluene-d8	98	6.389	6.388	(0.833)	494764	45.7050	45.70
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	190900	51.6744	51.67
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	55868	18.7938	18.79
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	73109	16.8358	16.83
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	62691	19.4843	19.48
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	39704	18.3609	18.36
22 1,1-Dichloroethane	63	2.929	2.929	(0.700)	84739	17.0409	17.04
11 1,1-Dichloroethene	96	1.912	1.911	(0.457)	48170	17.8181	17.81
32 1,1-Dichloropropene	75	4.283	4.282	(0.862)	59836	16.5915	16.59
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	39910	17.0965	17.09
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	51347	18.5313	18.53(M)
90 1,2,4-Trichlorobenzene	180	11.345	11.345	(1.173)	61084	17.2328	17.23
79 1,2,4-Trimethylbenzene	105	9.383	9.382	(0.970)	186766	16.4219	16.42
89 1,2-Dibromo-3-Chloropropane	155	10.658	10.658	(1.102)	10602	18.8535	18.85
57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	55145	18.9702	18.97
88 1,2-Dichlorobenzene	146	9.999	9.999	(1.034)	114466	17.5908	17.59
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	65710	18.5171	18.51

Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091205.D Page 2
Report Date: 25-Sep-2019 14:04

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
42	1,2-Dichloropropane	63	5.443	5.443	(1.095)	48309	17.9594	17.95
75	1,3,5-Trimethylbenzene	105	9.068	9.074	(0.938)	174680	15.7656	15.76
83	1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	119547	17.4361	17.43
54	1,3-Dichloropropane	76	6.983	6.983	(0.910)	81850	18.2593	18.25
84	1,4-Dichlorobenzene	146	9.684	9.683	(1.001)	119530	17.1923	17.19
26	2,2-Dichloropropane	77	3.516	3.516	(0.841)	71838	17.2918	17.29
24	2-Butanone	43	3.581	3.580	(0.856)	36799	37.7933	37.79
76	2-Chlorotoluene	91	8.982	8.981	(0.929)	145638	17.7667	17.76
52	2-Hexanone	43	7.091	7.090	(0.924)	58769	37.2264	37.22
77	4-Chlorotoluene	91	9.075	9.074	(0.939)	171185	16.7396	16.73
82	p-Isopropyltoluene	119	9.655	9.655	(0.999)	174690	15.2163	15.21
45	4-Methyl-2-Pentanone	43	6.331	6.331	(0.825)	85645	36.7481	36.74
10	Acetone	43	1.976	1.976	(0.473)	43964	48.1747	48.17
37	Benzene	78	4.519	4.519	(0.909)	194770	17.7192	17.71
74	Bromobenzene	156	8.810	8.809	(0.911)	73040	18.1363	18.13
29	Bromochloromethane	128	3.803	3.802	(0.909)	32758	17.8334	17.83
39	Bromodichloromethane	83	5.730	5.729	(1.153)	66835	18.1677	18.16
66	Bromoform	173	8.416	8.415	(1.097)	45908	19.5541	19.55
6	Bromomethane	94	1.339	1.338	(0.320)	59997	22.7620	22.76
19	Carbon Disulfide	76	2.069	2.069	(0.495)	261878	32.7625	32.76
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	62103	16.1275	16.12
59	Chlorobenzene	112	7.699	7.699	(1.004)	144503	17.5972	17.59
7	Chloroethane	64	1.403	1.403	(0.336)	39686	20.3422	20.34
28	Chloroform	83	3.910	3.910	(0.935)	89072	17.6518	17.65
3	Chloromethane	50	1.081	1.081	(0.258)	44232	18.5182	18.51
27	cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	57836	17.7853	17.78
46	cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	84695	18.9401	18.94
55	Dibromochloromethane	129	7.184	7.183	(0.937)	58568	18.5250	18.52
44	Dibromomethane	93	5.558	5.557	(1.118)	35692	18.4118	18.41
2	Dichlorodifluoromethane	85	0.973	0.973	(0.233)	34544	14.8609	14.86
61	Ethylbenzene	106	7.807	7.799	(1.018)	71248	16.7244	16.72
91	Hexachlorobutadiene	225	11.489	11.488	(1.188)	31902	16.1711	16.17
67	Isopropylbenzene	105	8.566	8.566	(1.117)	196946	15.5863	15.58
62	m,p-Xylenes	106	7.907	7.907	(1.031)	173690	33.7740	33.77
17	Methylene Chloride	84	2.306	2.305	(0.551)	53990	18.2818	18.28
87	n-Butylbenzene	91	9.999	9.999	(1.034)	135435	15.3702	15.37
73	n-Propylbenzene	91	8.917	8.917	(0.922)	220503	15.2944	15.29
92	Naphthalene	128	11.546	11.546	(1.194)	100240	17.7870	17.78
63	o-Xylene	106	8.244	8.244	(1.075)	87929	17.4581	17.45
81	sec-Butylbenzene	105	9.526	9.526	(0.985)	197062	15.4760	15.47 (M)
64	Styrene	104	8.265	8.265	(1.078)	158131	18.3159	18.31
78	tert-Butylbenzene	119	9.340	9.340	(0.966)	146655	15.7546	15.75 (M)
56	Tetrachloroethene	164	6.933	6.933	(0.904)	44562	15.7255	15.72
50	Toluene	91	6.453	6.453	(0.841)	209692	17.3394	17.33
20	trans-1,2-Dichloroethene	96	2.535	2.527	(0.606)	46833	16.8833	16.88
51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.344)	76669	19.1543	19.15
38	Trichloroethene	130	5.214	5.214	(1.049)	57524	17.3766	17.37
8	Trichlorofluoromethane	101	1.561	1.560	(0.373)	81502	17.0812	17.08
5	Vinyl Chloride	62	1.138	1.138	(0.272)	58487	17.6897	17.68

QC Flag Legend

M - Compound response manually integrated.



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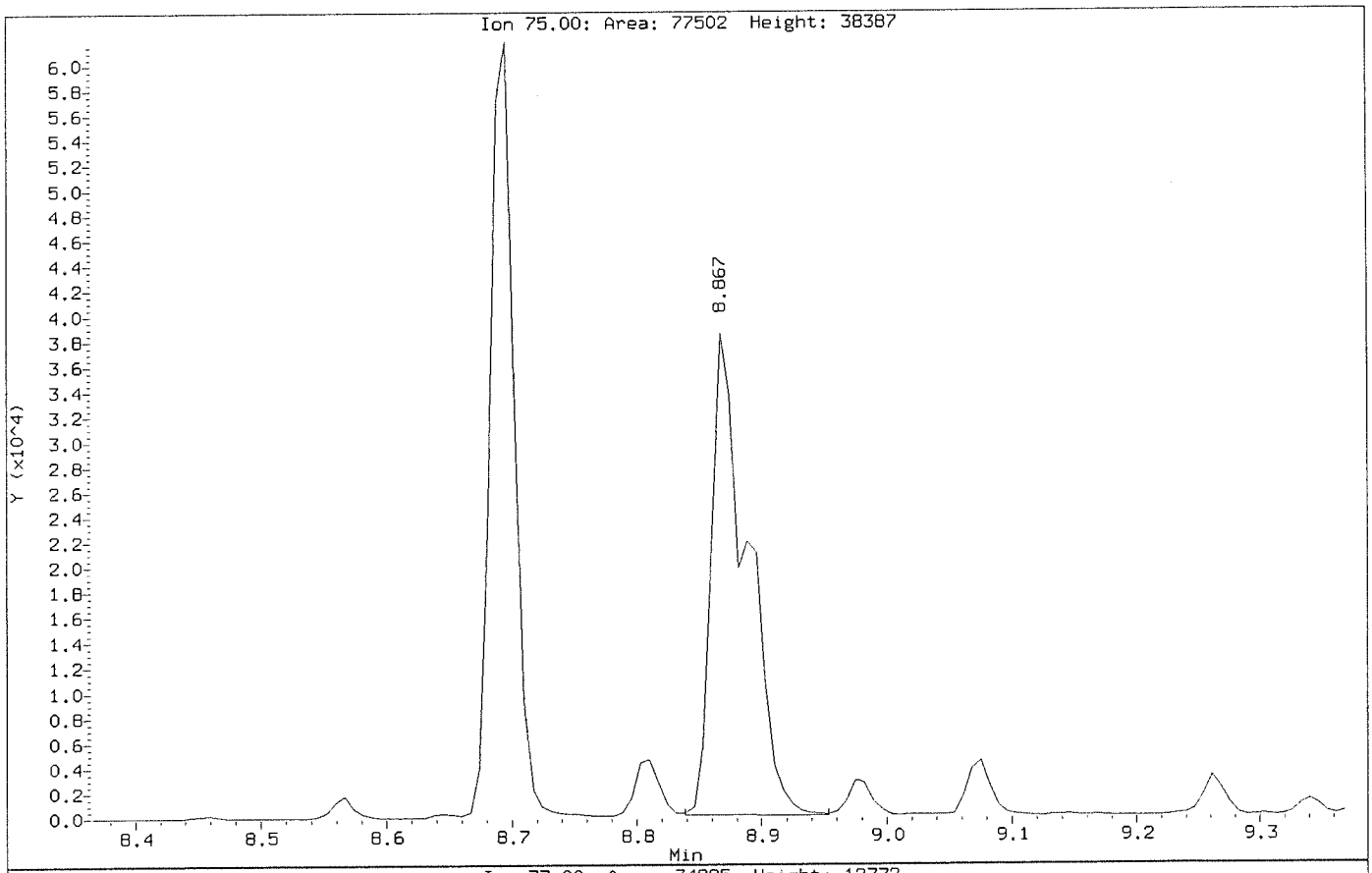
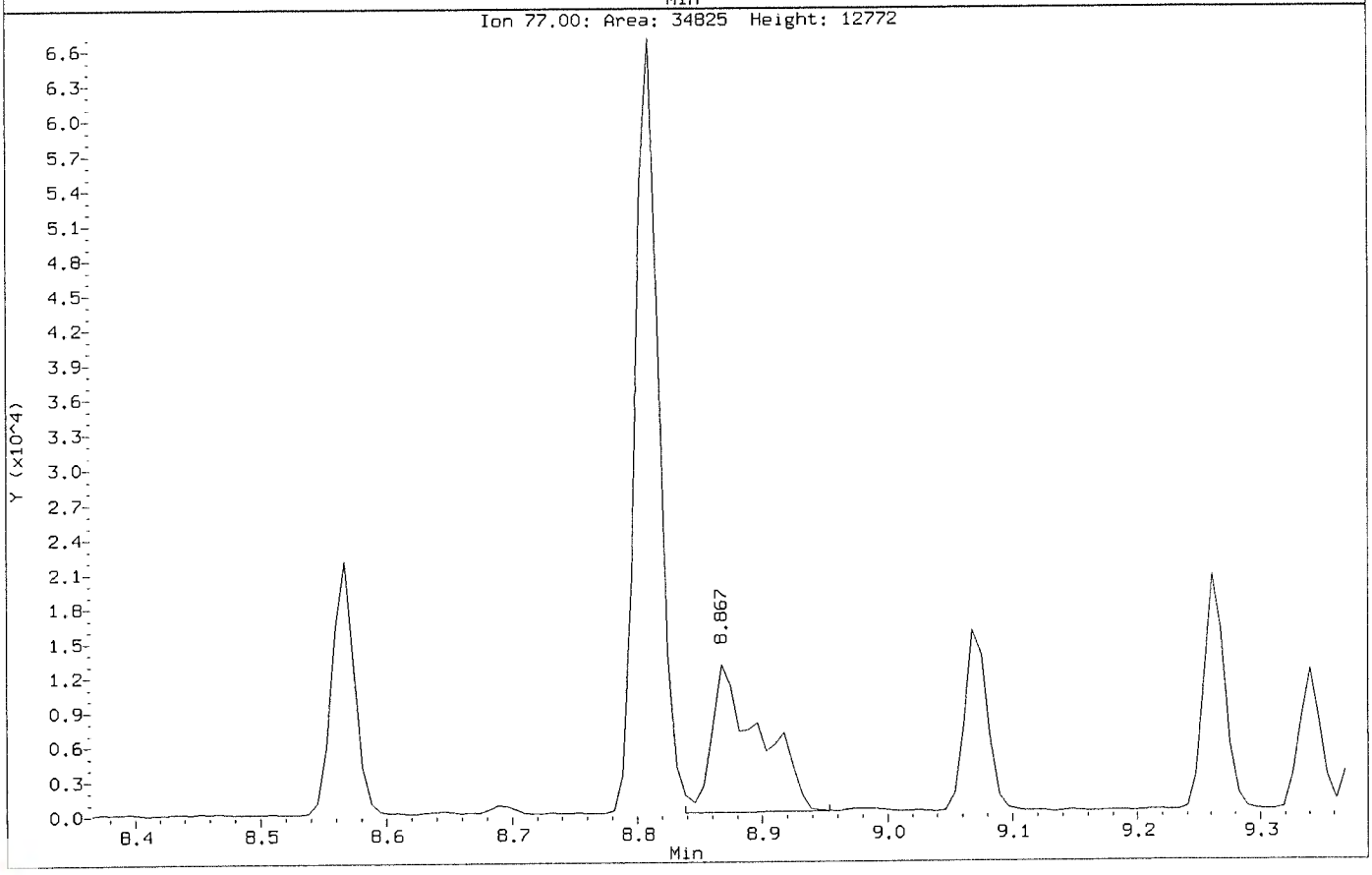
Date : 12-SEP-2019 13:14
Client ID: VLCSW-190912
Sample Info: VLCSW-190912;VLCSW-190912;3;;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\BEFORE\X091205.D
Injection Date: 12-SEP-2019 13:14
Instrument: voa6.i
Client Sample ID: VLCSW-190912

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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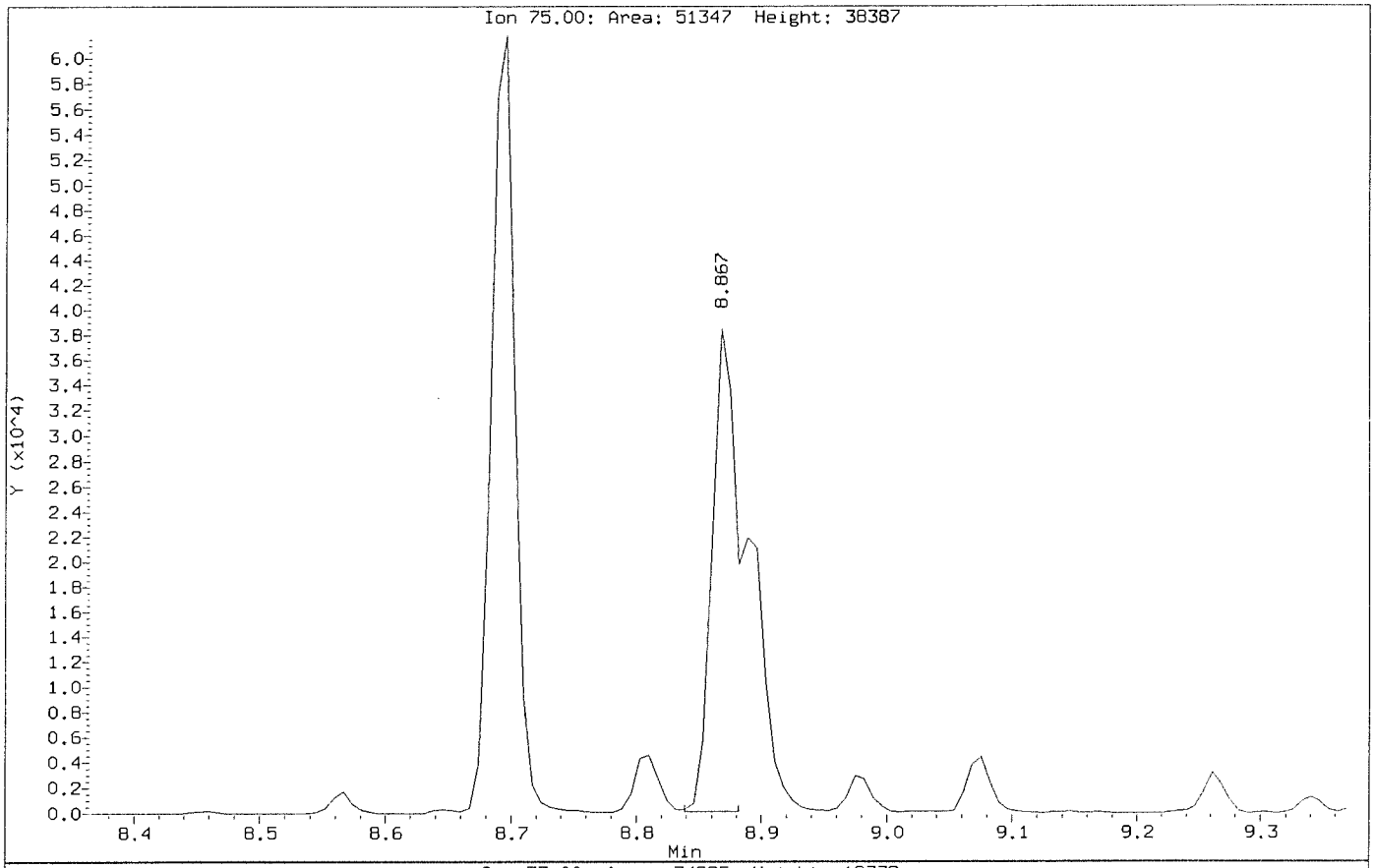
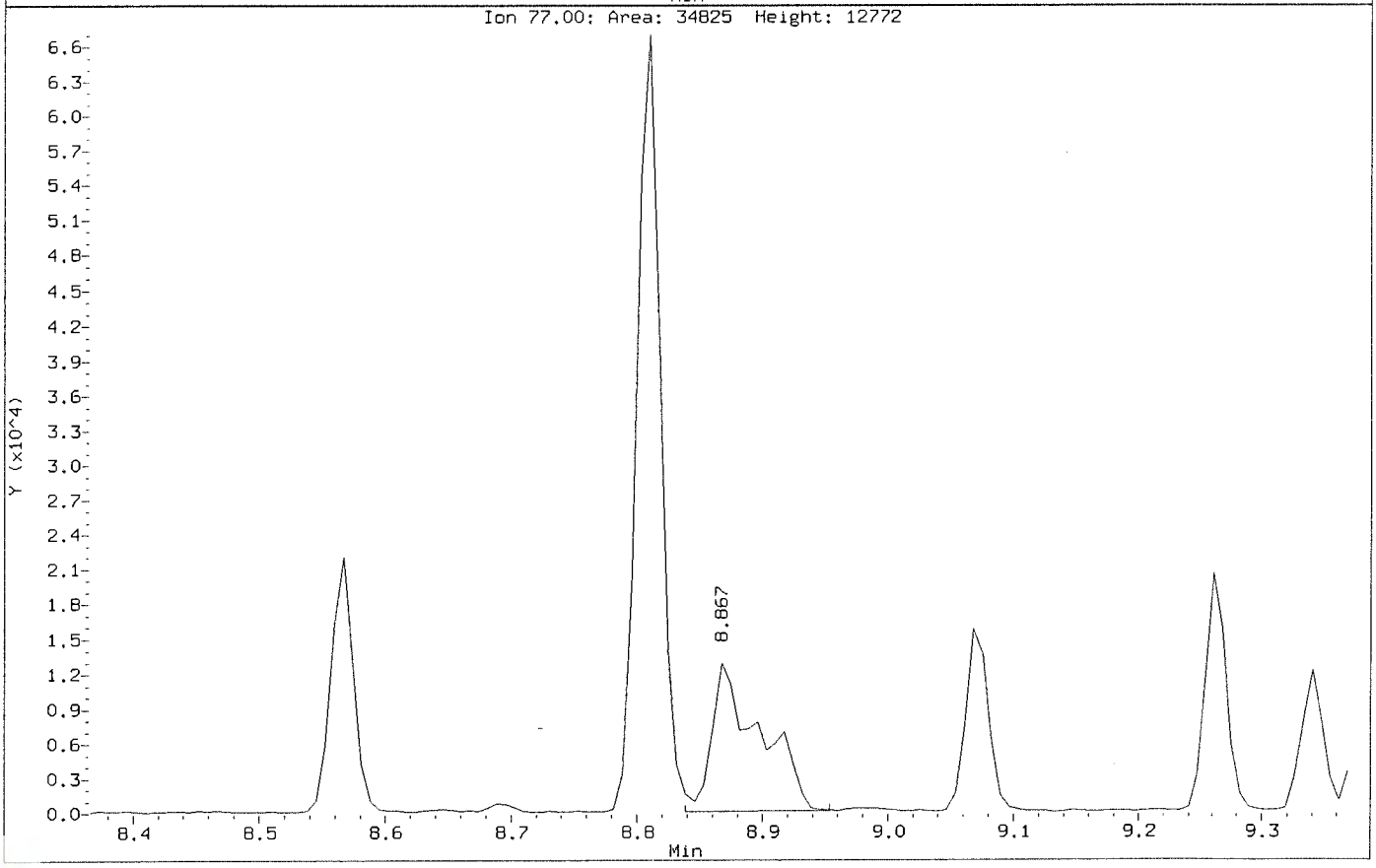
Injection Date: 12-SEP-2019 13:14
Instrument: voa6.i
Client Sample ID: VLCSW-190912

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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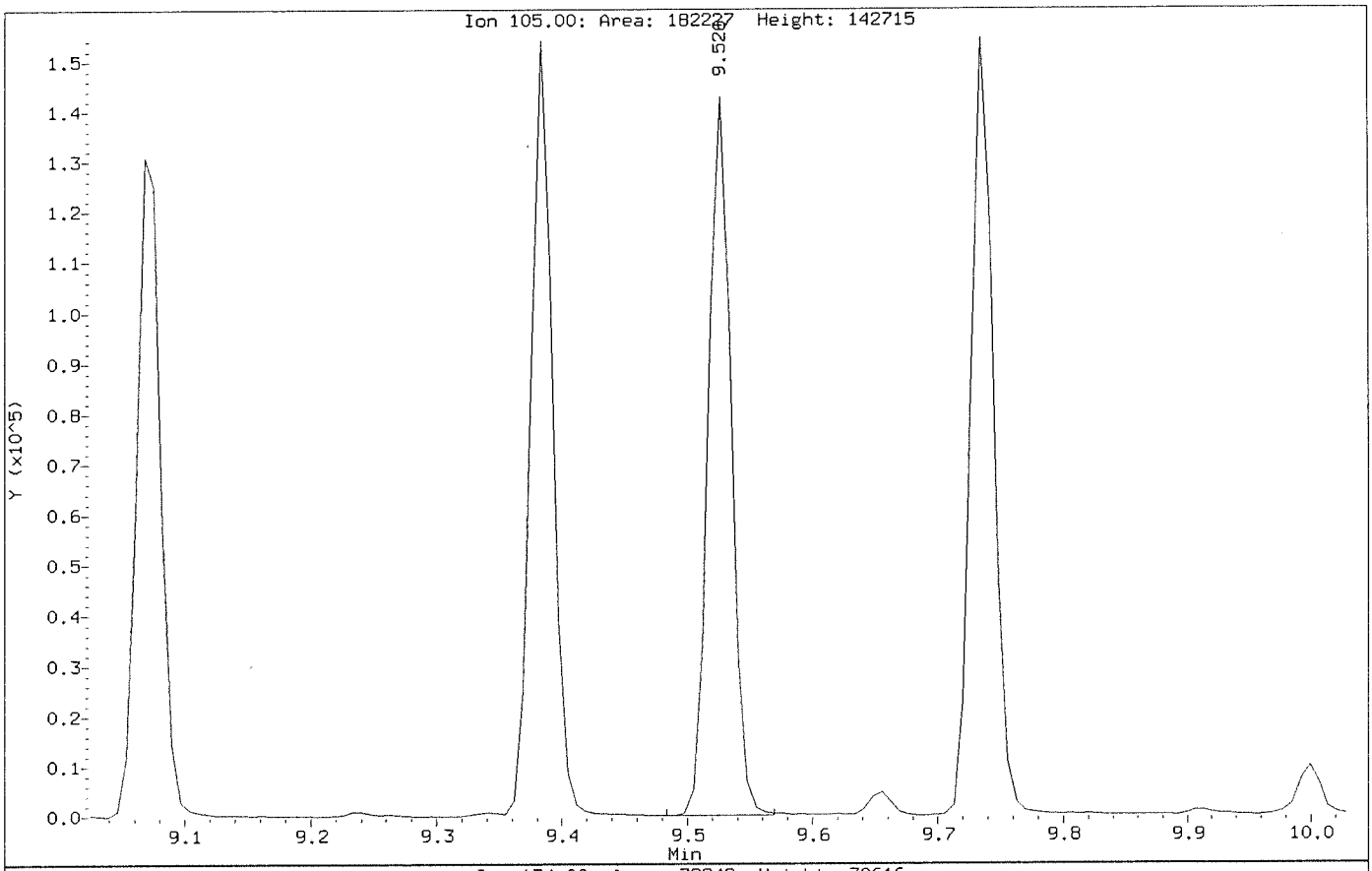
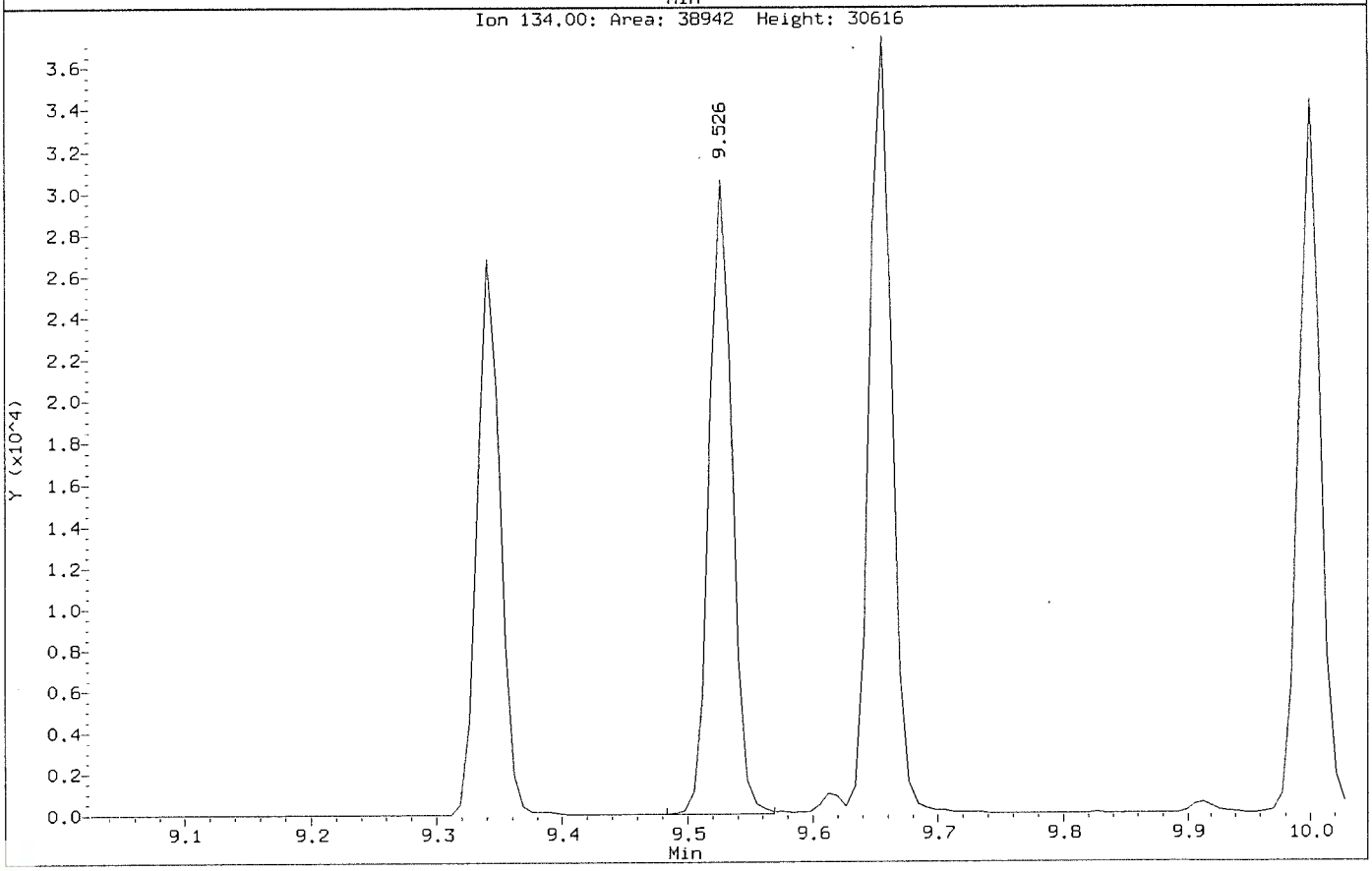
Injection Date: 12-SEP-2019 13:14
Instrument: voa6.i
Client Sample ID: VLCSW-190912

Compound: sec-Butylbenzene
CAS Number: 135-98-8





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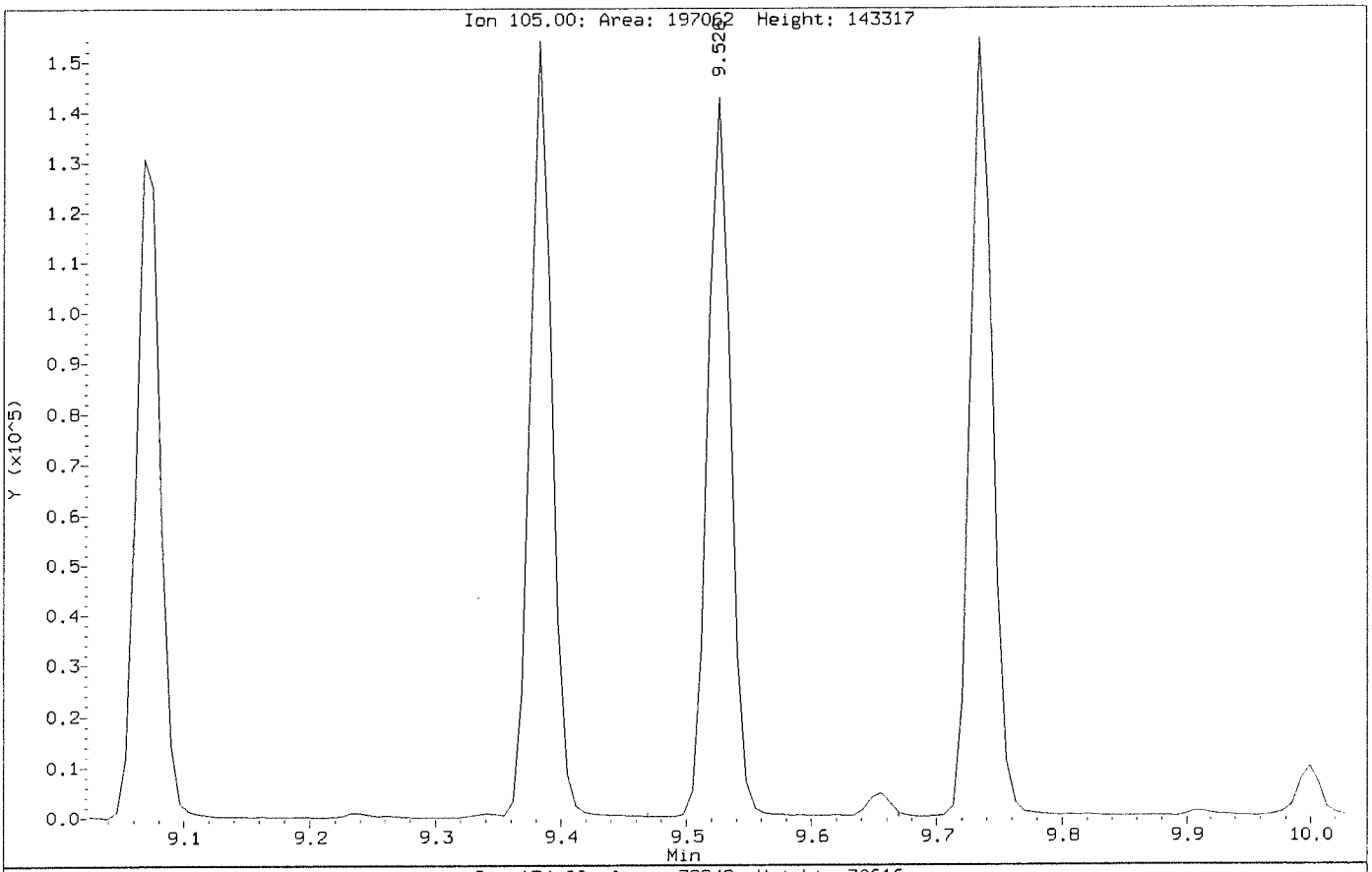
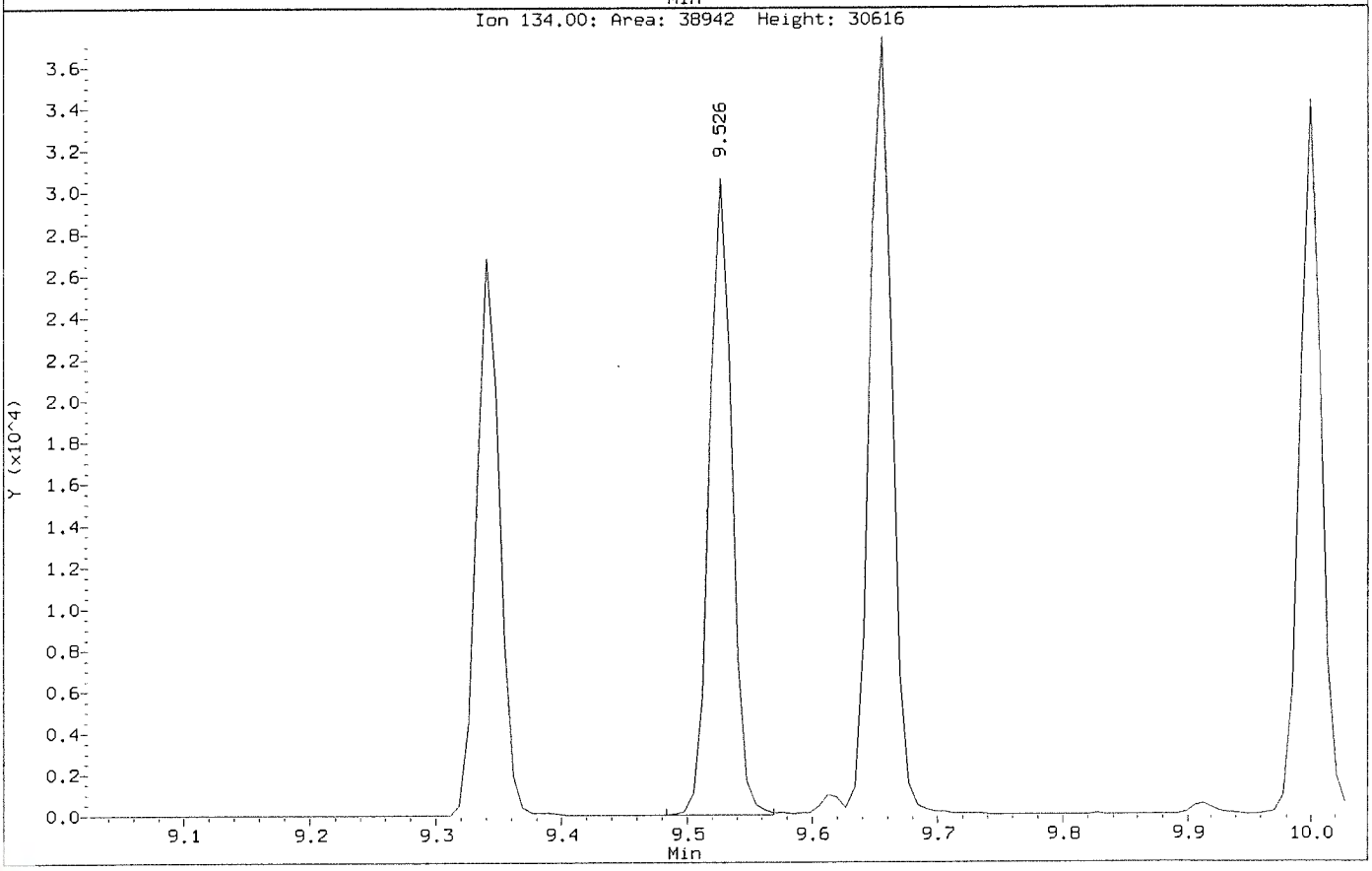
Injection Date: 12-SEP-2019 13:14
Instrument: voa6.i
Client Sample ID: VLCSW-190912

Compound: sec-Butylbenzene
CAS Number: 135-98-8





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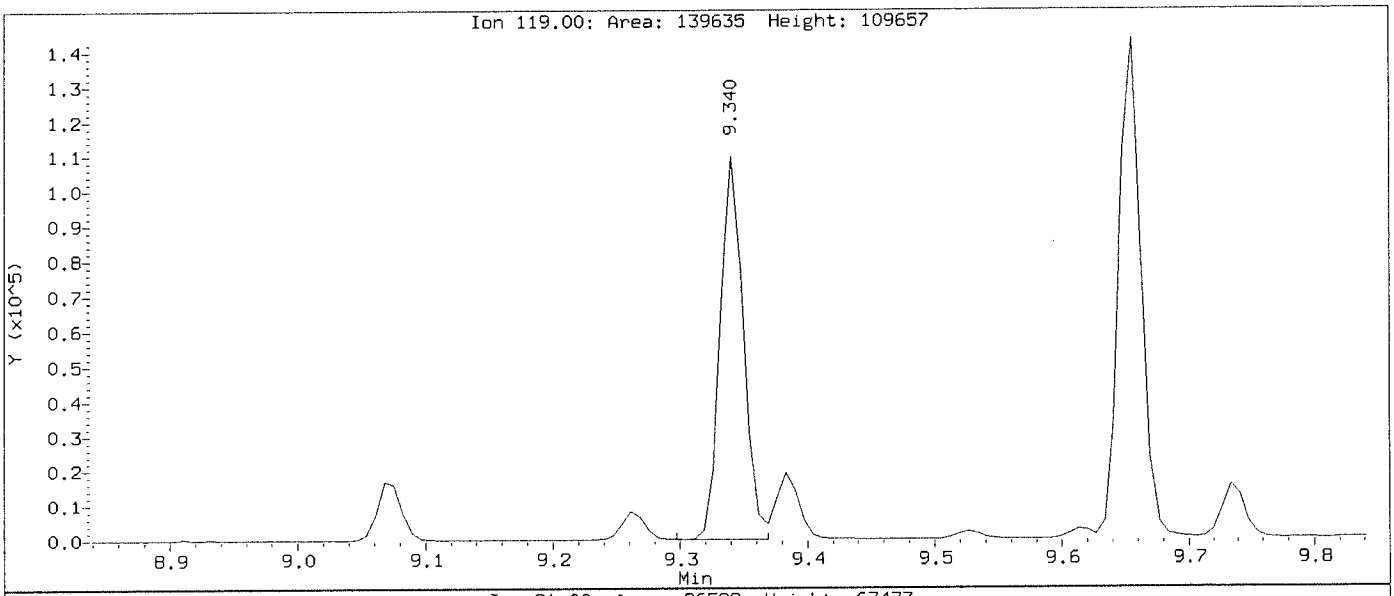
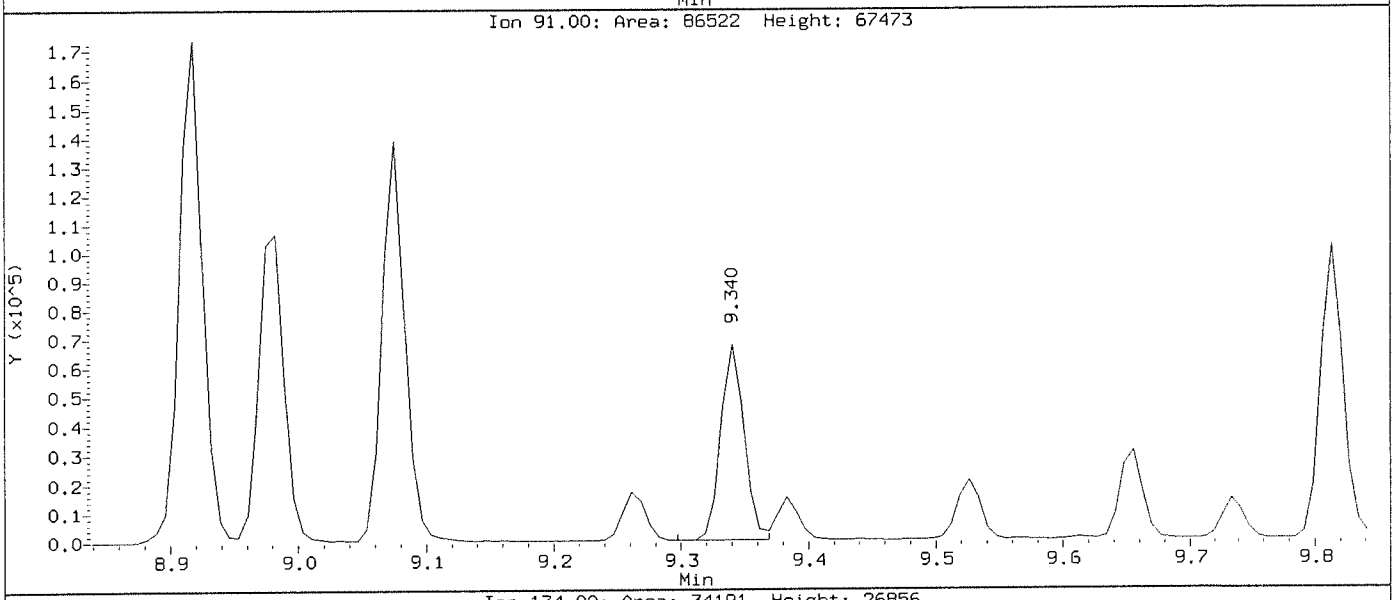
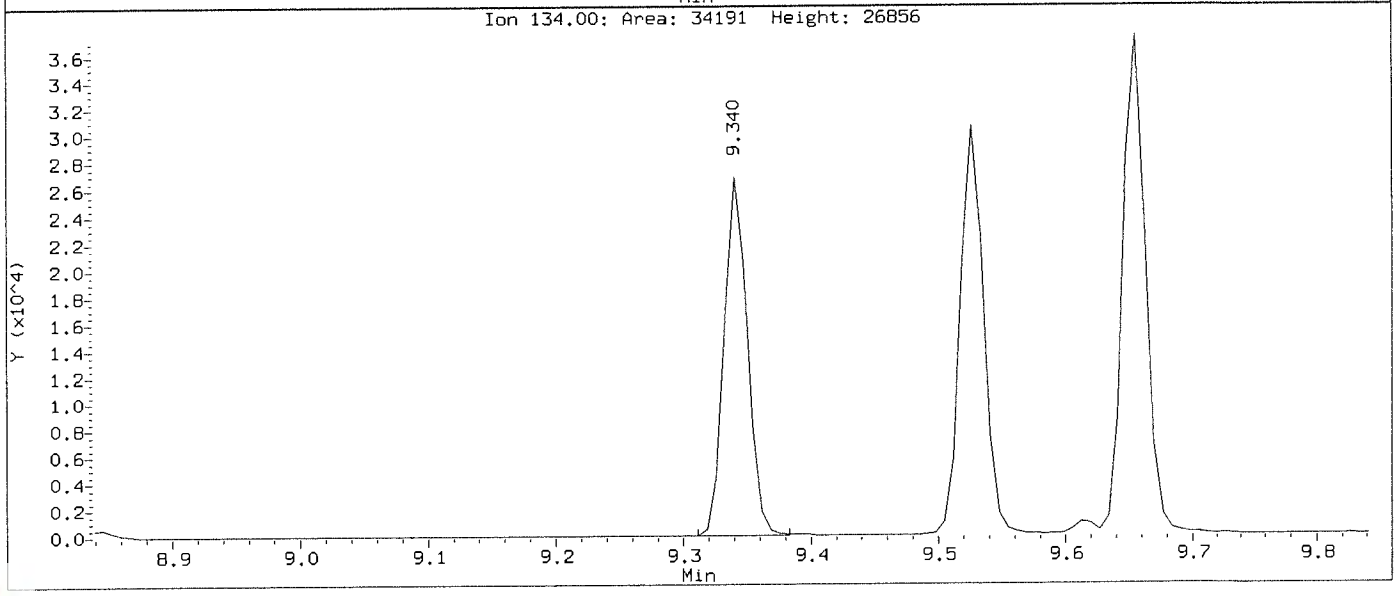
Injection Date: 12-SEP-2019 13:14
Instrument: voa6.i
Client Sample ID: VLCSW-190912

Compound: tert-Butylbenzene
CAS Number: 98-06-6







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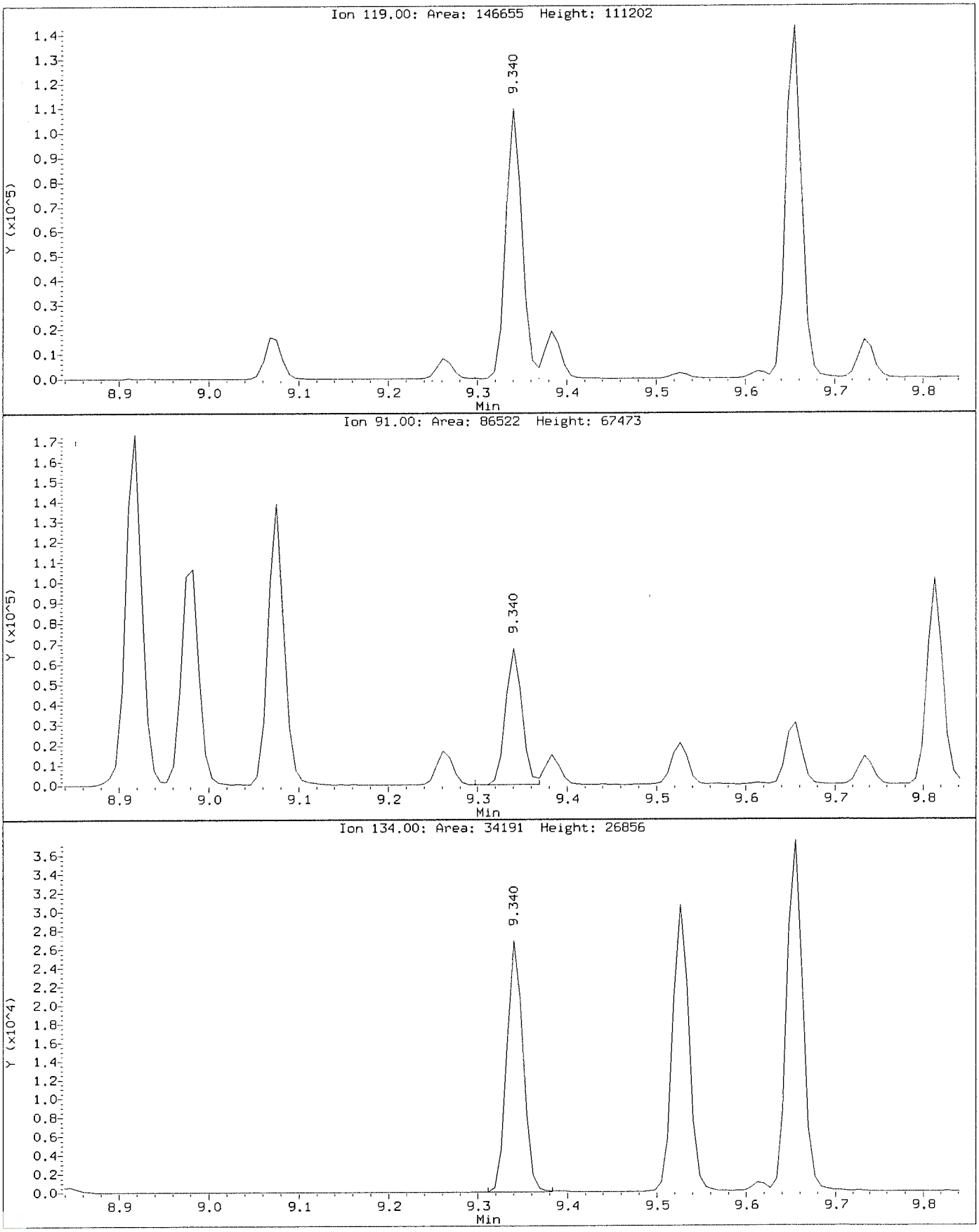
Injection Date: 12-SEP-2019 13:14
Instrument: voa6.i
Client Sample ID: VLCSW-190912

Compound: tert-Butylbenzene
CAS Number: 98-06-6



ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X190912.b\X091207.D
Lab Smp Id: VBLKW-190912 Client Smp ID: VBLKW-190912
Inj Date : 12-SEP-2019 14:16
Operator : PC Inst ID: voa6.i
Smp Info : VBLKW-190912;VBLKW-190912;3;;BLANK
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X190912.b\8260W.m
Meth Date : 25-Sep-2019 14:03 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 8 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

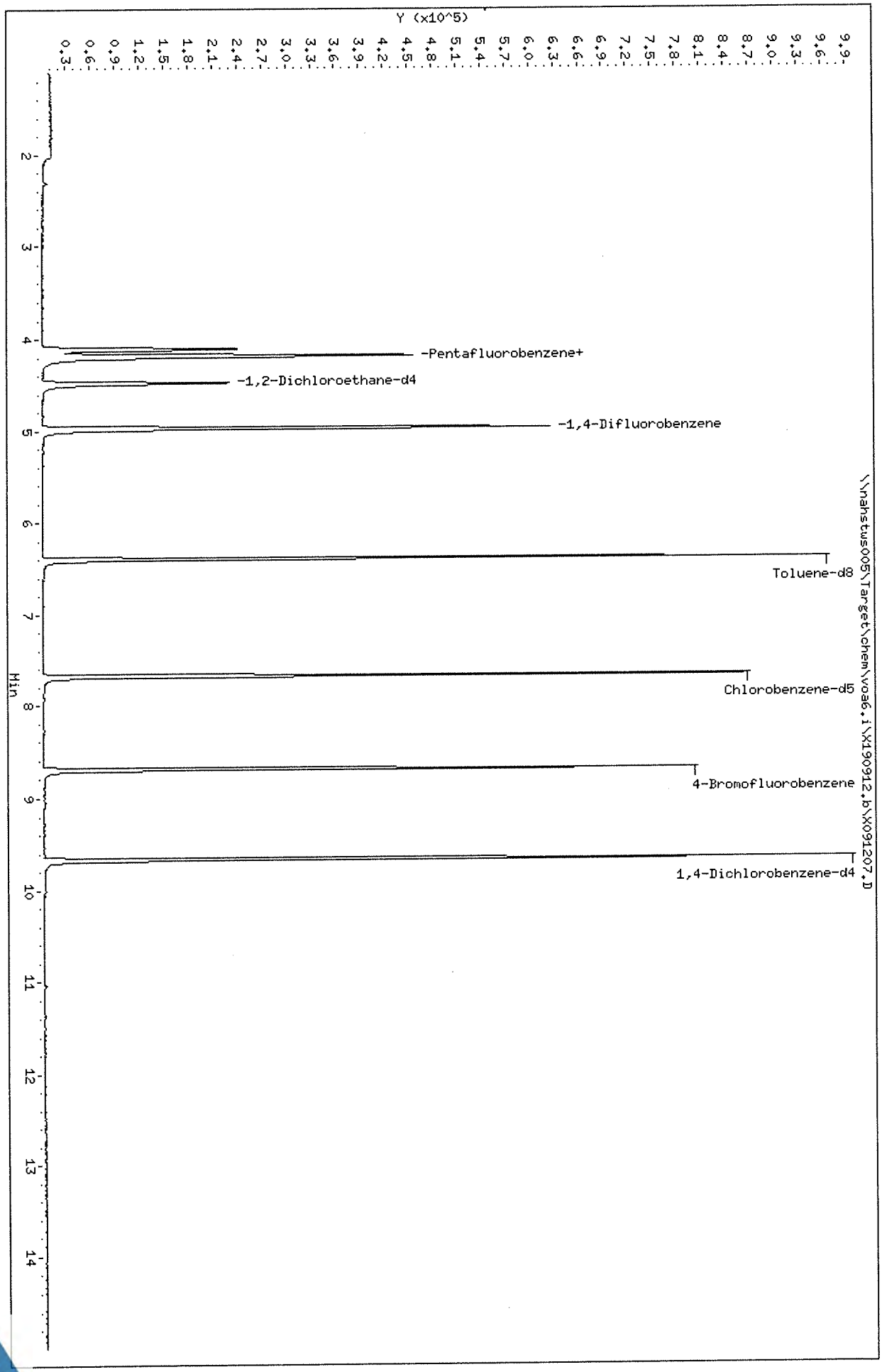
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	421777	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	552949	50.0000	
* 47 Chlorobenzene-d5	117	7.678	7.671	(1.000)	467161	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	255563	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	172601	47.2332	47.23
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	177079	45.4857	45.48
$ 48 Toluene-d8	98	6.389	6.388	(0.832)	628247	48.6922	48.69
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.132)	226017	51.3263	51.32

Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091207.D
Date : 12-SEP-2019 14:16
Client ID: VBLKW-190912
Sample Info: VBLKW-190912;VBLKW-190912;3;;BLANK
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X190912.b\X091210.D
Lab Smp Id: HS19090511-08 Client Smp ID: HS19090511-08
Inj Date : 12-SEP-2019 15:28
Operator : PC Inst ID: voa6.i
Smp Info : HS19090511-08;HS19090511-08;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X190912.b\8260W.m
Meth Date : 25-Sep-2019 14:34 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

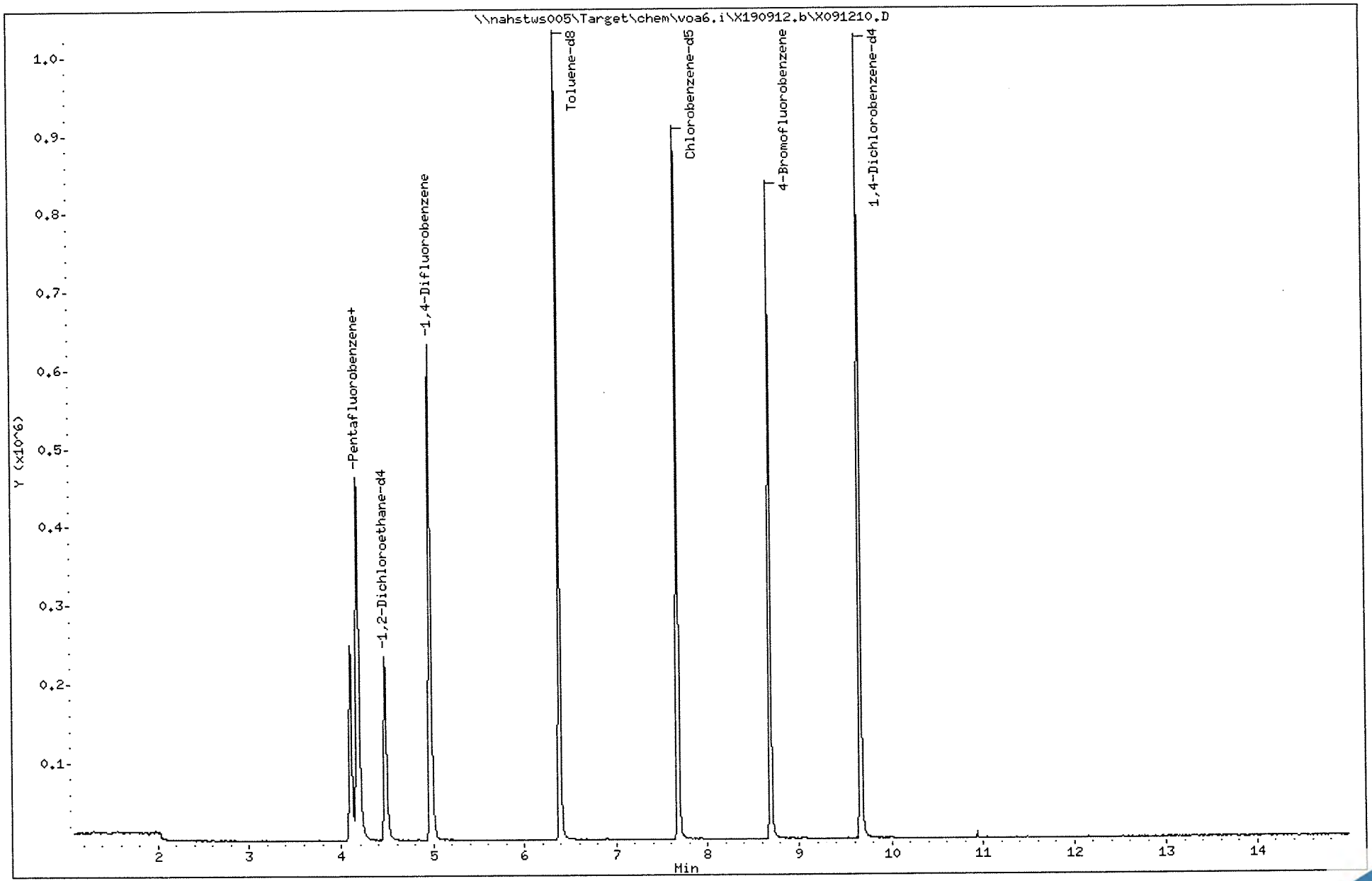
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.189	(1.000)	424959	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	560409	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	477107	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	260861	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	170729	46.3561	46.35
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	175728	44.7892	44.78
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	634762	48.1715	48.17
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	226980	50.4605	50.46

Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091210.D
Date : 12-SEP-2019 15:28
Client ID: HS19090511-08
Sample Info: HS19090511-08;HS19090511-08;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i

Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091211.D Page 1
Report Date: 25-Sep-2019 14:34

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X190912.b\X091211.D
Lab Smp Id: HS19090511-01 Client Smp ID: HS19090511-01
Inj Date : 12-SEP-2019 15:52
Operator : PC Inst ID: voa6.i
Smp Info : HS19090511-01;HS19090511-01;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X190912.b\8260W.m
Meth Date : 25-Sep-2019 14:34 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.189	(1.000)	430759	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	563749	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	482470	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	269839	50.0000	
$ 30 Dibromofluoromethane	113	4.104	4.103	(0.981)	171643	45.9701	45.97
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	178604	44.9113	44.91
$ 48 Toluene-d8	98	6.389	6.388	(0.833)	639229	47.9713	47.97
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	232569	51.1362	51.13
22 1,1-Dichloroethane	63	2.929	2.929	(0.700)	6196	0.91748	0.91(a)
11 1,1-Dichloroethene	96	1.912	1.911	(0.457)	19335	5.26625	5.26
33 1,2-Dichloroethane	62	4.569	4.562	(0.919)	5610	1.20379	1.20(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091211.D

Date : 12-SEP-2019 15:52

Client ID: HS19090511-01

Instrument: voa6.i

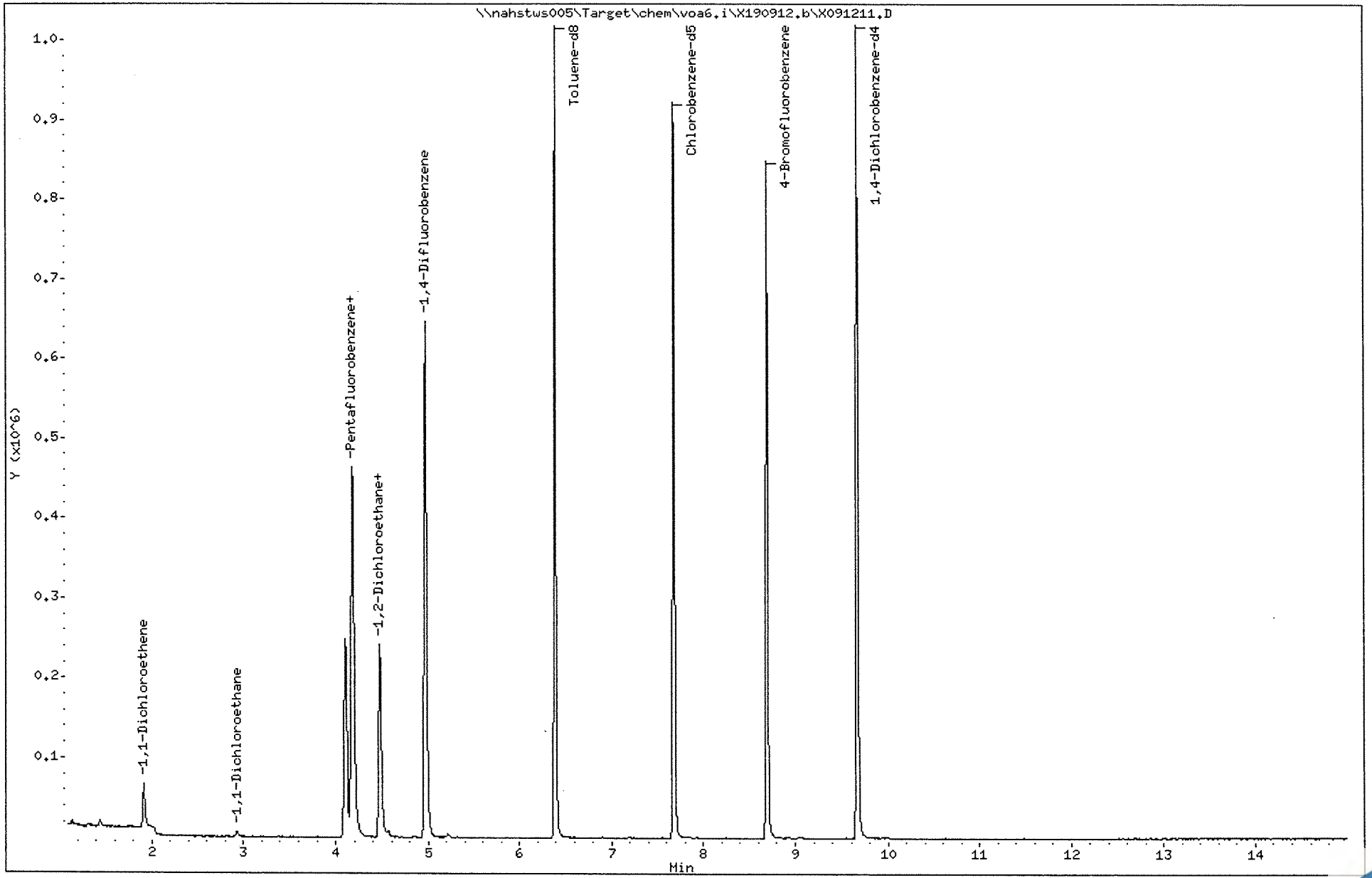
Sample Info: HS19090511-01;HS19090511-01;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091211.D

Date : 12-SEP-2019 15:52

Client ID: HS19090511-01

Instrument: voa6.i

Sample Info: HS19090511-01;HS19090511-01;;;

Purge Volume: 5.0

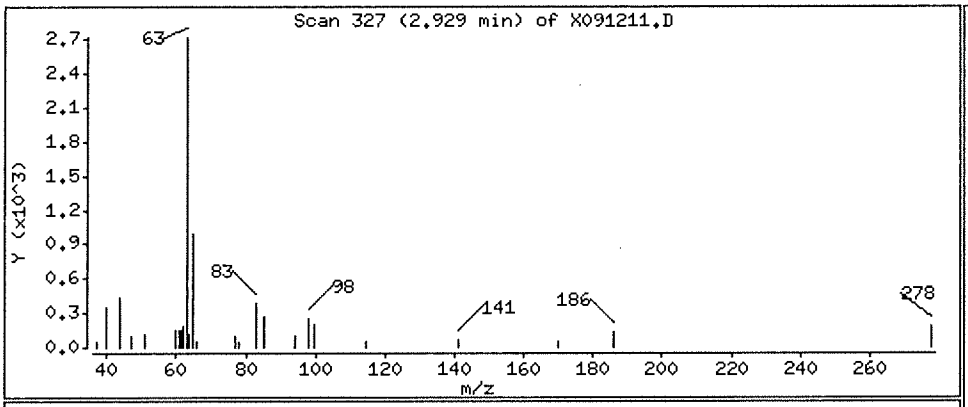
Operator: PC

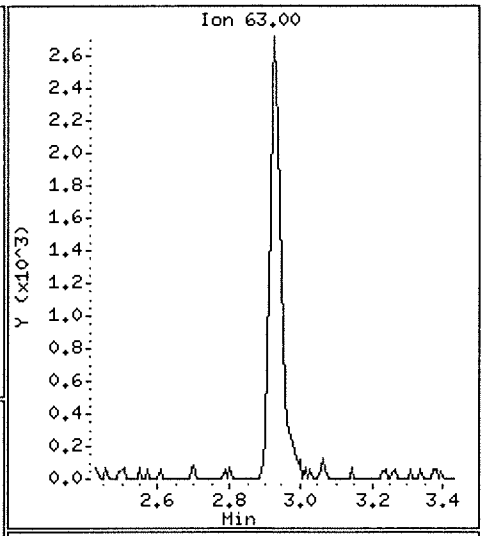
Column phase: DB624

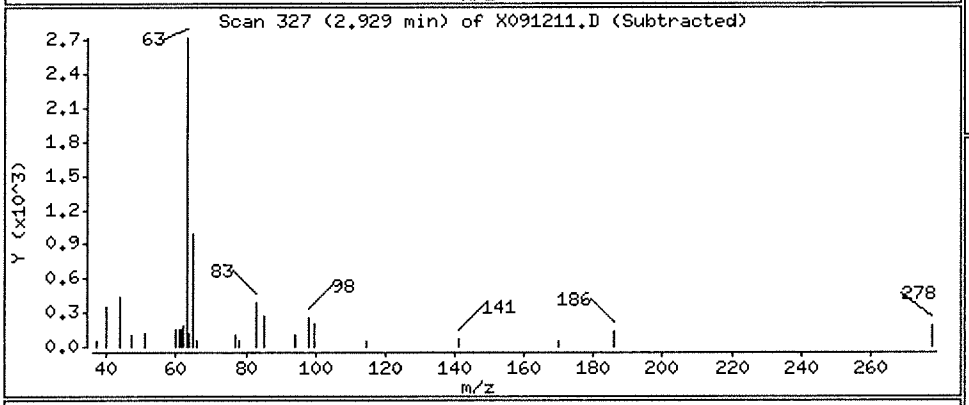
Column diameter: 0.18

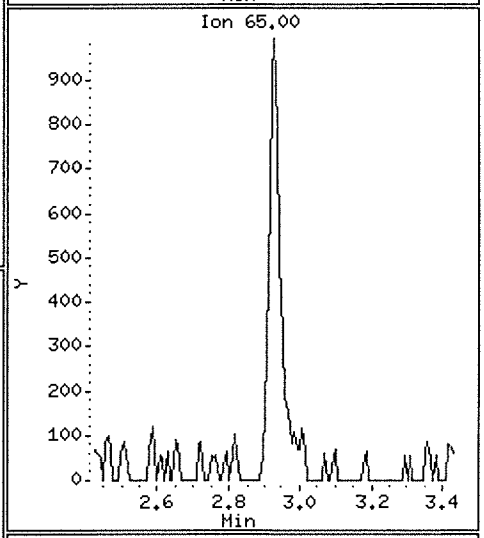
22 1,1-Dichloroethane

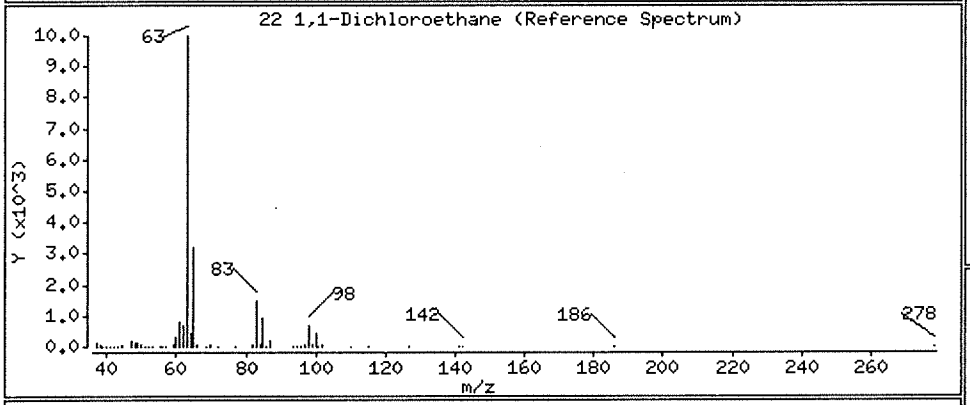
Concentration: 0.91 ug/l

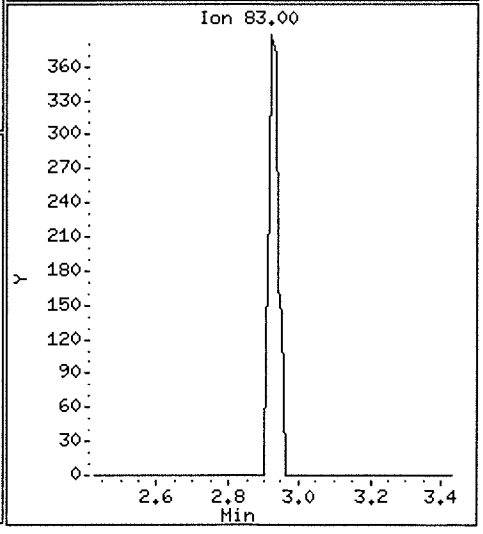


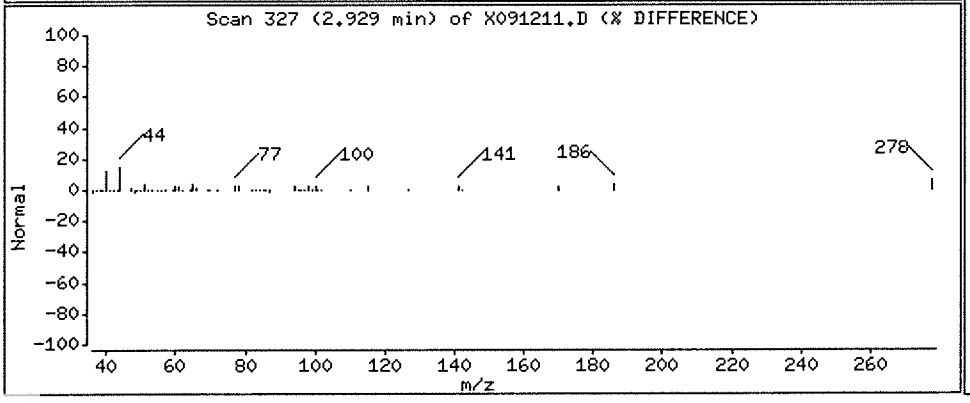












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091211.D

Date : 12-SEP-2019 15:52

Client ID: HS19090511-01

Instrument: voa6.i

Sample Info: HS19090511-01;HS19090511-01;;;

Purge Volume: 5.0

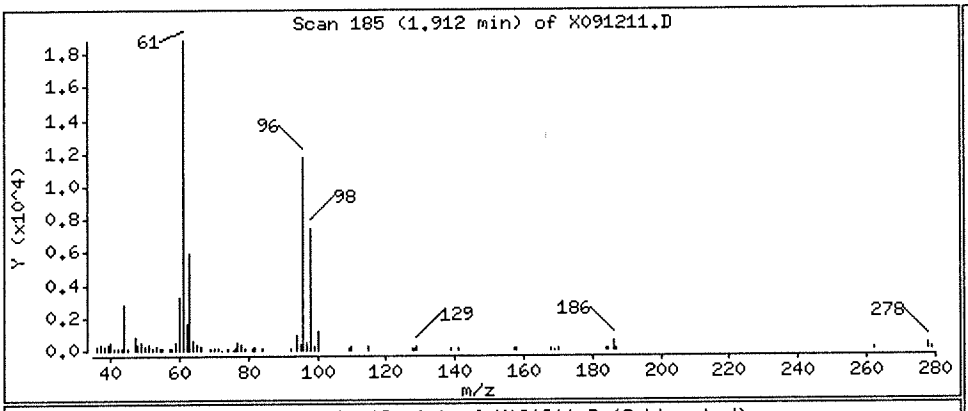
Operator: PC

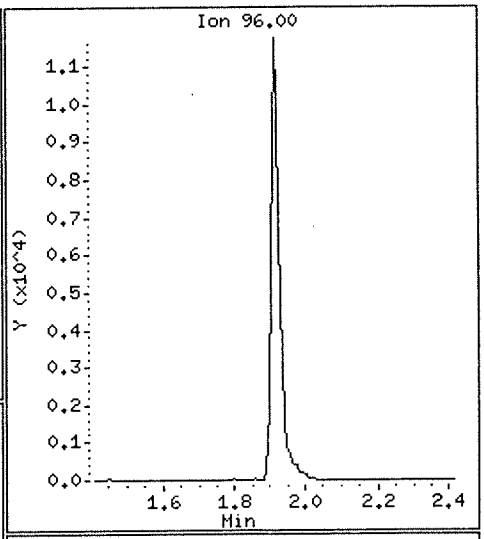
Column phase: DB624

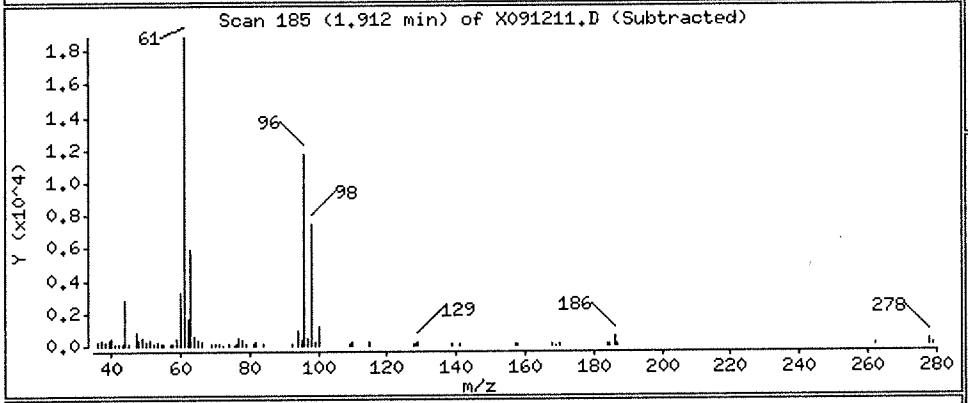
Column diameter: 0.18

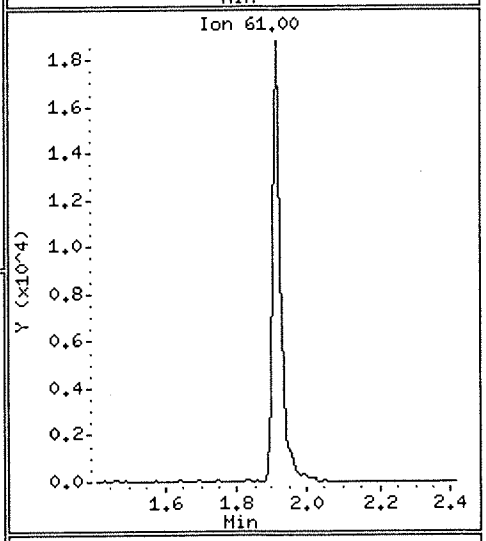
11 1,1-Dichloroethene

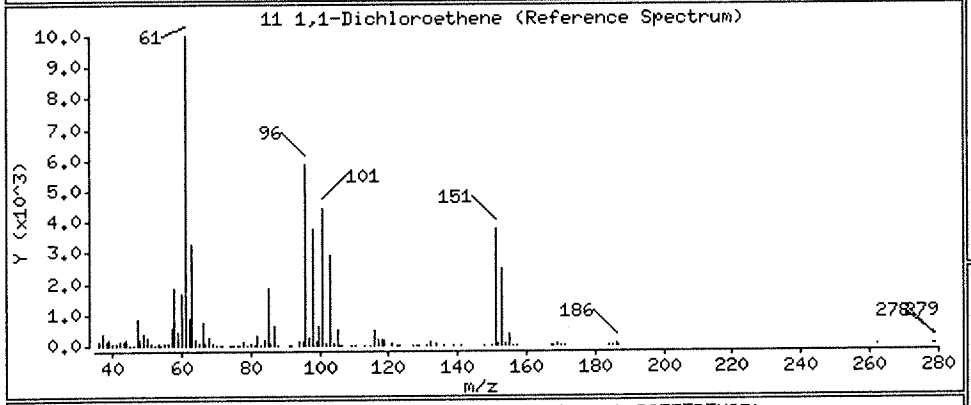
Concentration: 5.26 ug/l

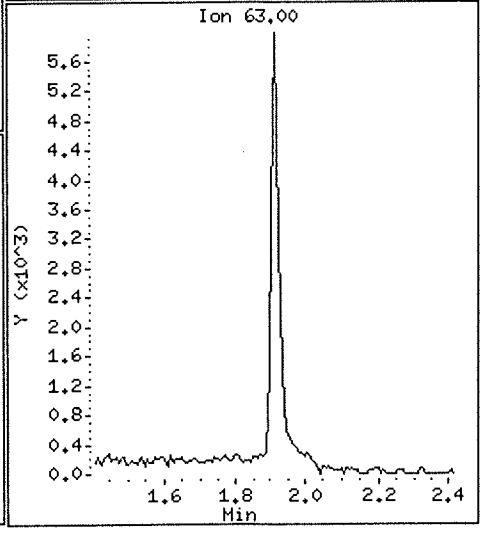


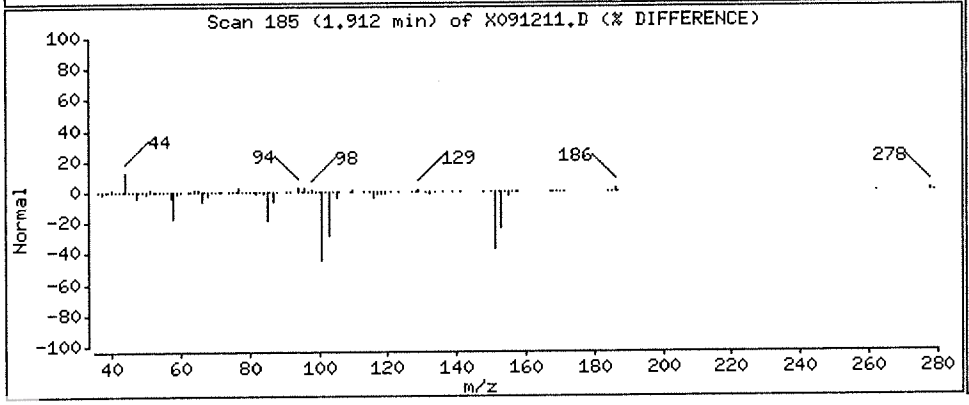












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Date : 12-SEP-2019 15:52

Client ID: HS19090511-01

Instrument: voa6.i

Sample Info: HS19090511-01;HS19090511-01;;;

Purge Volume: 5.0

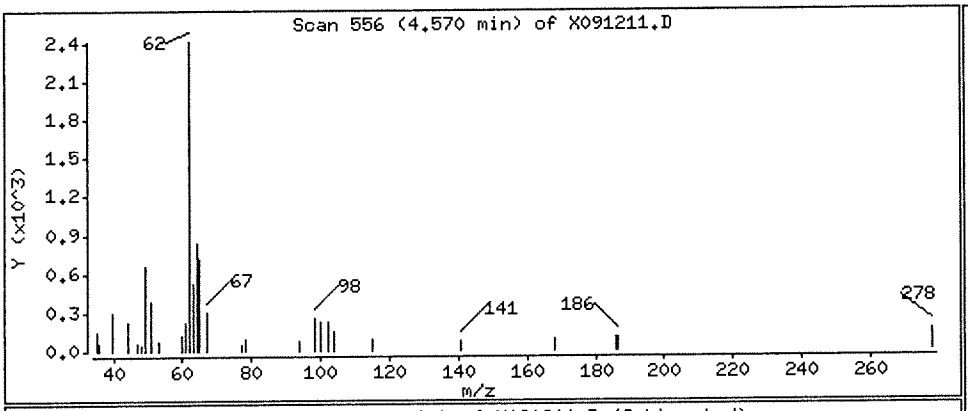
Operator: PC

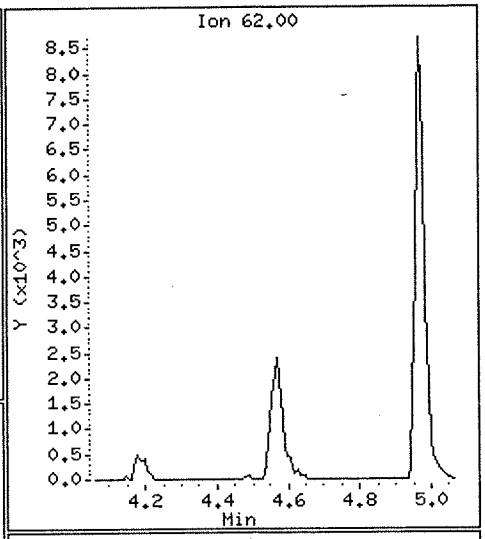
Column phase: DB624

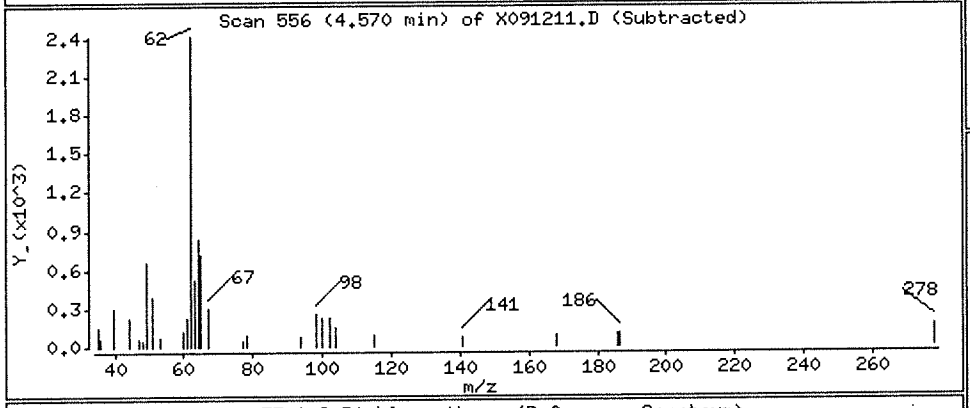
Column diameter: 0.18

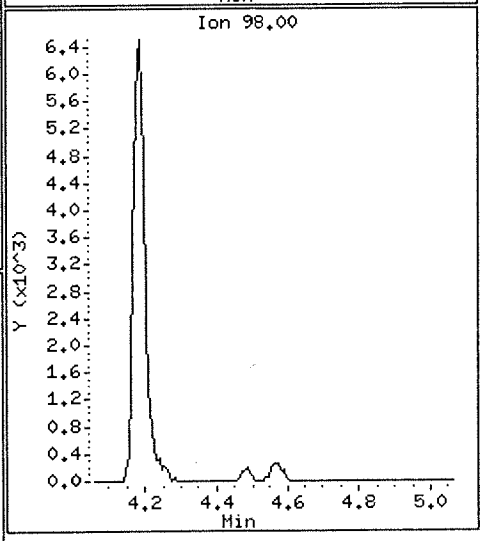
33 1,2-Dichloroethane

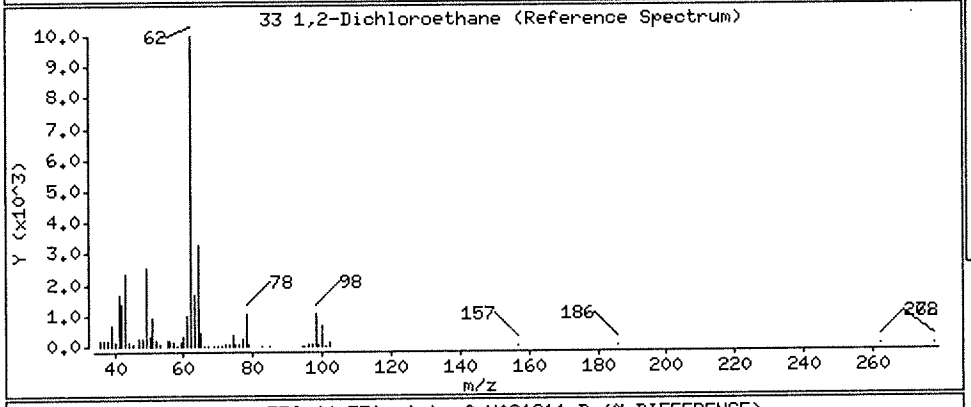
Concentration: 1.20 ug/l

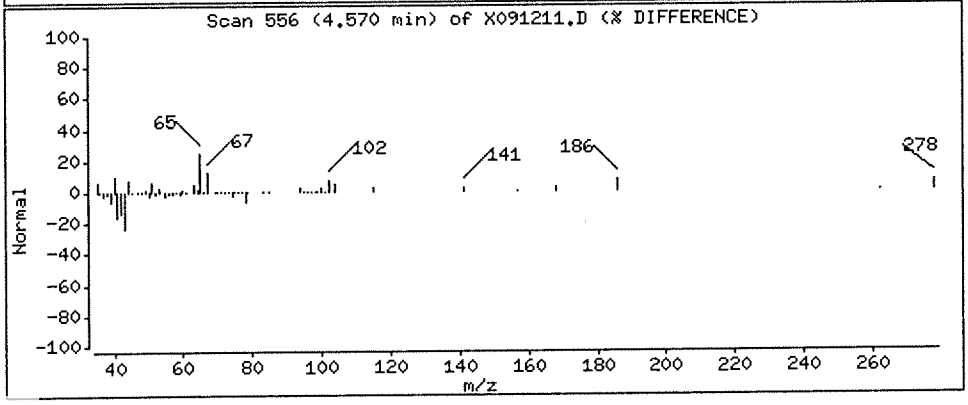












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091212.D Page 1
Report Date: 25-Sep-2019 14:34

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X190912.b\X091212.D
Lab Smp Id: HS19090511-02 Client Smp ID: HS19090511-02
Inj Date : 12-SEP-2019 16:16
Operator : PC Inst ID: voa6.i
Smp Info : HS19090511-02;HS19090511-02;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X190912.b\8260W.m
Meth Date : 25-Sep-2019 14:34 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.189	(1.000)	381515	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	509686	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	444840	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	252226	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	154746	46.8088	46.80
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	164494	46.7326	46.73
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	578167	47.0592	47.05
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	216095	51.5379	51.53
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	176031	71.7257	71.72
22 1,1-Dichloroethane	63	2.929	2.929	(0.700)	2973974	497.214	497.21(A)
11 1,1-Dichloroethene	96	1.912	1.911	(0.457)	8503748	2615.11	2615.11(A)
88 1,2-Dichlorobenzene	146	9.999	9.999	(1.034)	123598	16.4836	16.48
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	81735	19.3989	19.39
83 1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	7471	0.94563	0.94(a)
84 1,4-Dichlorobenzene	146	9.691	9.683	(1.002)	22851	2.85229	2.85(a)
37 Benzene	78	4.519	4.519	(0.909)	107978	8.27344	8.27
19 Carbon Disulfide	76	2.076	2.069	(0.497)	58101	6.04306	6.04
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	425931	108.893	108.89
20 trans-1,2-Dichloroethene	96	2.535	2.527	(0.606)	48161	14.4343	14.43
38 Trichloroethene	130	5.214	5.214	(1.049)	1281312	325.985	325.98(A)
5 Vinyl Chloride	62	1.138	1.138	(0.272)	4162798	1046.75	1046.74(A)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.

Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091212.D

Date : 12-SEP-2019 16:16

Client ID: HS19090511-02

Instrument: voa6.i

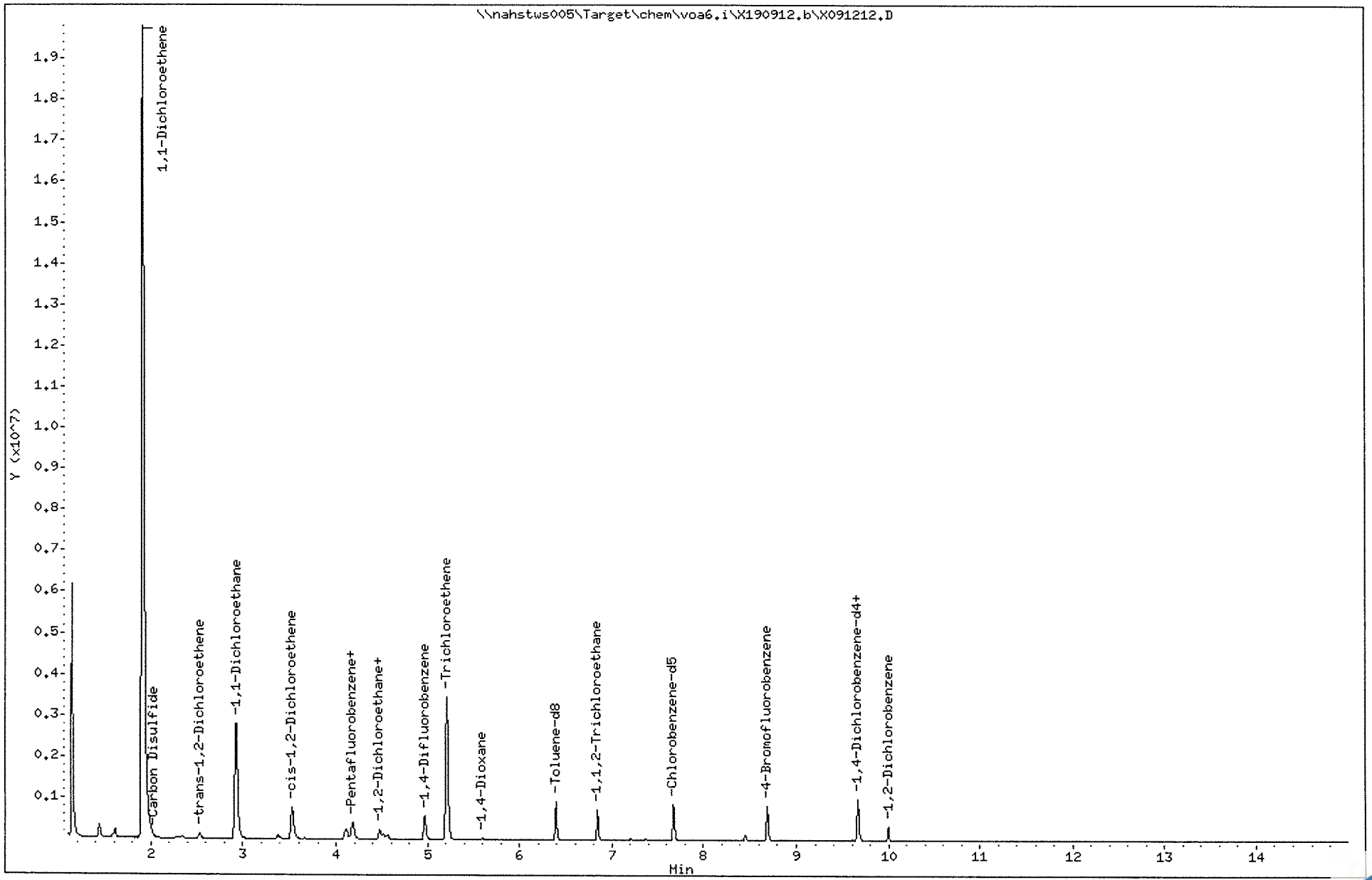
Sample Info: HS19090511-02;HS19090511-02;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



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Date : 12-SEP-2019 16:16

Client ID: HS19090511-02

Instrument: voa6.i

Sample Info: HS19090511-02;HS19090511-02;;;

Purge Volume: 5.0

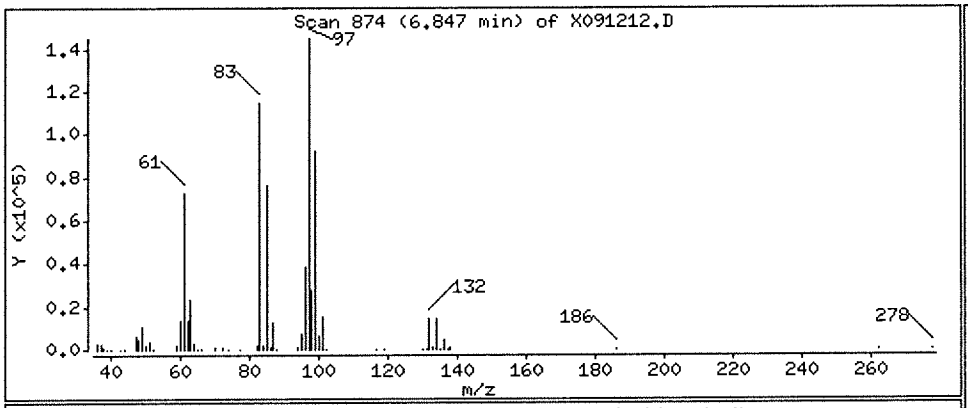
Operator: PC

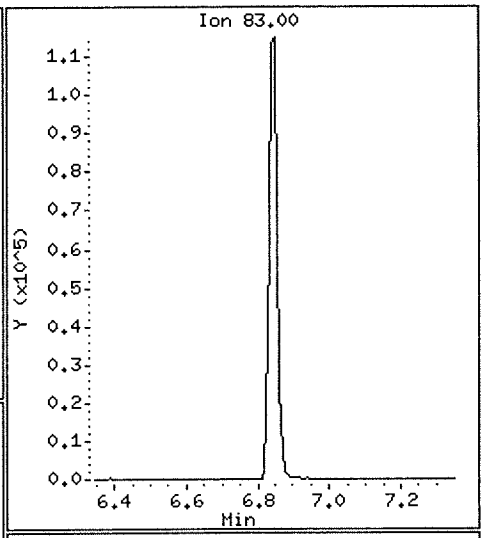
Column phase: DB624

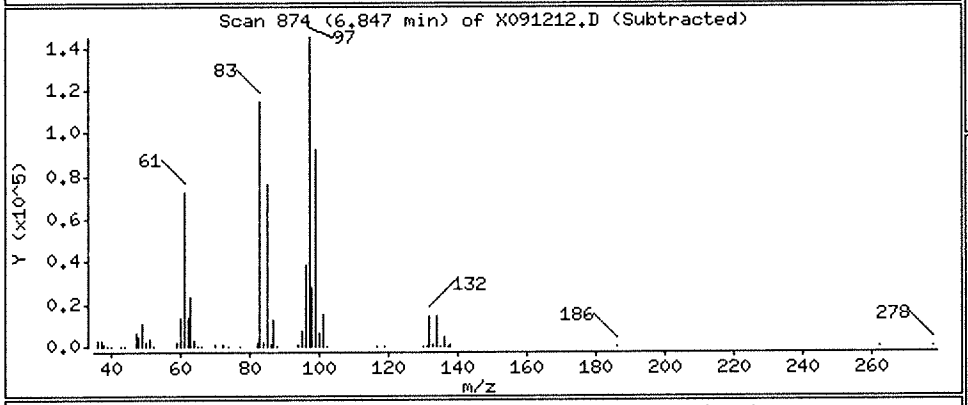
Column diameter: 0.18

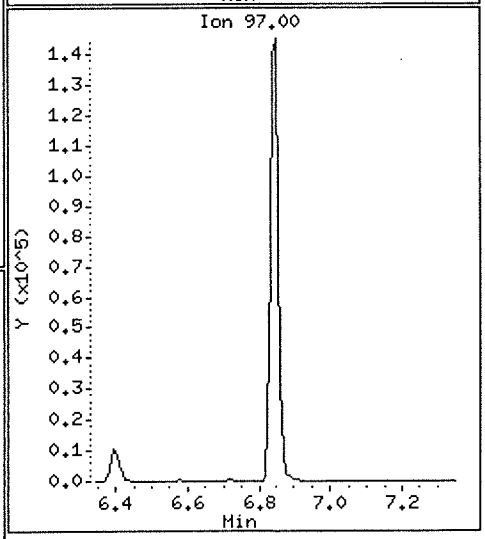
53 1,1,2-Trichloroethane

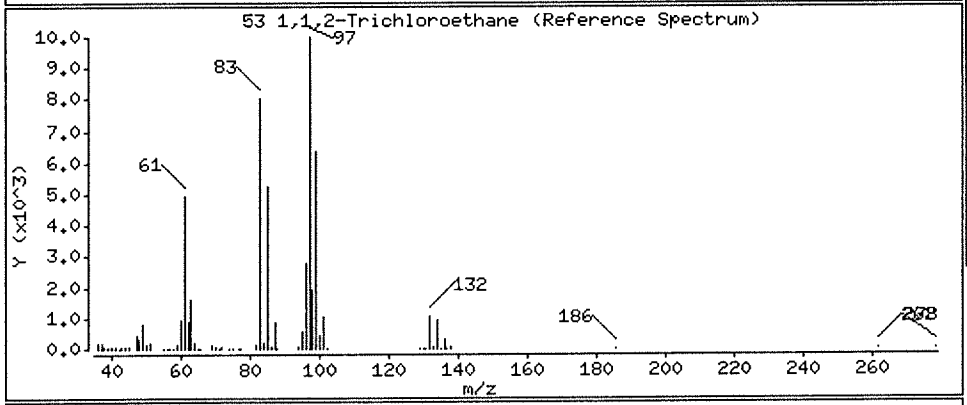
Concentration: 71.72 ug/l

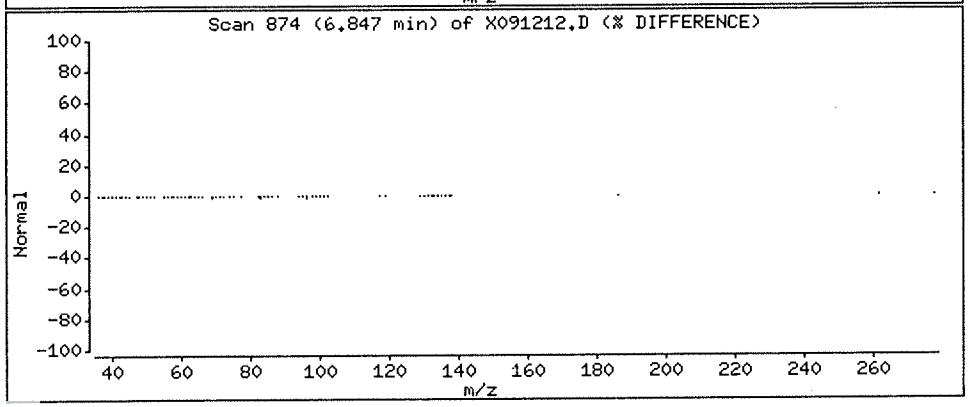












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Date : 12-SEP-2019 16:16

Client ID: HS19090511-02

Instrument: voa6.i

Sample Info: HS19090511-02;HS19090511-02;;;

Purge Volume: 5.0

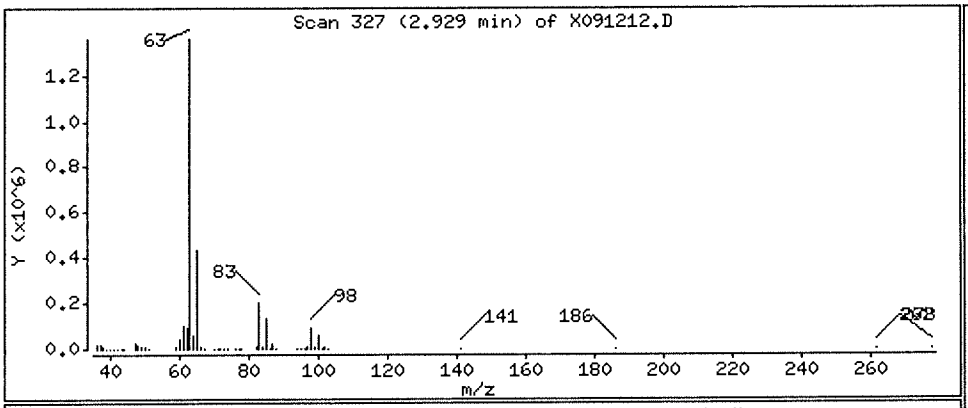
Operator: PC

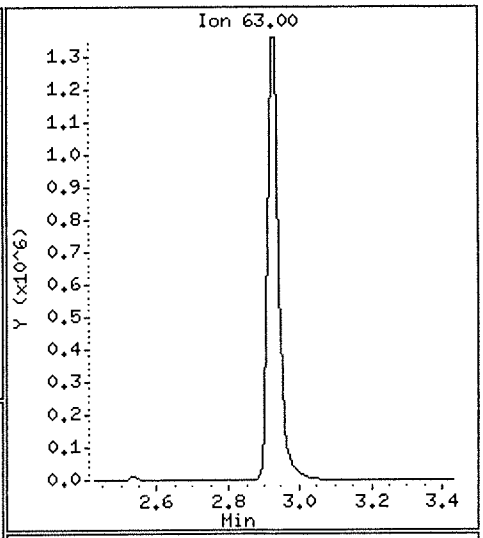
Column phase: DB624

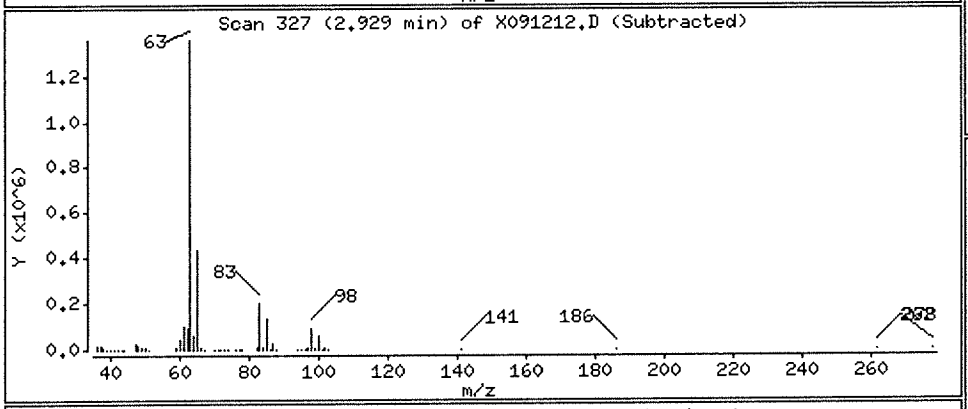
Column diameter: 0.18

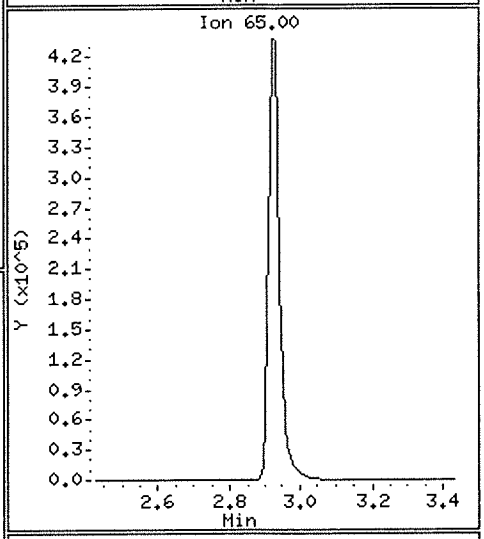
22 1,1-Dichloroethane

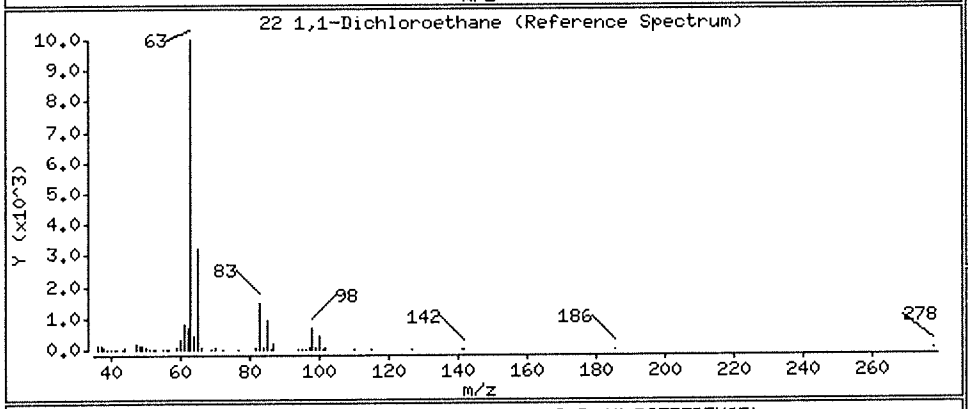
Concentration: 497.21 ug/l

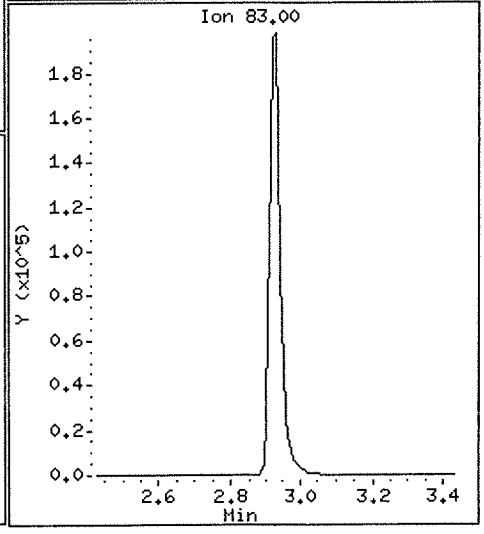


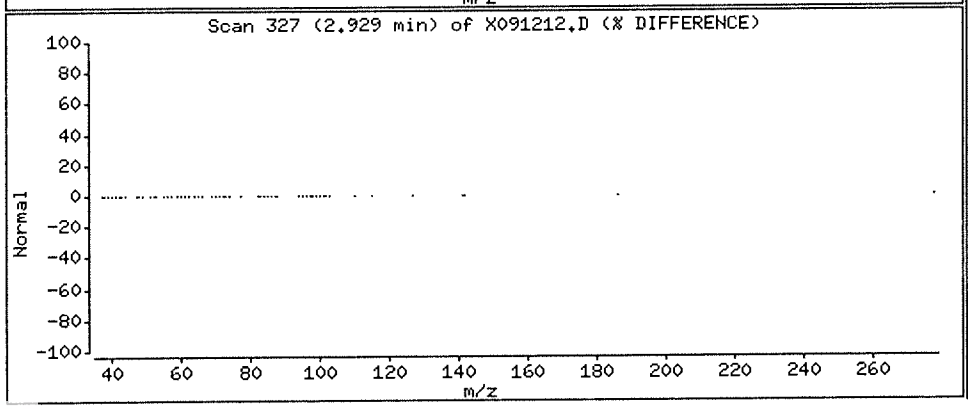












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091212.D

Date : 12-SEP-2019 16:16

Client ID: HS19090511-02

Instrument: voa6.i

Sample Info: HS19090511-02;HS19090511-02;;;

Purge Volume: 5.0

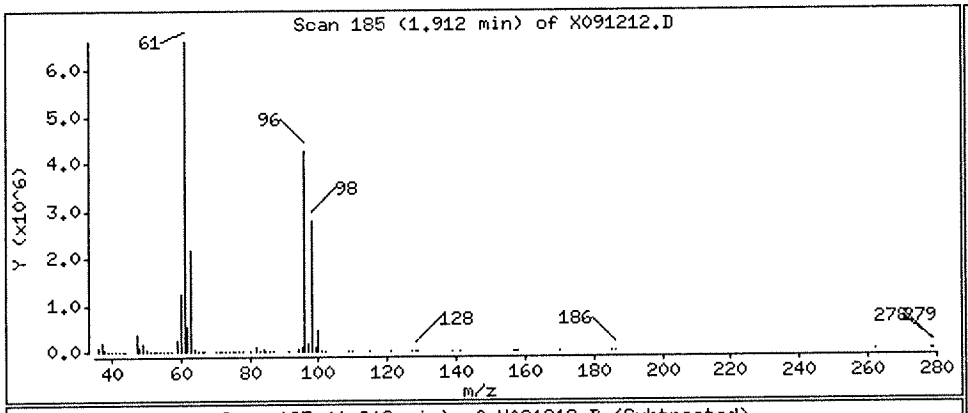
Operator: PC

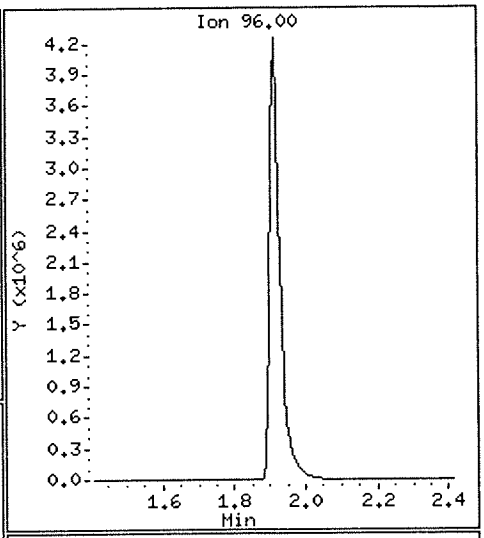
Column phase: DB624

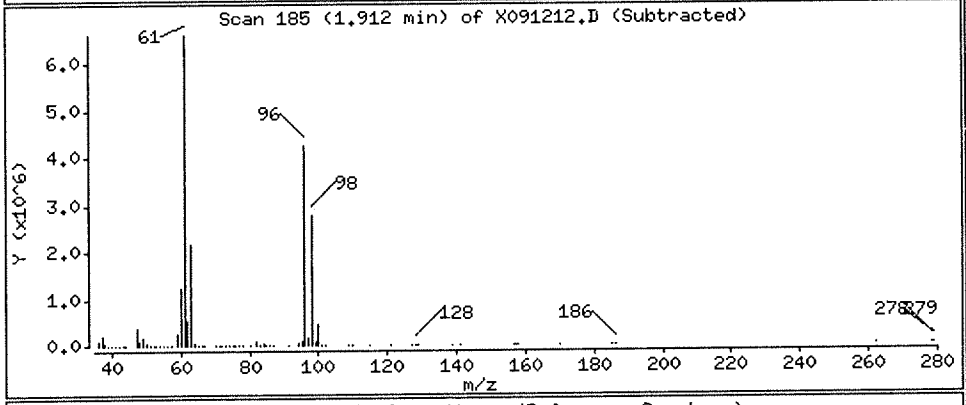
Column diameter: 0.18

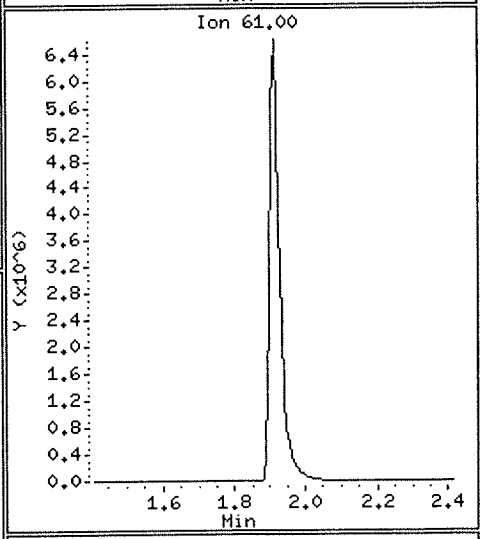
11 1,1-Dichloroethene

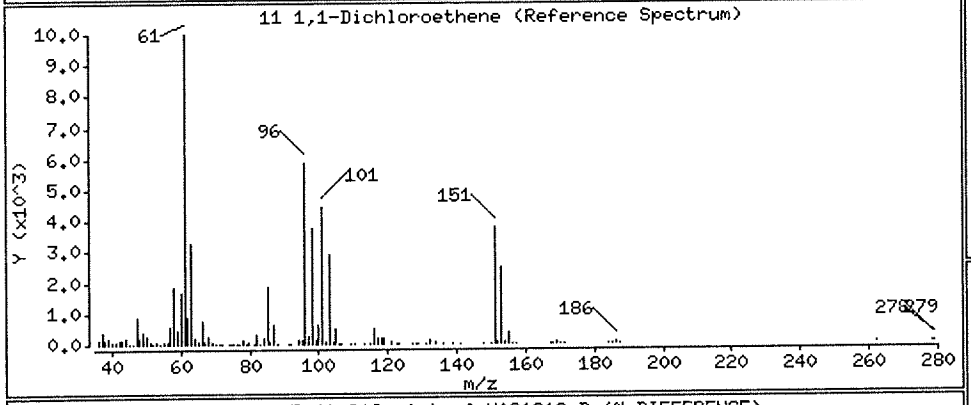
Concentration: 2615.11 ug/l

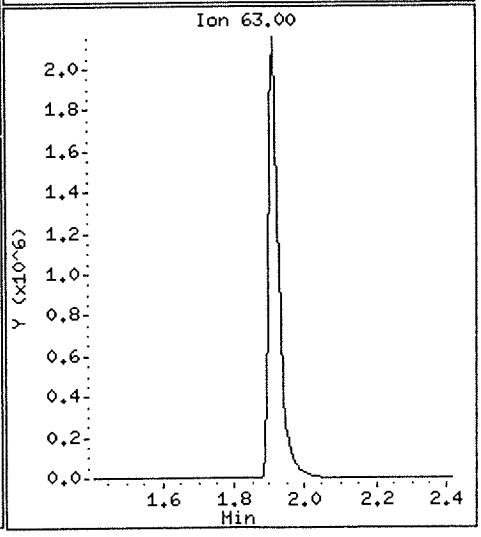


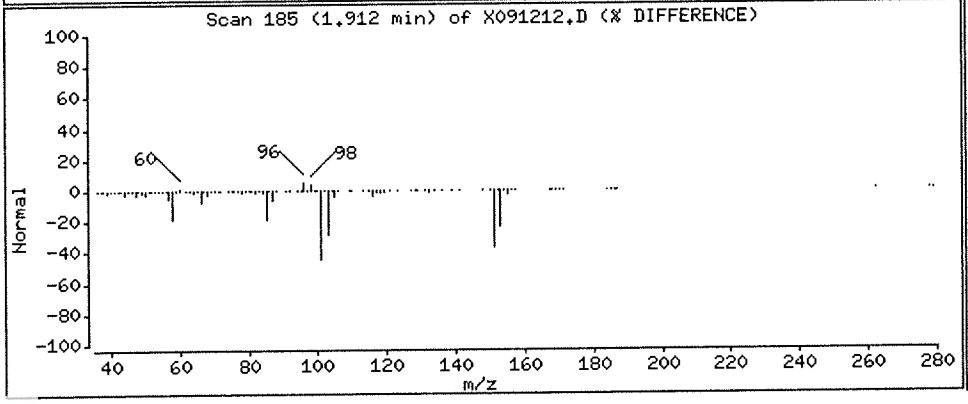












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091212.D

Date : 12-SEP-2019 16:16

Client ID: HS19090511-02

Instrument: voa6.i

Sample Info: HS19090511-02;HS19090511-02;;;

Purge Volume: 5.0

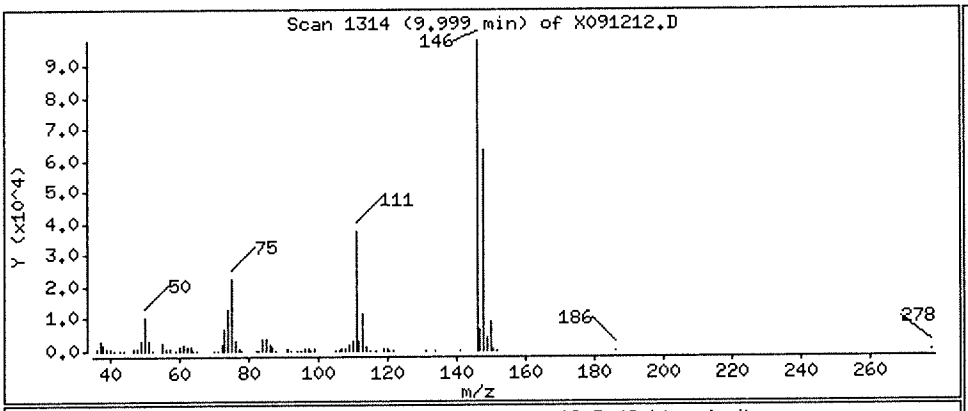
Operator: PC

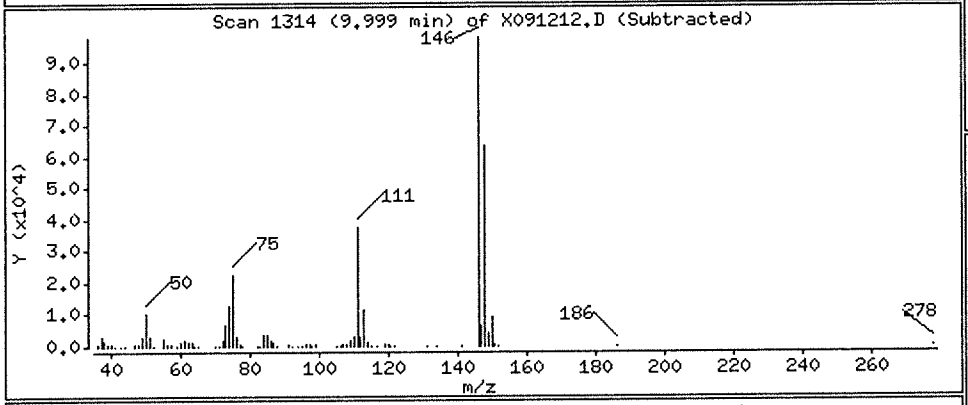
Column phase: DB624

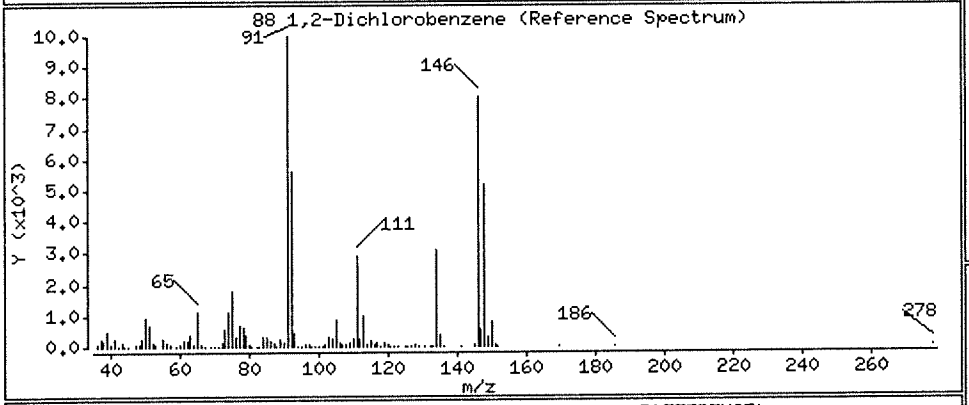
Column diameter: 0.18

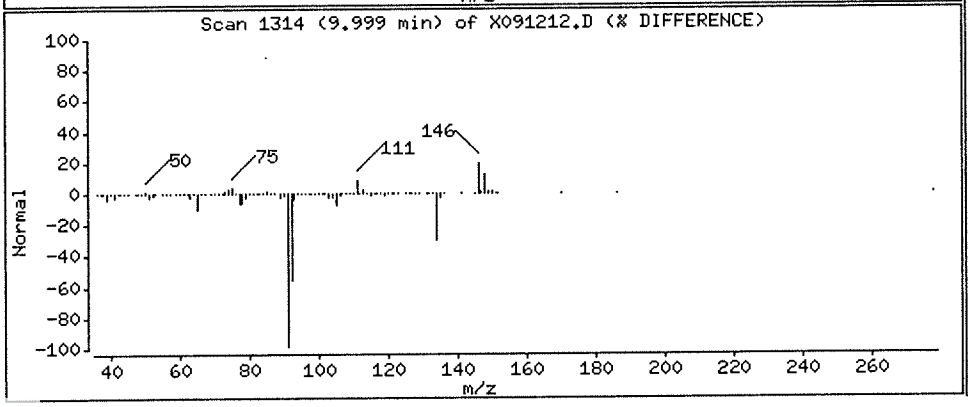
88 1,2-Dichlorobenzene

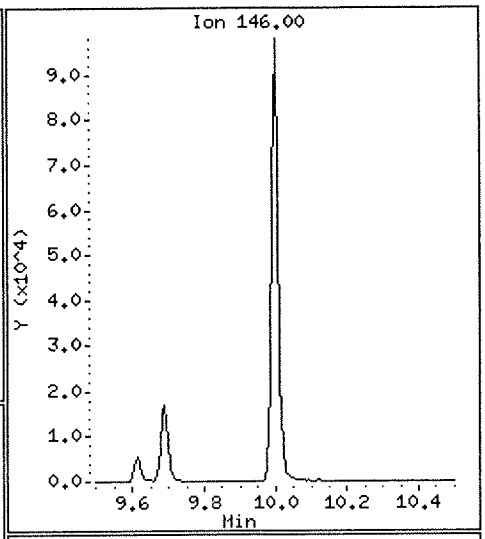
Concentration: 16.48 ug/l

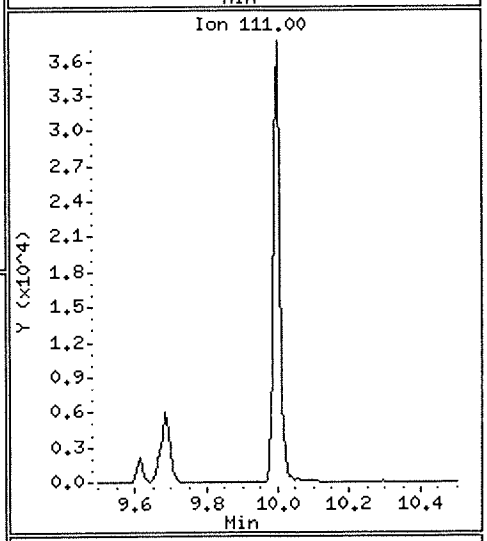


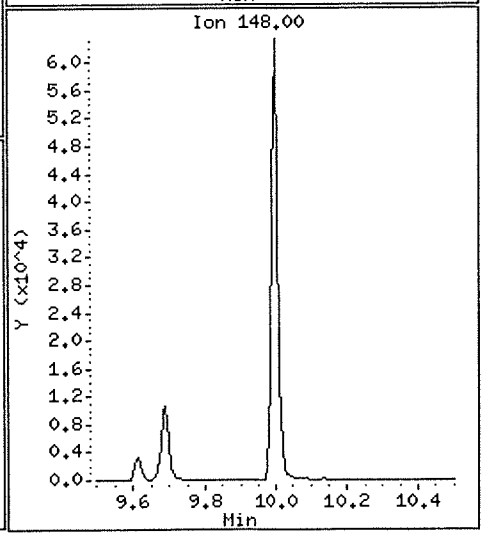












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091212.D

Date : 12-SEP-2019 16:16

Client ID: HS19090511-02

Instrument: voa6.i

Sample Info: HS19090511-02;HS19090511-02;;;

Purge Volume: 5.0

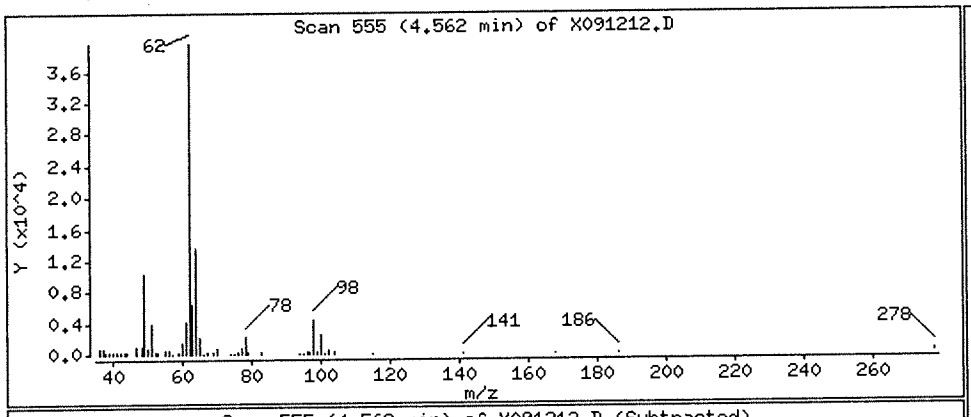
Operator: PC

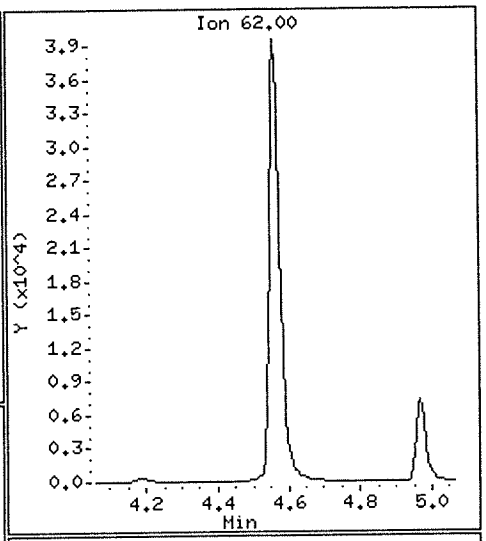
Column phase: DB624

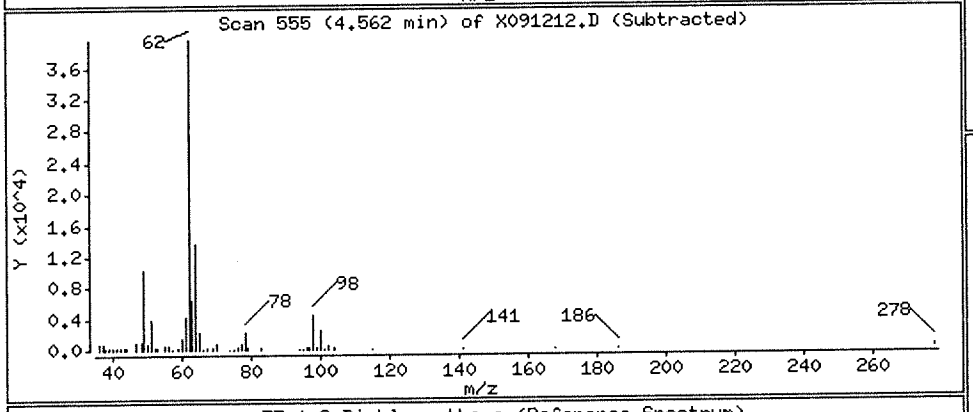
Column diameter: 0.18

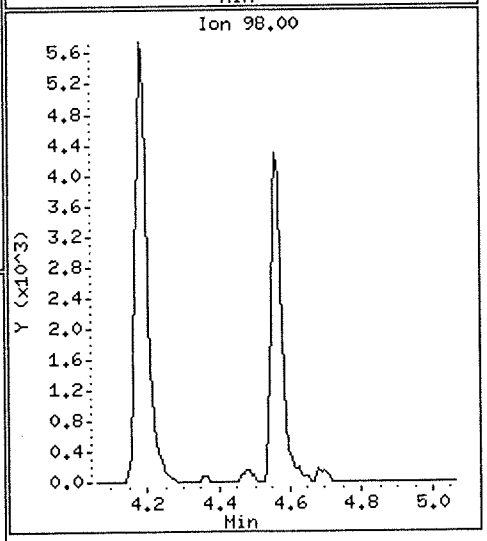
33 1,2-Dichloroethane

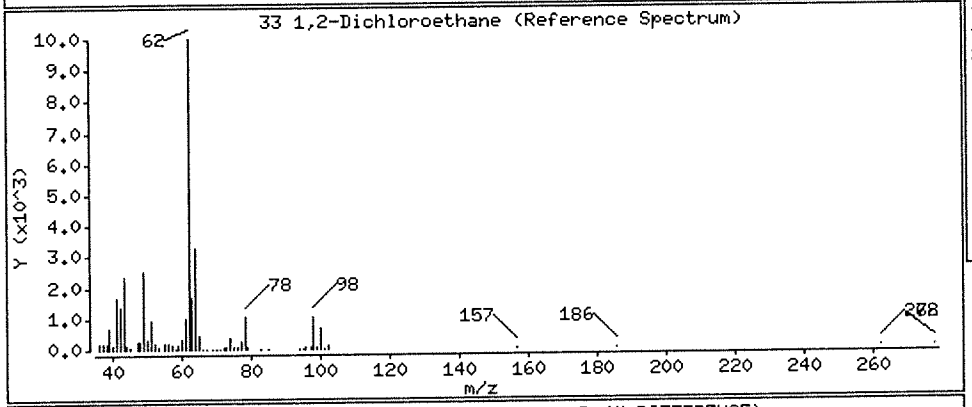
Concentration: 19.39 ug/l

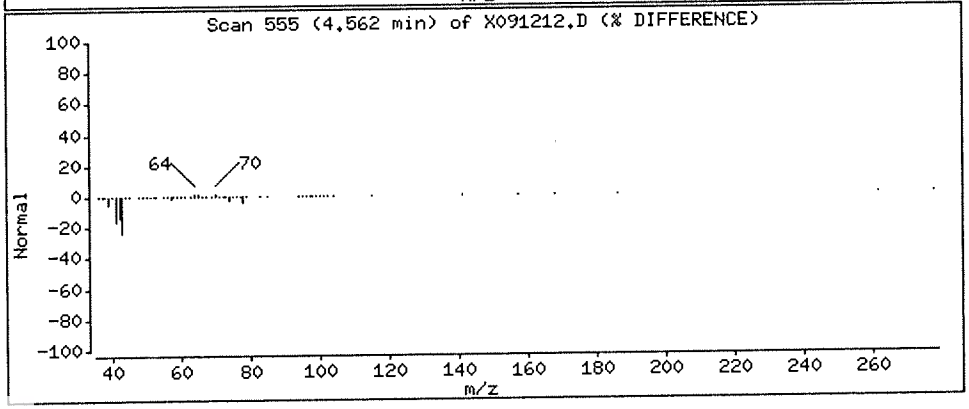












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091212.D Page 9

Date : 12-SEP-2019 16:16

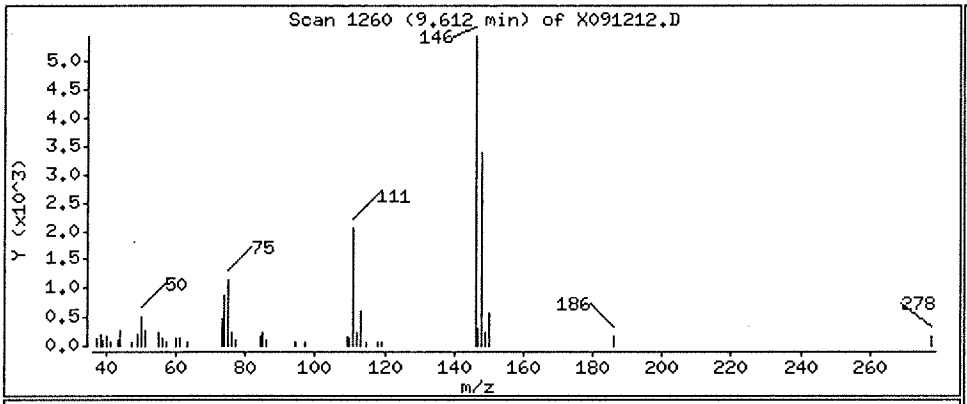
Client ID: HS19090511-02 Instrument: voa6.i

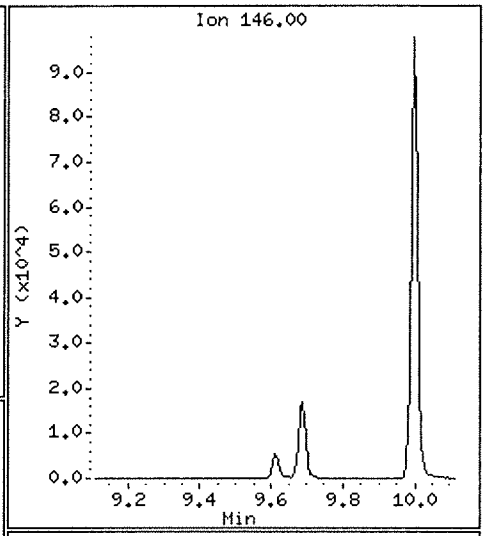
Sample Info: HS19090511-02;HS19090511-02;;;

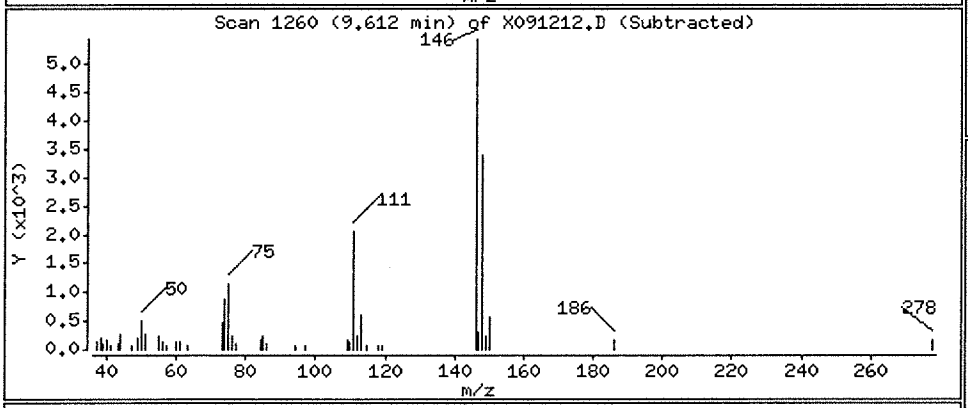
Purge Volume: 5.0 Operator: PC

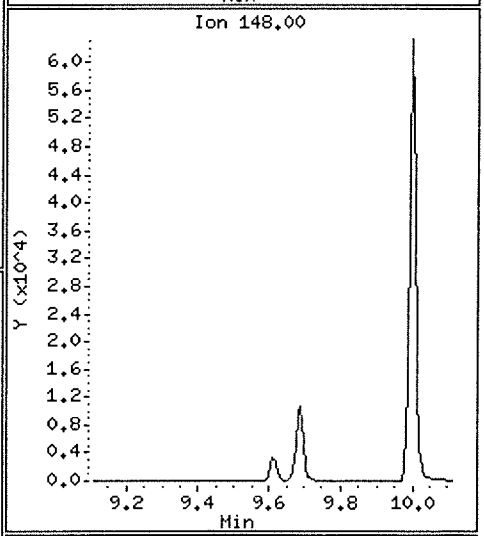
Column phase: DB624 Column diameter: 0.18

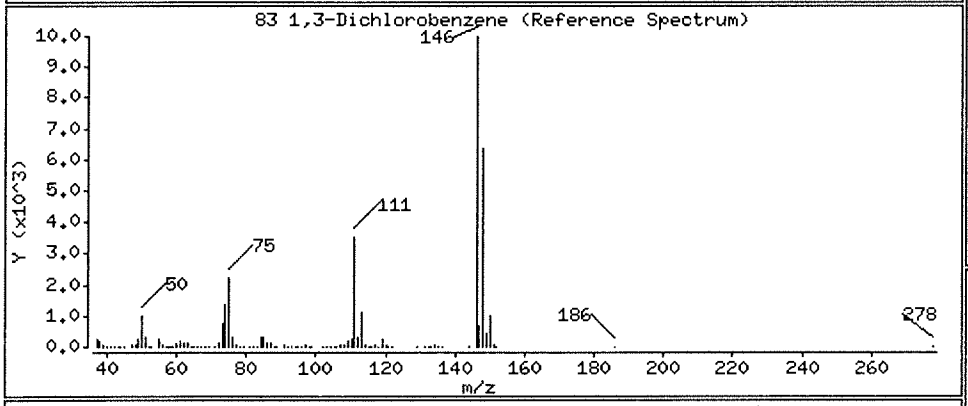
83 1,3-Dichlorobenzene Concentration: 0.94 ug/l

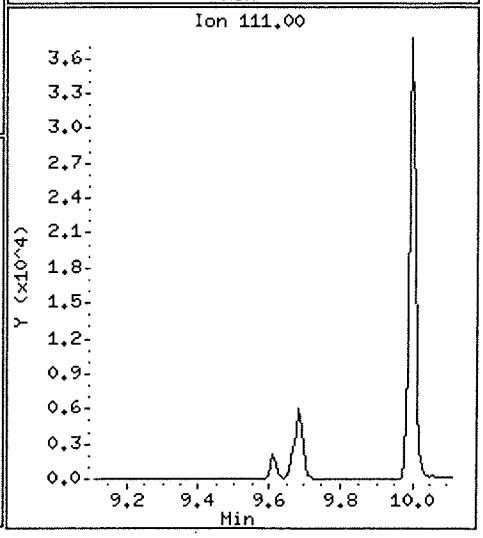


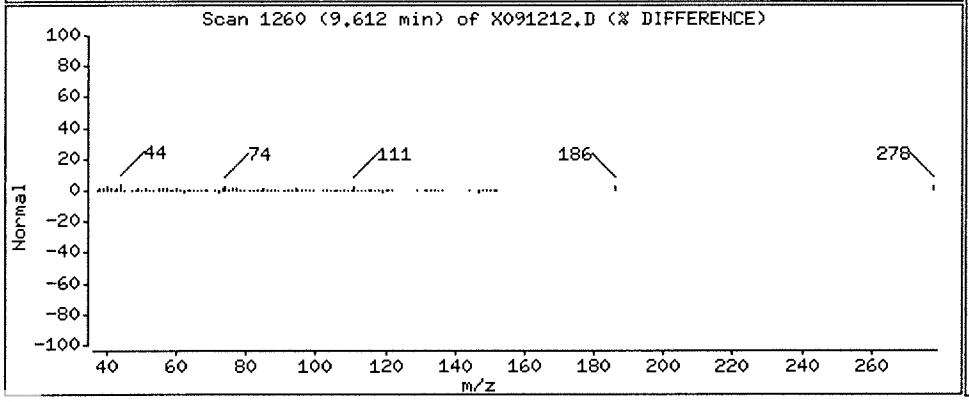












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Date : 12-SEP-2019 16:16

Client ID: HS19090511-02

Instrument: voa6.i

Sample Info: HS19090511-02;HS19090511-02;;;

Purge Volume: 5.0

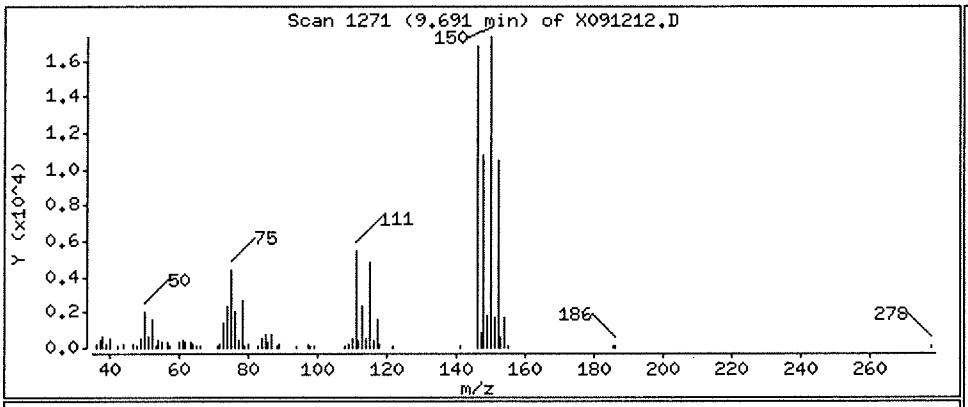
Operator: PC

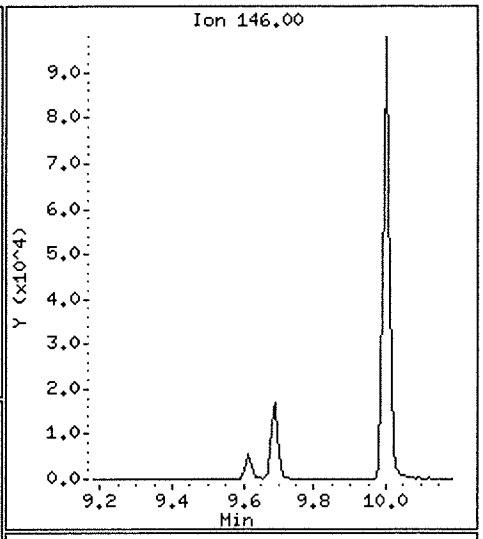
Column phase: DB624

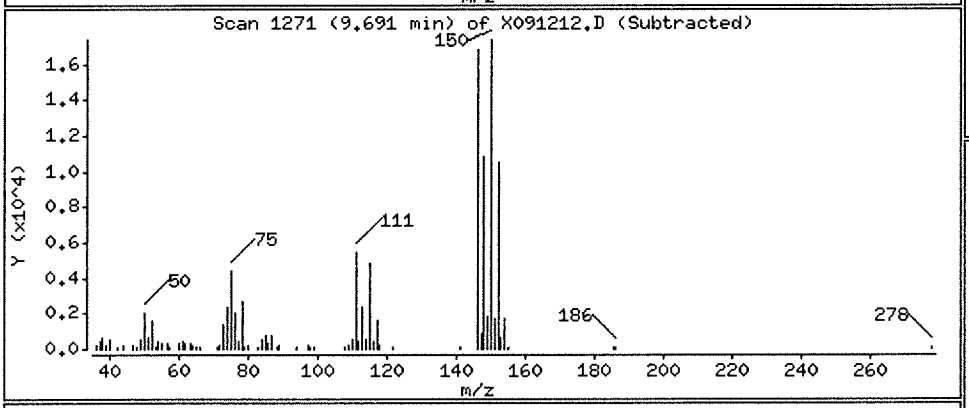
Column diameter: 0.18

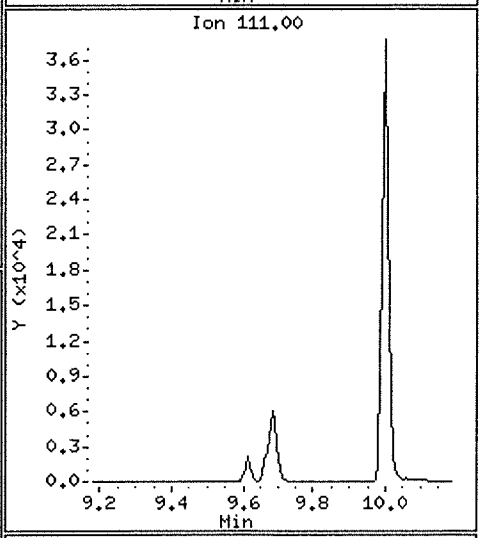
84 1,4-Dichlorobenzene

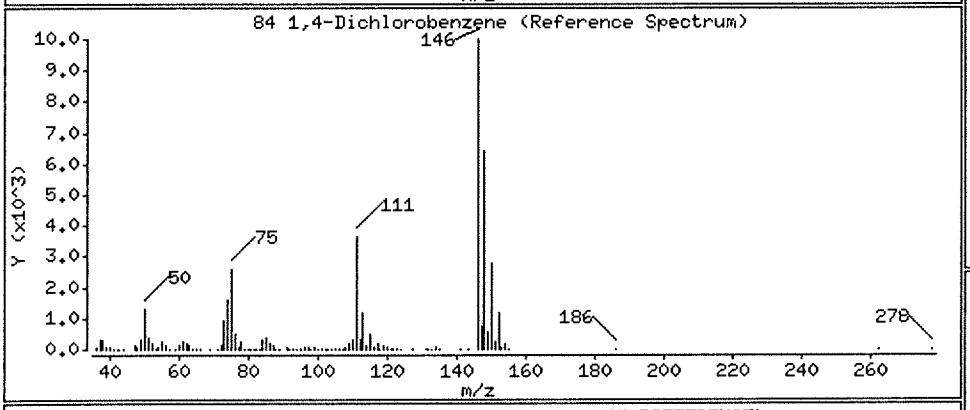
Concentration: 2.85 ug/l

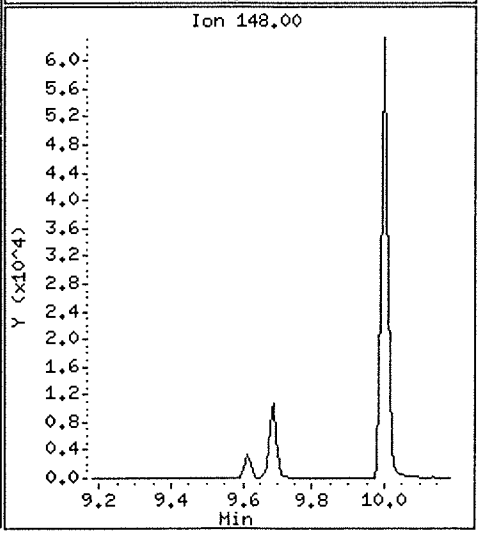


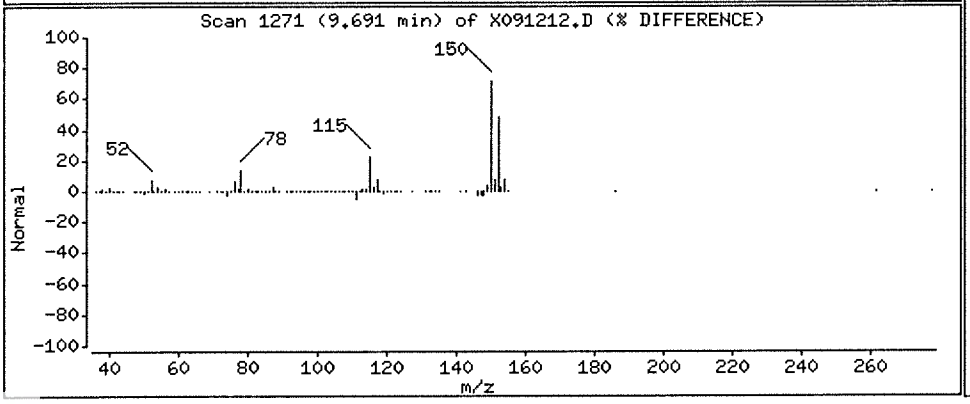












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Date : 12-SEP-2019 16:16

Client ID: HS19090511-02

Instrument: voa6.i

Sample Info: HS19090511-02;HS19090511-02;;;

Purge Volume: 5.0

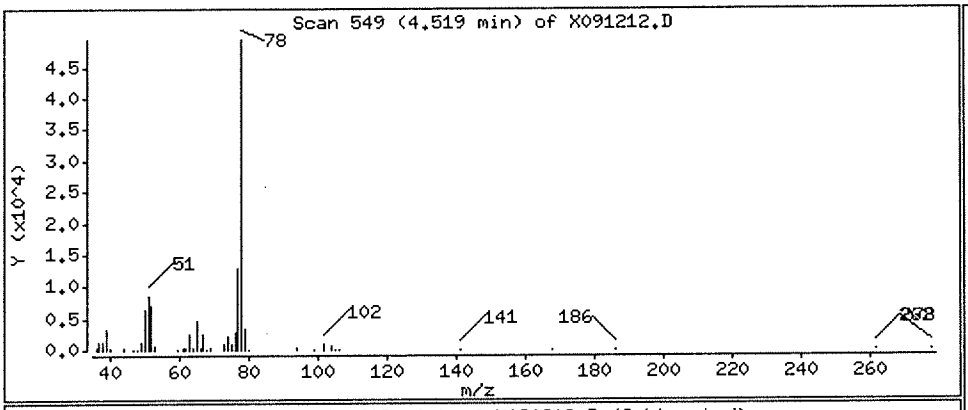
Operator: PC

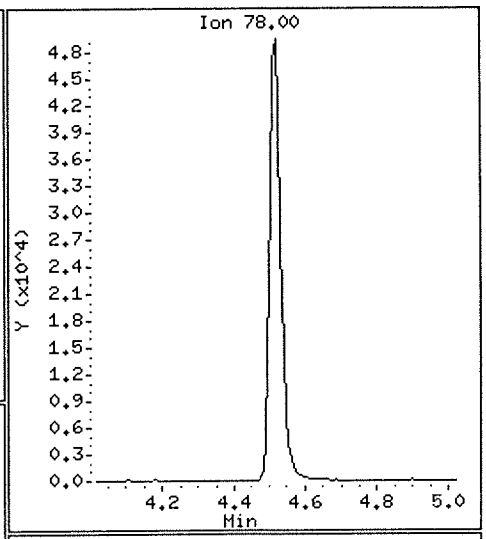
Column phase: DB624

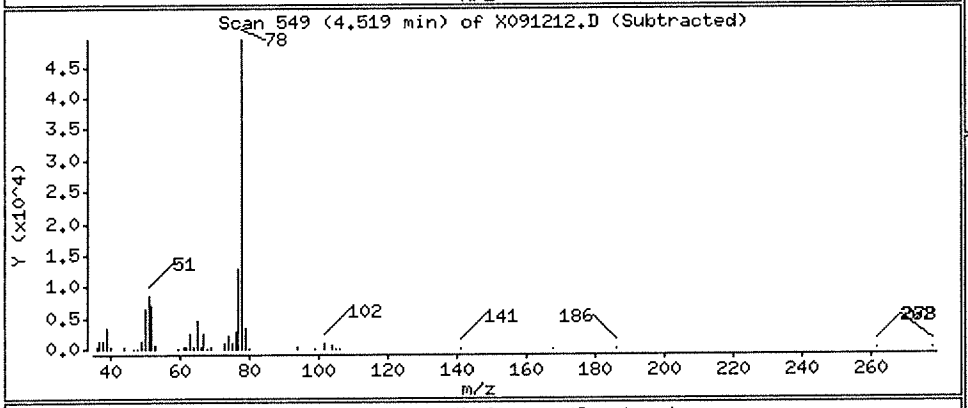
Column diameter: 0.18

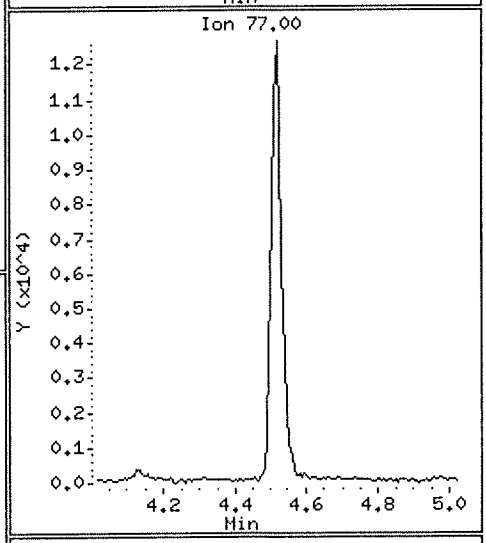
37 Benzene

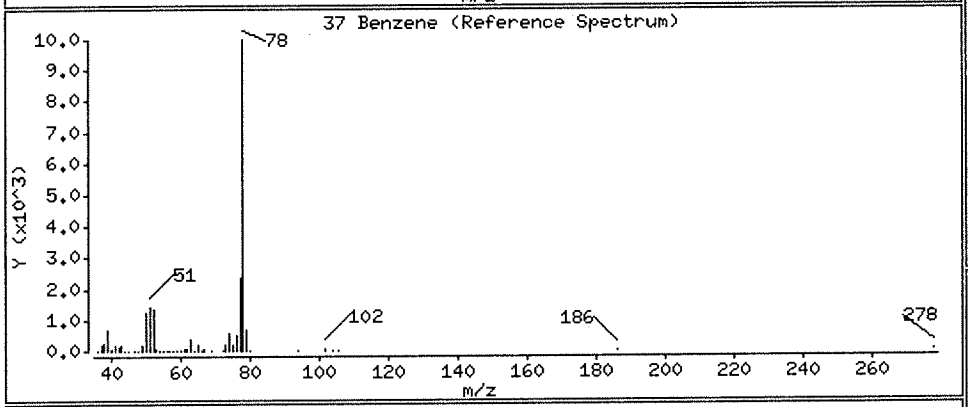
Concentration: 8.27 ug/l

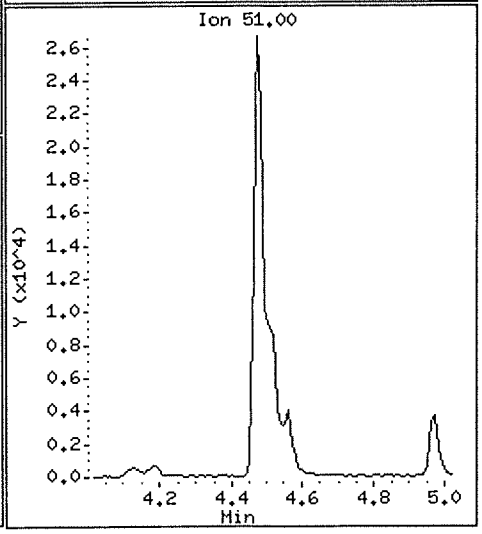


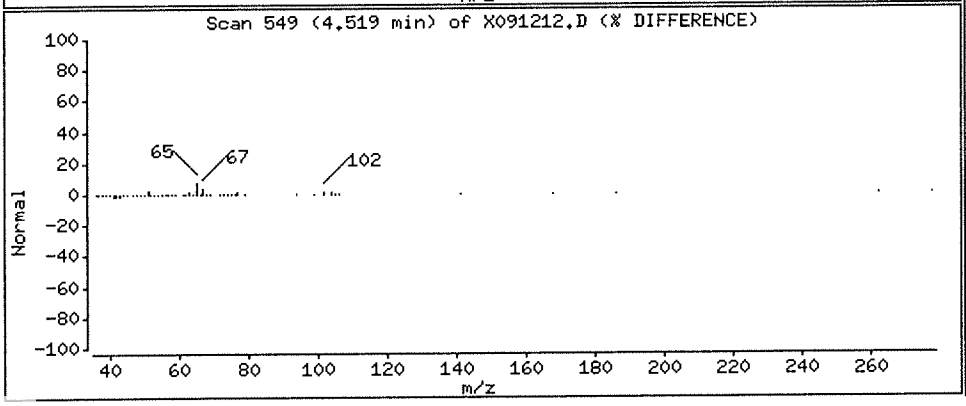












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Date : 12-SEP-2019 16:16

Client ID: HS19090511-02

Instrument: voa6.i

Sample Info: HS19090511-02;HS19090511-02;;;

Purge Volume: 5.0

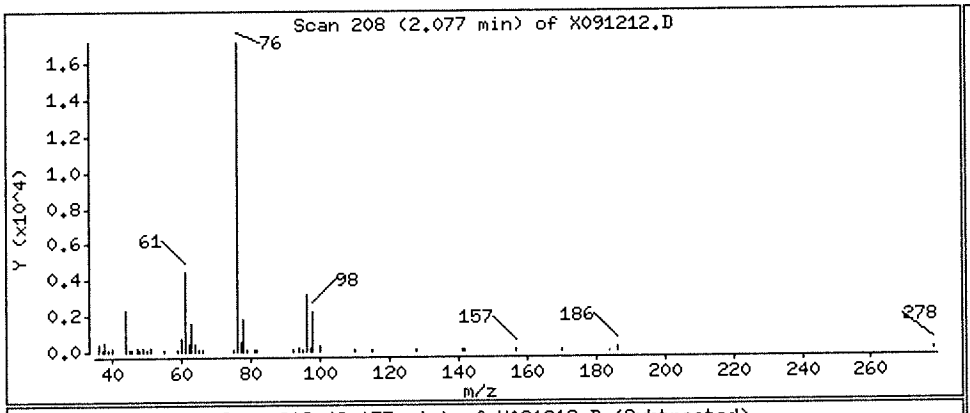
Operator: PC

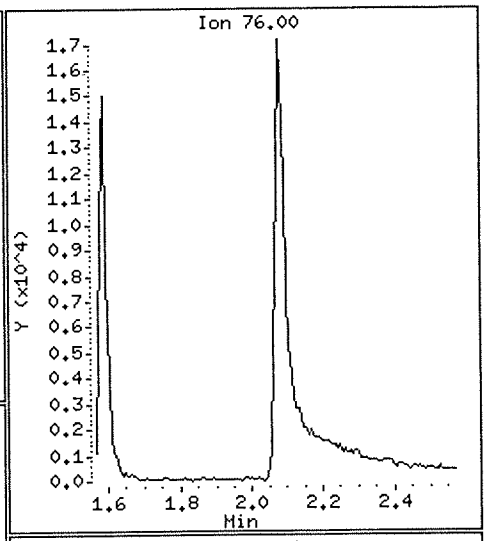
Column phase: DB624

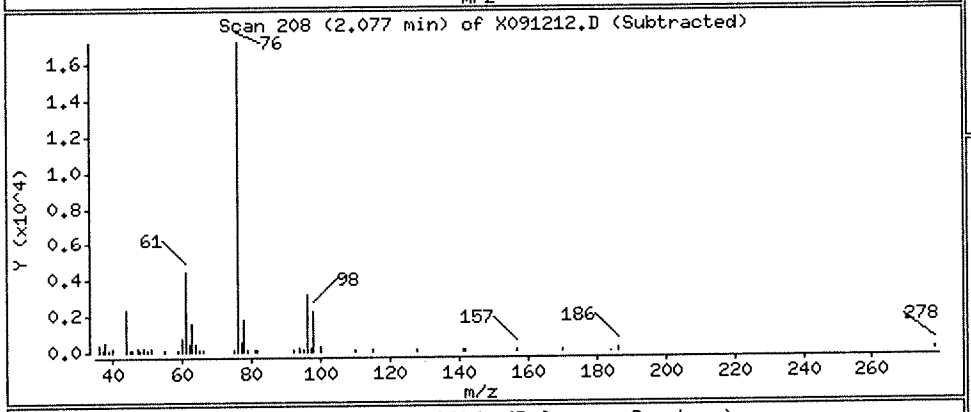
Column diameter: 0.18

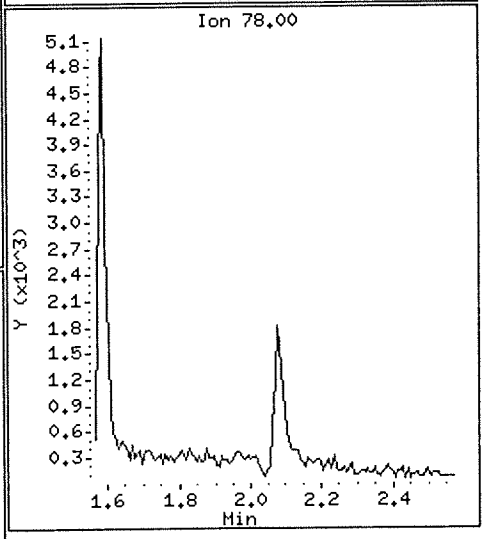
19 Carbon Disulfide

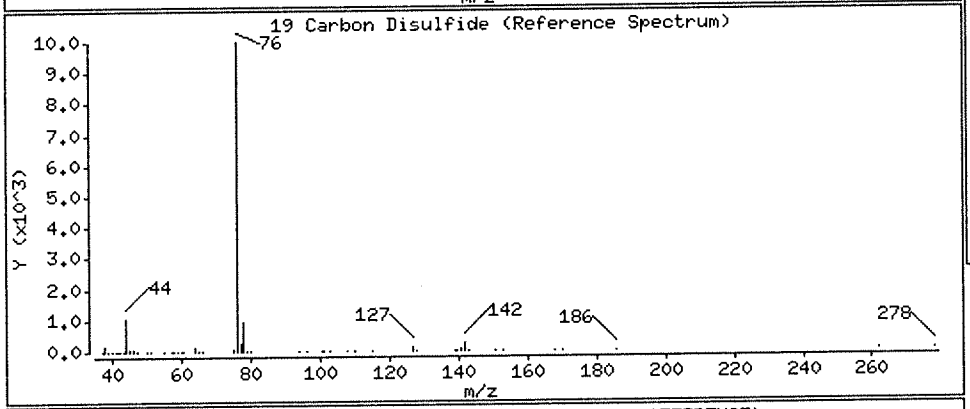
Concentration: 6.04 ug/l

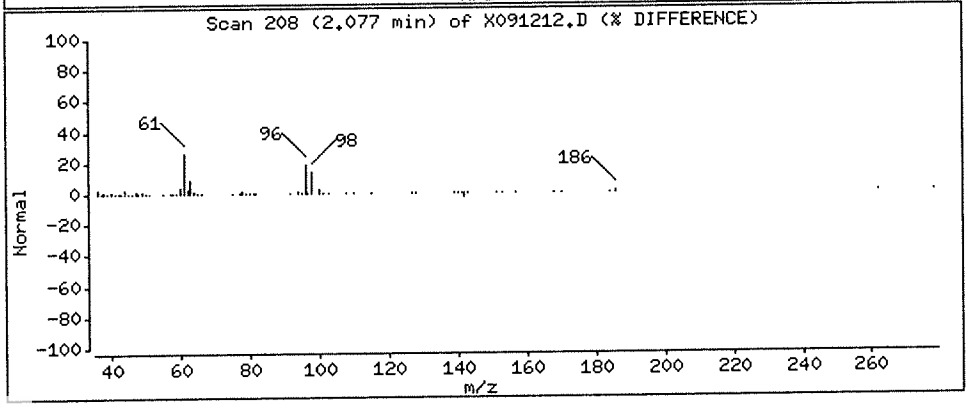












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Date : 12-SEP-2019 16:16

Client ID: HS19090511-02

Instrument: voa6.i

Sample Info: HS19090511-02;HS19090511-02;;;

Purge Volume: 5.0

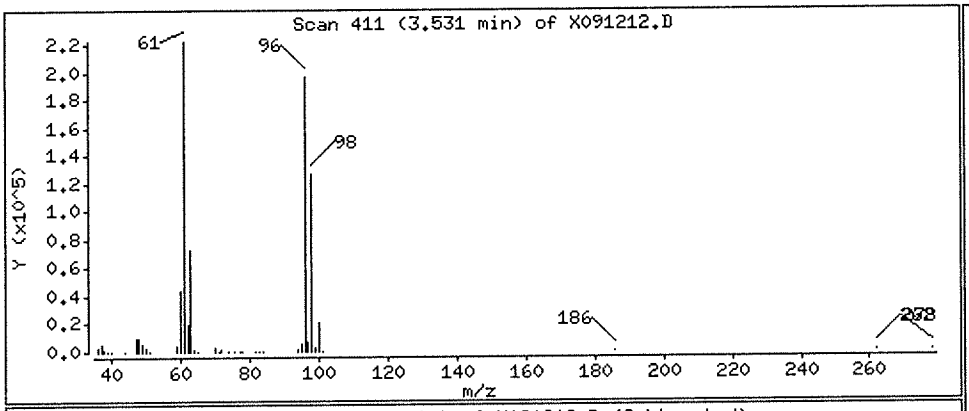
Operator: PC

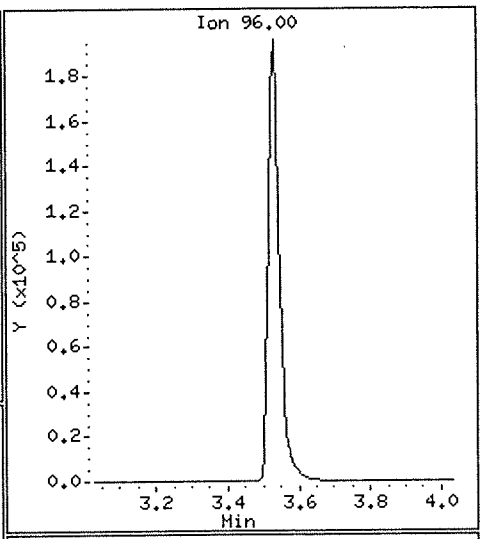
Column phase: DB624

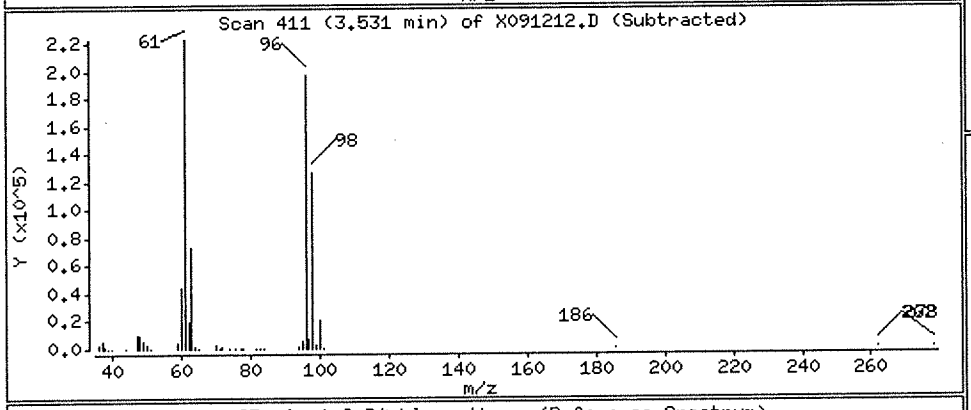
Column diameter: 0.18

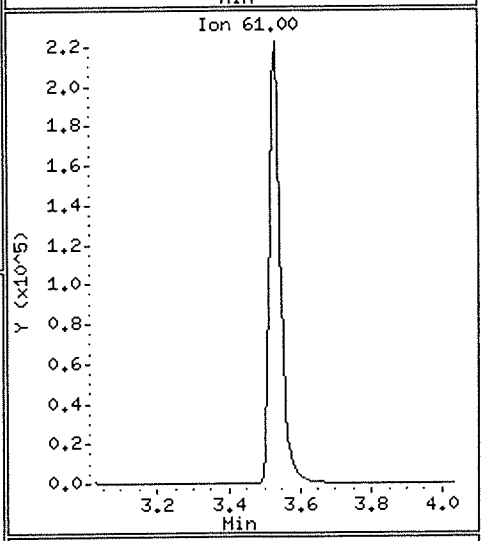
27 cis-1,2-Dichloroethene

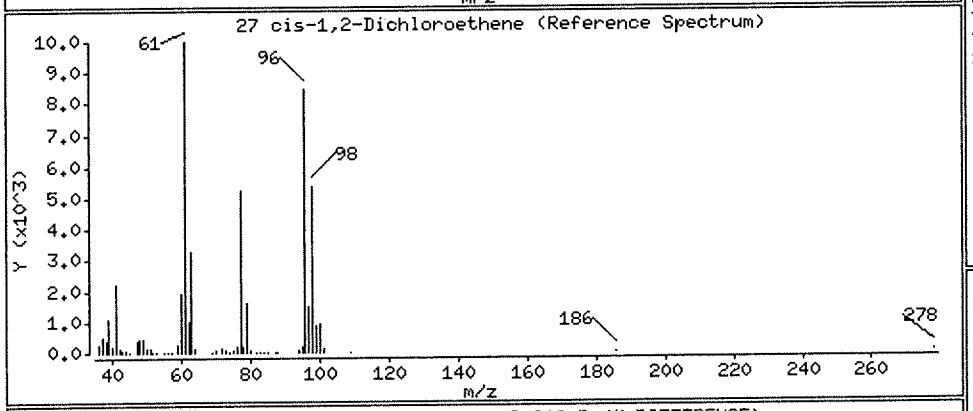
Concentration: 108.89 ug/l

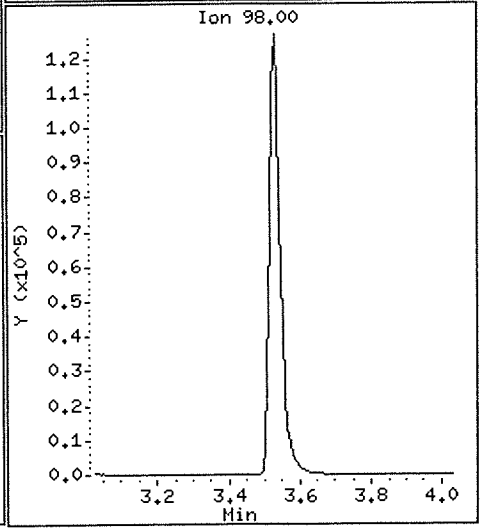


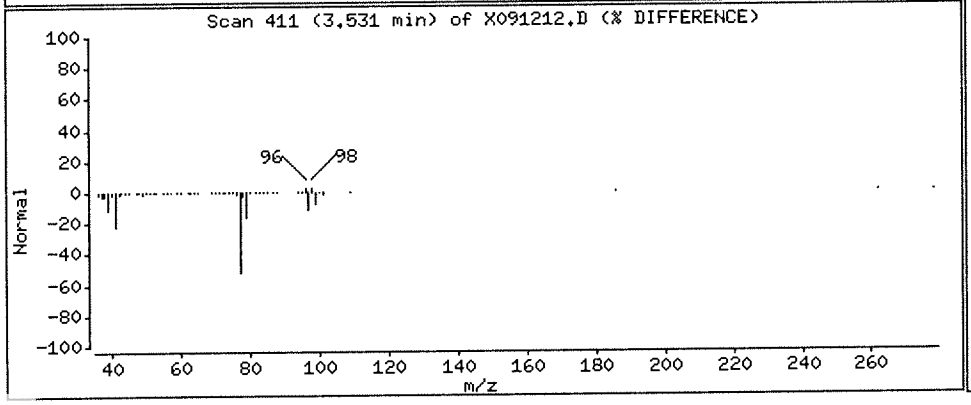












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Date : 12-SEP-2019 16:16

Client ID: HS19090511-02

Instrument: voa6.i

Sample Info: HS19090511-02;HS19090511-02;;;

Purge Volume: 5.0

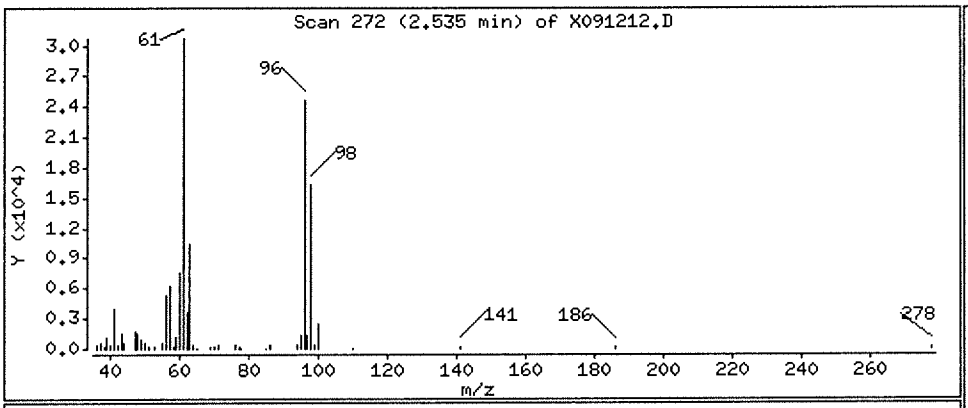
Operator: PC

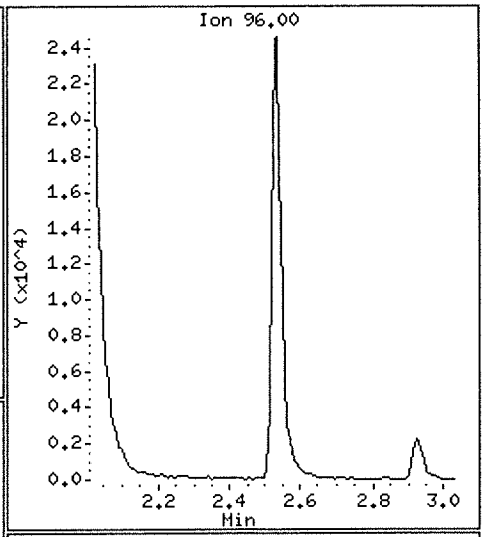
Column phase: DB624

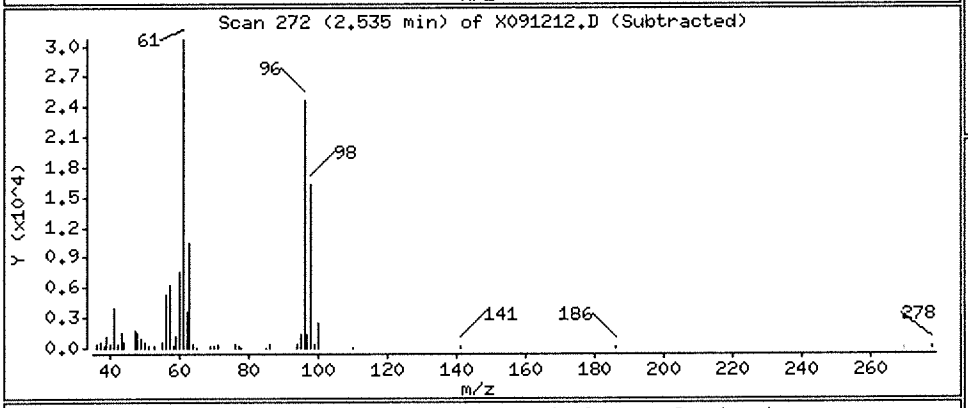
Column diameter: 0.18

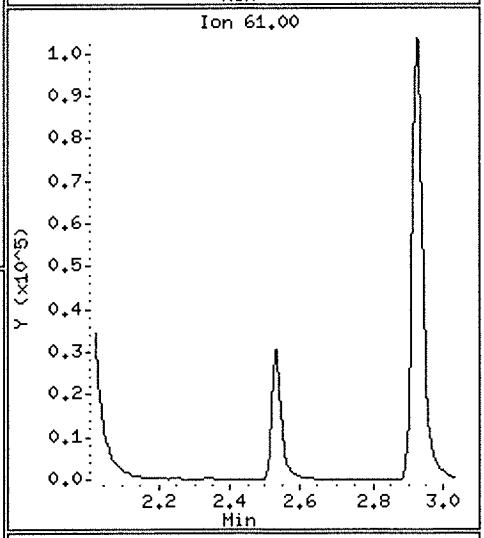
20 trans-1,2-Dichloroethene

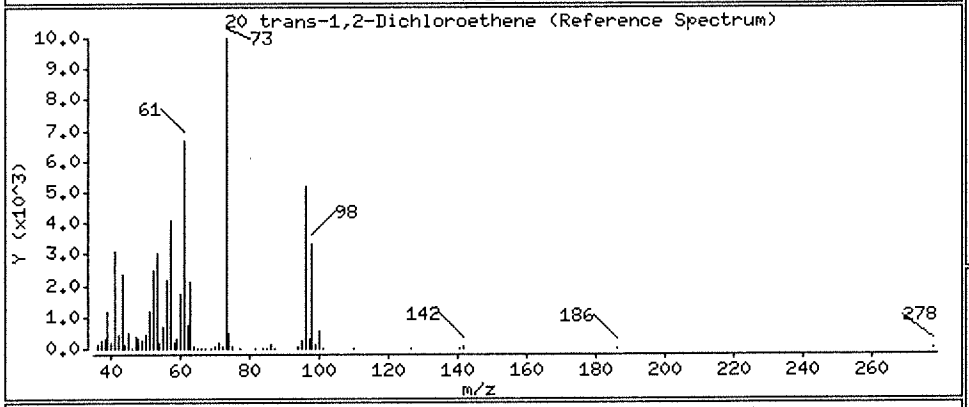
Concentration: 14.43 ug/l

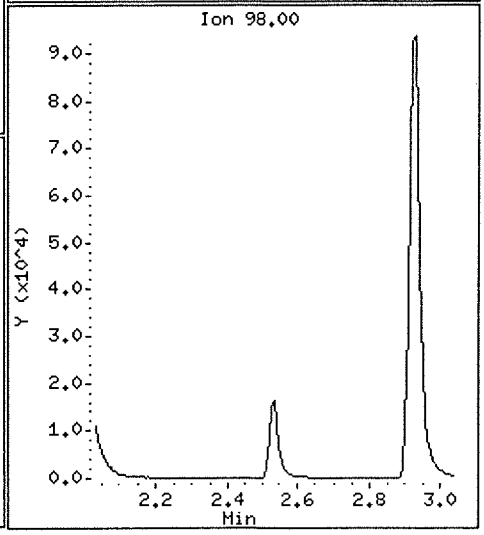


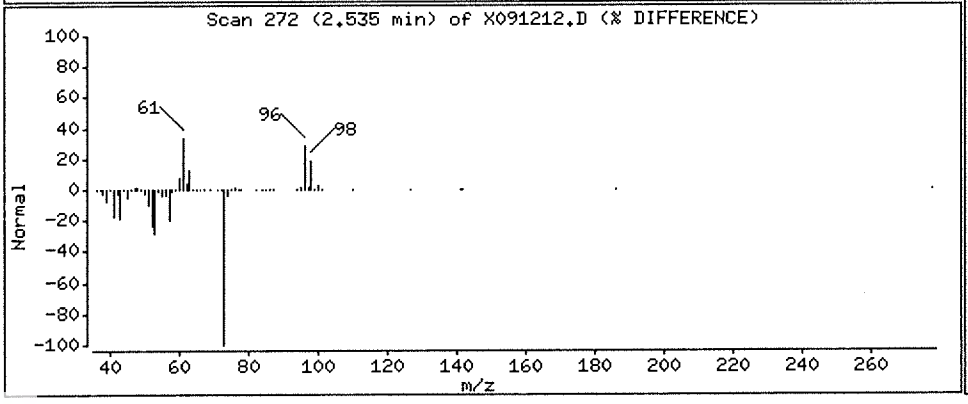












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091212.D Page 15

Date : 12-SEP-2019 16:16

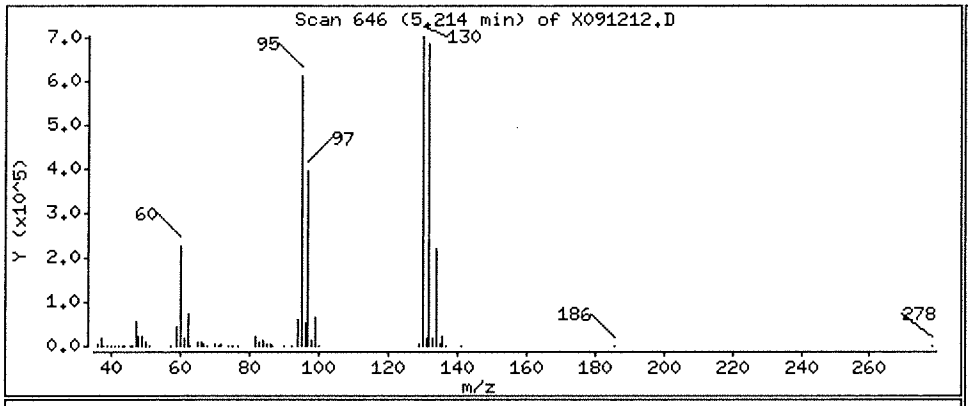
Client ID: HS19090511-02 Instrument: voa6.i

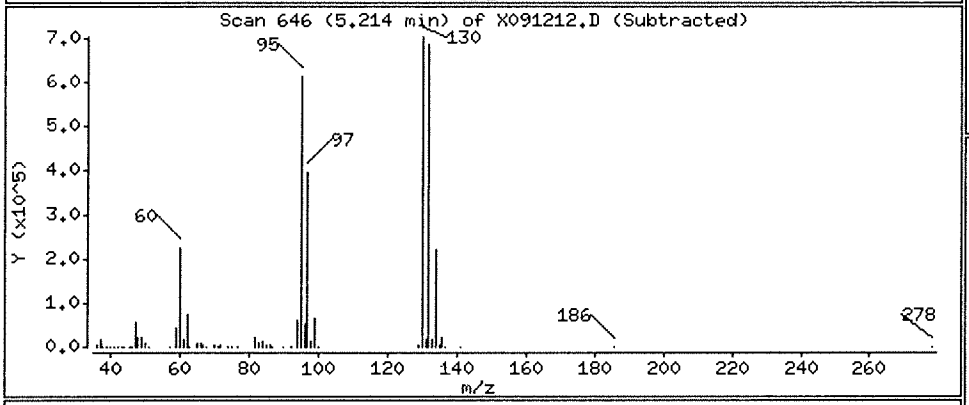
Sample Info: HS19090511-02;HS19090511-02;;;

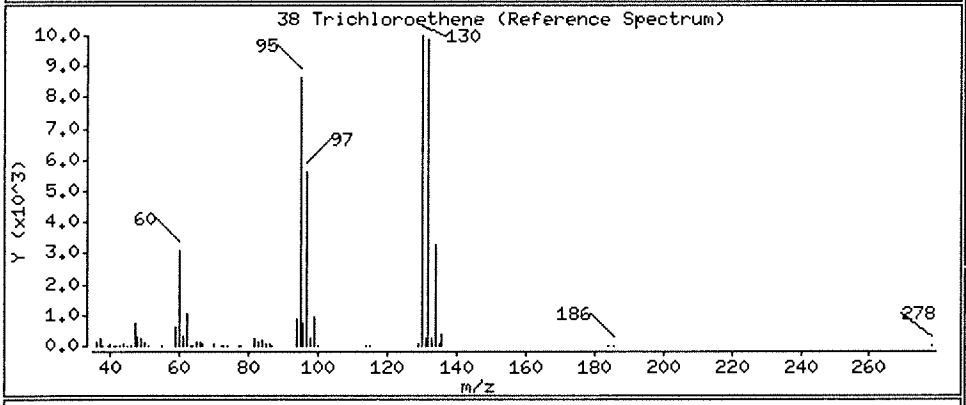
Purge Volume: 5.0 Operator: PC

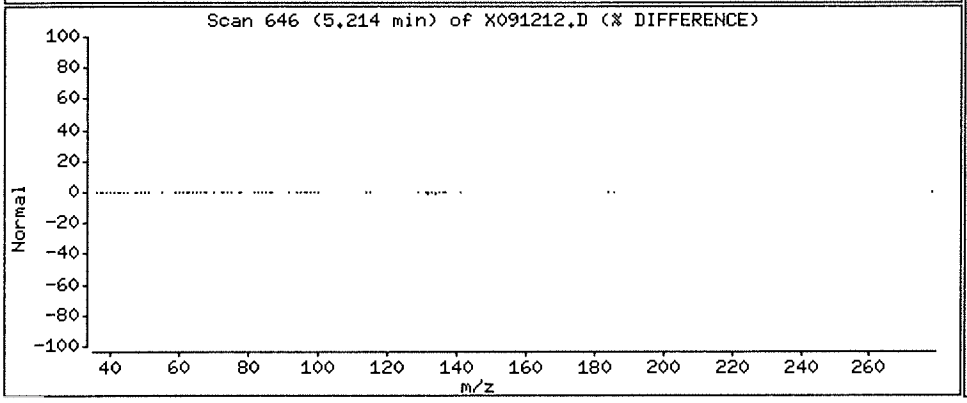
Column phase: DB624 Column diameter: 0.18

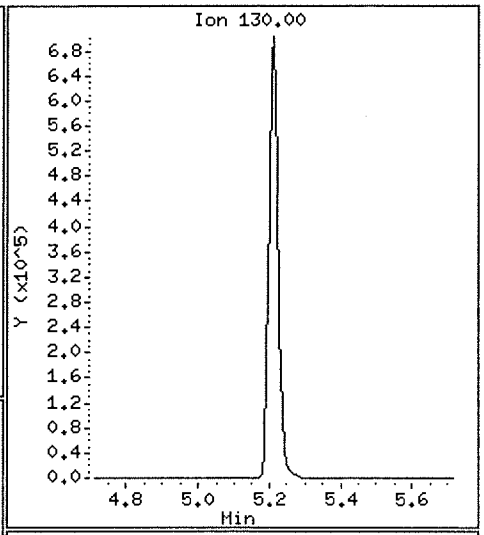
38 Trichloroethene Concentration: 325.98 ug/l

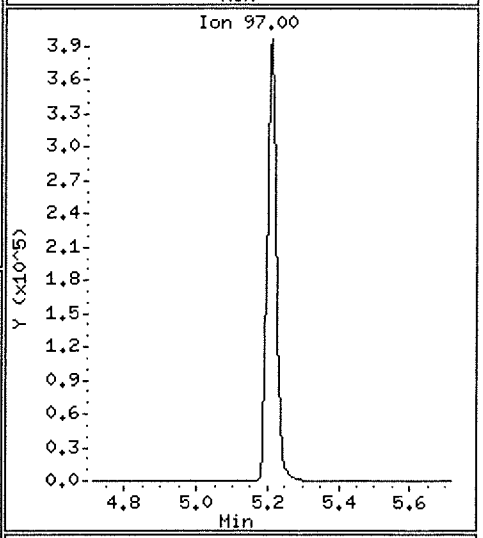


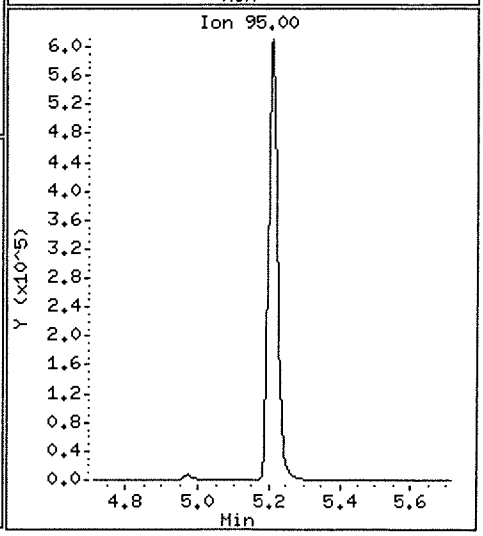












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Date : 12-SEP-2019 16:16

Client ID: HS19090511-02

Instrument: voa6.i

Sample Info: HS19090511-02;HS19090511-02;;;

Purge Volume: 5.0

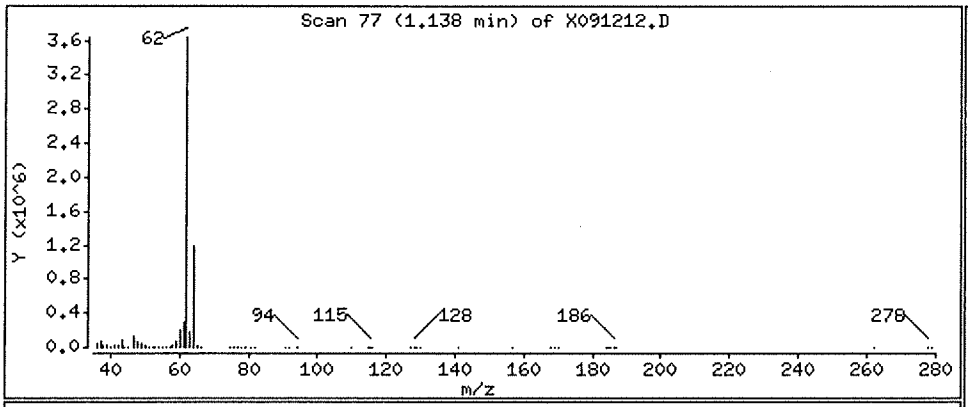
Operator: PC

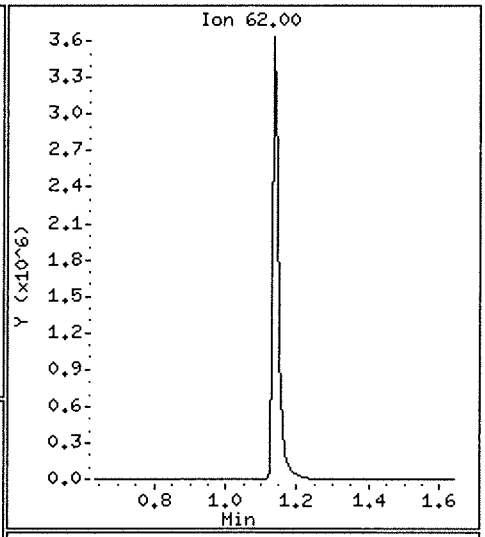
Column phase: DB624

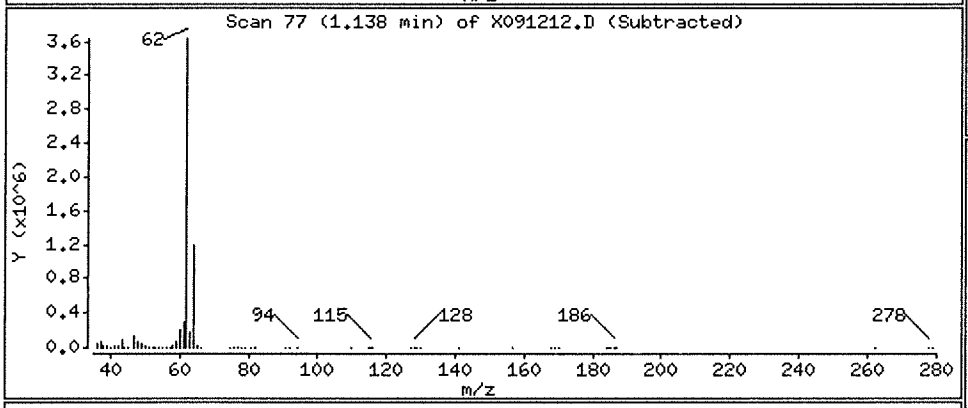
Column diameter: 0.18

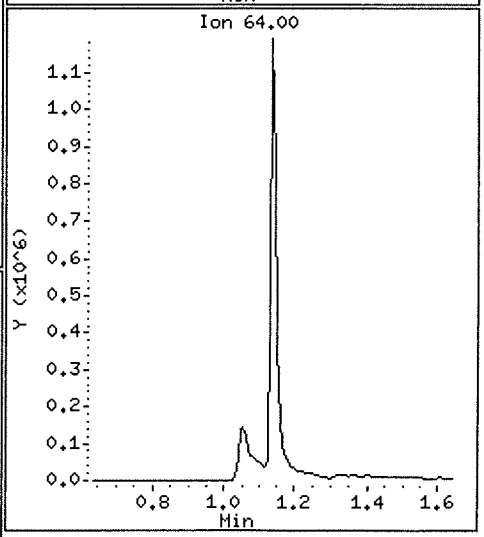
5 Vinyl Chloride

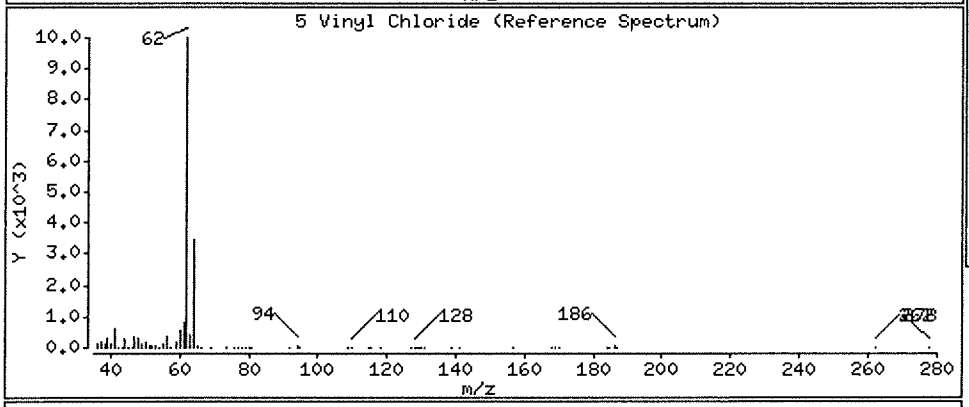
Concentration: 1046.74 ug/l

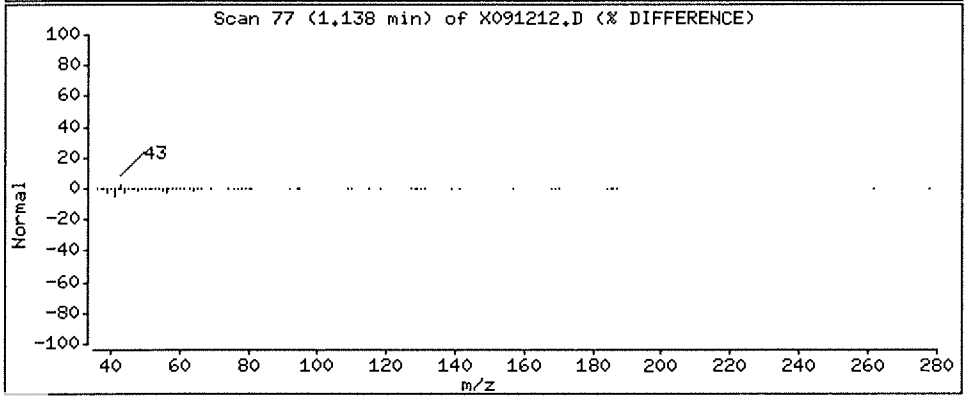












ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X190912.b\X091214.D
Lab Smp Id: HS19090511-02 Client Smp ID: HS19090511-02
Inj Date : 12-SEP-2019 17:04
Operator : PC Inst ID: voa6.i
Smp Info : HS19090511-02;HS19090511-02;;;
Misc Info : HS18090001;WATER;0;25;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X190912.b\8260W.m
Meth Date : 25-Sep-2019 14:34 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 14
Dil Factor: 25.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	25.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

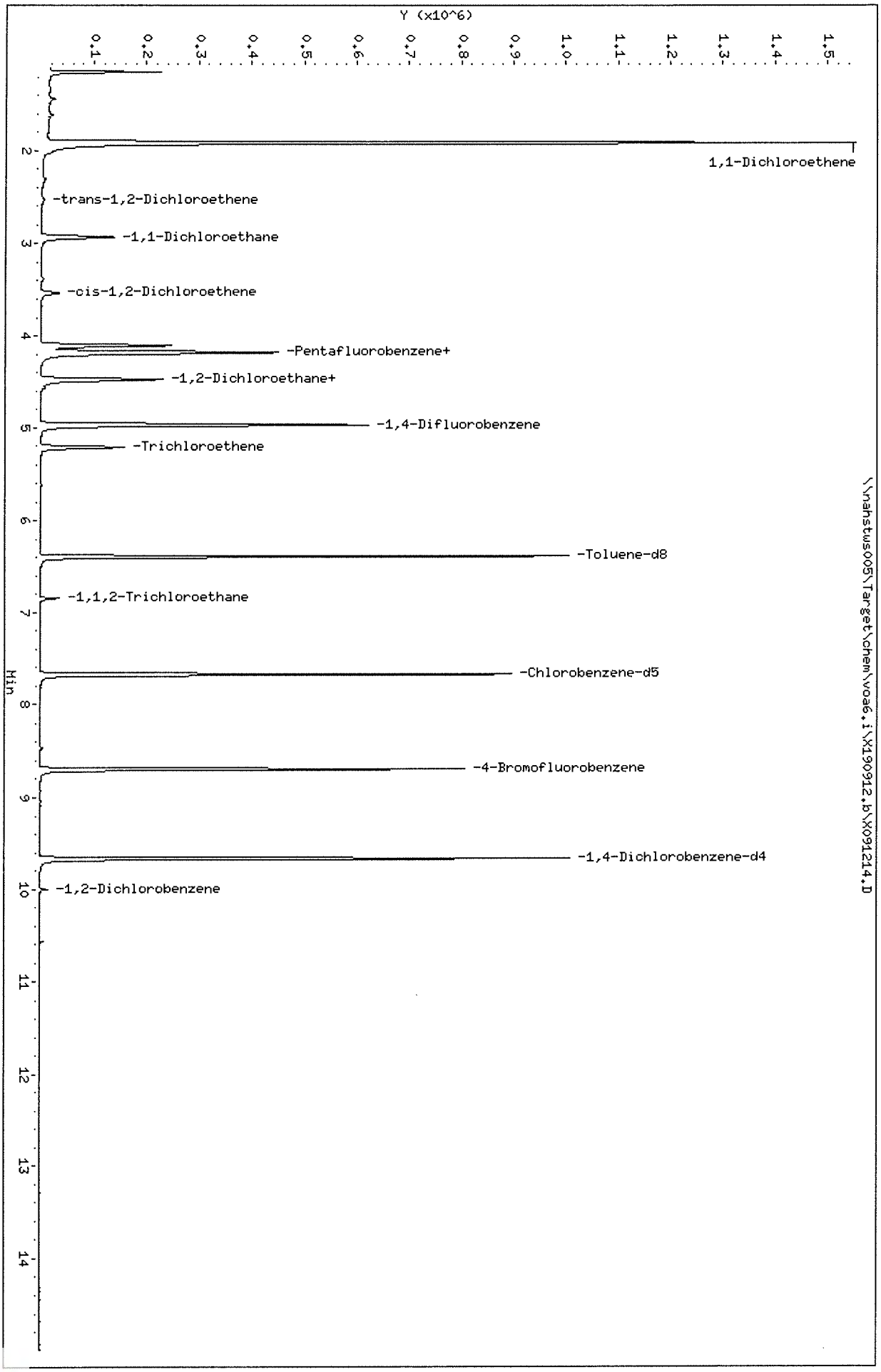
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.189	(1.000)	419630	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	550349	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	471229	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	258182	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	170379	46.8573	46.85
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	175324	45.2616	45.26
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	626316	48.1235	48.12
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	224428	50.5162	50.51
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	8388	3.22638	80.65(a)
22 1,1-Dichloroethane	63	2.929	2.929	(0.700)	145592	22.1304	553.25
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	560156	156.615	3915.37
88 1,2-Dichlorobenzene	146	9.999	9.999	(1.034)	6238	0.81274	20.31(a)
33 1,2-Dichloroethane	62	4.569	4.562	(0.919)	3814	0.83833	20.95(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	19427	4.51554	112.88(a)
20 trans-1,2-Dichloroethene	96	2.535	2.527	(0.606)	1714	0.46704	11.67(a)
38 Trichloroethene	130	5.214	5.214	(1.049)	59428	14.0023	350.05
5 Vinyl Chloride	62	1.138	1.138	(0.272)	139096	31.7992	794.98

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091214.D
Date : 12-SEP-2019 17:04
Client ID: HS19090511-02
Sample Info: HS19090511-02;HS19090511-02;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091214.D

Date : 12-SEP-2019 17:04

Client ID: HS19090511-02

Instrument: voa6.i

Sample Info: HS19090511-02;HS19090511-02;;;

Purge Volume: 5.0

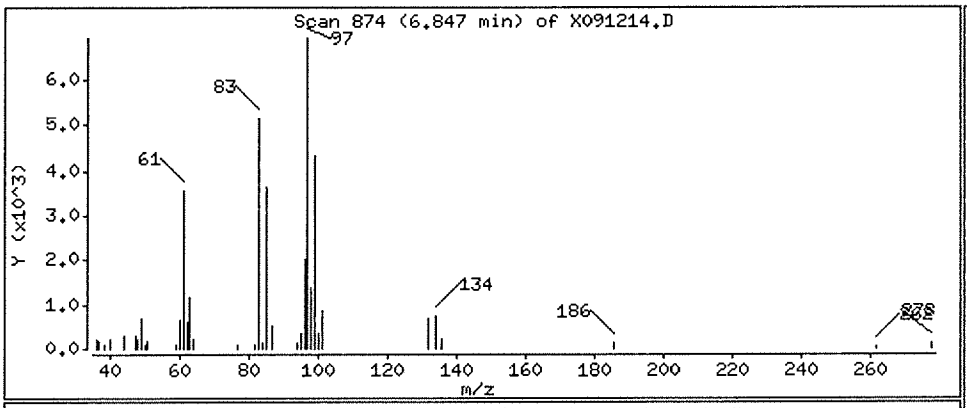
Operator: PC

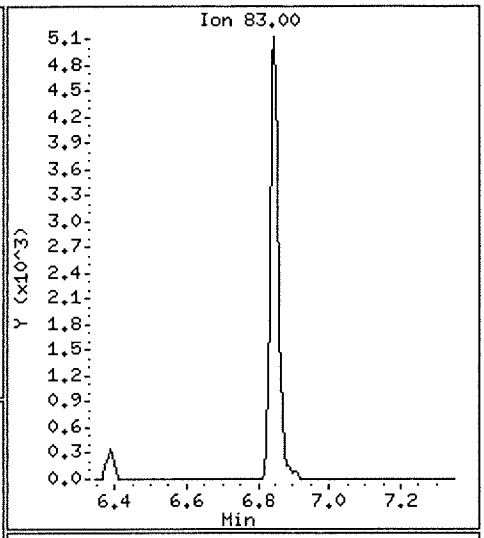
Column phase: DB624

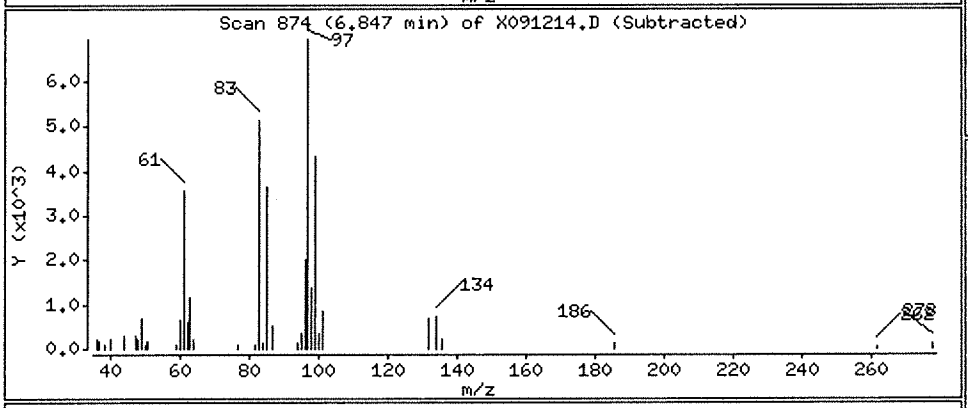
Column diameter: 0.18

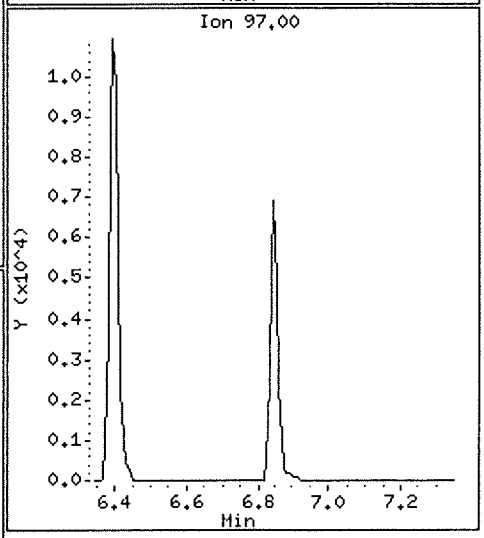
53 1,1,2-Trichloroethane

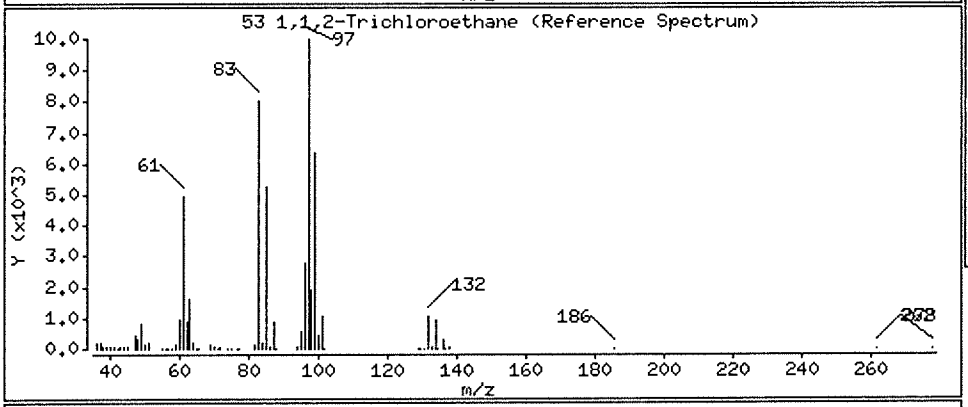
Concentration: 80.65 ug/l

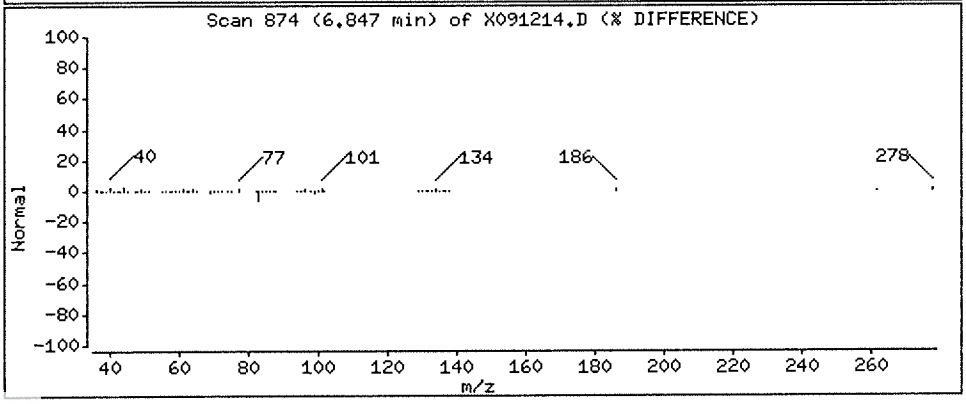












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Date : 12-SEP-2019 17:04

Client ID: HS19090511-02

Instrument: voa6.i

Sample Info: HS19090511-02;HS19090511-02;;;

Purge Volume: 5.0

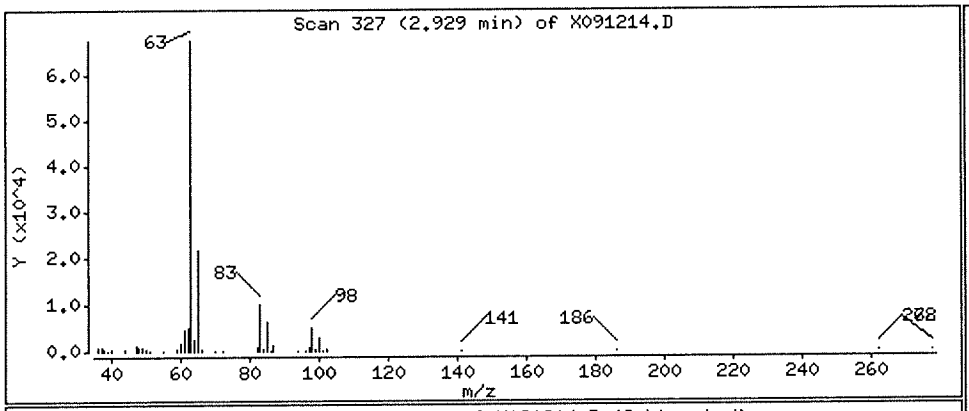
Operator: PC

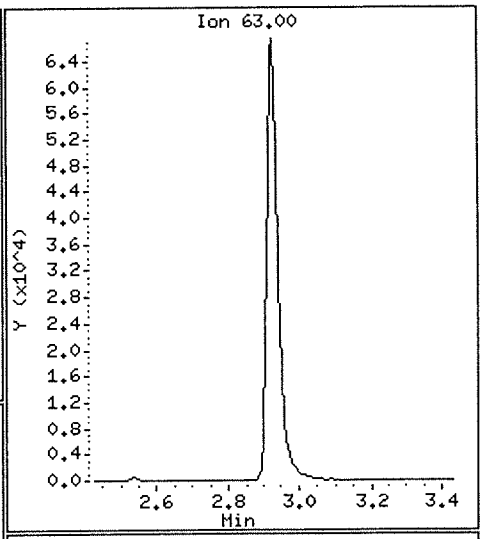
Column phase: DB624

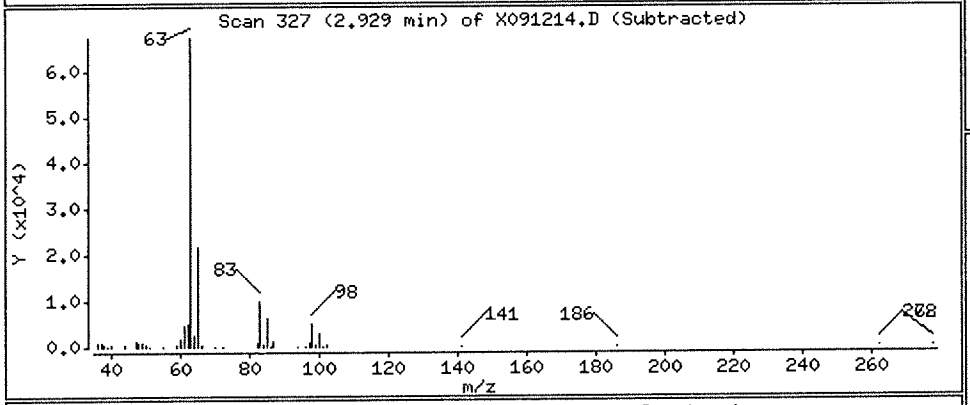
Column diameter: 0.18

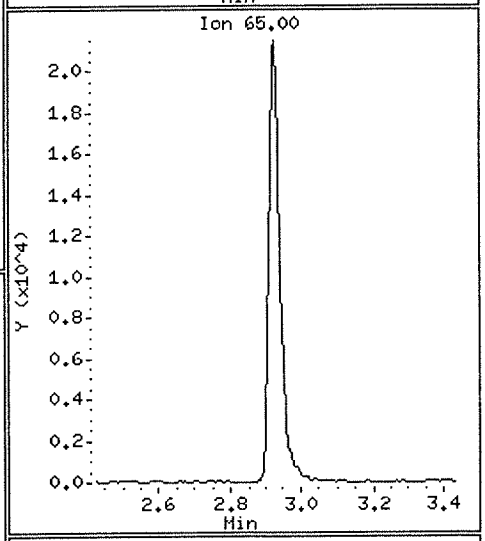
22 1,1-Dichloroethane

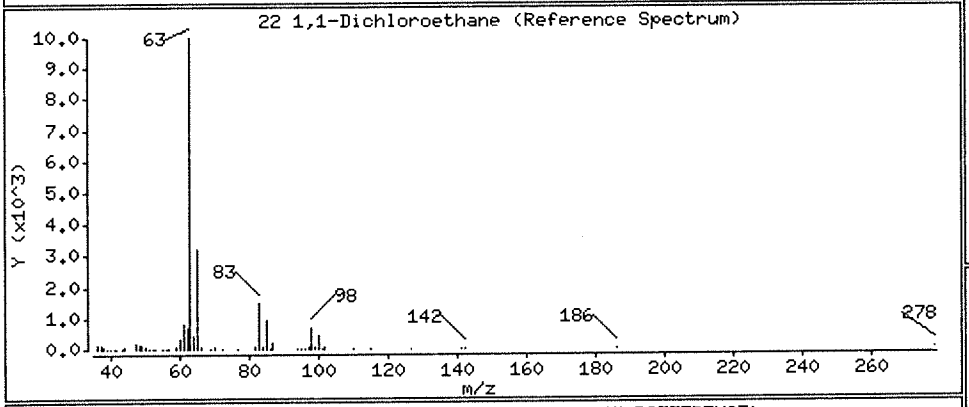
Concentration: 553.25 ug/l

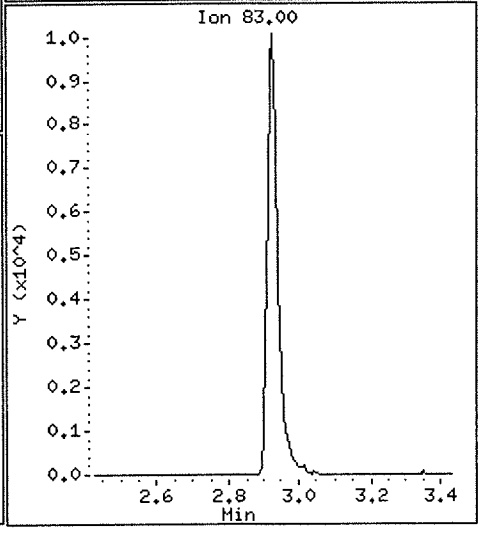


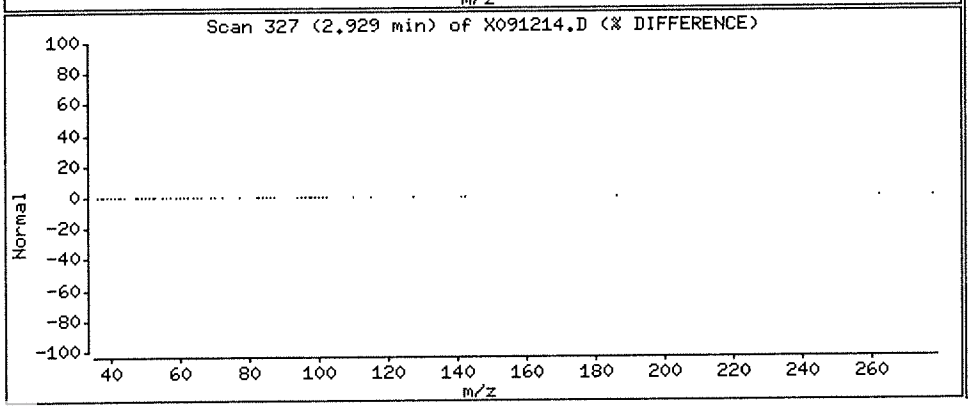












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091214.D

Date : 12-SEP-2019 17:04

Client ID: HS19090511-02

Instrument: voa6.i

Sample Info: HS19090511-02;HS19090511-02;;;

Purge Volume: 5.0

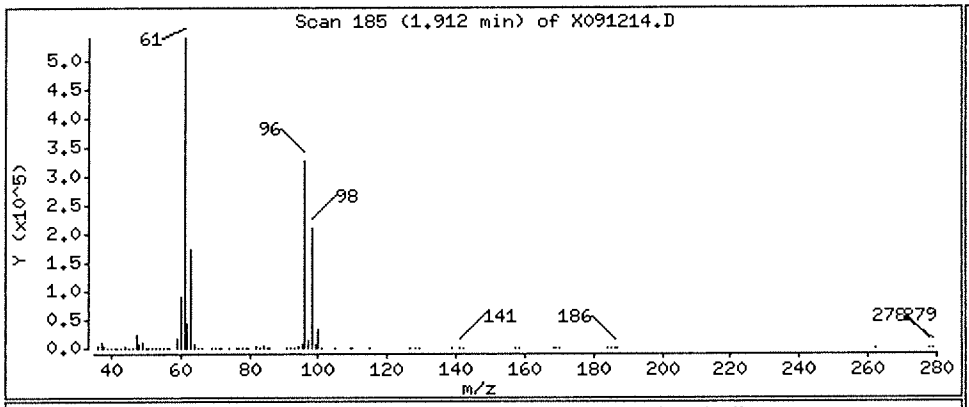
Operator: PC

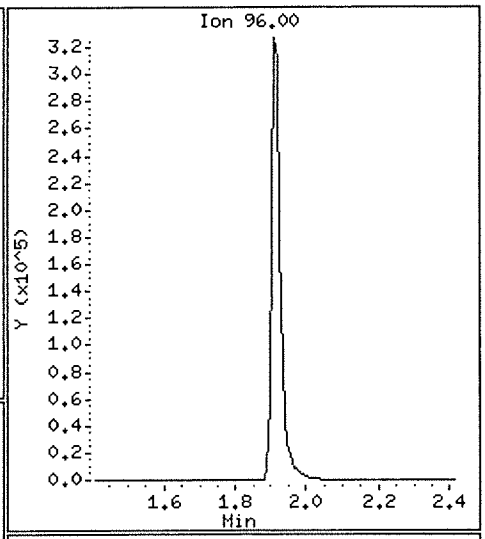
Column phase: DB624

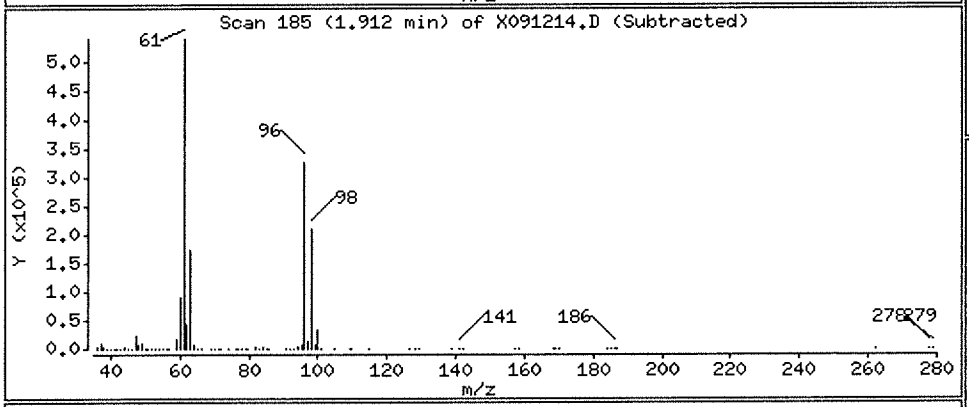
Column diameter: 0.18

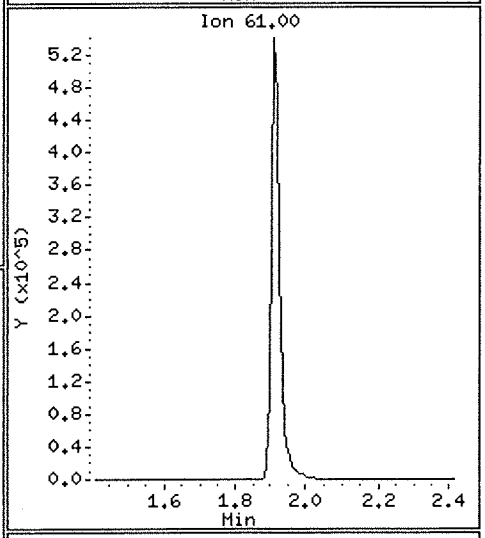
11 1,1-Dichloroethene

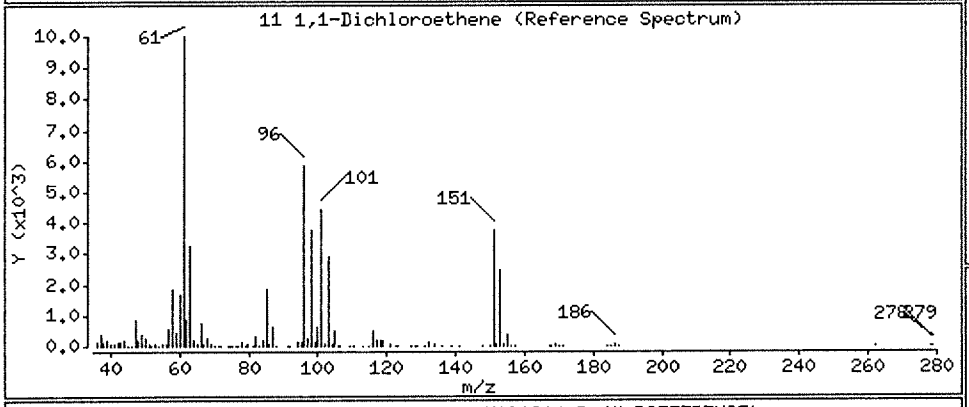
Concentration: 3915.37 ug/l

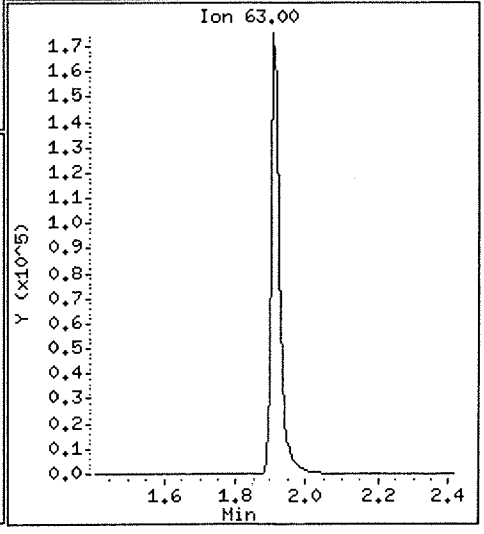


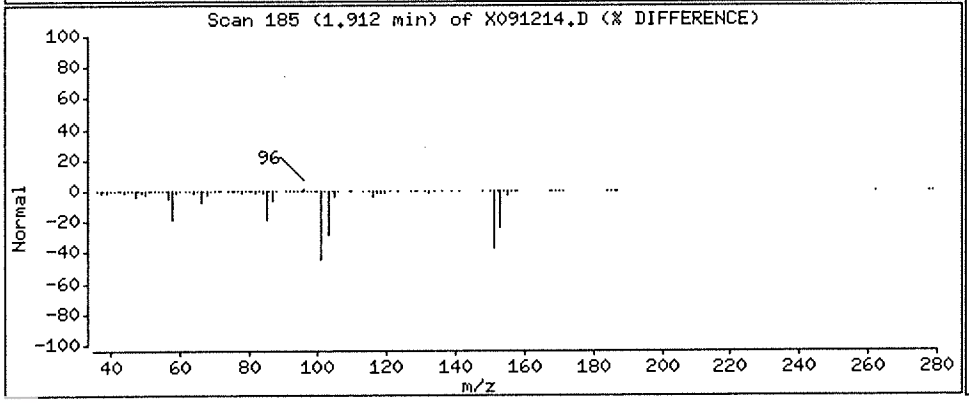












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091214.D

Date : 12-SEP-2019 17:04

Client ID: HS19090511-02

Instrument: voa6.i

Sample Info: HS19090511-02;HS19090511-02;;;

Purge Volume: 5.0

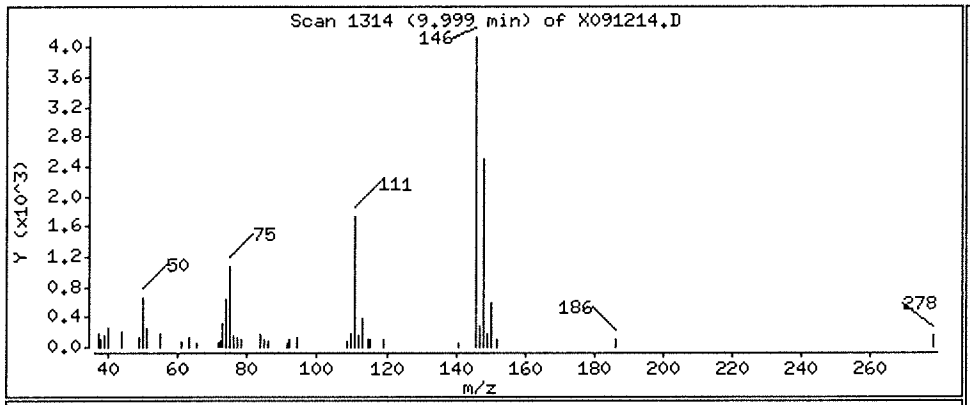
Operator: PC

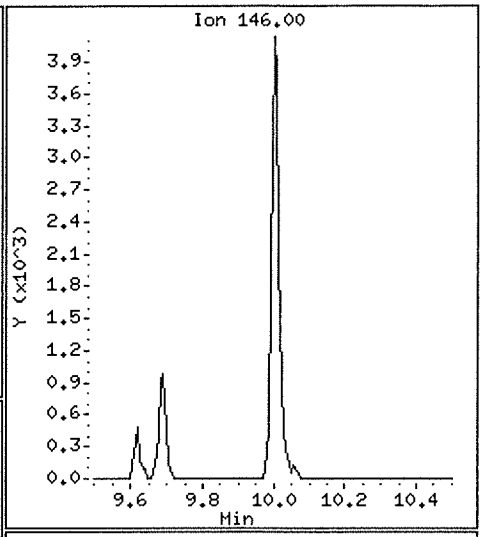
Column phase: DB624

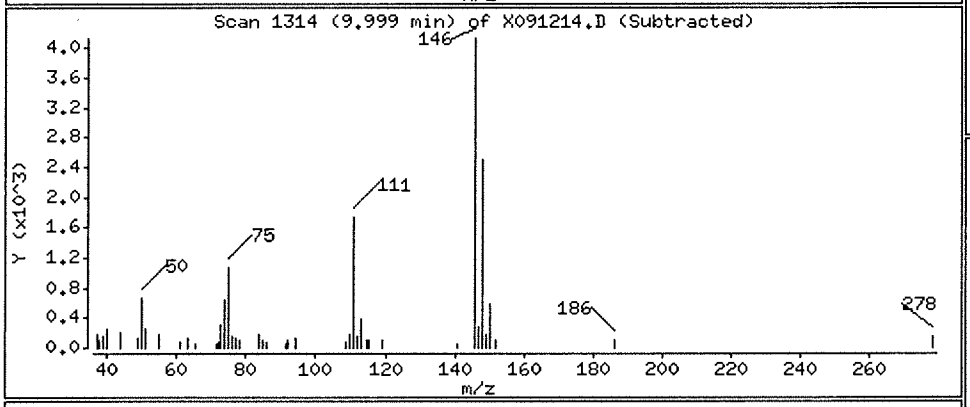
Column diameter: 0.18

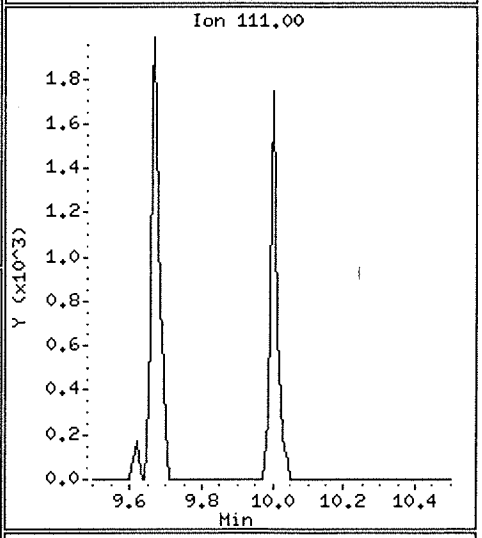
88 1,2-Dichlorobenzene

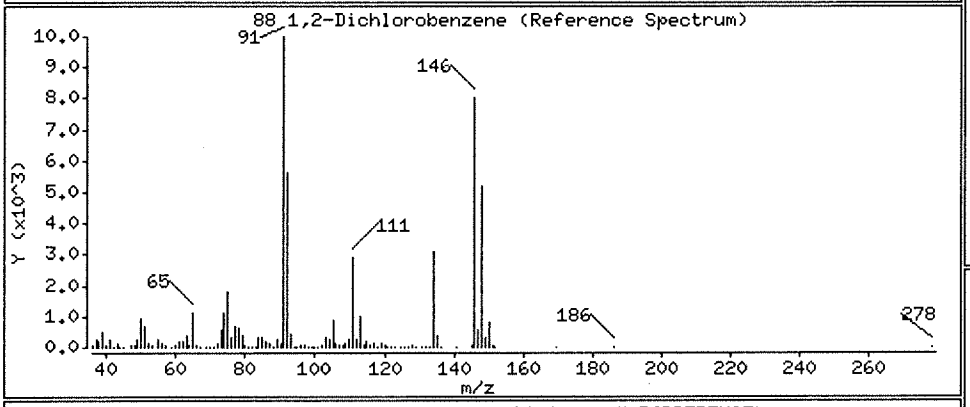
Concentration: 20.31 ug/l

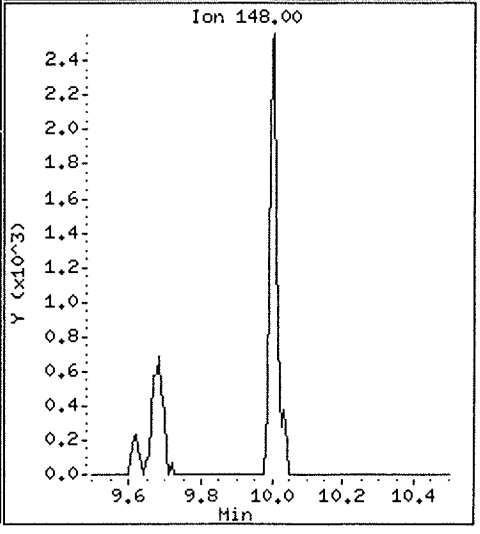


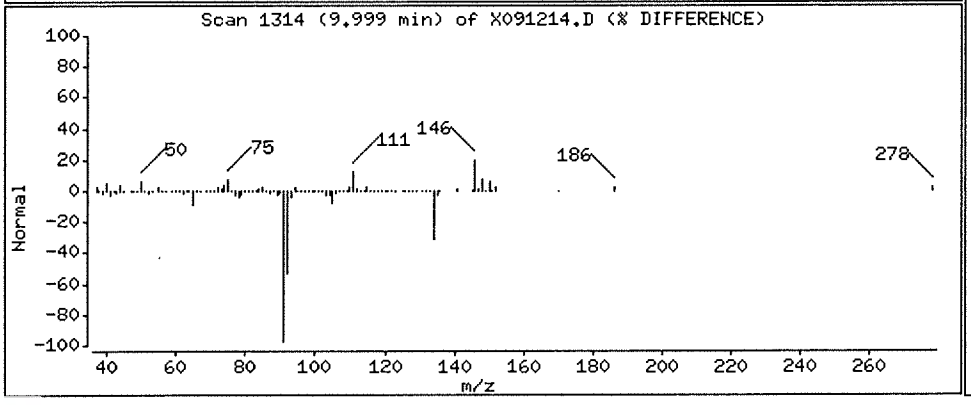












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091214.D

Date : 12-SEP-2019 17:04

Client ID: HS19090511-02

Instrument: voa6.i

Sample Info: HS19090511-02;HS19090511-02;;;

Purge Volume: 5.0

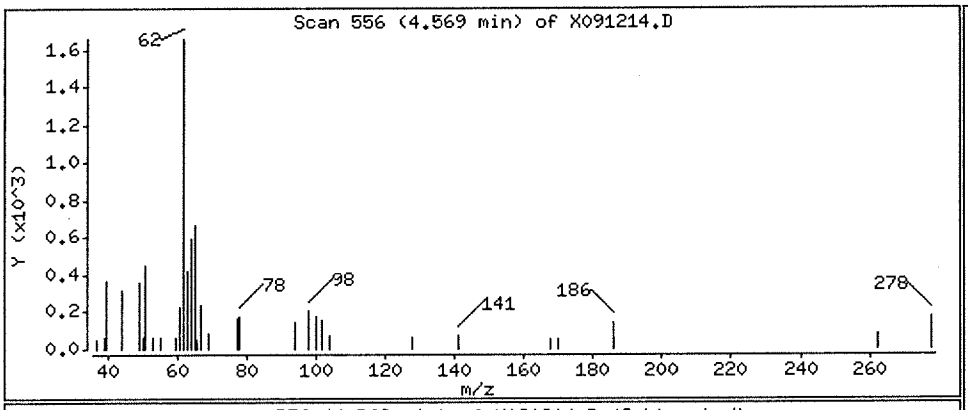
Operator: PC

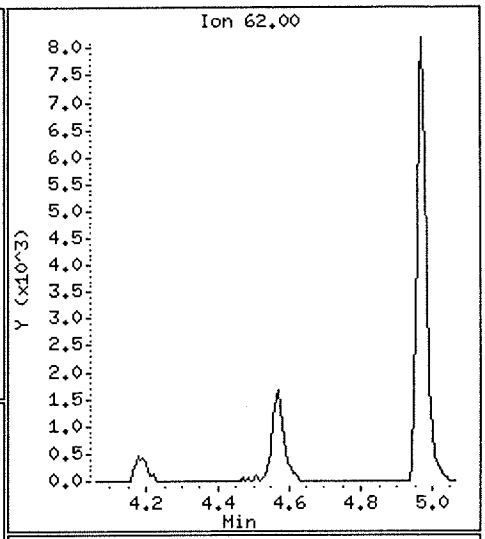
Column phase: DB624

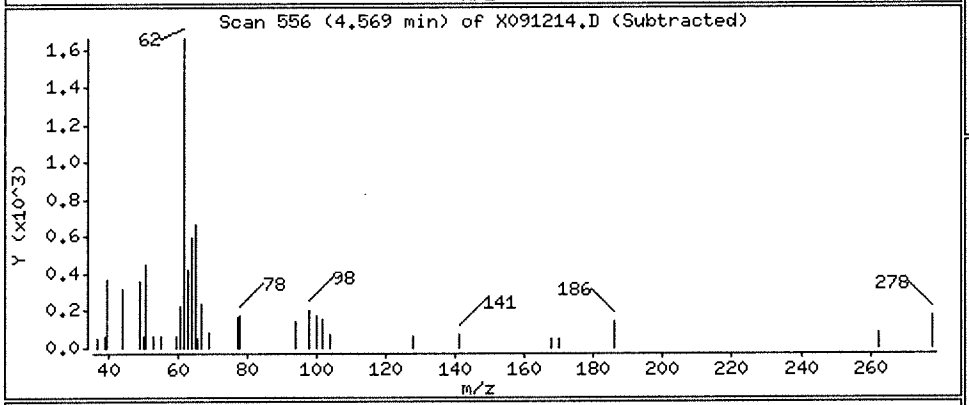
Column diameter: 0.18

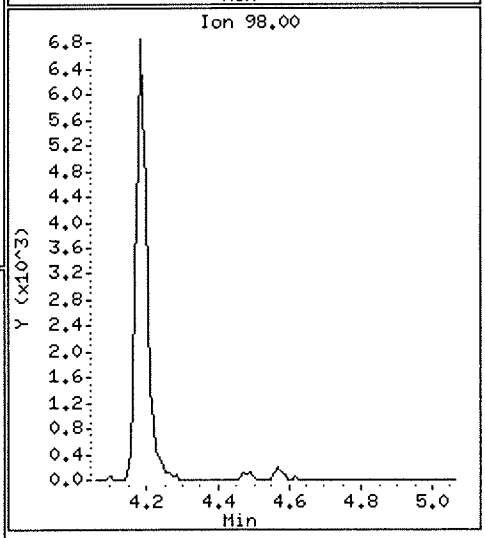
33 1,2-Dichloroethane

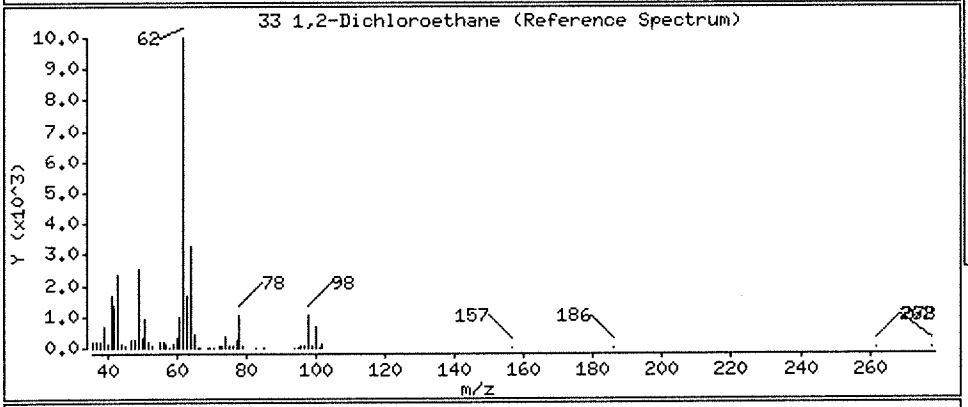
Concentration: 20.95 ug/l

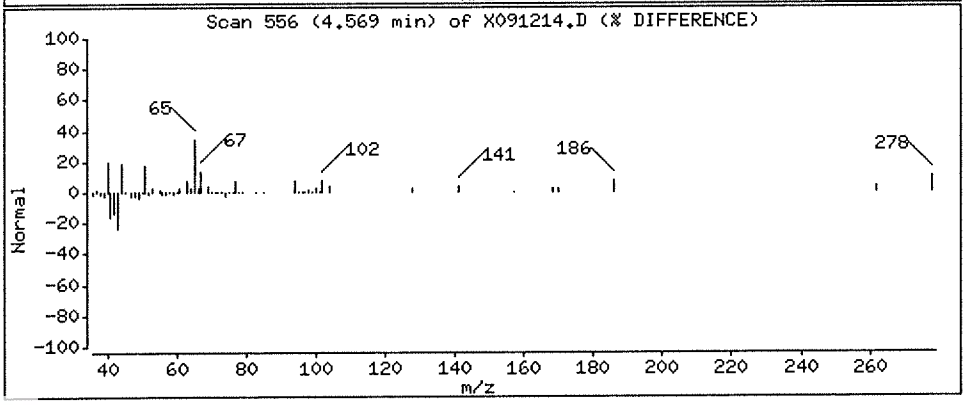












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091214.D Page 8

Date : 12-SEP-2019 17:04

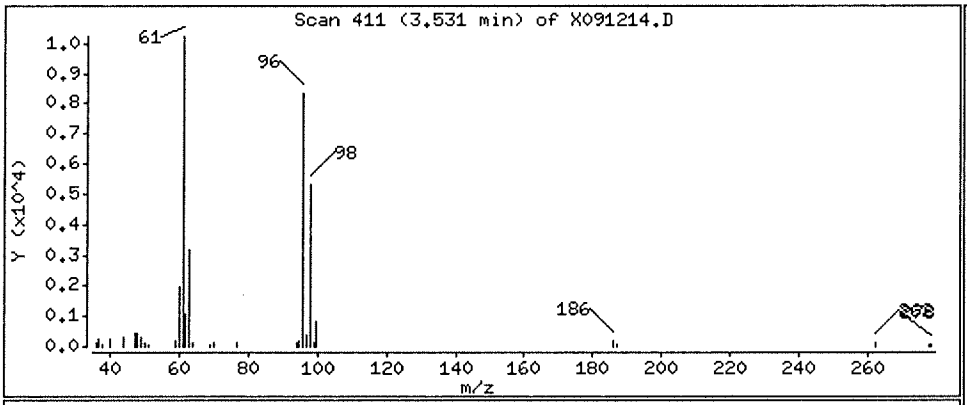
Client ID: HS19090511-02 Instrument: voa6.i

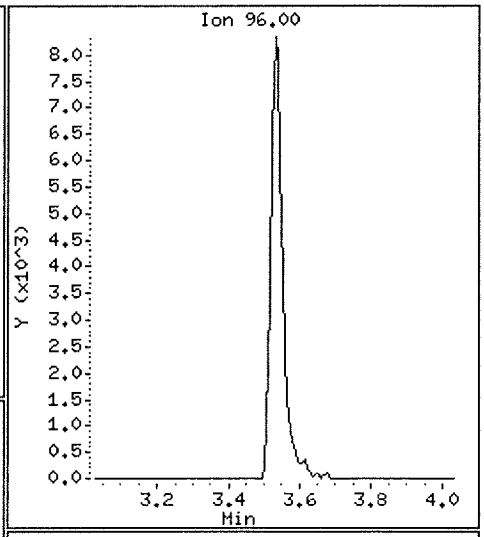
Sample Info: HS19090511-02;HS19090511-02;;;

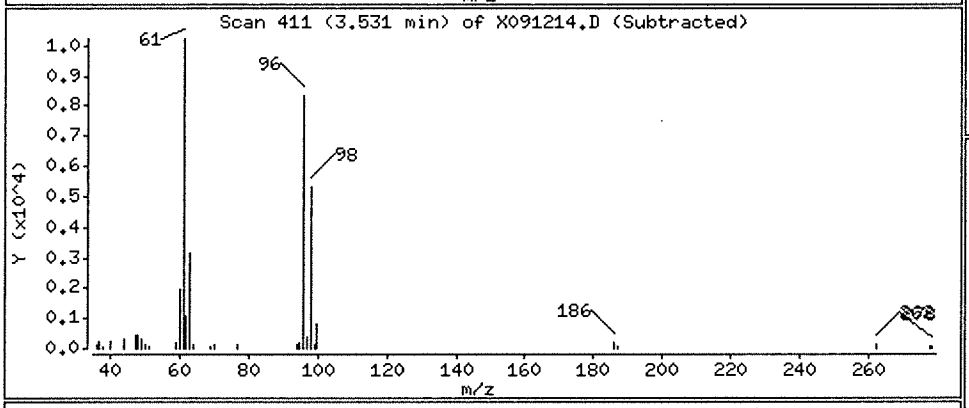
Purge Volume: 5.0 Operator: PC

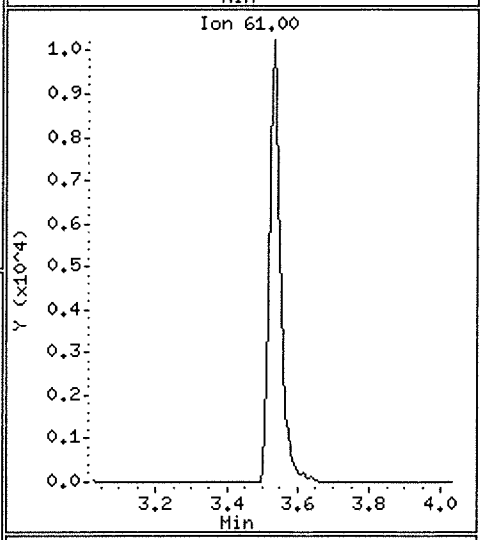
Column phase: DB624 Column diameter: 0.18

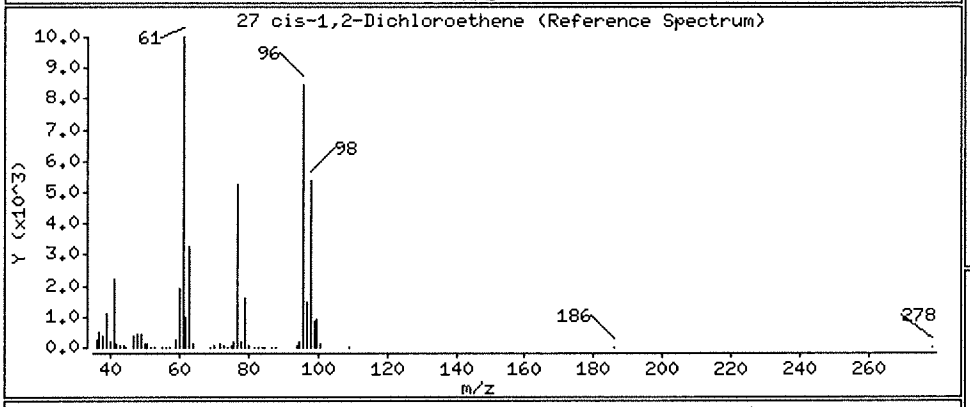
27 cis-1,2-Dichloroethene Concentration: 112.88 ug/l

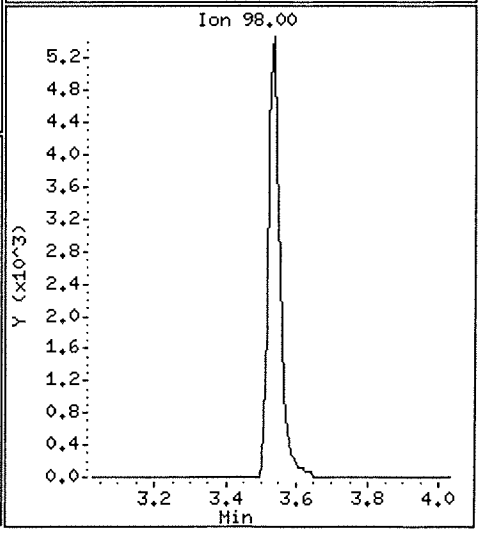


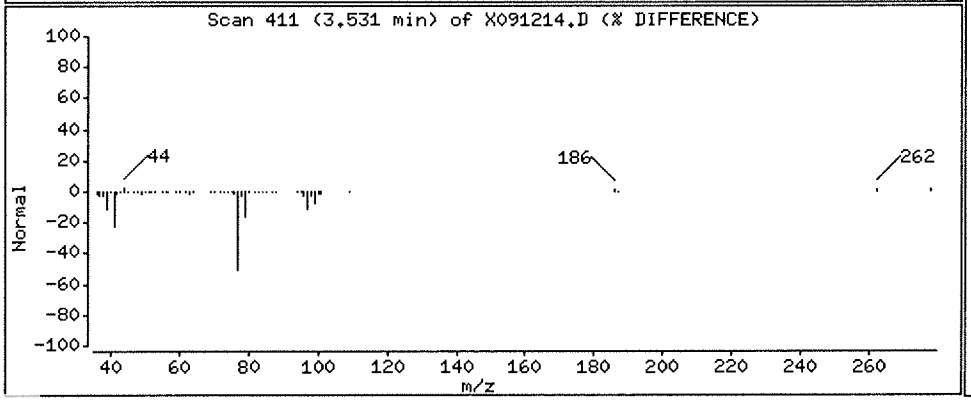












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091214.D Page 9

Date : 12-SEP-2019 17:04

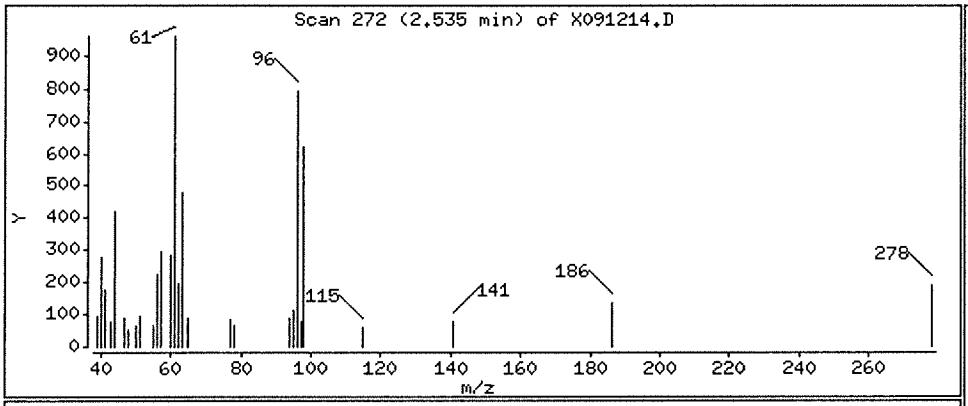
Client ID: HS19090511-02 Instrument: voa6.i

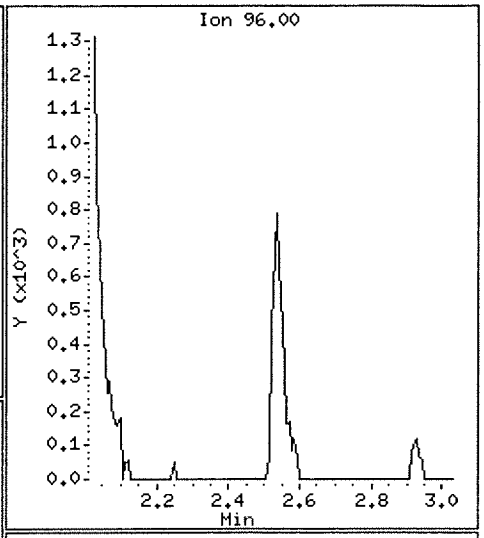
Sample Info: HS19090511-02;HS19090511-02;;;

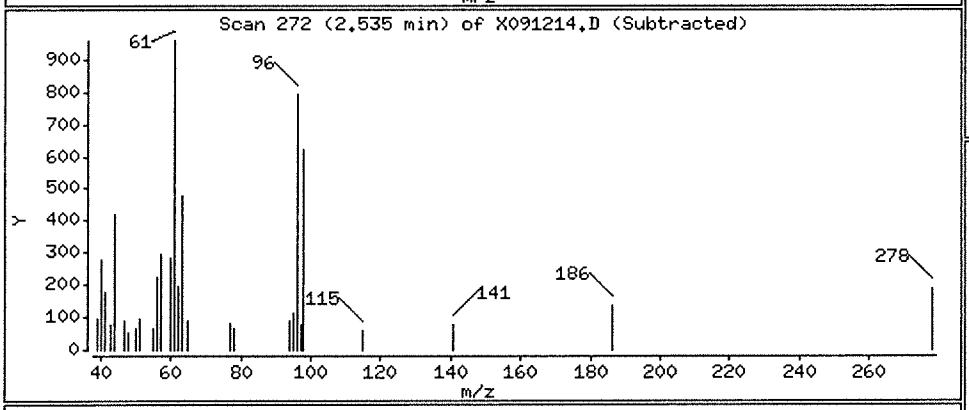
Purge Volume: 5.0 Operator: PC

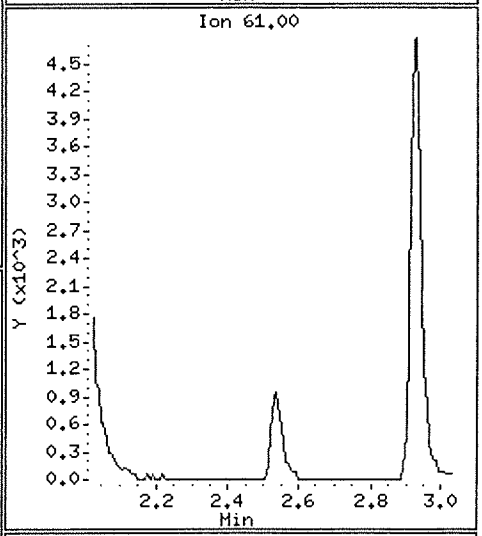
Column phase: DB624 Column diameter: 0.18

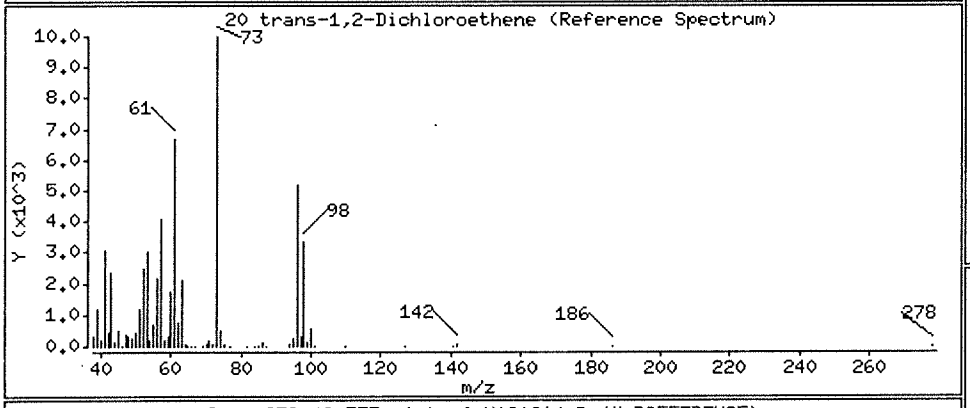
20 trans-1,2-Dichloroethene Concentration: 11.67 ug/l

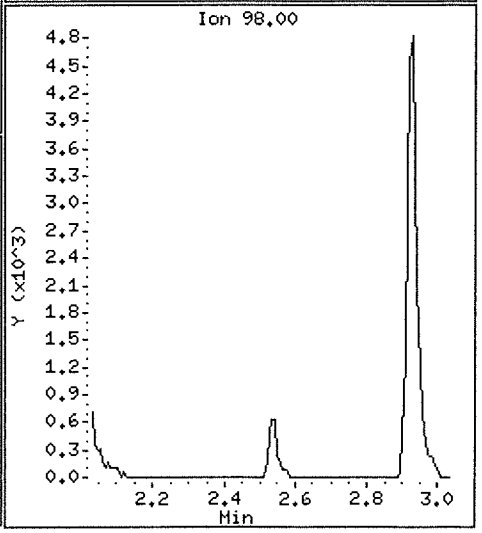


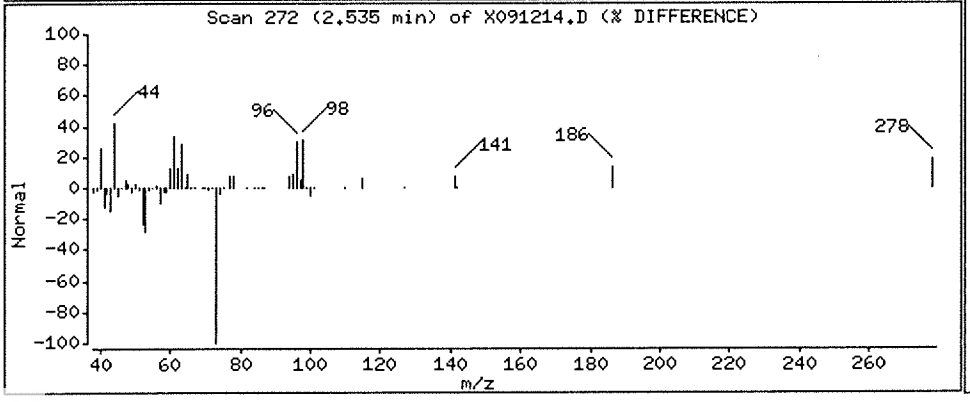












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091214.D

Date : 12-SEP-2019 17:04

Client ID: HS19090511-02

Instrument: voa6.i

Sample Info: HS19090511-02;HS19090511-02;;;

Purge Volume: 5.0

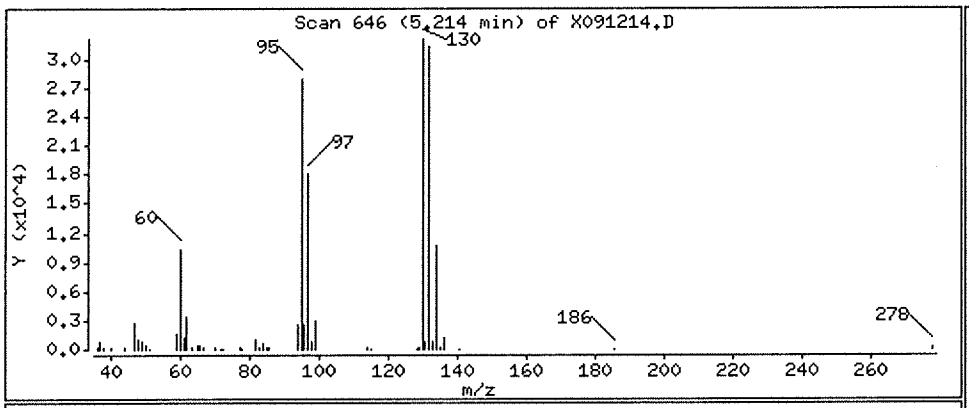
Operator: PC

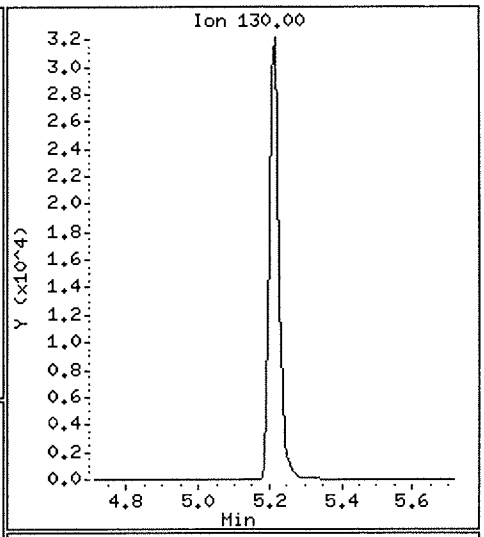
Column phase: DB624

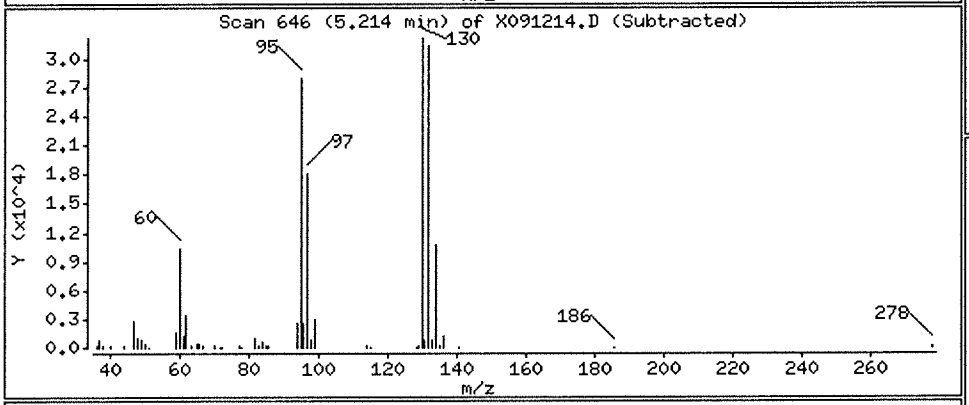
Column diameter: 0.18

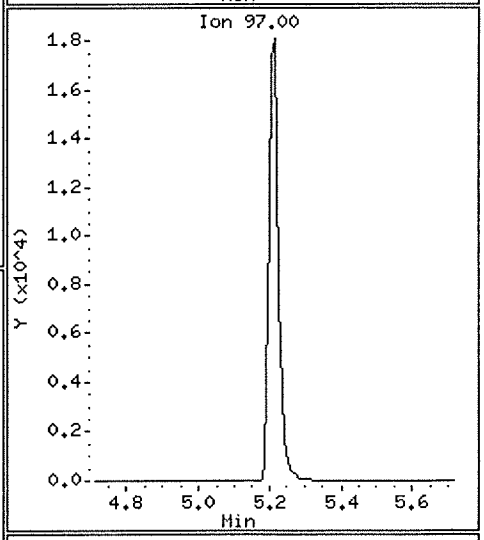
38 Trichloroethene

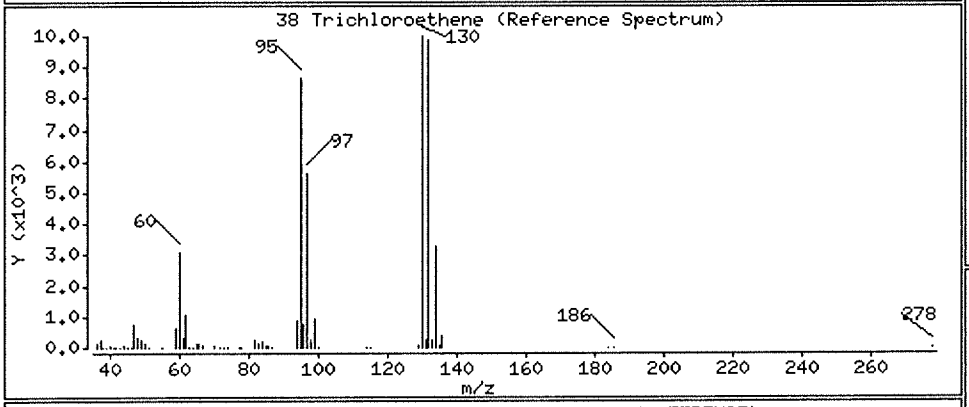
Concentration: 350.05 ug/l

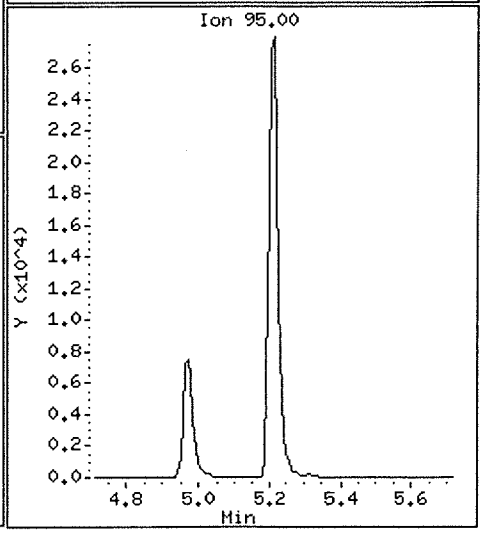


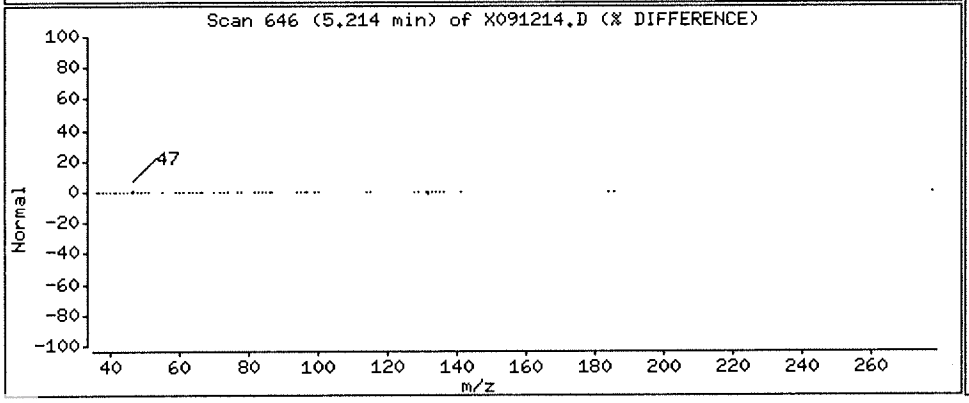












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091214.D Page 11

Date : 12-SEP-2019 17:04

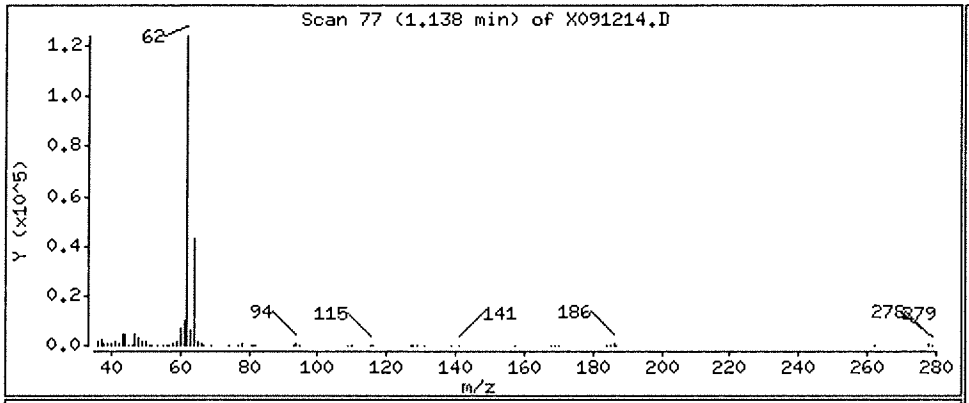
Client ID: HS19090511-02 Instrument: voa6.i

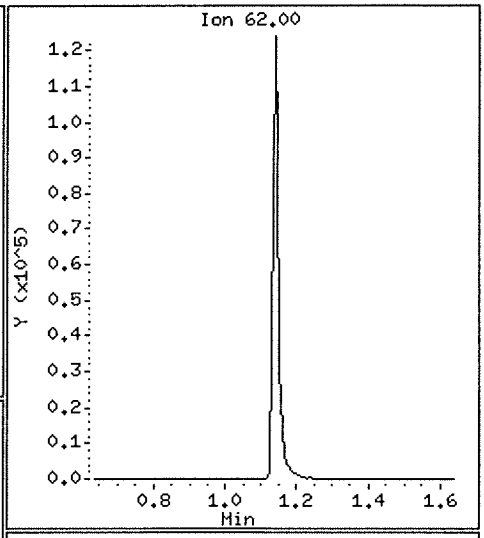
Sample Info: HS19090511-02;HS19090511-02;;;

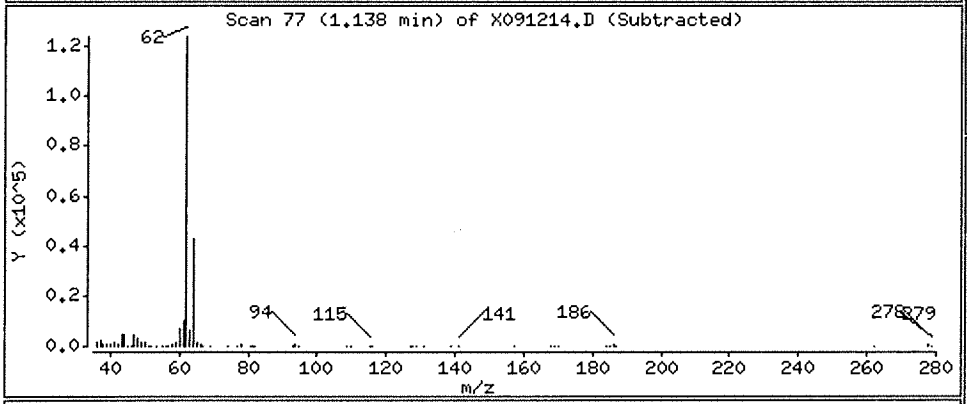
Purge Volume: 5.0 Operator: PC

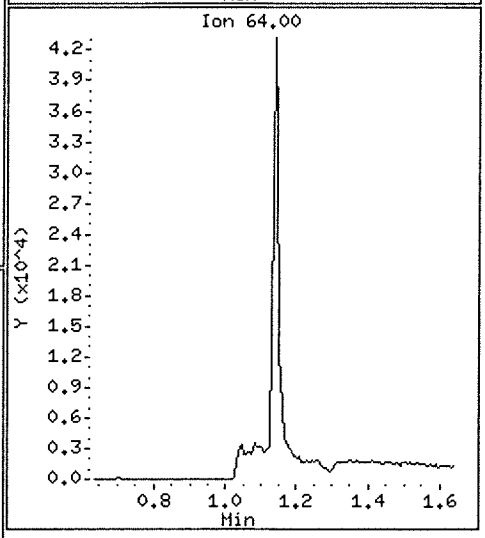
Column phase: DB624 Column diameter: 0.18

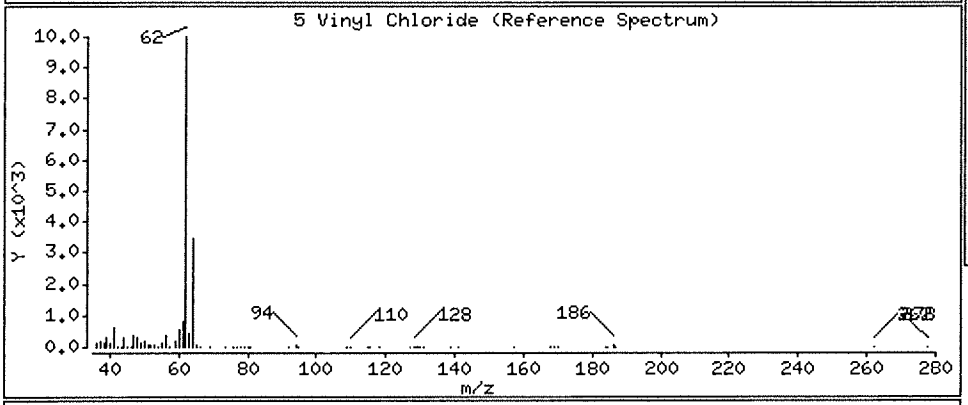
5 Vinyl Chloride Concentration: 794.98 ug/l

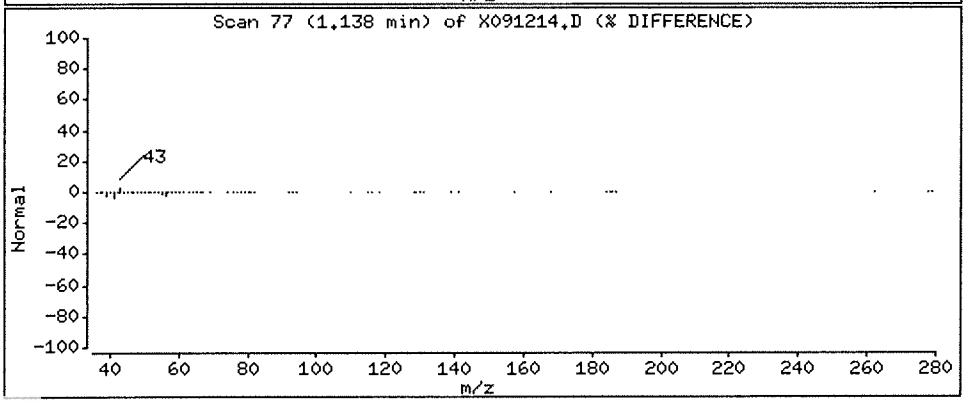












ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X190912.b\X091215.D
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Inj Date : 12-SEP-2019 17:28
Operator : PC Inst ID: voa6.i
Smp Info : HS19090511-02MS;HS19090511-02MS;3;;MS
Misc Info : HS18090001;WATER;0;25;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X190912.b\8260W.m
Meth Date : 25-Sep-2019 14:03 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 15 QC Sample: MS
Dil Factor: 25.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

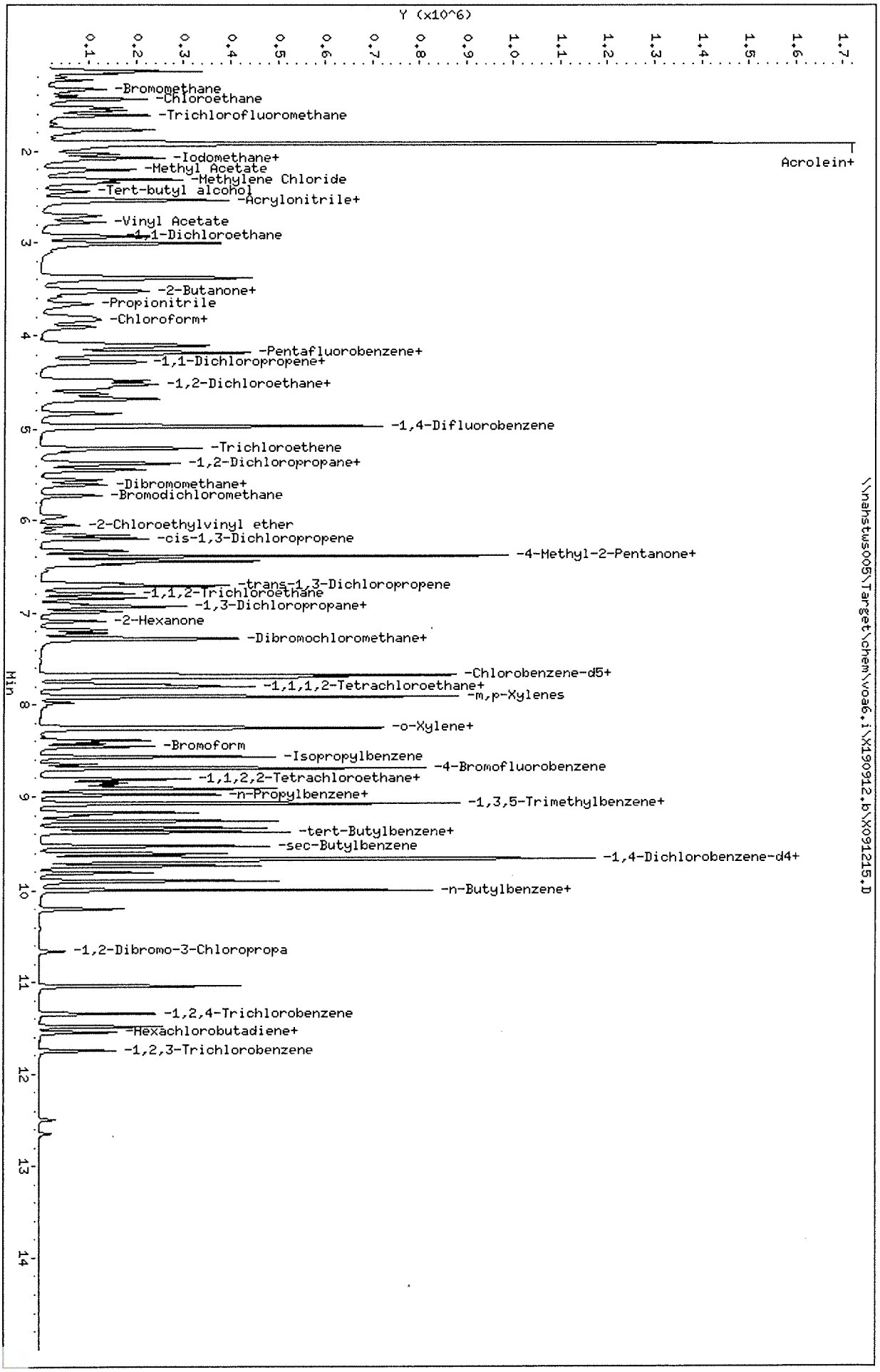
Name	Value	Description
DF	25.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.189	(1.000)	406603	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	529940	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	456590	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	251844	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	164978	46.8250	46.82
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	174505	46.5142	46.51
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	603401	47.8492	47.84
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	215572	50.0734	50.07
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	65614	18.9474	473.68
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	95775	17.2049	430.12
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	72008	19.4511	486.27
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	53452	21.2191	530.47
22 1,1-Dichloroethane	63	2.921	2.929	(0.699)	243107	38.1368	953.42
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	601458	173.551	4338.76
32 1,1-Dichloropropene	75	4.282	4.282	(0.862)	81077	18.2106	455.26
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	47451	17.6669	441.67
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	56725	17.7933	444.83(M)
90 1,2,4-Trichlorobenzene	180	11.345	11.345	(1.173)	76846	18.8426	471.06
79 1,2,4-Trimethylbenzene	105	9.383	9.382	(0.970)	245365	18.7512	468.77
89 1,2-Dibromo-3-Chloropropane	155	10.665	10.658	(1.103)	12110	18.7171	467.92
57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	61306	18.1039	452.59
88 1,2-Dichlorobenzene	146	9.999	9.999	(1.034)	139866	18.6815	467.03
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	77822	17.7643	444.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
42	1,2-Dichloropropane	63	5.443	5.443	(1.095)	56673	17.0665	426.66
75	1,3,5-Trimethylbenzene	105	9.075	9.074	(0.939)	240121	18.8360	470.89
83	1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	147966	18.7569	468.92
54	1,3-Dichloropropane	76	6.983	6.983	(0.910)	94202	18.0397	450.99
84	1,4-Dichlorobenzene	146	9.683	9.683	(1.001)	143497	17.9387	448.46
26	2,2-Dichloropropane	77	3.516	3.516	(0.841)	91792	17.2356	430.89
24	2-Butanone	43	3.580	3.580	(0.856)	39673	31.7841	794.60
76	2-Chlorotoluene	91	8.981	8.981	(0.929)	184826	19.5921	489.80
52	2-Hexanone	43	7.090	7.090	(0.924)	65904	35.8359	895.89
77	4-Chlorotoluene	91	9.075	9.074	(0.939)	216620	18.4106	460.26
82	p-Isopropyltoluene	119	9.655	9.655	(0.999)	259075	19.6136	490.33
45	4-Methyl-2-Pentanone	43	6.331	6.331	(0.825)	98479	36.2727	906.81
10	Acetone	43	1.976	1.976	(0.473)	38291	30.8548	771.37
37	Benzene	78	4.519	4.519	(0.909)	239261	17.6319	440.79
74	Bromobenzene	156	8.809	8.809	(0.911)	85563	18.4657	461.64
29	Bromochloromethane	128	3.795	3.802	(0.908)	38104	16.1816	404.54
39	Bromodichloromethane	83	5.729	5.729	(1.153)	77429	17.0491	426.22
66	Bromoform	173	8.416	8.415	(1.097)	50367	18.4162	460.40
6	Bromomethane	94	1.331	1.338	(0.318)	51197	14.6516	366.29
19	Carbon Disulfide	76	2.069	2.069	(0.495)	315633	30.8032	770.08
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	87350	18.3747	459.36
59	Chlorobenzene	112	7.699	7.699	(1.004)	170823	17.8573	446.43
7	Chloroethane	64	1.403	1.403	(0.336)	47856	18.9847	474.61
28	Chloroform	83	3.910	3.910	(0.935)	106956	16.5344	413.36
3	Chloromethane	50	1.081	1.081	(0.258)	43968	14.3243	358.10
27	cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	88141	21.1436	528.58
46	cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	98183	17.7854	444.63
55	Dibromochloromethane	129	7.183	7.183	(0.937)	67231	18.2545	456.36
44	Dibromomethane	93	5.557	5.557	(1.118)	40411	16.8861	422.15
2	Dichlorodifluoromethane	85	0.973	0.973	(0.233)	29080	9.75894	243.97
61	Ethylbenzene	106	7.807	7.799	(1.018)	92343	18.6073	465.18
91	Hexachlorobutadiene	225	11.488	11.488	(1.188)	48257	20.9631	524.07
67	Isopropylbenzene	105	8.566	8.566	(1.117)	279841	19.0113	475.28
62	m,p-Xylenes	106	7.907	7.907	(1.031)	223336	37.2795	931.98
17	Methylene Chloride	84	2.305	2.305	(0.551)	63752	16.6354	415.88
87	n-Butylbenzene	91	9.999	9.999	(1.034)	207890	20.5056	512.63
73	n-Propylbenzene	91	8.917	8.917	(0.922)	313577	18.9040	472.60
92	Naphthalene	128	11.546	11.546	(1.194)	115769	17.8543	446.35
63	o-Xylene	106	8.244	8.244	(1.075)	108367	18.4699	461.74
81	sec-Butylbenzene	105	9.526	9.526	(0.985)	281189	19.1930	479.82
64	Styrene	104	8.265	8.265	(1.078)	186055	18.4993	462.48
78	tert-Butylbenzene	119	9.340	9.340	(0.966)	205625	19.1989	479.97
56	Tetrachloroethene	164	6.933	6.933	(0.904)	64720	19.6057	490.14
50	Toluene	91	6.453	6.453	(0.841)	257230	18.2590	456.47
20	trans-1,2-Dichloroethene	96	2.535	2.527	(0.606)	60528	17.0215	425.53
51	trans-1,3-Dichloropropene	75	6.689	6.682	(1.346)	86916	17.5894	439.73
38	Trichloroethene	130	5.214	5.214	(1.049)	129845	31.7720	794.29
8	Trichlorofluoromethane	101	1.560	1.560	(0.373)	112728	18.4297	460.74
5	Vinyl Chloride	62	1.138	1.138	(0.272)	205498	48.4848	1212.11

QC Flag Legend

M - Compound response manually integrated.

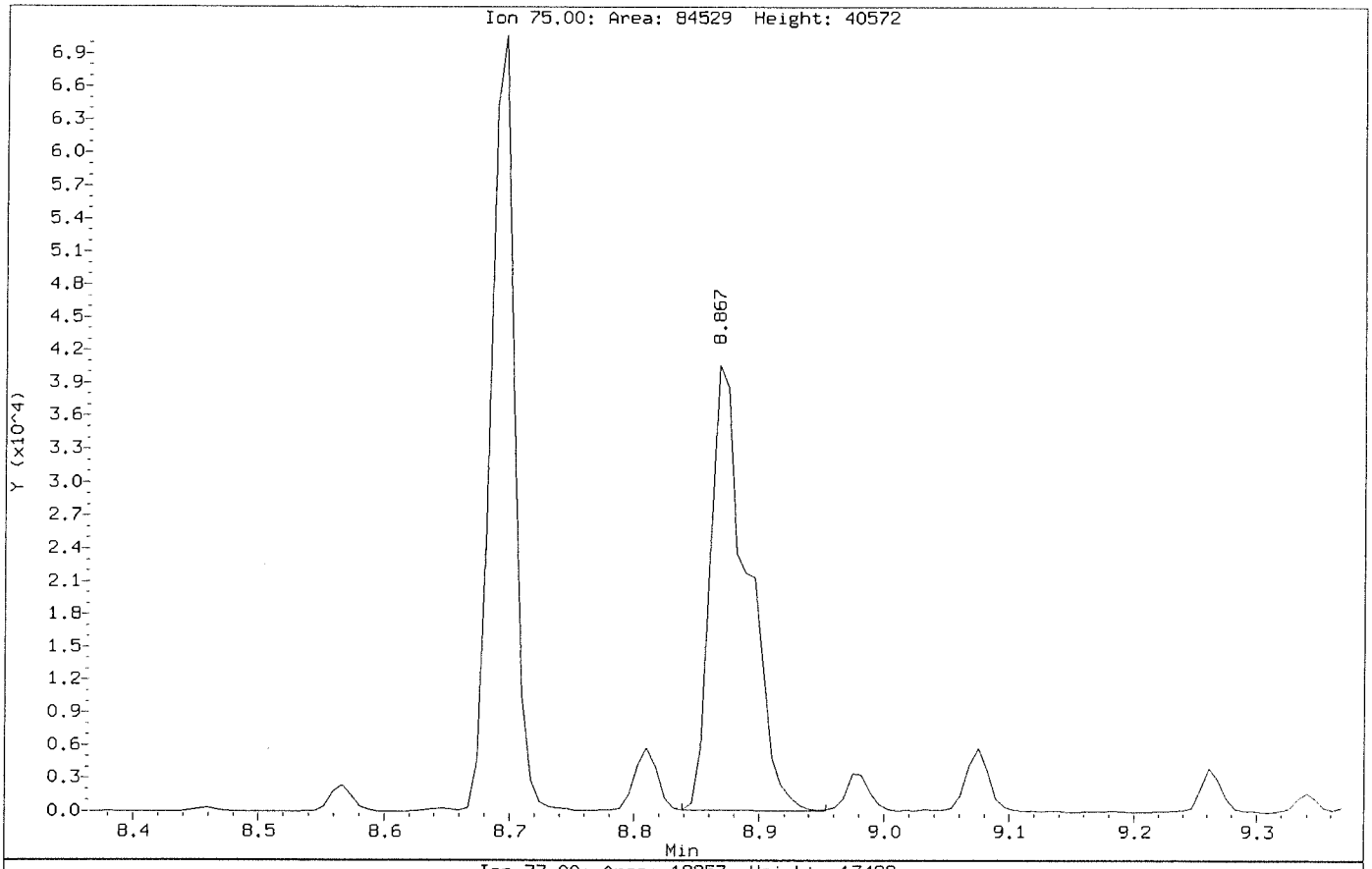


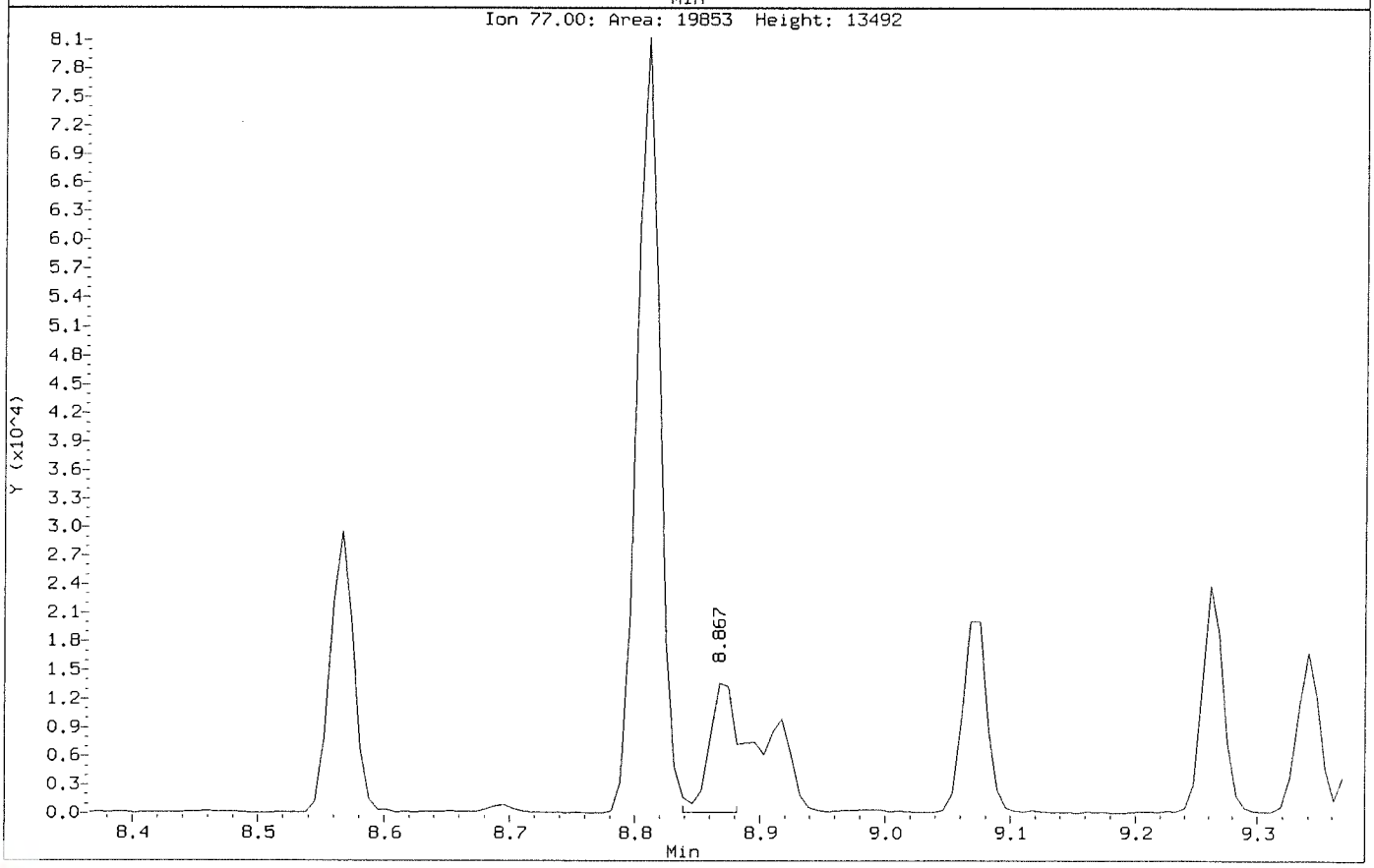
Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091215.D
Date : 12-SEP-2019 17:28
Client ID: HS19090511-02HS
Sample Info: HS19090511-02HS;HS19090511-02HS;3;;HS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\BEFORE\X091215.D
Injection Date: 12-SEP-2019 17:28
Instrument: voa6.i
Client Sample ID: HS19090511-02MS

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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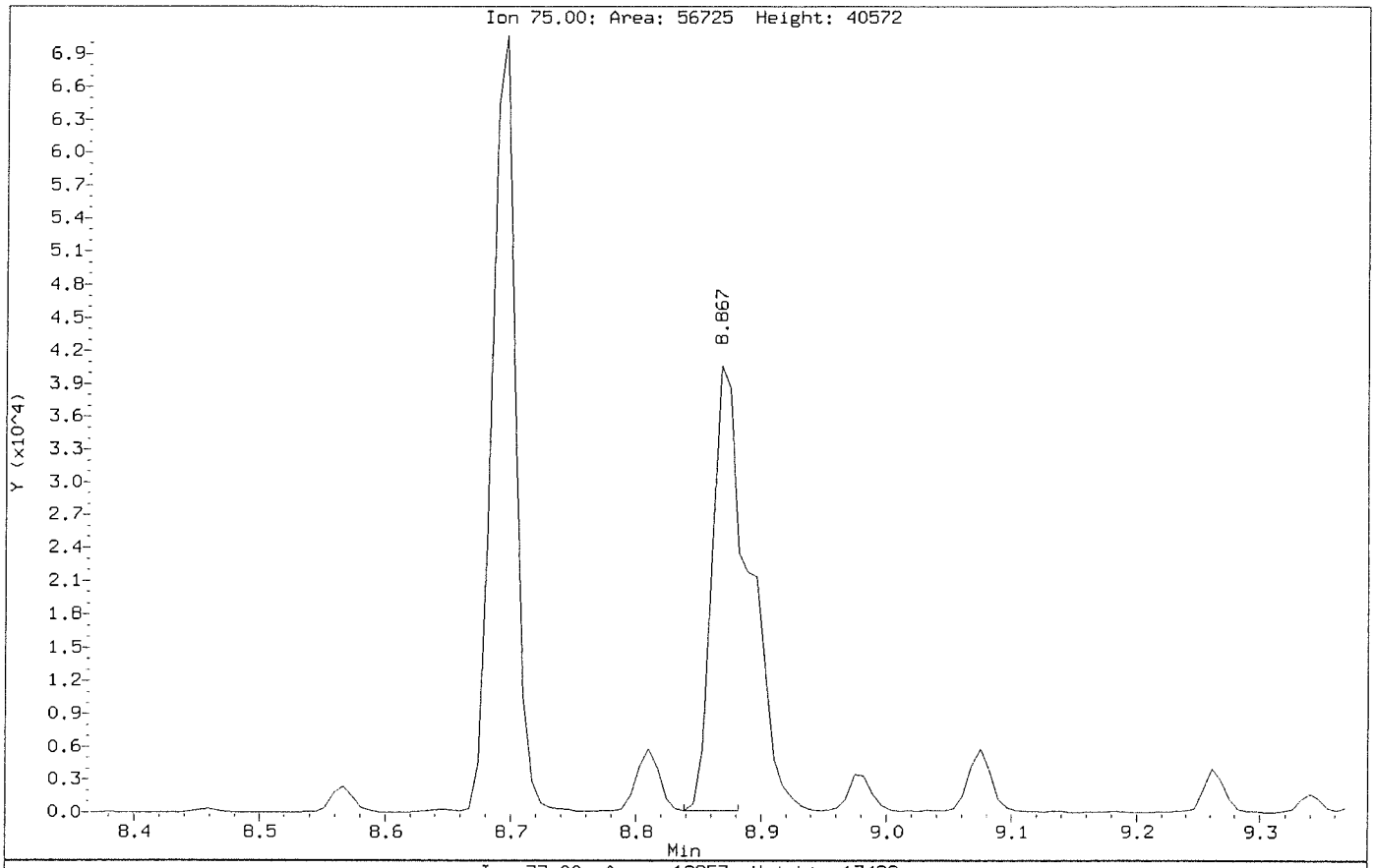
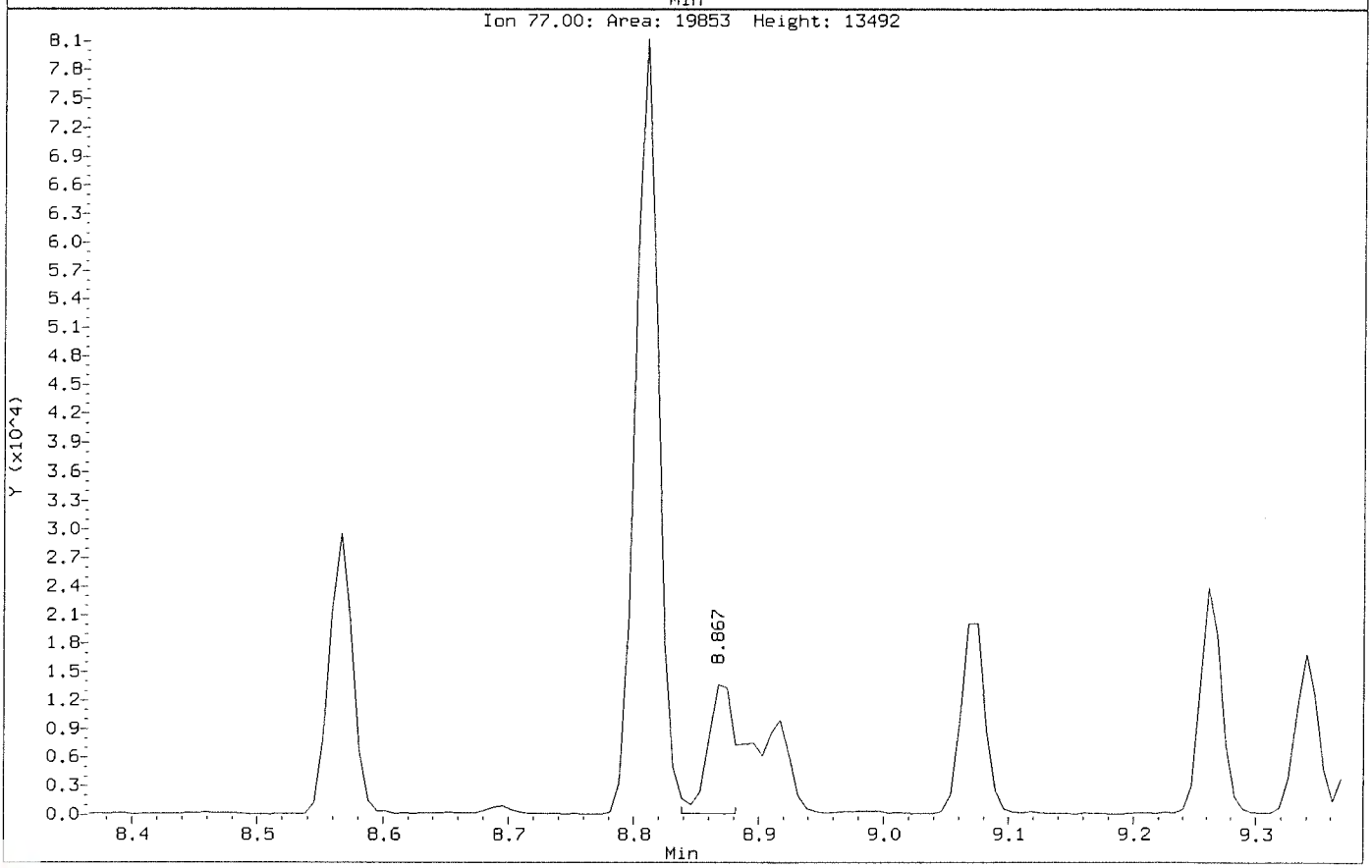
Injection Date: 12-SEP-2019 17:28
Instrument: voa6.i
Client Sample ID: HS19090511-02MS

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X190912.b\X091216.D
Lab Smp Id: HS19090511-02MSD Client Smp ID: HS19090511-02MSD
Inj Date : 12-SEP-2019 17:52
Operator : PC Inst ID: voa6.i
Smp Info : HS19090511-02MSD;HS19090511-02MSD;3;;MSD
Misc Info : HS18090001;WATER;0;25;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X190912.b\8260W.m
Meth Date : 25-Sep-2019 14:03 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 15 QC Sample: MSD
Dil Factor: 25.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	25.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

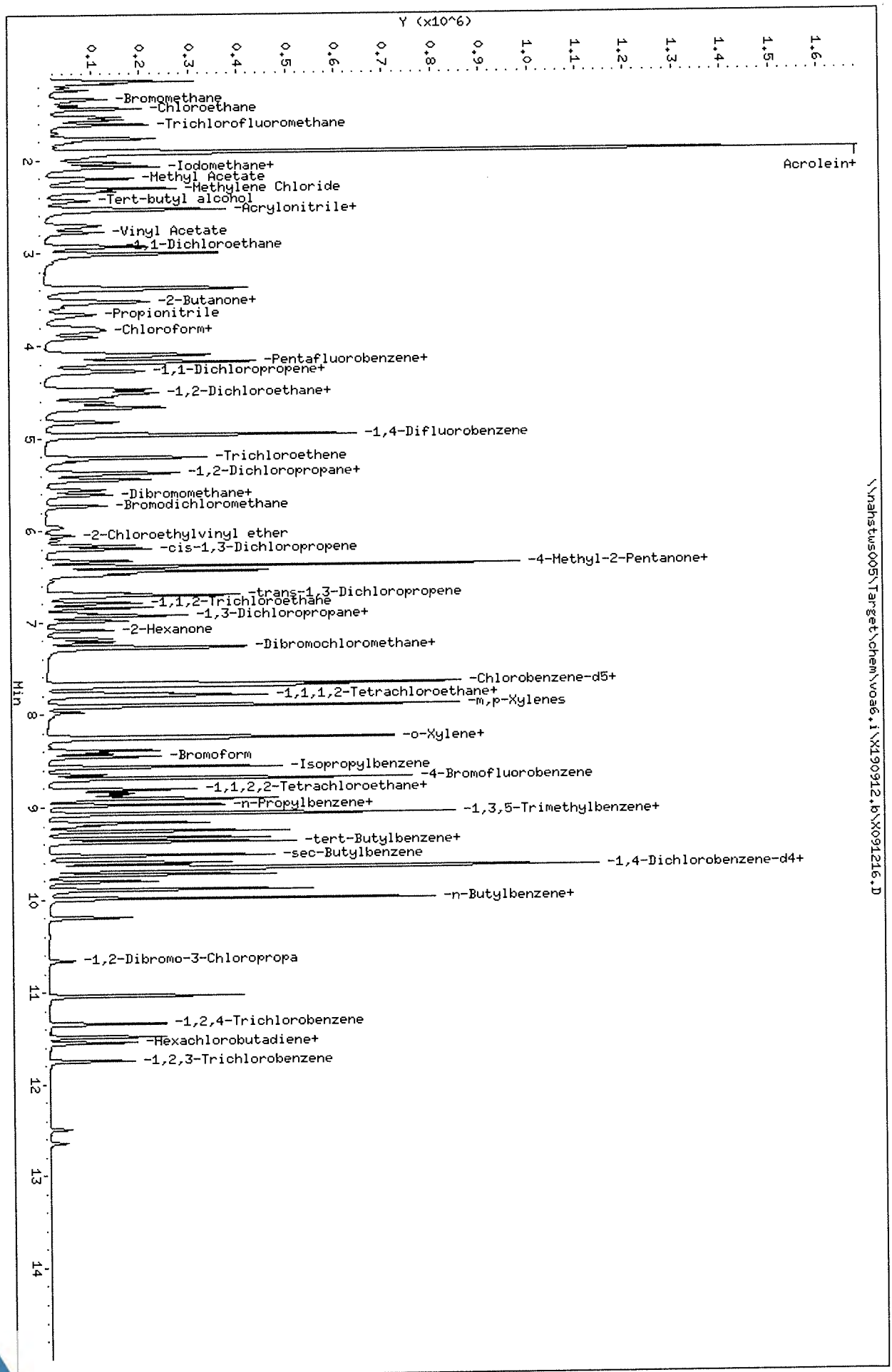
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.182	4.189	(1.000)	392858	50.0000	
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	507712	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	433105	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	234381	50.0000	
$	30 Dibromofluoromethane	113	4.103	4.103	(0.981)	158557	46.5727	46.57
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	165478	45.6372	45.63
$	48 Toluene-d8	98	6.388	6.388	(0.833)	579649	48.4582	48.45
$	69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	203228	49.7622	49.76
	60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	61835	18.8244	470.61
	31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	90071	16.7464	418.65
	68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	69506	20.1823	504.55
	53 1,1,2-Trichloroethane	83	6.840	6.847	(0.892)	52100	21.8039	545.09
	22 1,1-Dichloroethane	63	2.929	2.929	(0.700)	224537	36.4561	911.40
	11 1,1-Dichloroethene	96	1.912	1.911	(0.457)	565762	168.962	4224.05
	32 1,1-Dichloropropene	75	4.282	4.282	(0.862)	77576	18.1871	454.67
	93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	51078	20.4343	510.85
	71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	56100	18.9084	472.70(M)
	90 1,2,4-Trichlorobenzene	180	11.345	11.345	(1.173)	76862	20.2507	506.26
	79 1,2,4-Trimethylbenzene	105	9.383	9.382	(0.970)	234068	19.2206	480.51
	89 1,2-Dibromo-3-Chloropropane	155	10.658	10.658	(1.102)	12060	20.0286	500.71
	57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	60724	18.9044	472.60
	88 1,2-Dichlorobenzene	146	9.999	9.999	(1.034)	137767	19.7722	494.30
	33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	76603	18.2516	456.28

Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091216.D Page 2
Report Date: 25-Sep-2019 14:04

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
42	1,2-Dichloropropane	63	5.443	5.443	(1.095)	53550	16.8320	420.80
75	1,3,5-Trimethylbenzene	105	9.067	9.074	(0.938)	230396	19.4197	485.49
83	1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	143024	19.4813	487.03
54	1,3-Dichloropropane	76	6.983	6.983	(0.910)	89180	18.0040	450.10
84	1,4-Dichlorobenzene	146	9.683	9.683	(1.001)	141137	18.9582	473.95
26	2,2-Dichloropropane	77	3.516	3.516	(0.841)	87394	16.9840	424.59
24	2-Butanone	43	3.581	3.580	(0.856)	38757	32.1366	803.41
76	2-Chlorotoluene	91	8.981	8.981	(0.929)	177368	20.2009	505.02
52	2-Hexanone	43	7.090	7.090	(0.924)	66240	37.9717	949.29
77	4-Chlorotoluene	91	9.075	9.074	(0.939)	207002	18.9040	472.59
82	p-Isopropyltoluene	119	9.655	9.655	(0.999)	247235	20.1118	502.79
45	4-Methyl-2-Pentanone	43	6.331	6.331	(0.825)	93910	36.4654	911.63
10	Acetone	43	1.976	1.976	(0.473)	37265	31.1211	778.02
37	Benzene	78	4.519	4.519	(0.909)	226075	17.3896	434.73
74	Bromobenzene	156	8.810	8.809	(0.911)	83255	19.3063	482.65
29	Bromochloromethane	128	3.803	3.802	(0.909)	36420	16.0076	400.19
39	Bromodichloromethane	83	5.729	5.729	(1.153)	75324	17.3118	432.79
66	Bromoform	173	8.416	8.415	(1.097)	50110	19.3157	482.89
6	Bromomethane	94	1.331	1.338	(0.318)	53606	16.0029	400.07
19	Carbon Disulfide	76	2.069	2.069	(0.495)	290240	29.3161	732.90
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	82550	18.1252	453.13
59	Chlorobenzene	112	7.699	7.699	(1.004)	163917	18.0645	451.61
7	Chloroethane	64	1.403	1.403	(0.336)	42226	17.1173	427.93
28	Chloroform	83	3.910	3.910	(0.935)	100467	16.0747	401.86
3	Chloromethane	50	1.081	1.081	(0.258)	38864	13.0912	327.28
27	cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	82602	20.5081	512.70
46	cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	92735	17.5340	438.34
55	Dibromochloromethane	129	7.184	7.183	(0.937)	64944	18.5897	464.74
44	Dibromomethane	93	5.558	5.557	(1.118)	38812	16.9279	423.19
2	Dichlorodifluoromethane	85	0.973	0.973	(0.233)	25754	8.94516	223.62
61	Ethylbenzene	106	7.800	7.799	(1.017)	88841	18.8724	471.80
91	Hexachlorobutadiene	225	11.489	11.488	(1.188)	46525	21.6825	542.06
67	Isopropylbenzene	105	8.566	8.566	(1.117)	267952	19.1907	479.76
62	m,p-Xylenes	106	7.907	7.907	(1.031)	213515	37.5727	939.31
17	Methylene Chloride	84	2.305	2.305	(0.551)	60213	16.2035	405.08
87	n-Butylbenzene	91	9.999	9.999	(1.034)	199235	21.1161	527.90
73	n-Propylbenzene	91	8.917	8.917	(0.922)	302643	19.6042	490.10
92	Naphthalene	128	11.546	11.546	(1.194)	119936	19.8752	496.87
63	o-Xylene	106	8.244	8.244	(1.075)	102900	18.4891	462.22
81	sec-Butylbenzene	105	9.526	9.526	(0.985)	269391	19.7577	493.94
64	Styrene	104	8.265	8.265	(1.078)	178860	18.7482	468.70
78	tert-Butylbenzene	119	9.340	9.340	(0.966)	197515	19.8157	495.39
56	Tetrachloroethene	164	6.933	6.933	(0.904)	59992	19.1589	478.97
50	Toluene	91	6.453	6.453	(0.841)	244229	18.2762	456.90
20	trans-1,2-Dichloroethene	96	2.528	2.527	(0.604)	56755	16.5189	412.97
51	trans-1,3-Dichloropropene	75	6.689	6.682	(1.346)	82724	17.4740	436.84
38	Trichloroethene	130	5.214	5.214	(1.049)	122059	31.1744	779.35
8	Trichlorofluoromethane	101	1.561	1.560	(0.373)	102242	17.3002	432.50
5	Vinyl Chloride	62	1.138	1.138	(0.272)	188818	46.1080	1152.69

QC Flag Legend

M - Compound response manually integrated.



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Date : 12-SEP-2019 17:52
Client ID: HS19090511-02HSD
Sample Info: HS19090511-02HSD;HS19090511-02HSD;3;;HSD
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091218.D Page 1
Report Date: 25-Sep-2019 14:35

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X190912.b\X091218.D
Lab Smp Id: HS19090511-03 Client Smp ID: HS19090511-03
Inj Date : 12-SEP-2019 18:40
Operator : PC Inst ID: voa6.i
Smp Info : HS19090511-03;HS19090511-03;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X190912.b\8260W.m
Meth Date : 25-Sep-2019 14:34 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 17
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

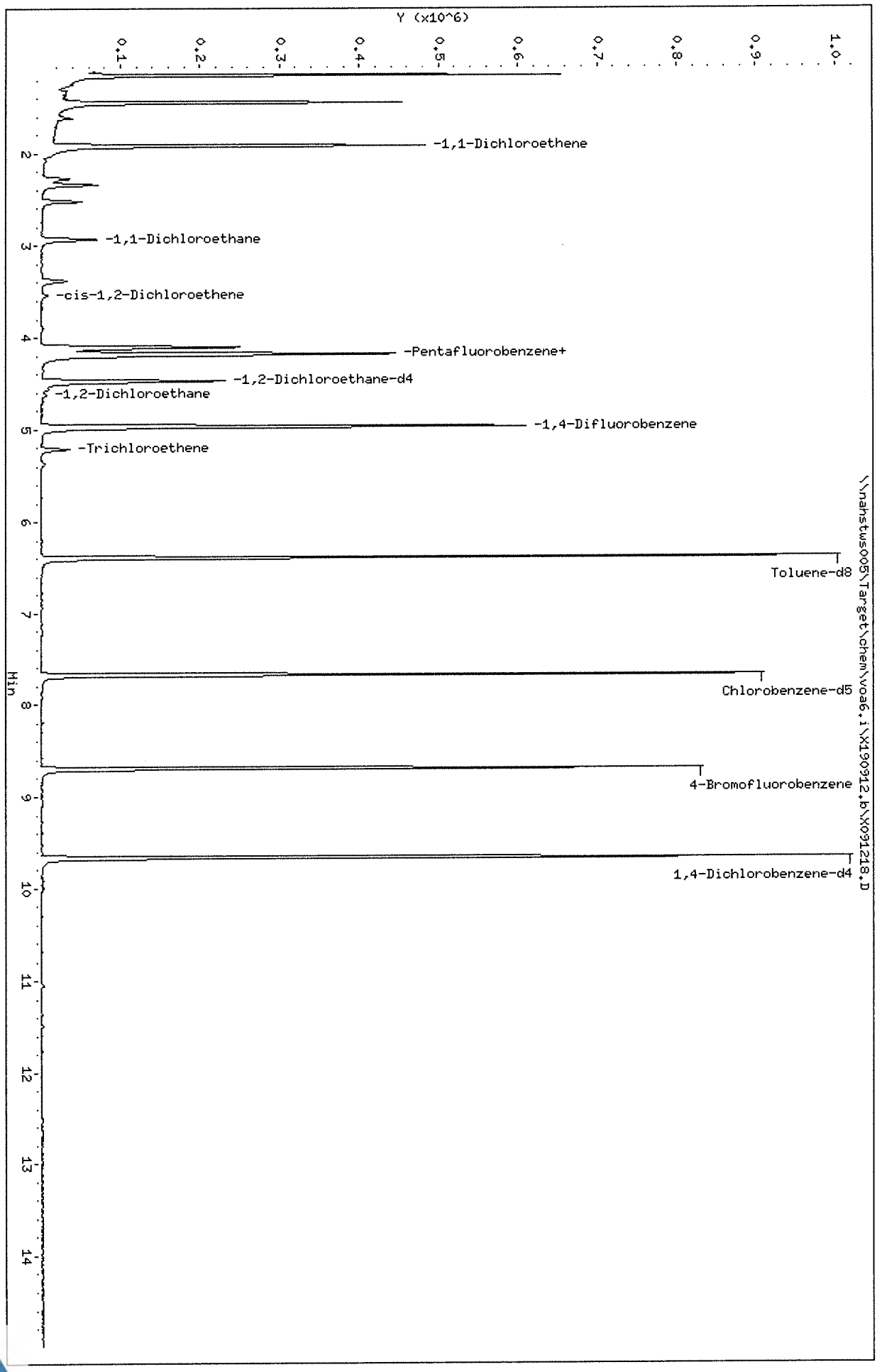
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.189	(1.000)	414009	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	541490	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	474852	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	263524	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	164866	45.9409	45.94
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	173957	45.5227	45.52
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	625520	47.6956	47.69
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	229742	51.3272	51.32
22 1,1-Dichloroethane	63	2.929	2.929	(0.700)	73129	11.2667	11.26
11 1,1-Dichloroethene	96	1.912	1.911	(0.457)	161409	45.7414	45.74
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	2980	0.66573	0.66(a)
27 cis-1,2-Dichloroethene	96	3.538	3.530	(0.846)	4694	1.10587	1.10(a)
38 Trichloroethene	130	5.214	5.214	(1.049)	12869	3.08177	3.08(a)
5 Vinyl Chloride	62	1.138	1.138	(0.272)	211274	48.9558	48.95

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091218.D
Date : 12-SEP-2019 18:40
Client ID: HS19090511-03
Sample Info: HS19090511-03;HS19090511-03;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



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Date : 12-SEP-2019 18:40

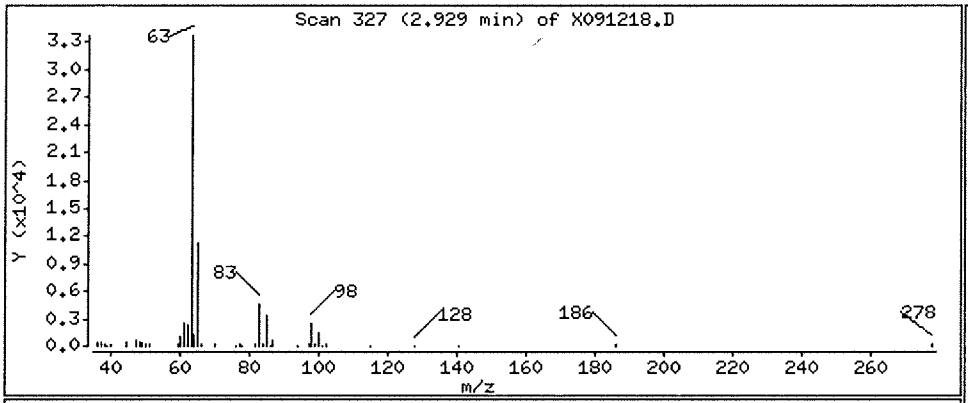
Client ID: HS19090511-03 Instrument: voa6.i

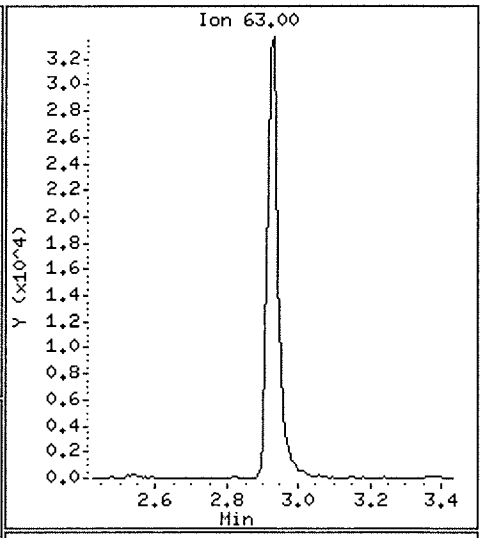
Sample Info: HS19090511-03;HS19090511-03;;;

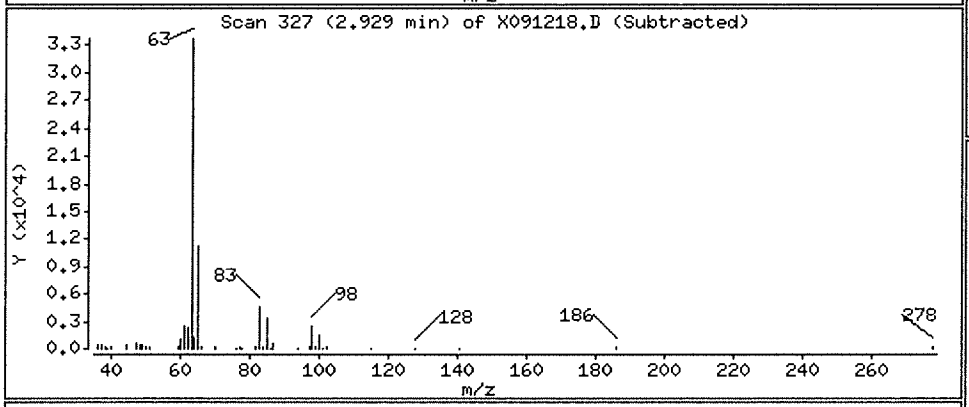
Purge Volume: 5.0 Operator: PC

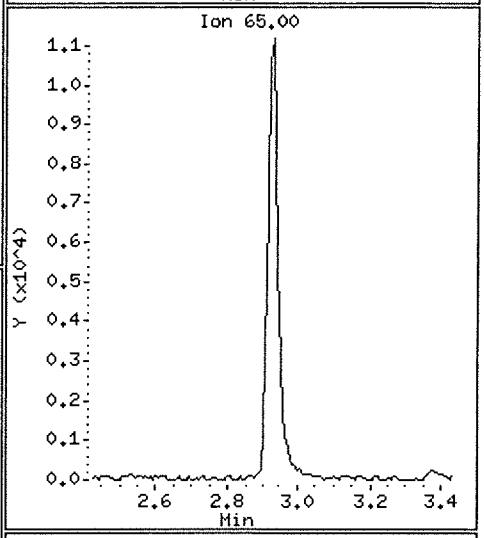
Column phase: DB624 Column diameter: 0.18

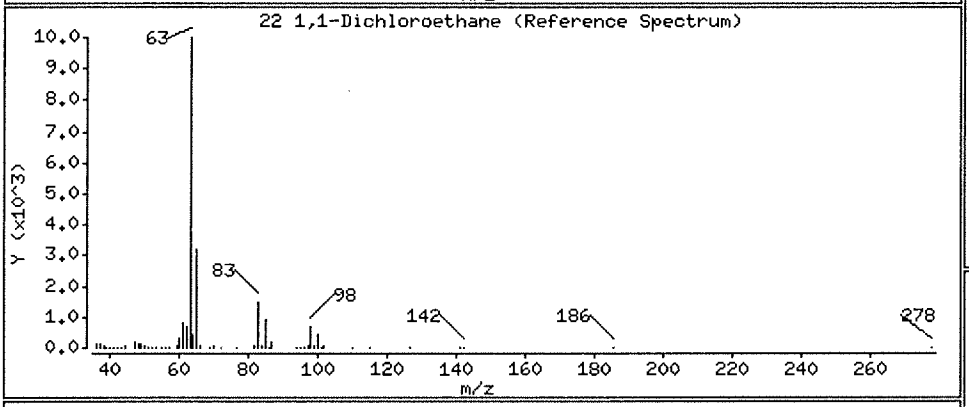
22 1,1-Dichloroethane Concentration: 11.26 ug/l

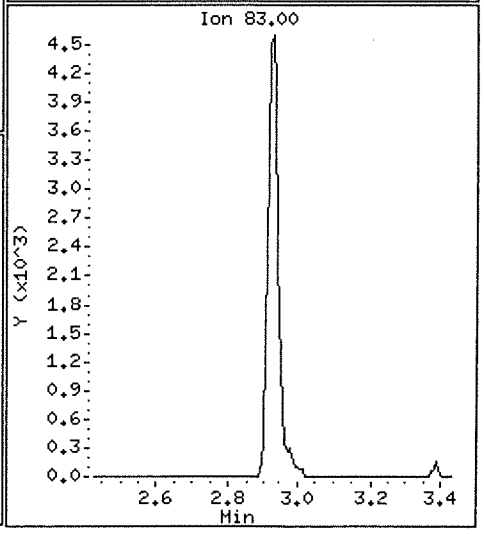


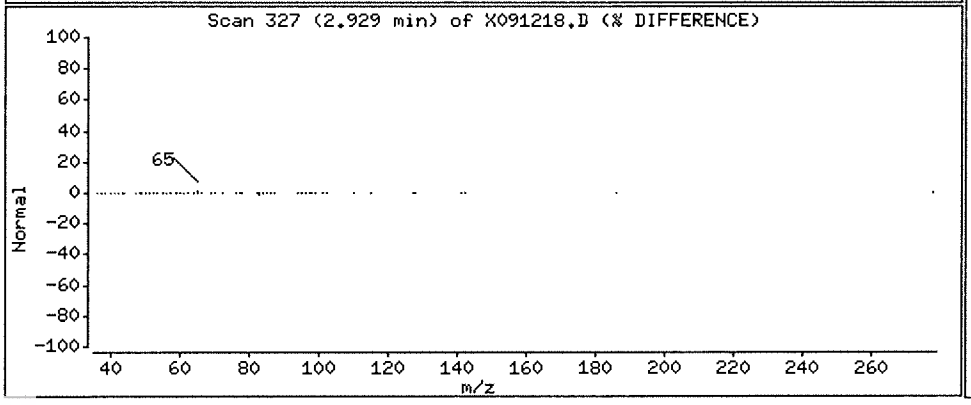












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091218.D

Date : 12-SEP-2019 18:40

Client ID: HS19090511-03

Instrument: voa6.i

Sample Info: HS19090511-03;HS19090511-03;;;

Purge Volume: 5.0

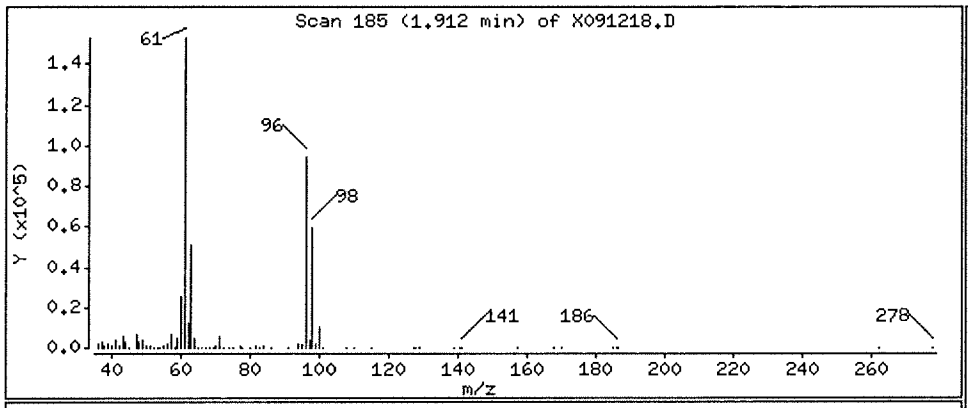
Operator: PC

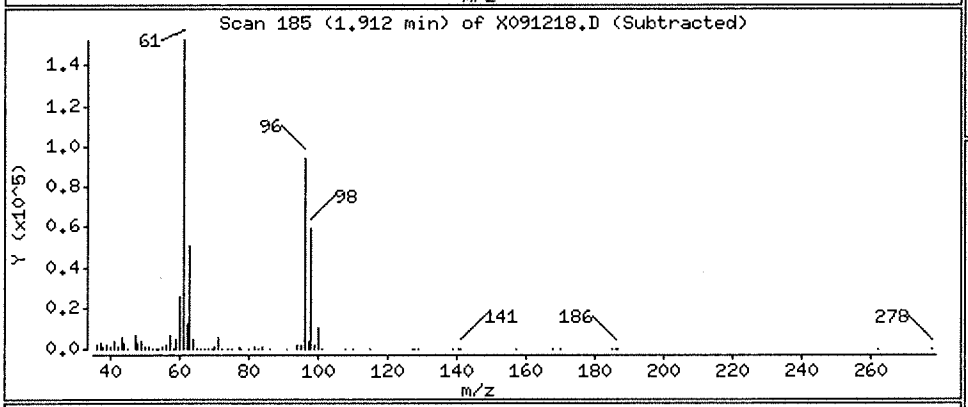
Column phase: DB624

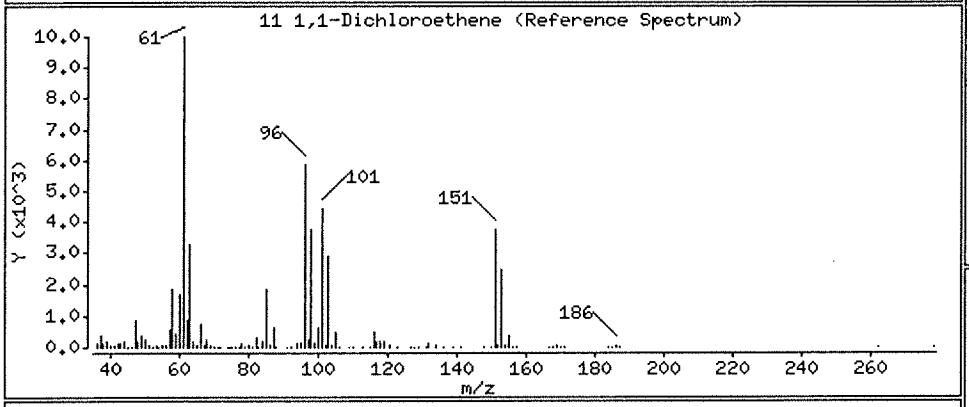
Column diameter: 0.18

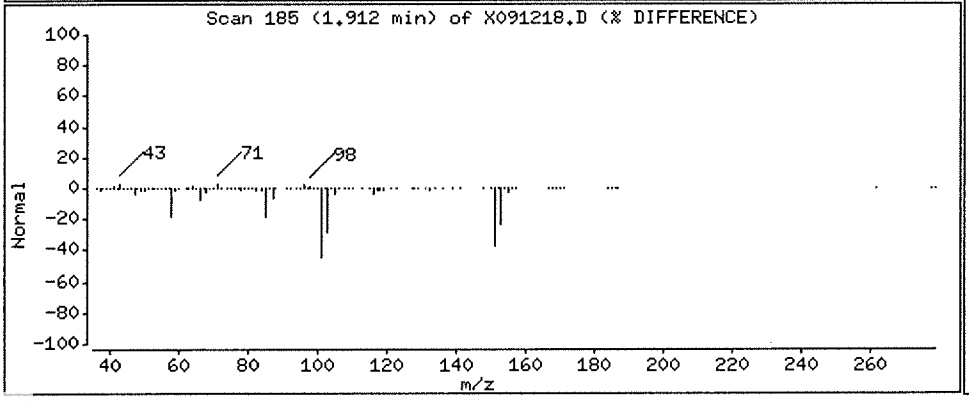
11 1,1-Dichloroethene

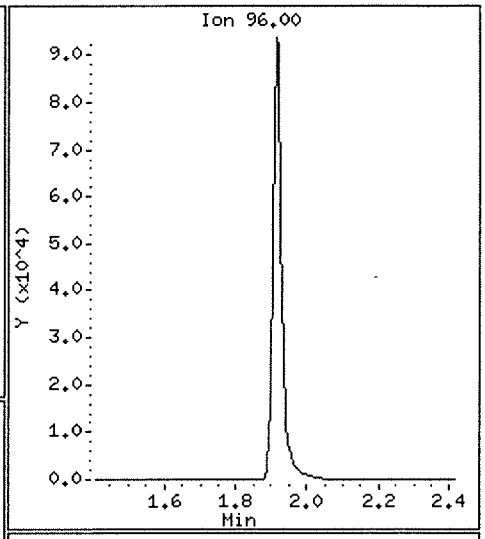
Concentration: 45.74 ug/l

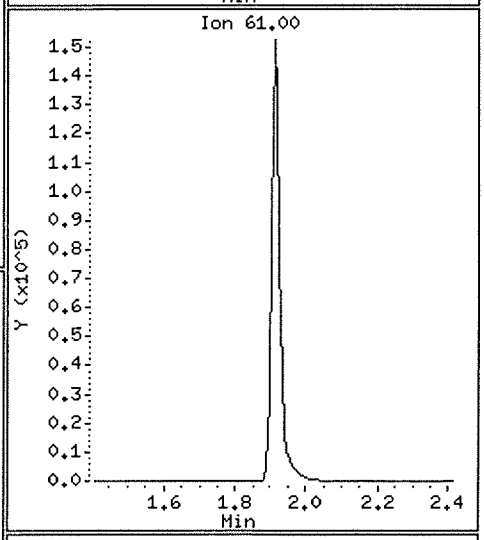


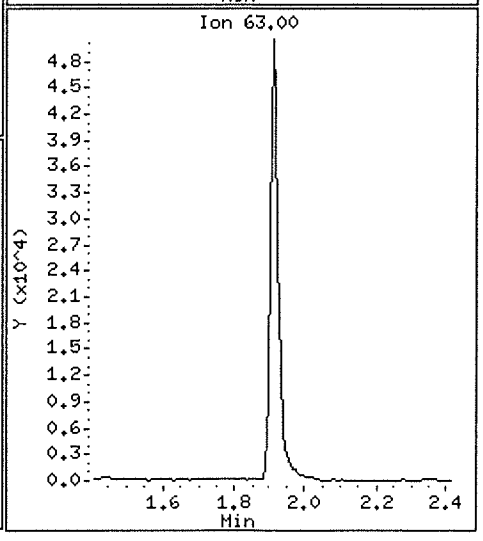












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091218.D

Date : 12-SEP-2019 18:40

Client ID: HS19090511-03

Instrument: voa6.i

Sample Info: HS19090511-03;HS19090511-03;;;

Purge Volume: 5.0

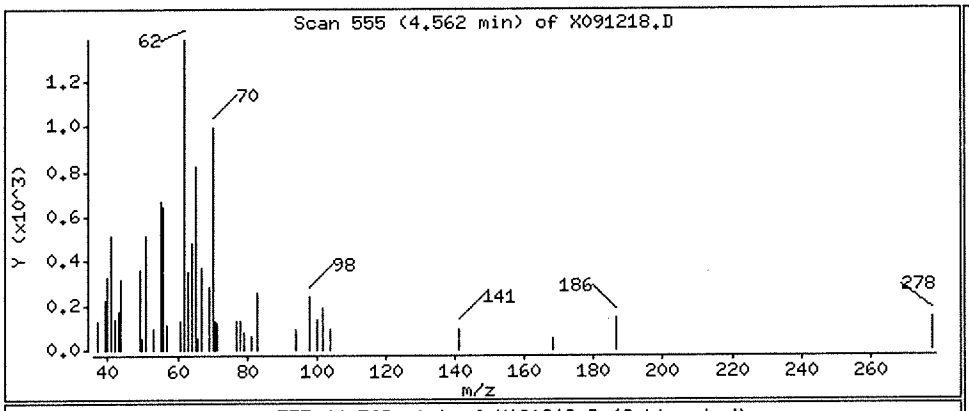
Operator: PC

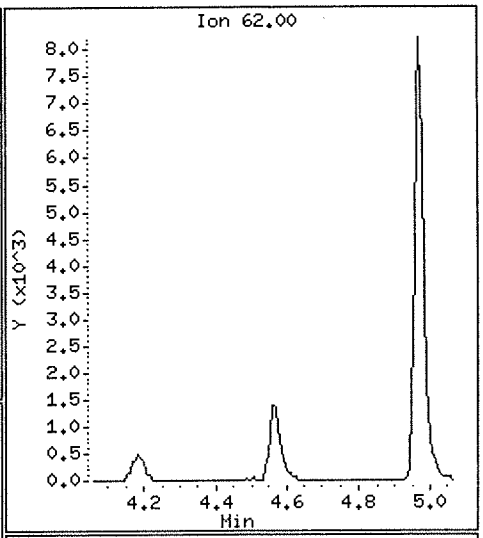
Column phase: DB624

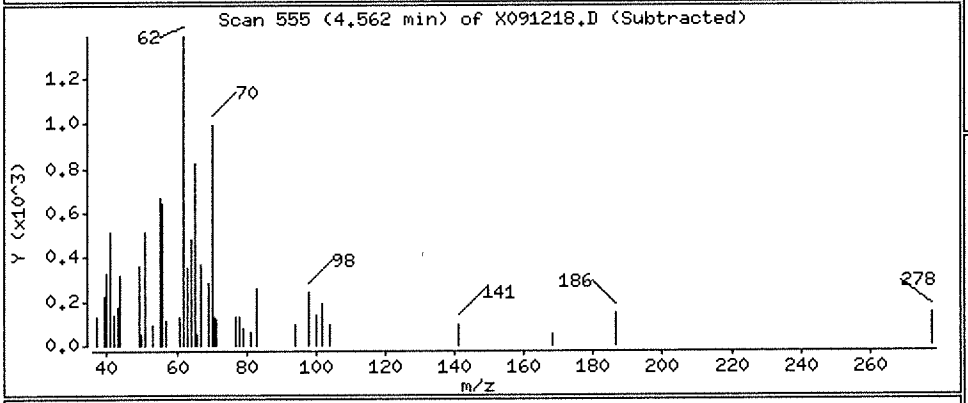
Column diameter: 0.18

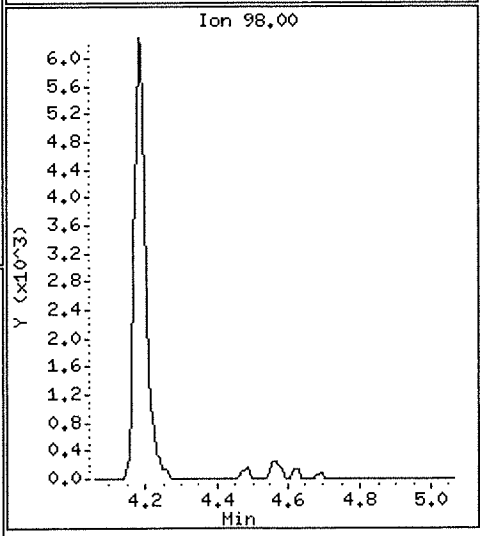
33 1,2-Dichloroethane

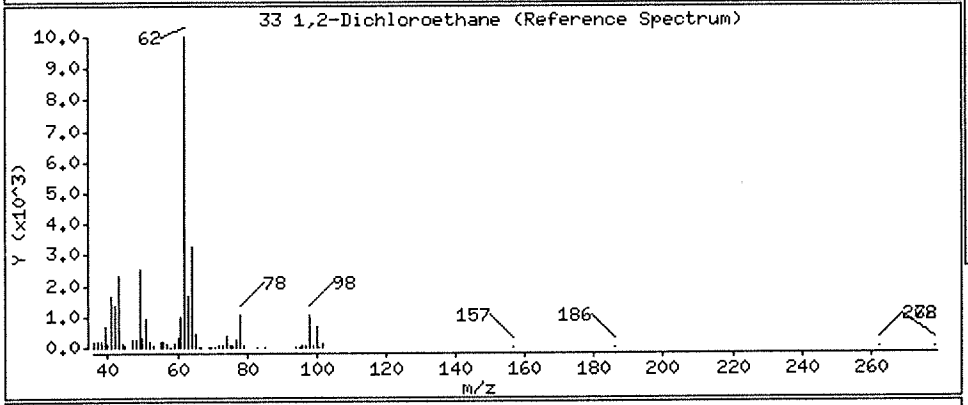
Concentration: 0.66 ug/l

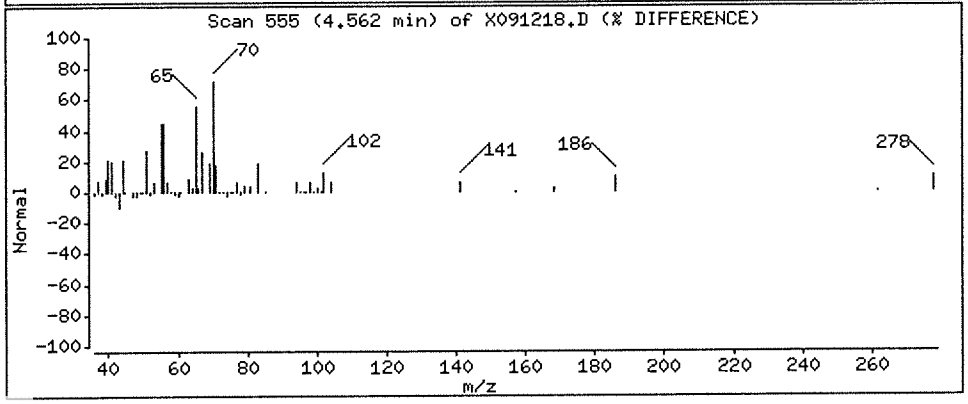












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091218.D

Date : 12-SEP-2019 18:40

Client ID: HS19090511-03

Instrument: voa6.i

Sample Info: HS19090511-03;HS19090511-03;;;

Purge Volume: 5.0

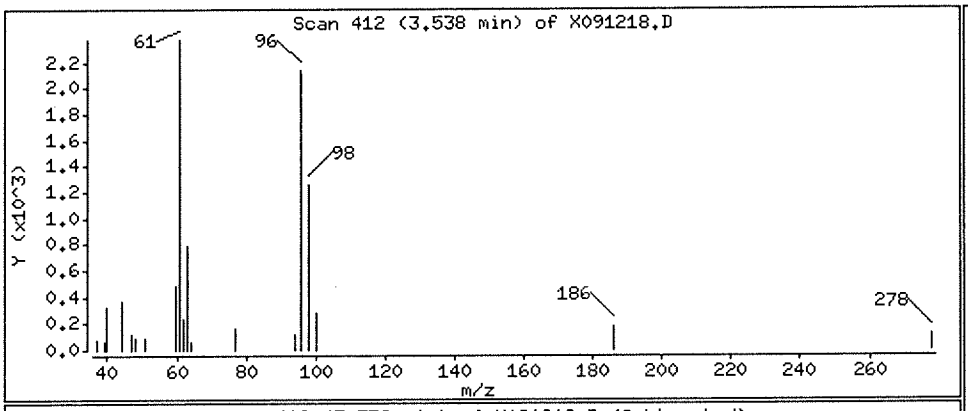
Operator: PC

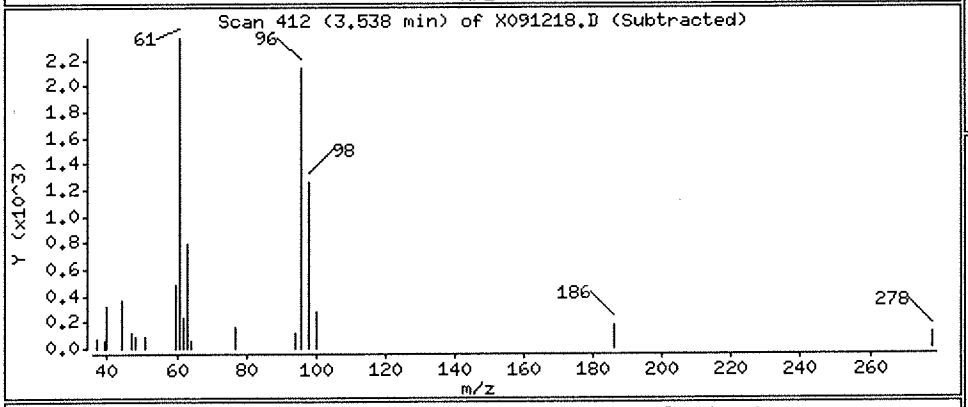
Column phase: DB624

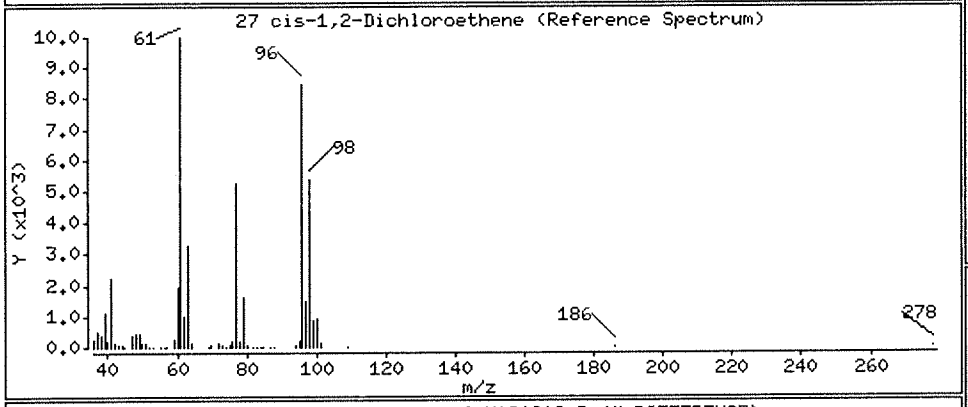
Column diameter: 0.18

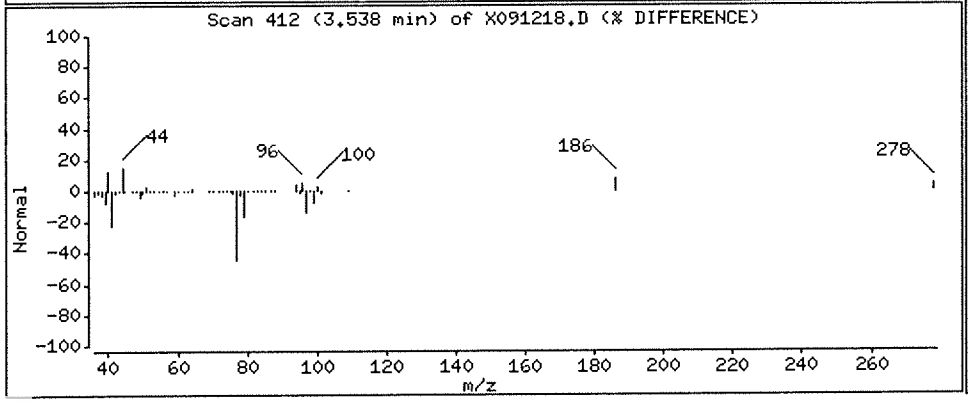
27 cis-1,2-Dichloroethene

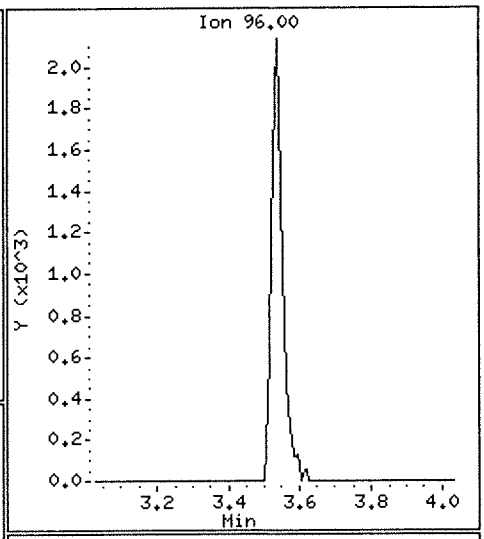
Concentration: 1.10 ug/l

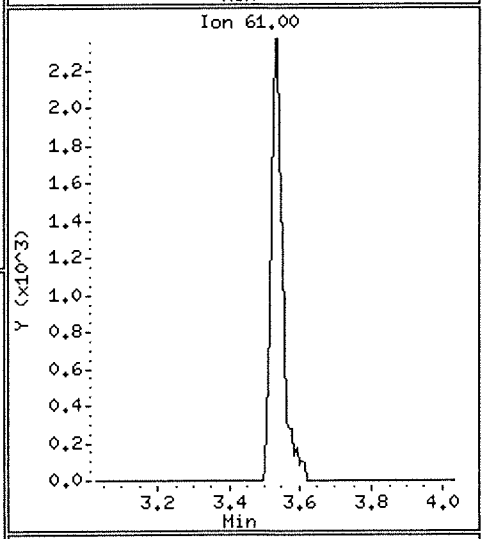


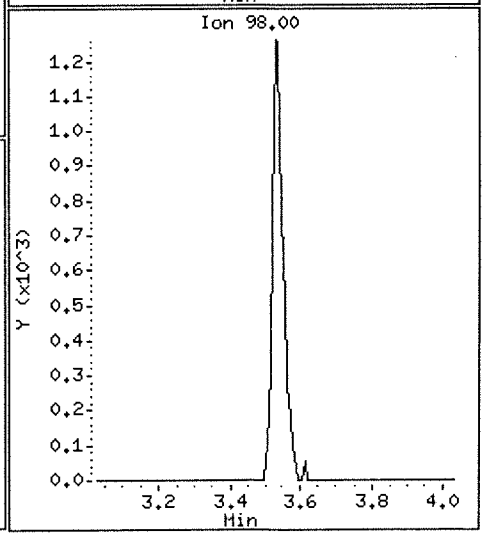












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091218.D

Date : 12-SEP-2019 18:40

Client ID: HS19090511-03

Instrument: voa6.i

Sample Info: HS19090511-03;HS19090511-03;;;

Purge Volume: 5.0

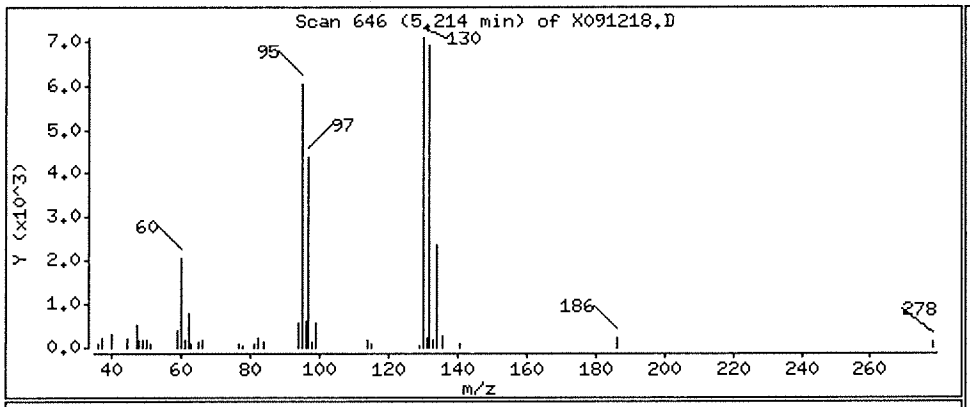
Operator: PC

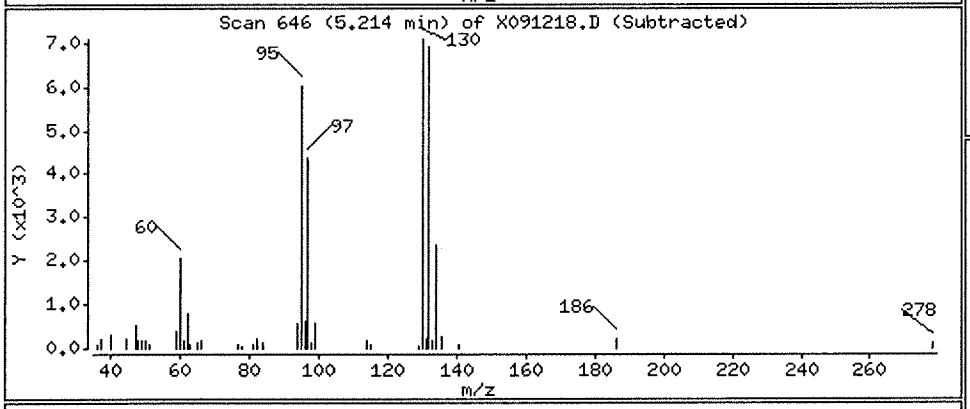
Column phase: DB624

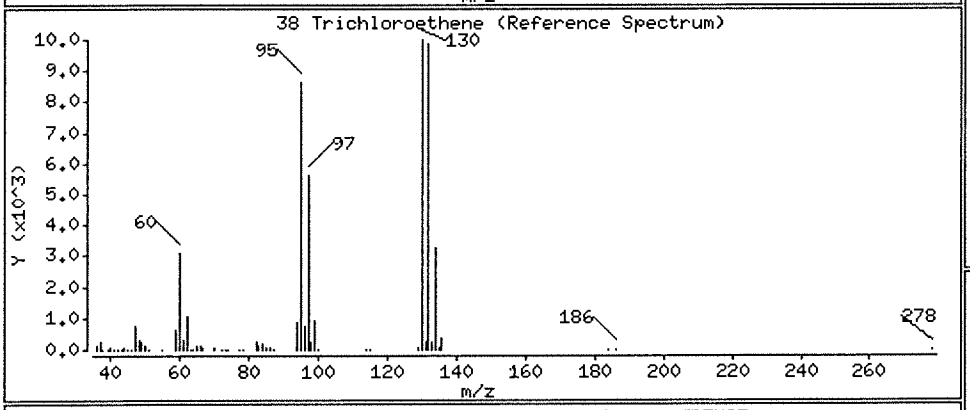
Column diameter: 0.18

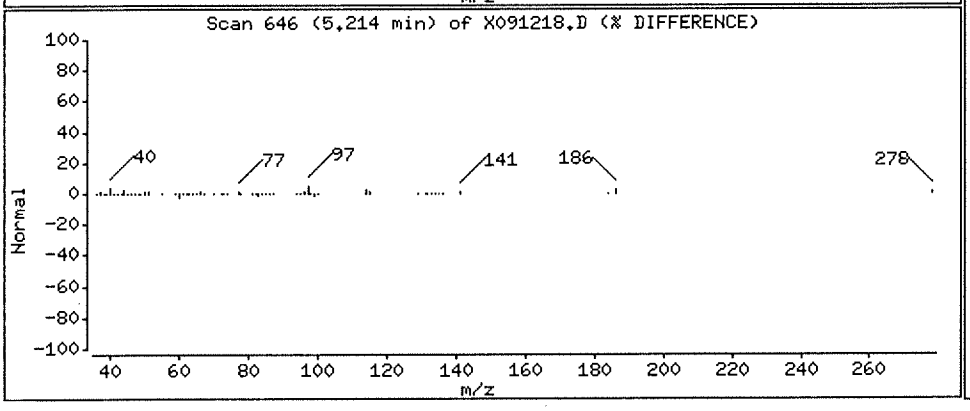
38 Trichloroethene

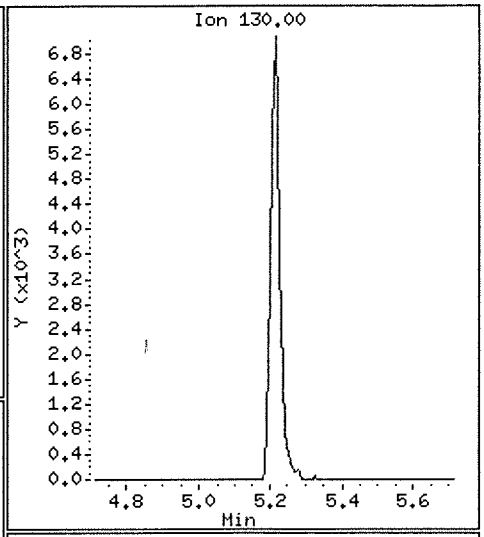
Concentration: 3.08 ug/l

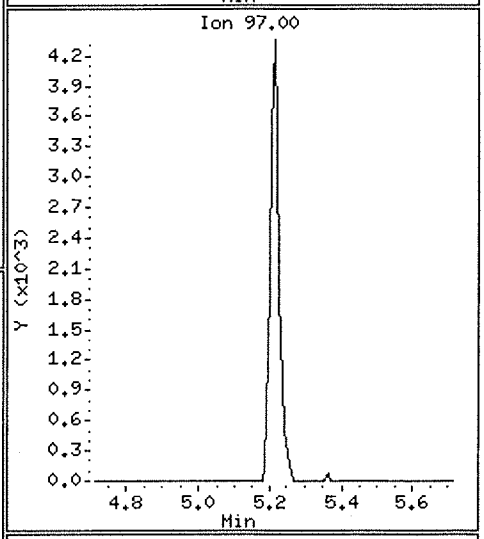


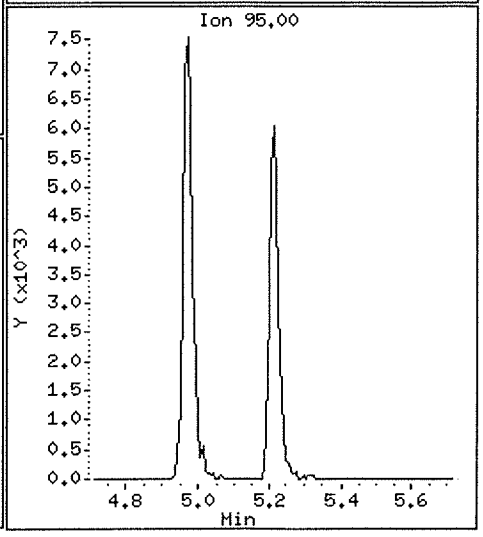












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091218.D

Date : 12-SEP-2019 18:40

Client ID: HS19090511-03

Instrument: voa6.i

Sample Info: HS19090511-03;HS19090511-03;;;

Purge Volume: 5.0

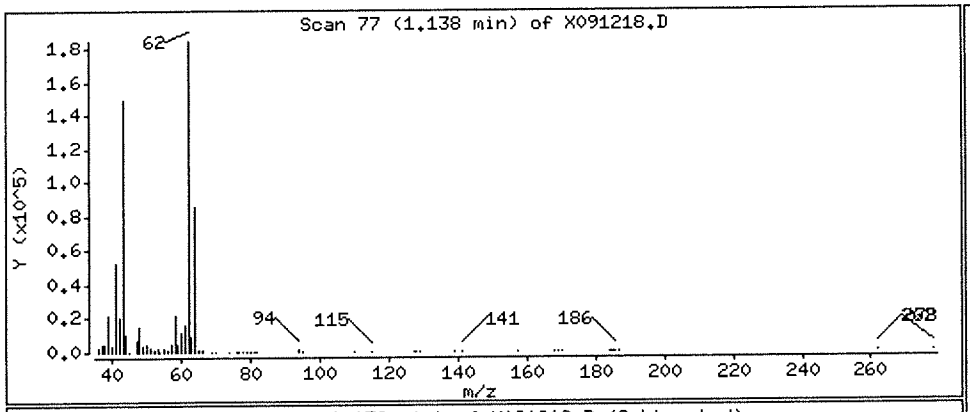
Operator: PC

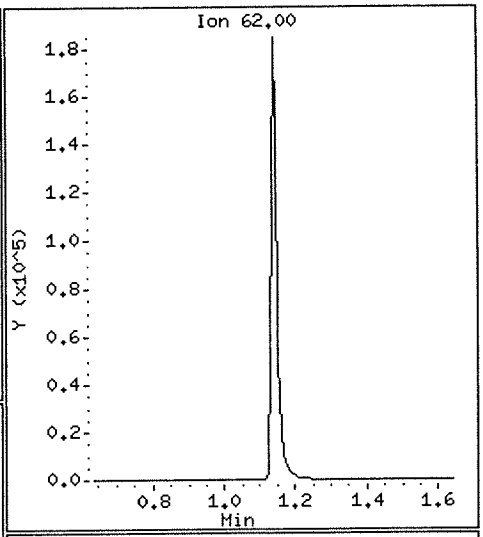
Column phase: DB624

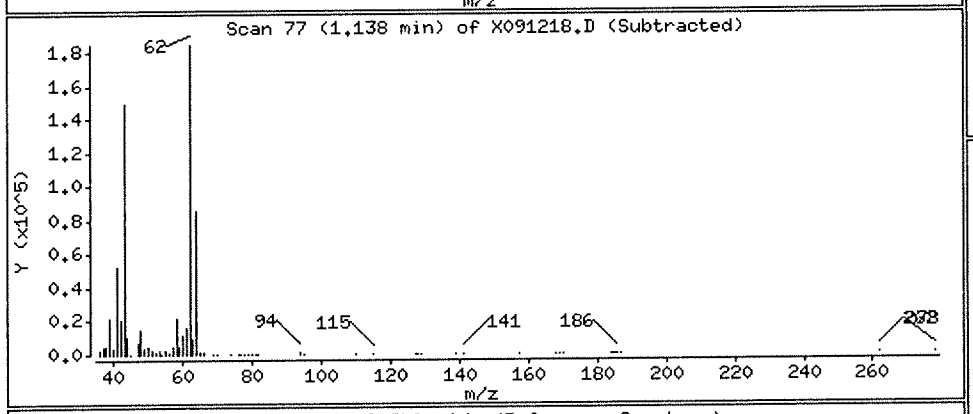
Column diameter: 0.18

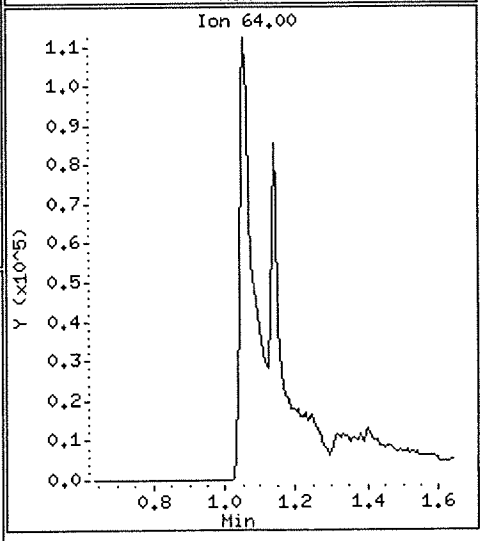
5 Vinyl Chloride

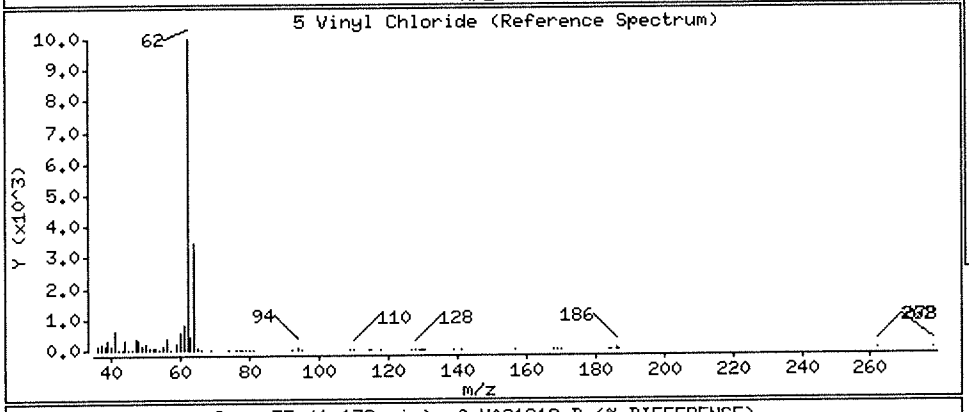
Concentration: 48.95 ug/l

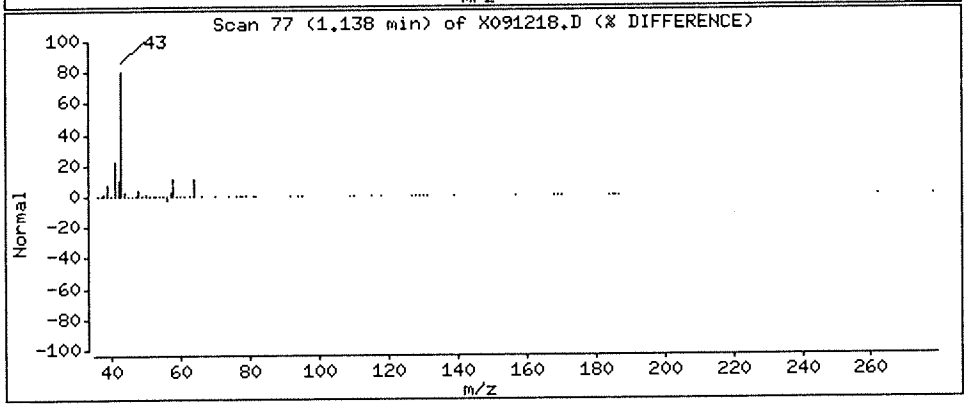












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091219.D Page 1
Report Date: 25-Sep-2019 14:35

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X190912.b\X091219.D
Lab Smp Id: HS19090511-04 Client Smp ID: HS19090511-04
Inj Date : 12-SEP-2019 19:04
Operator : PC Inst ID: voa6.i
Smp Info : HS19090511-04;HS19090511-04;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X190912.b\8260W.m
Meth Date : 25-Sep-2019 14:34 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 18
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

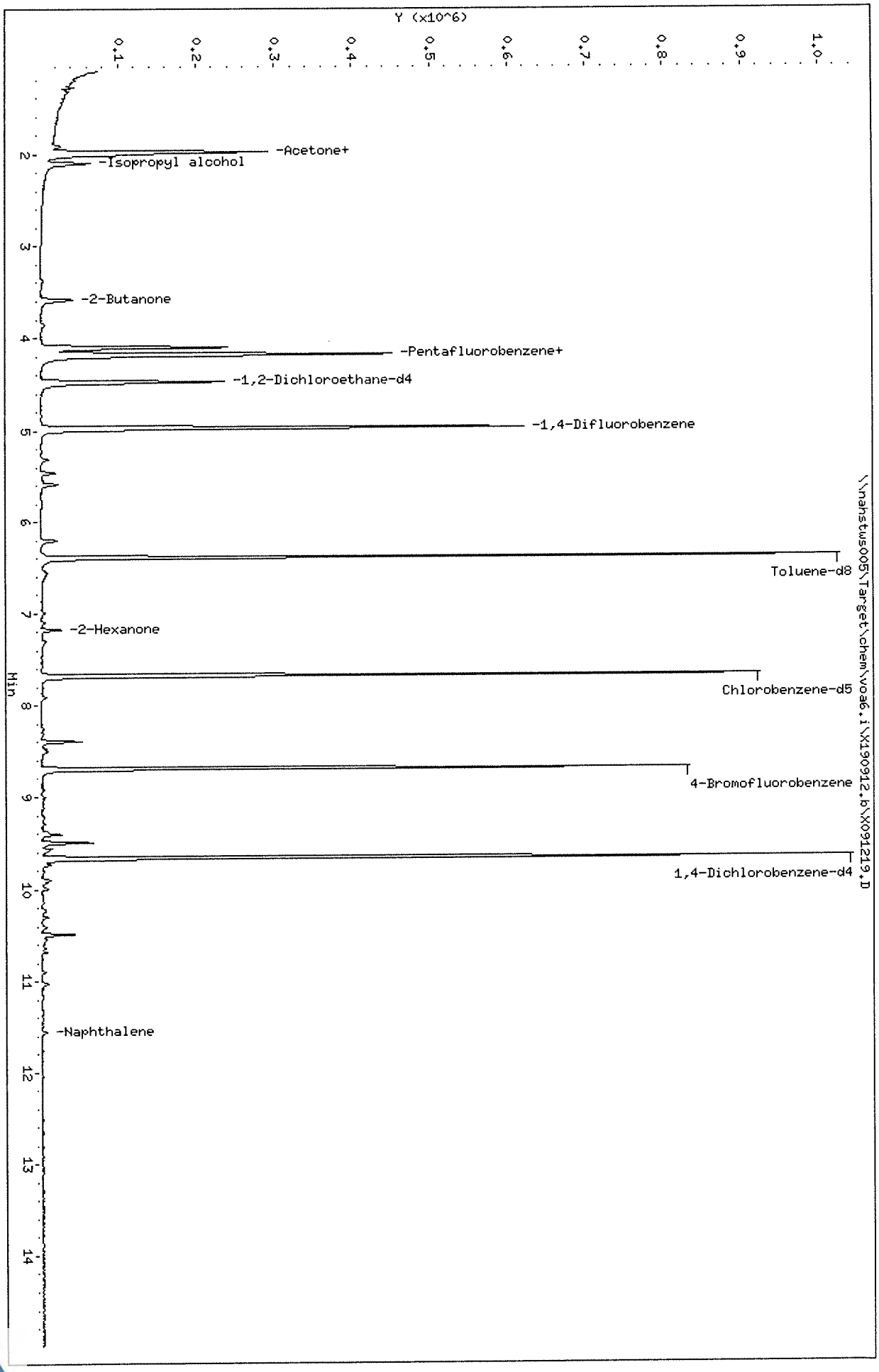
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.189	(1.000)	417385	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	545698	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	477886	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	264283	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	168882	46.6926	46.69
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	175179	45.4709	45.47
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	628011	47.5815	47.58
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	224799	49.8875	49.88
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	3262	0.91693	0.91(a)
24 2-Butanone	43	3.580	3.580	(0.856)	59244	46.2374	46.23
52 2-Hexanone	43	7.097	7.090	(0.925)	3066	1.59287	1.59(a)
10 Acetone	43	1.976	1.976	(0.473)	307303	281.123	281.12(A)
92 Naphthalene	128	11.553	11.546	(1.195)	5269	0.77436	0.77(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091219.D
Date : 12-SEP-2019 19:04
Client ID: HS19090511-04
Sample Info: HS19090511-04;HS19090511-04;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091219.D

Date : 12-SEP-2019 19:04

Client ID: HS19090511-04

Instrument: voa6.i

Sample Info: HS19090511-04;HS19090511-04;;;

Purge Volume: 5.0

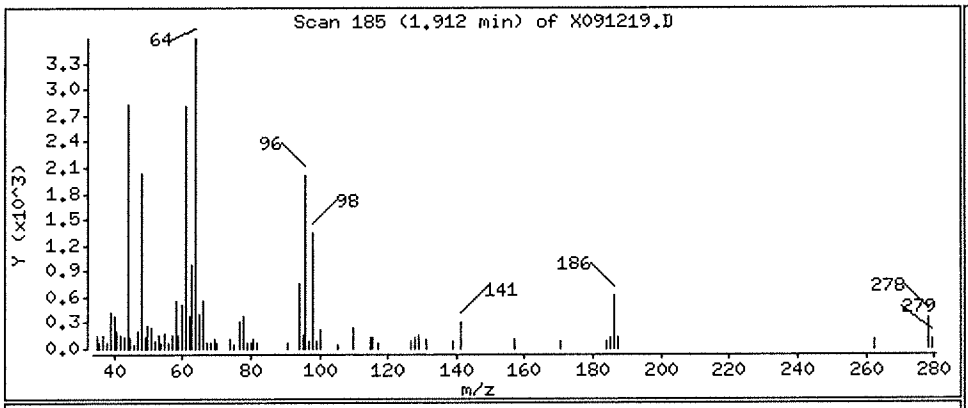
Operator: PC

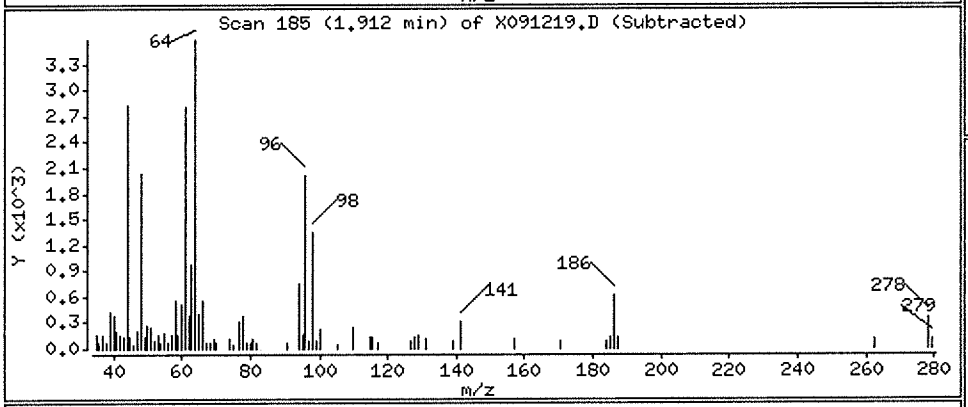
Column phase: DB624

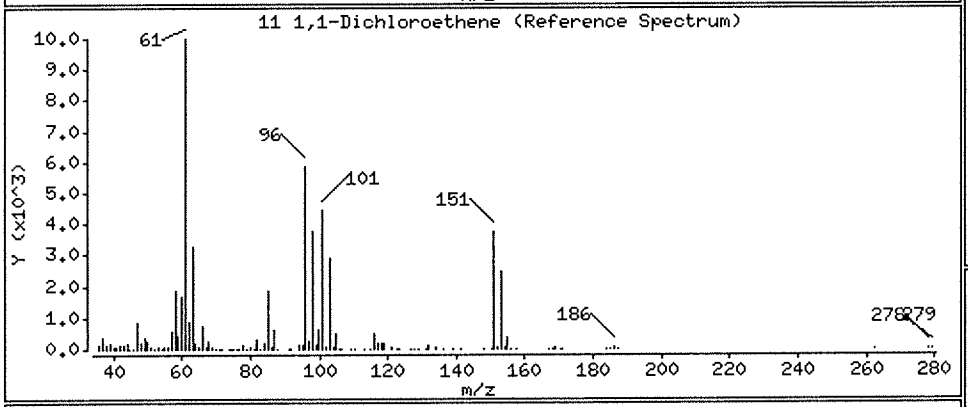
Column diameter: 0.18

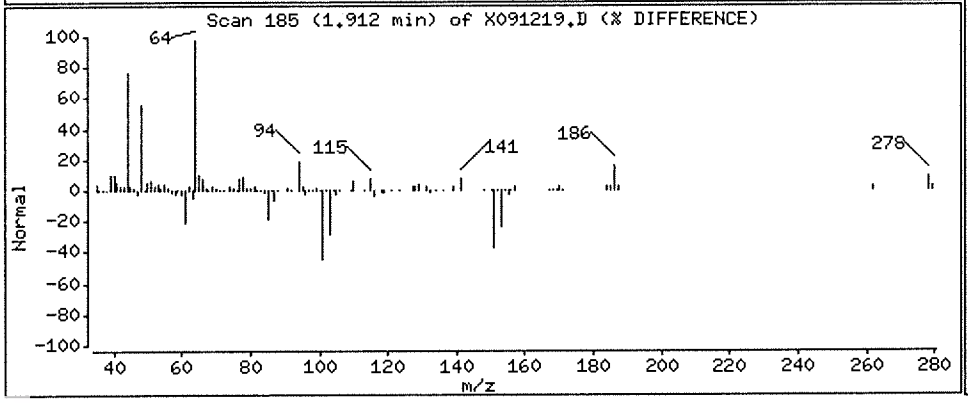
11 1,1-Dichloroethene

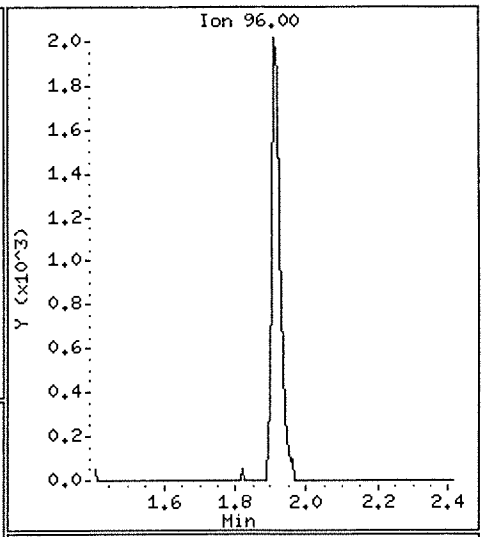
Concentration: 0.91 ug/l

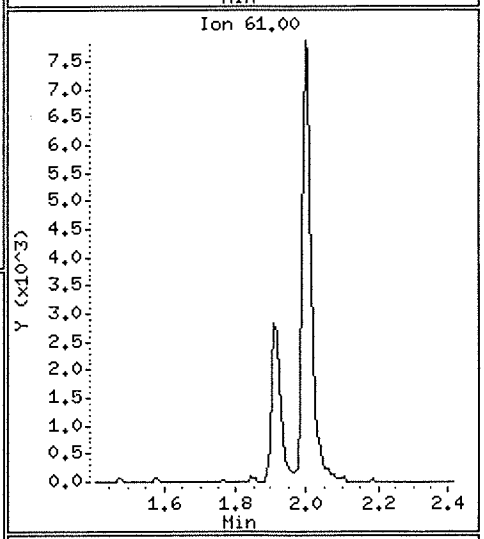


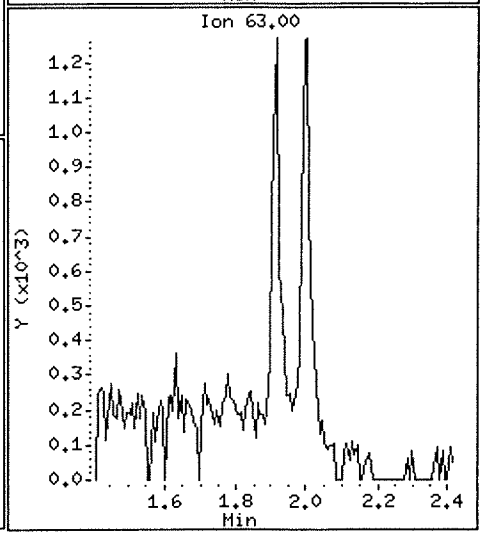












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091219.D

Date : 12-SEP-2019 19:04

Client ID: HS19090511-04

Instrument: voa6.i

Sample Info: HS19090511-04;HS19090511-04;;;

Purge Volume: 5.0

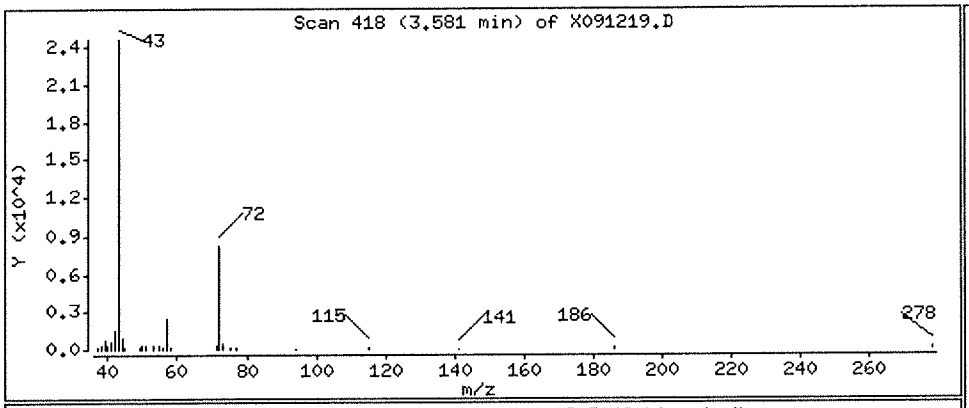
Operator: PC

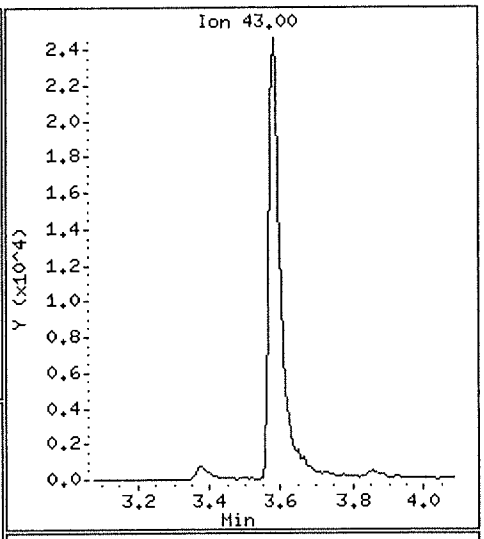
Column phase: DB624

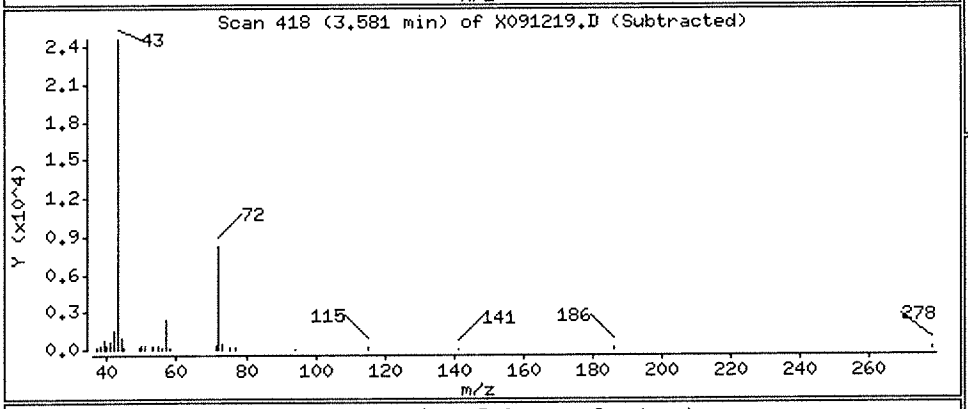
Column diameter: 0.18

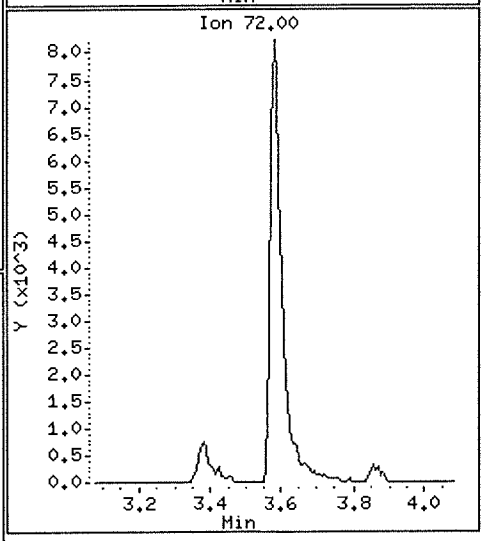
24 2-Butanone

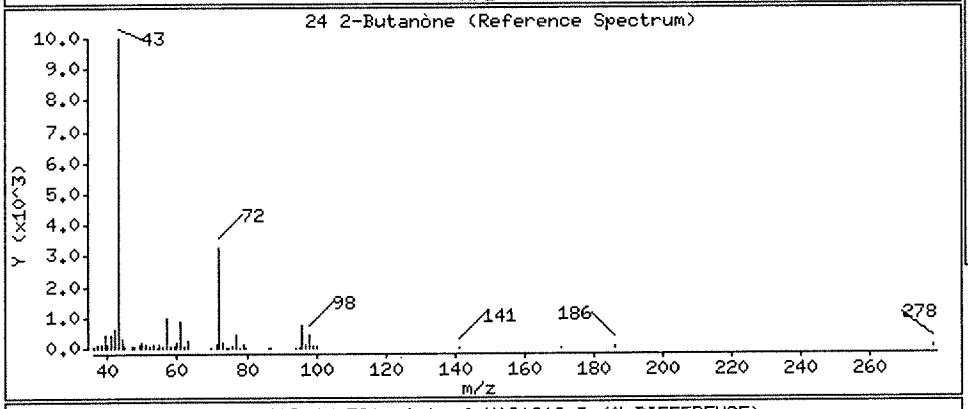
Concentration: 46.23 ug/l

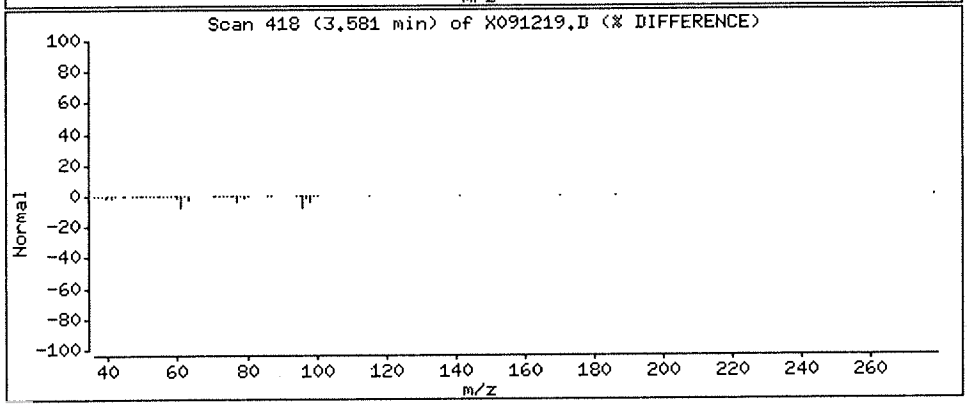












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091219.D

Date : 12-SEP-2019 19:04

Client ID: HS19090511-04

Instrument: voa6.i

Sample Info: HS19090511-04;HS19090511-04;;;

Purge Volume: 5.0

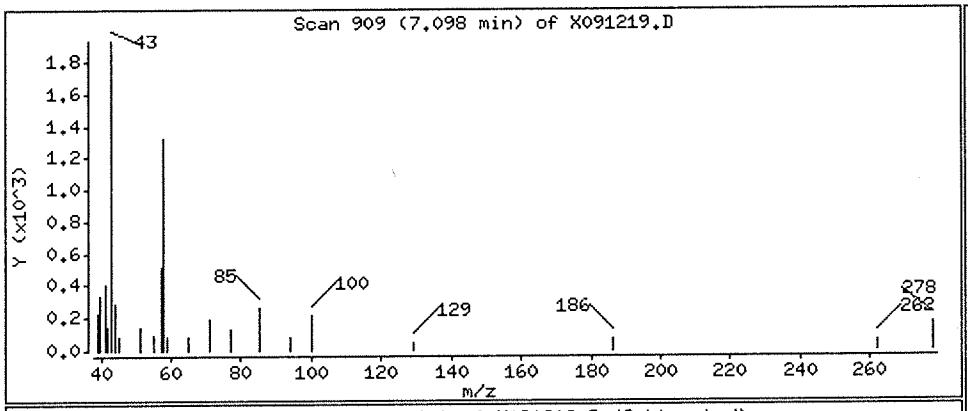
Operator: PC

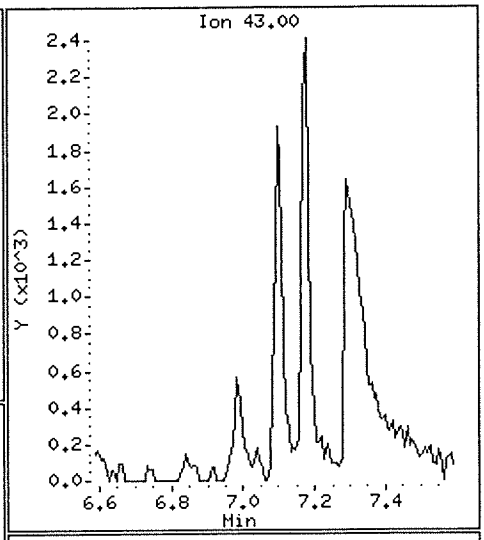
Column phase: DB624

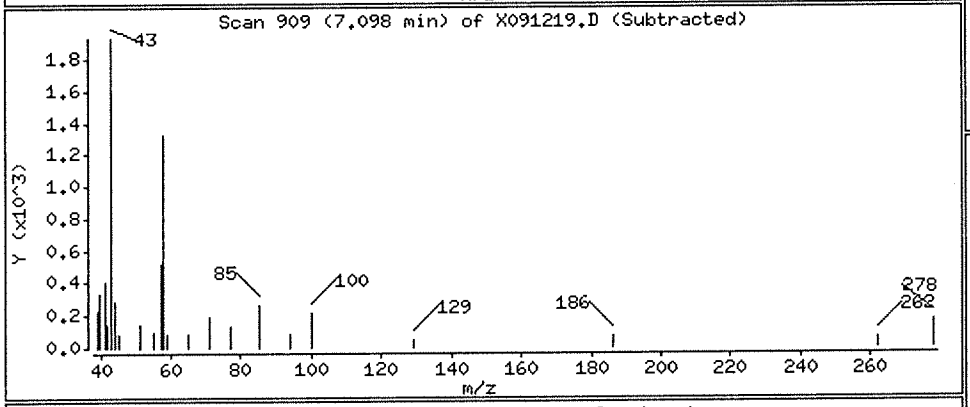
Column diameter: 0.18

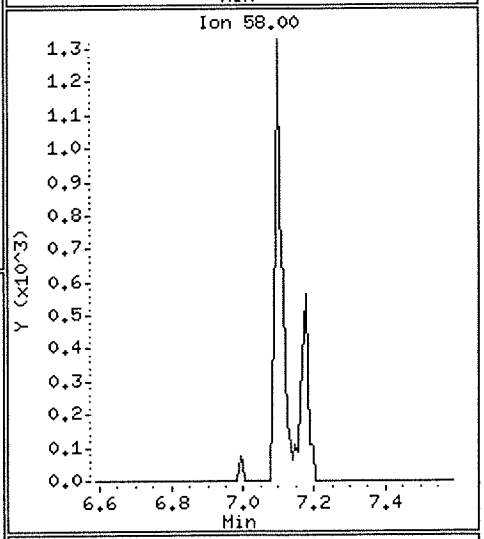
52 2-Hexanone

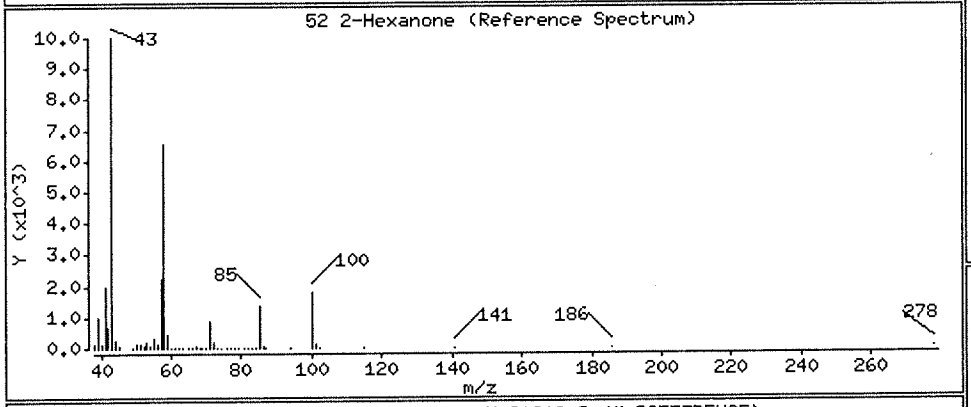
Concentration: 1.59 ug/l

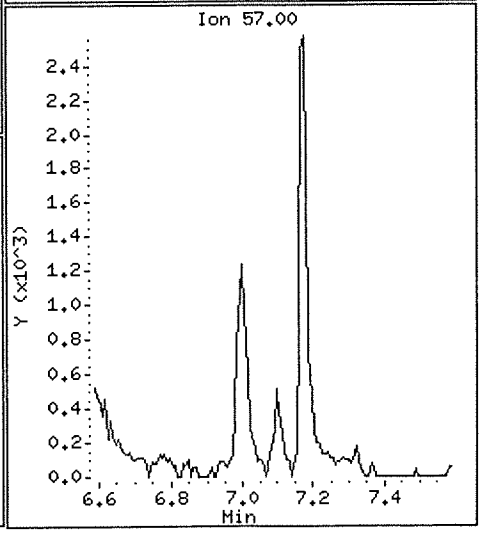


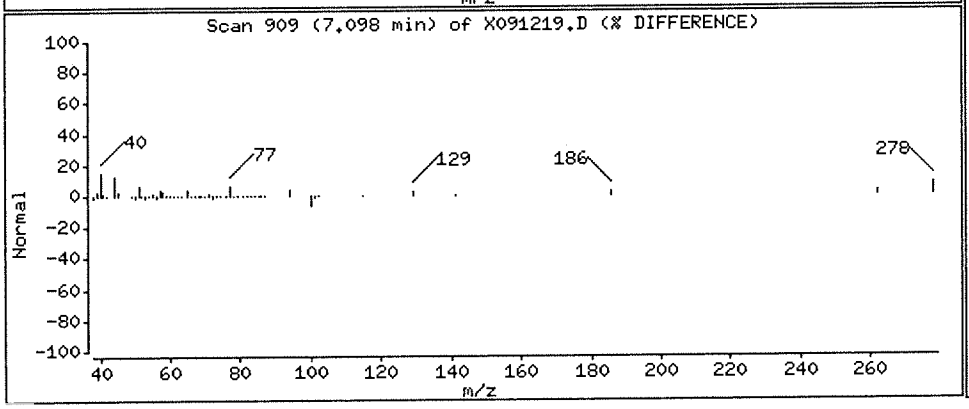












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091219.D Page 6

Date : 12-SEP-2019 19:04

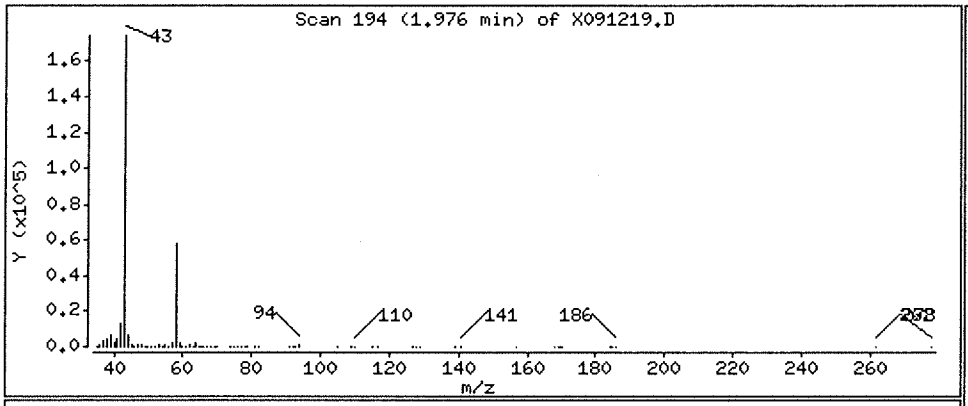
Client ID: HS19090511-04 Instrument: voa6.i

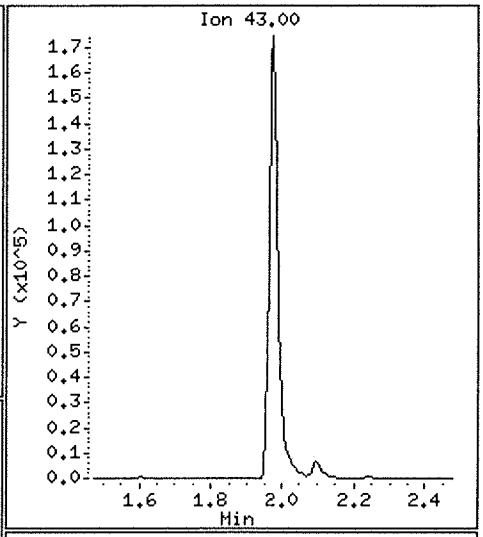
Sample Info: HS19090511-04;HS19090511-04;;;

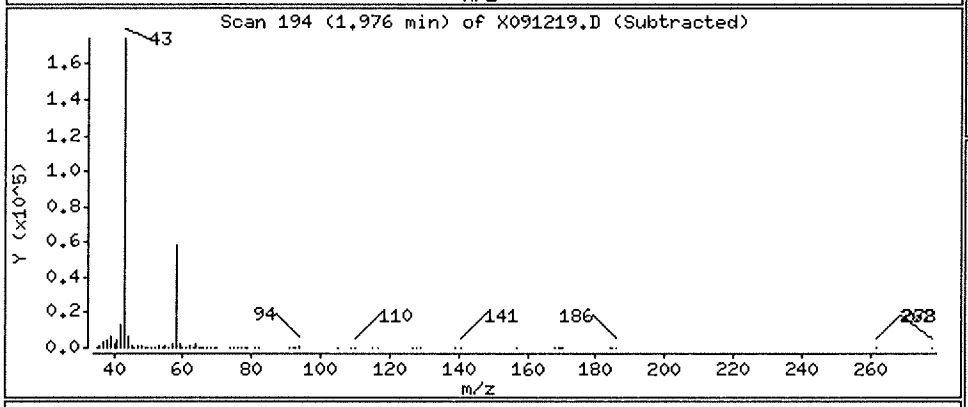
Purge Volume: 5.0 Operator: PC

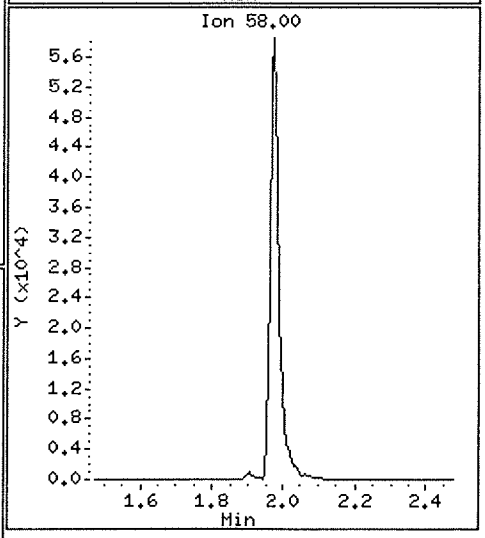
Column phase: DB624 Column diameter: 0.18

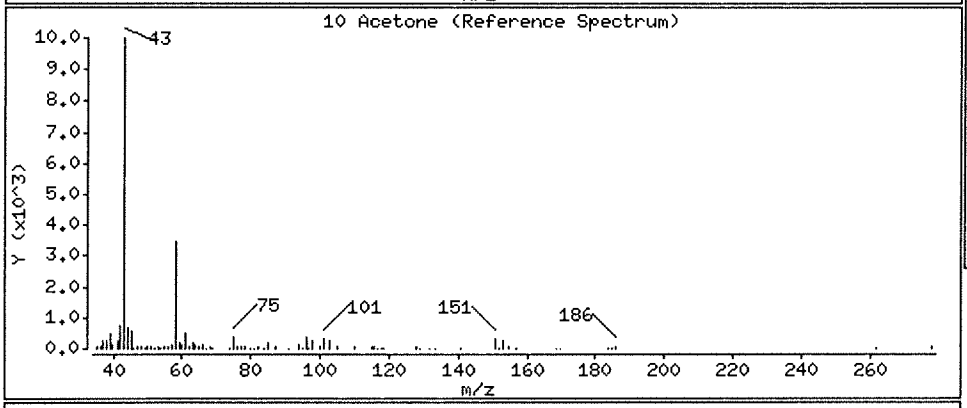
10 Acetone Concentration: 281.12 ug/l

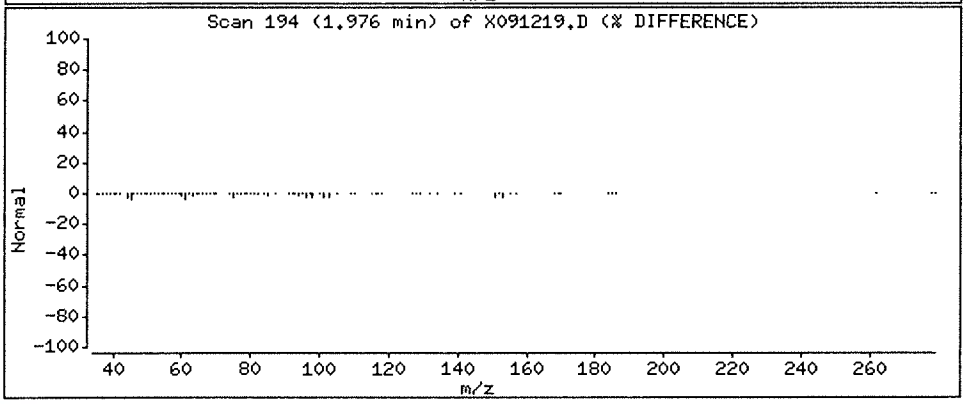












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091219.D

Date : 12-SEP-2019 19:04

Client ID: HS19090511-04

Instrument: voa6.i

Sample Info: HS19090511-04;HS19090511-04;;;

Purge Volume: 5.0

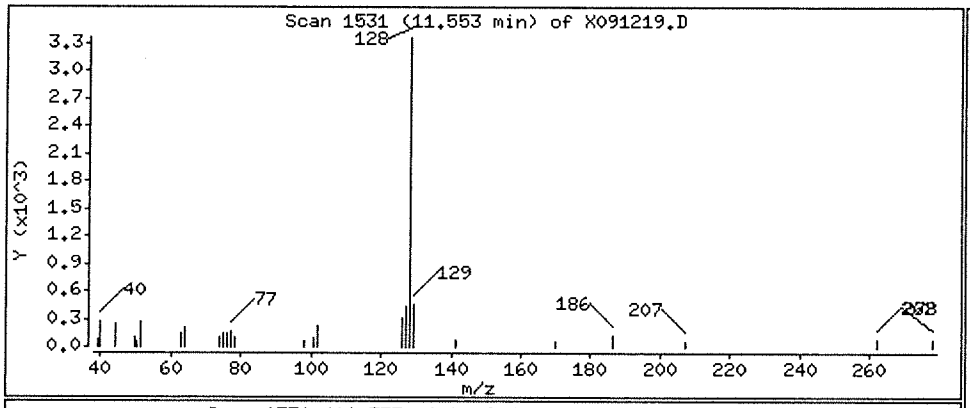
Operator: PC

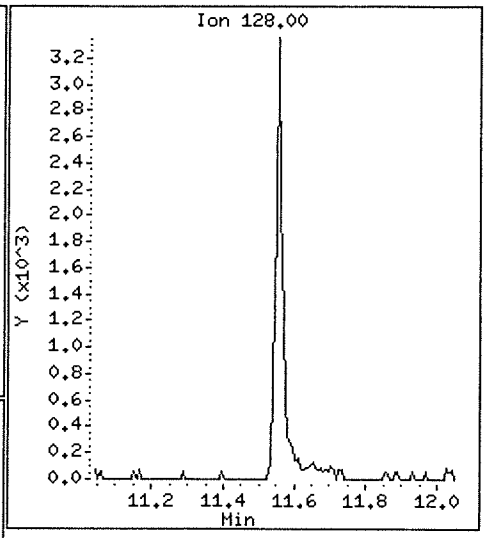
Column phase: DB624

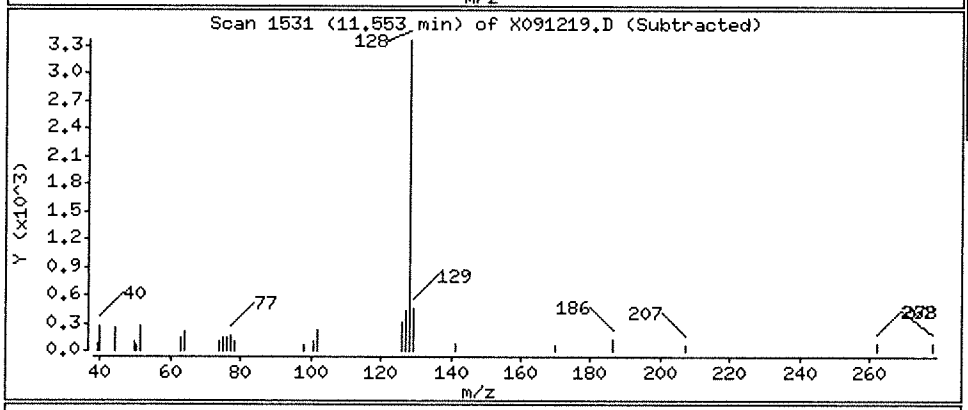
Column diameter: 0.18

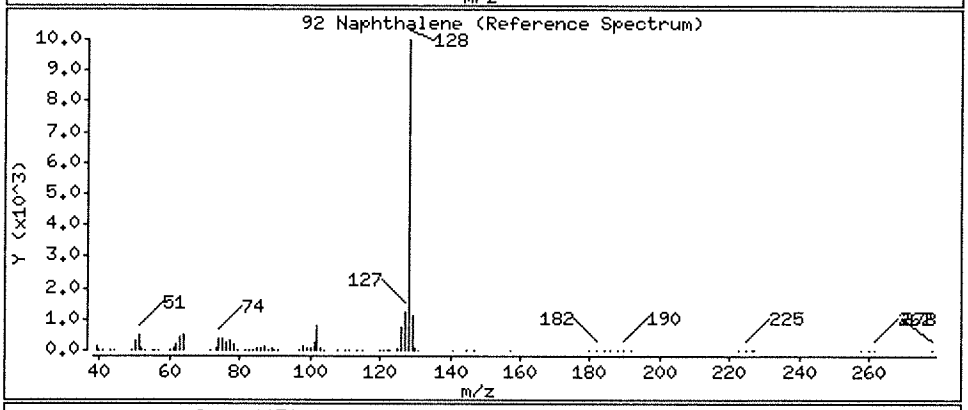
92 Naphthalene

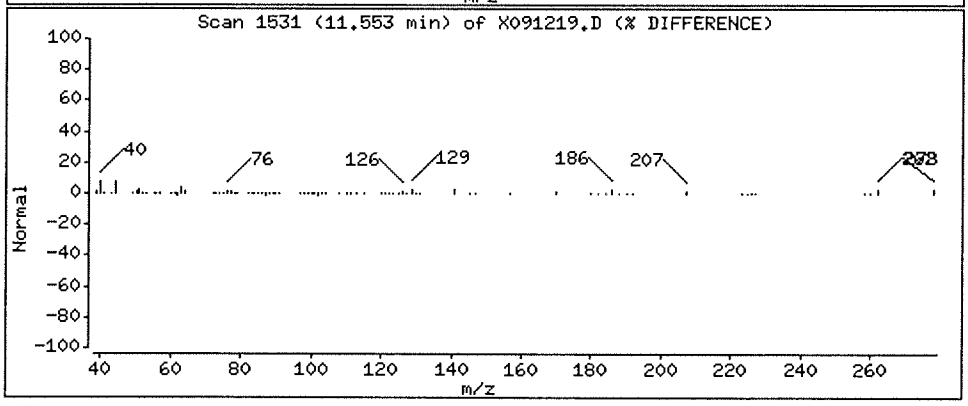
Concentration: 0.77 ug/l











Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091220.D Page 1
Report Date: 25-Sep-2019 14:35

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X190912.b\X091220.D
Lab Smp Id: HS19090511-05 Client Smp ID: HS19090511-05
Inj Date : 12-SEP-2019 19:28
Operator : PC Inst ID: voa6.i
Smp Info : HS19090511-05;HS19090511-05;;;
Misc Info : HS18090001;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa6.i\X190912.b\8260W.m
Meth Date : 25-Sep-2019 14:34 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 19
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.189	(1.000)	408918	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	534740	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	457765	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	260599	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	167141	47.1764	47.17
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	173354	45.9365	45.93
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	609289	48.1921	48.19
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	223112	51.7110	51.71
11 1,1-Dichloroethene	96	1.912	1.911	(0.457)	3078	0.88313	0.88(a)
24 2-Butanone	43	3.581	3.580	(0.856)	59862	47.6871	47.68
52 2-Hexanone	43	7.098	7.090	(0.925)	2836	1.53814	1.53(a)
10 Acetone	43	1.976	1.976	(0.473)	304605	284.493	284.49(A)
92 Naphthalene	128	11.553	11.546	(1.195)	5439	0.81064	0.81(a)

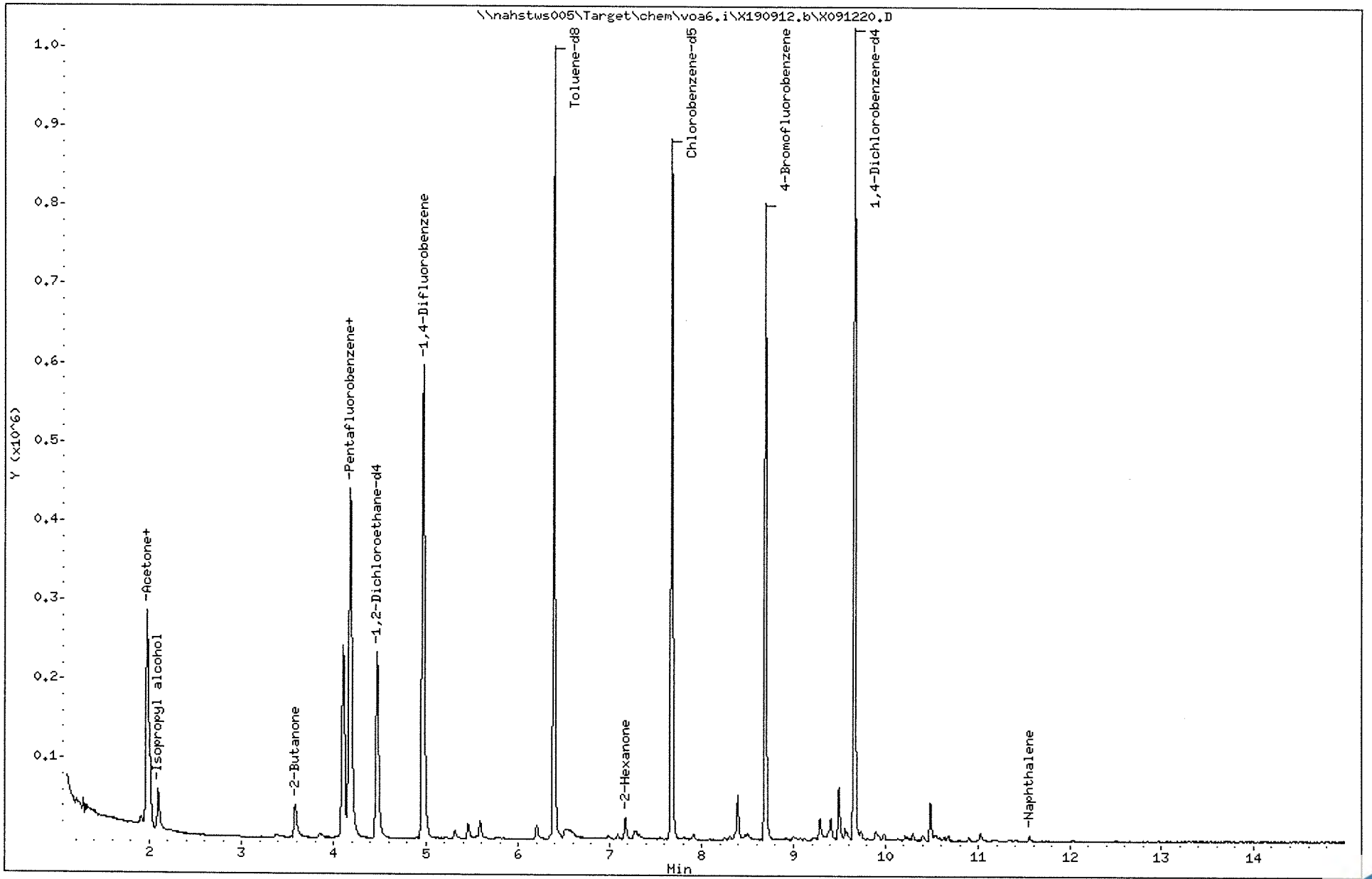
QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
    exceeded maximum amount.

00999601

Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091220.D
Date : 12-SEP-2019 19:28
Client ID: HS19090511-05
Sample Info: HS19090511-05;HS19090511-05;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091220.D

Date : 12-SEP-2019 19:28

Client ID: HS19090511-05

Instrument: voa6.i

Sample Info: HS19090511-05;HS19090511-05;;;

Purge Volume: 5.0

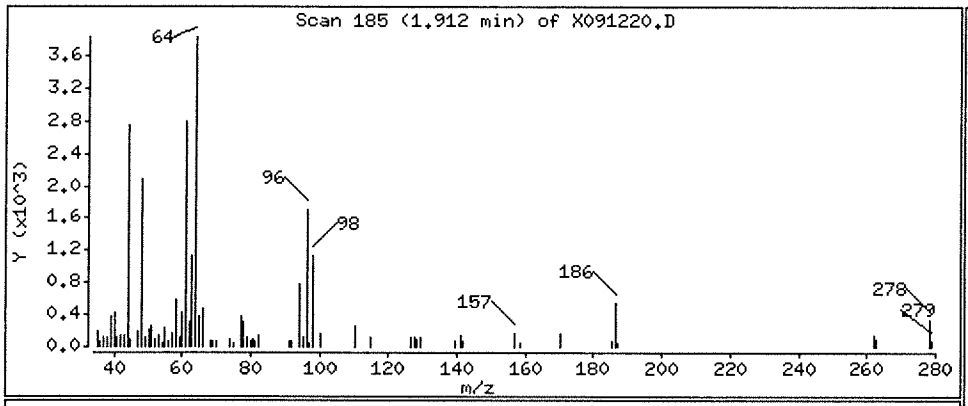
Operator: PC

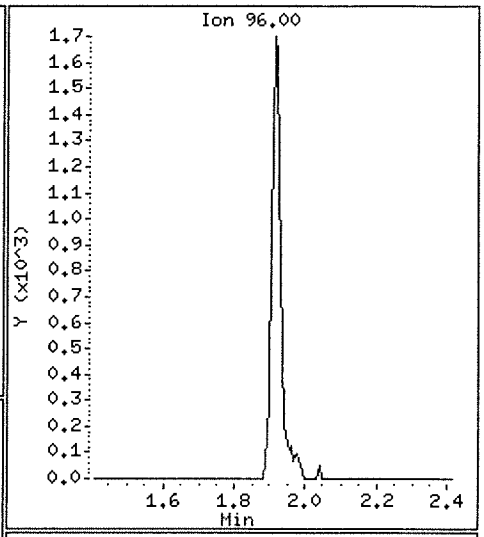
Column phase: DB624

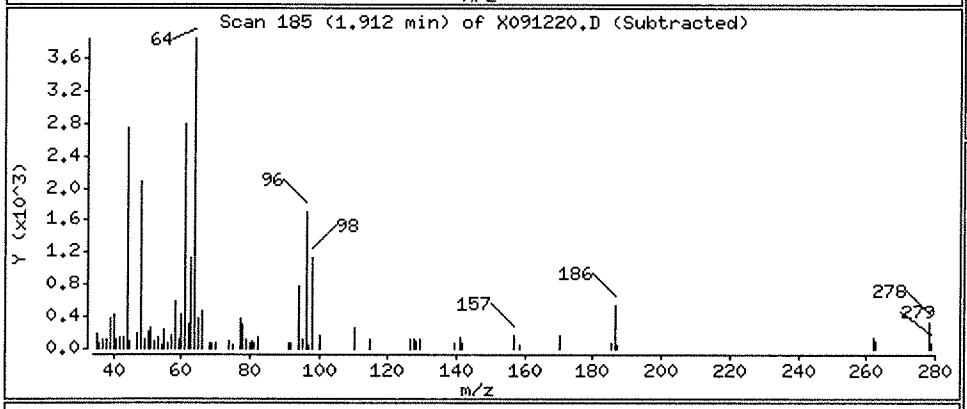
Column diameter: 0.18

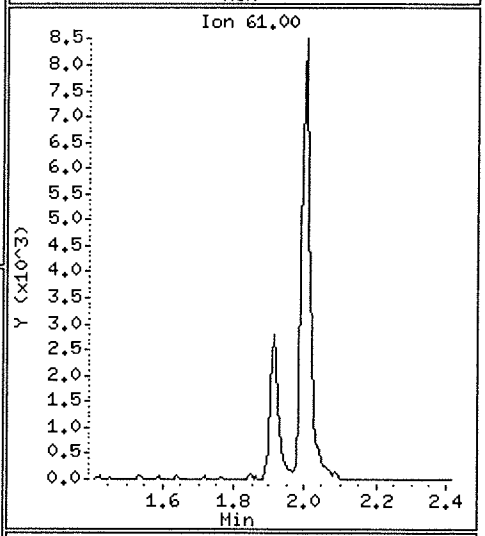
11 1,1-Dichloroethene

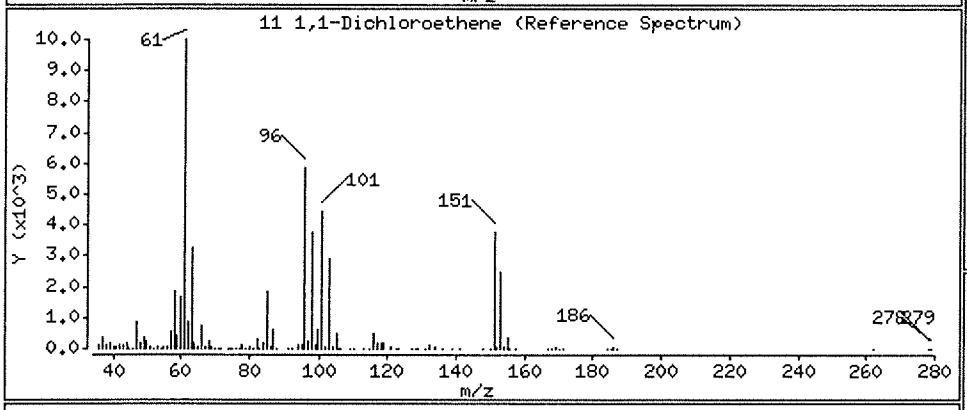
Concentration: 0.88 ug/l

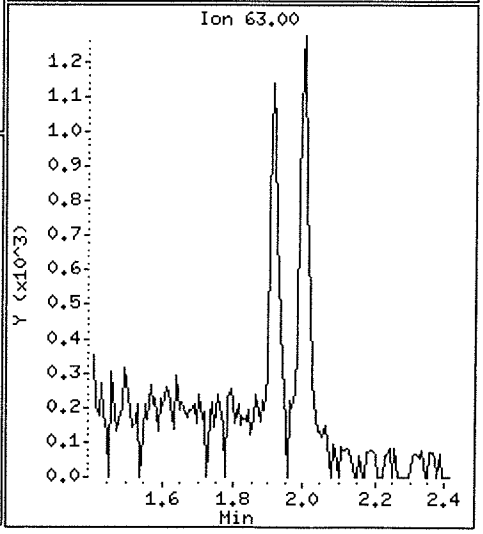


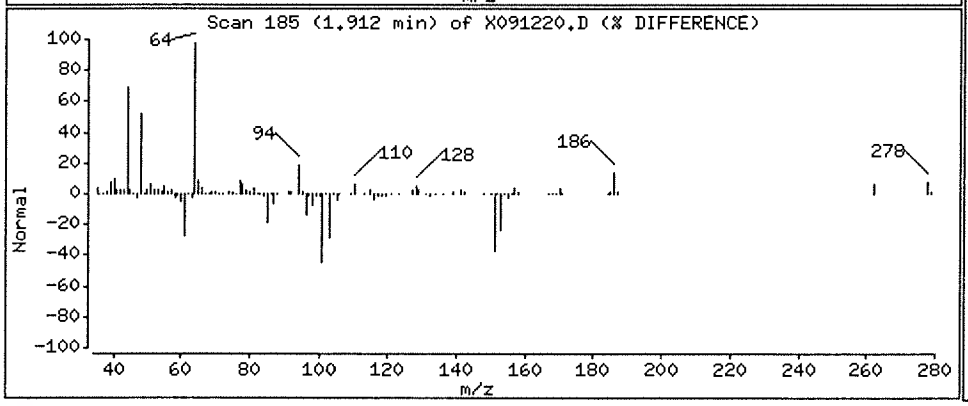












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091220.D

Date : 12-SEP-2019 19:28

Client ID: HS19090511-05

Instrument: voa6.i

Sample Info: HS19090511-05;HS19090511-05;;;

Purge Volume: 5.0

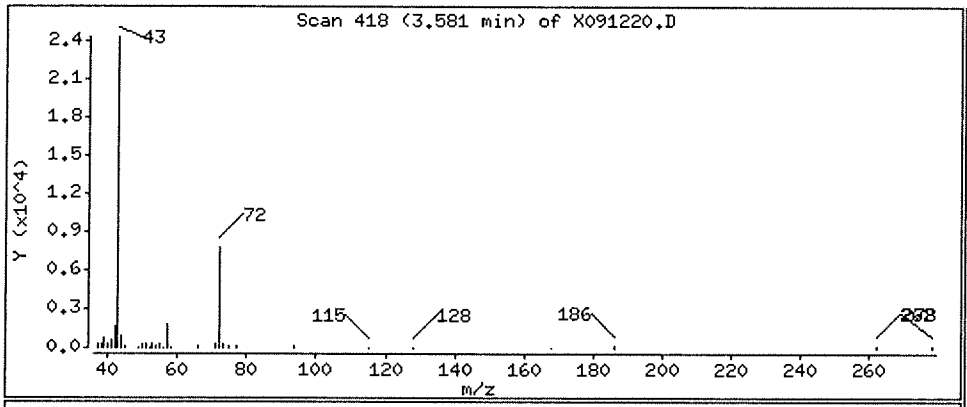
Operator: PC

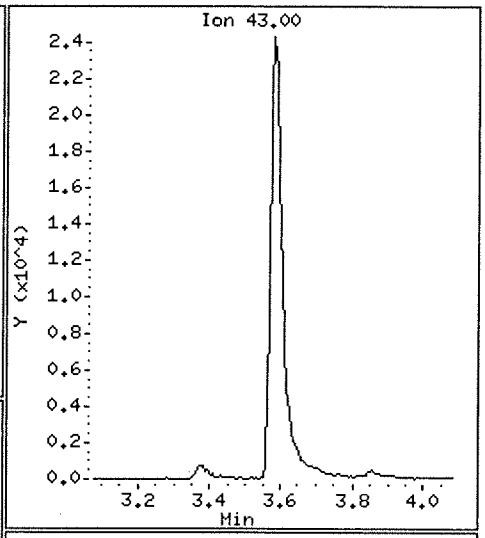
Column phase: DB624

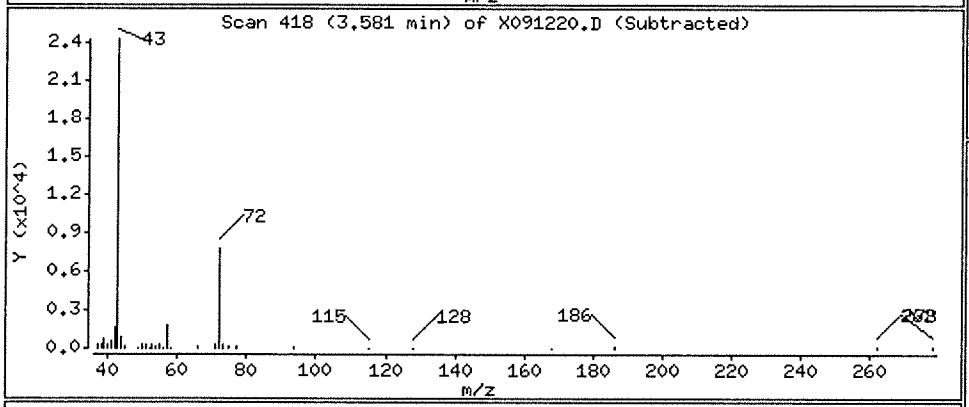
Column diameter: 0.18

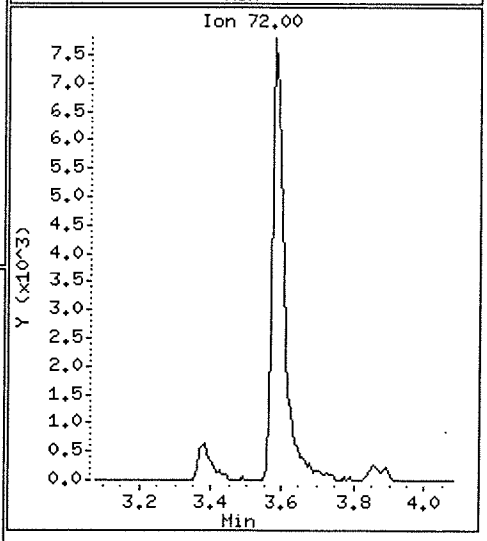
24 2-Butanone

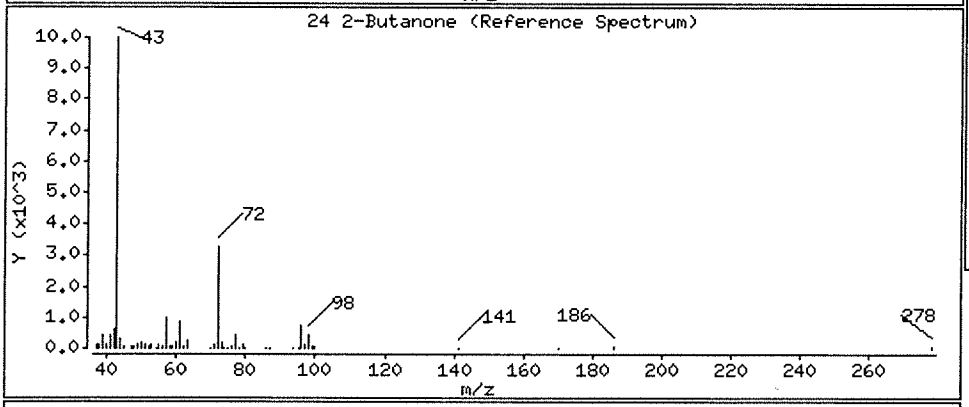
Concentration: 47.68 ug/l

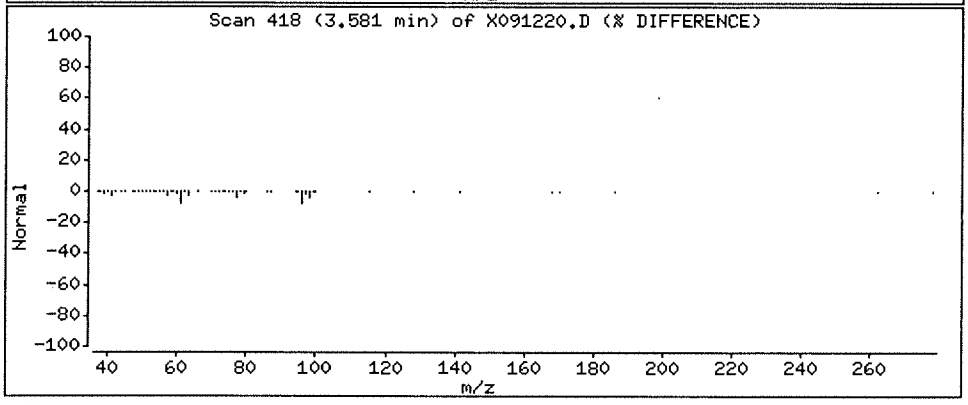












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091220.D

Date : 12-SEP-2019 19:28

Client ID: HS19090511-05

Instrument: voa6.i

Sample Info: HS19090511-05;HS19090511-05;;;

Purge Volume: 5.0

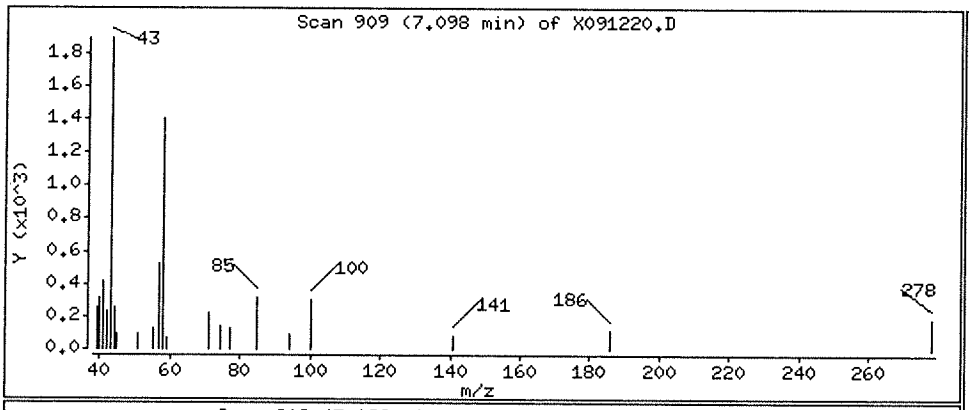
Operator: PC

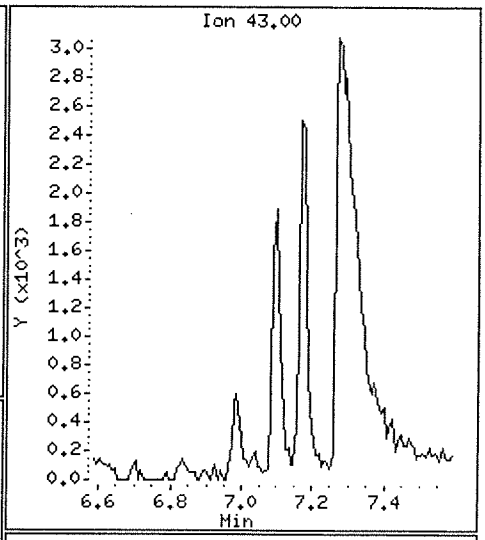
Column phase: DB624

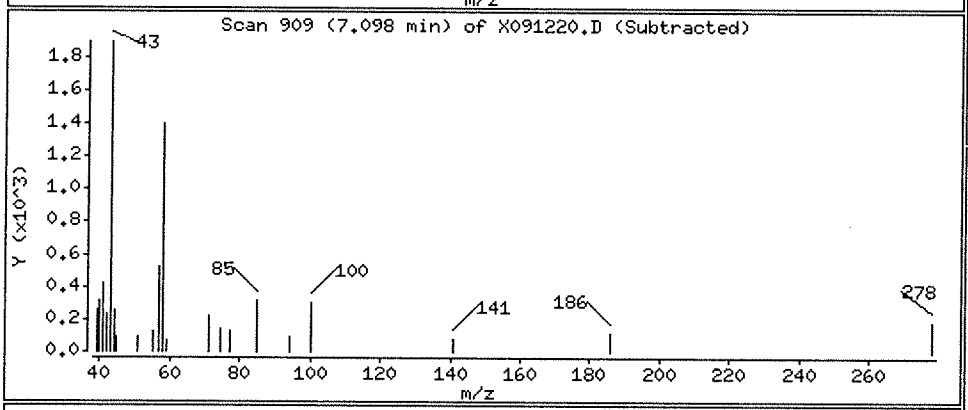
Column diameter: 0.18

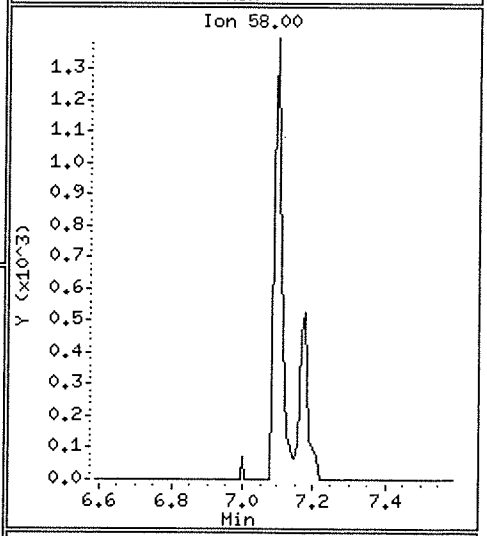
52 2-Hexanone

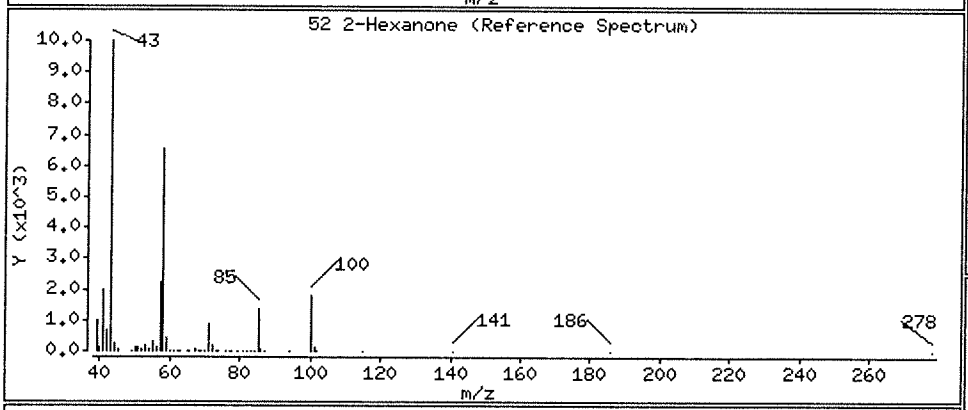
Concentration: 1.53 ug/l

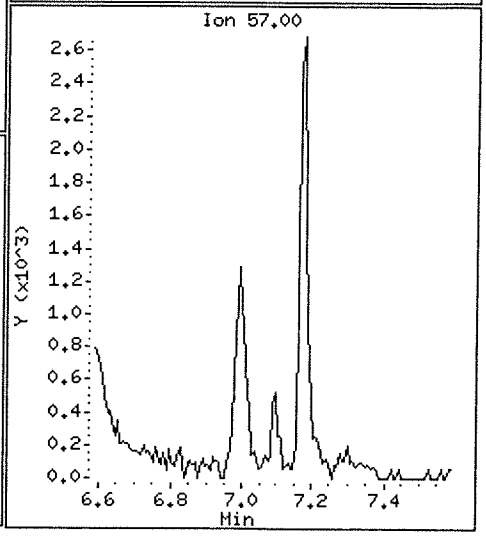


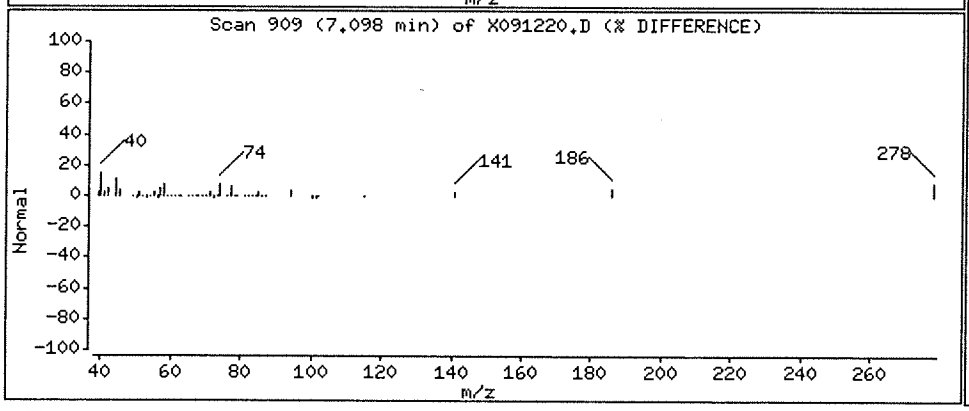












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091220.D

Date : 12-SEP-2019 19:28

Client ID: HS19090511-05

Instrument: voa6.i

Sample Info: HS19090511-05;HS19090511-05;;;

Purge Volume: 5.0

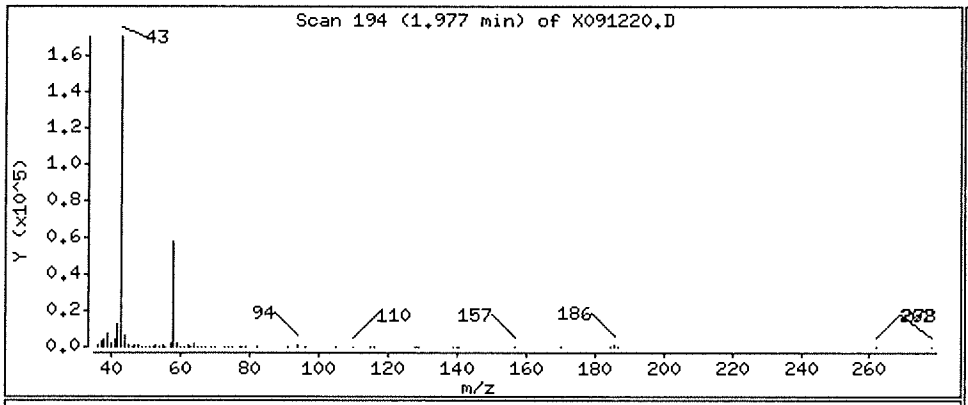
Operator: PC

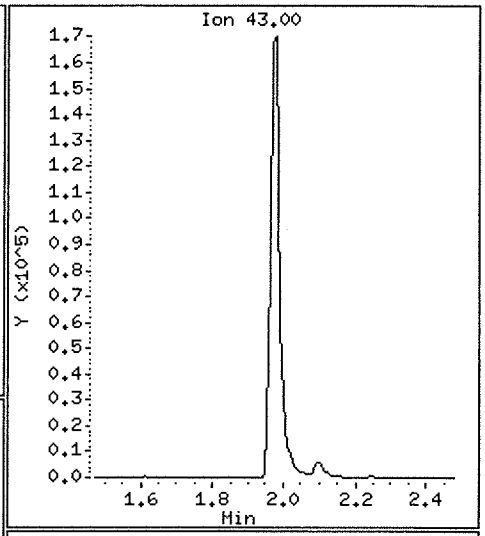
Column phase: DB624

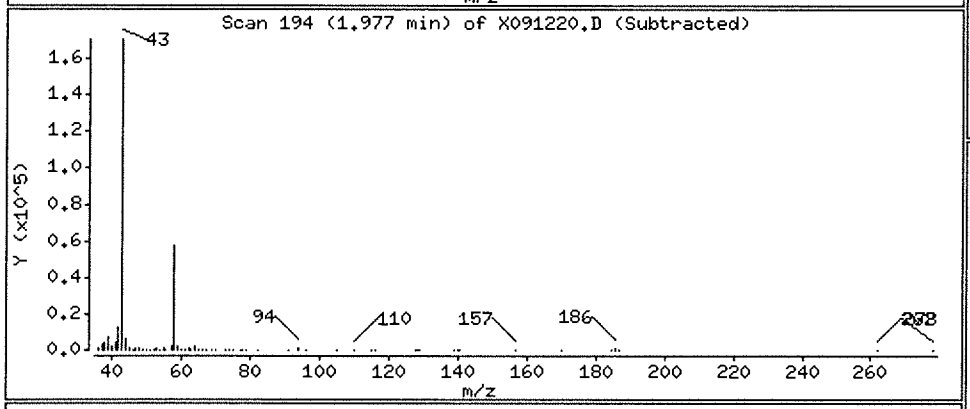
Column diameter: 0.18

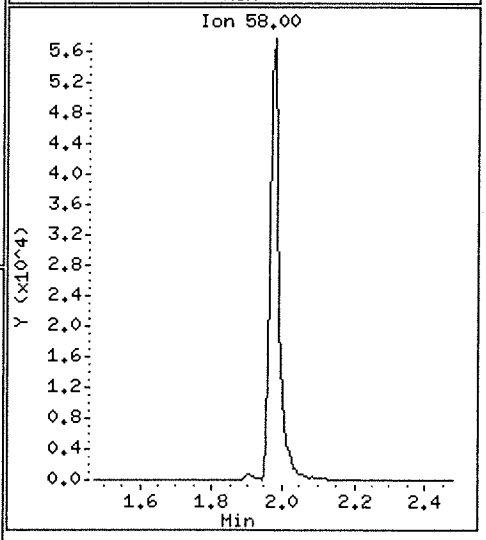
10 Acetone

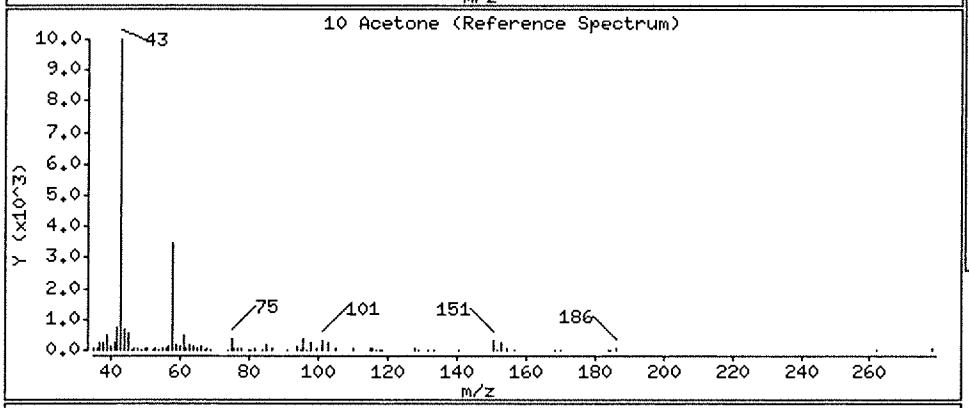
Concentration: 284.49 ug/l

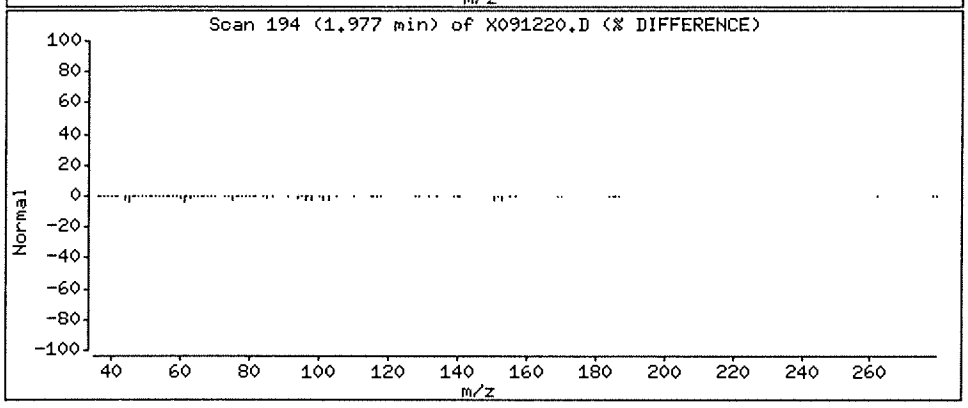












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091220.D

Date : 12-SEP-2019 19:28

Client ID: HS19090511-05

Instrument: voa6.i

Sample Info: HS19090511-05;HS19090511-05;;;

Purge Volume: 5.0

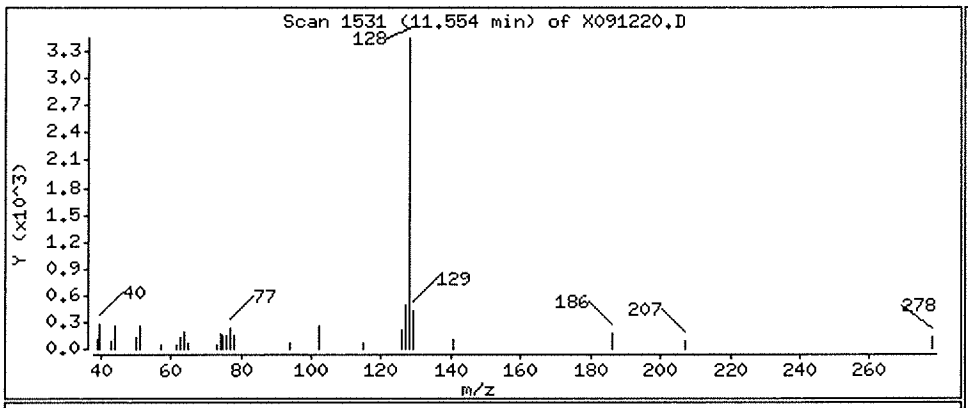
Operator: PC

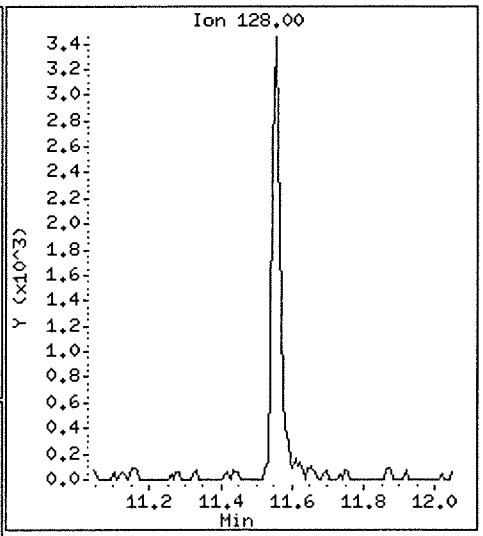
Column phase: DB624

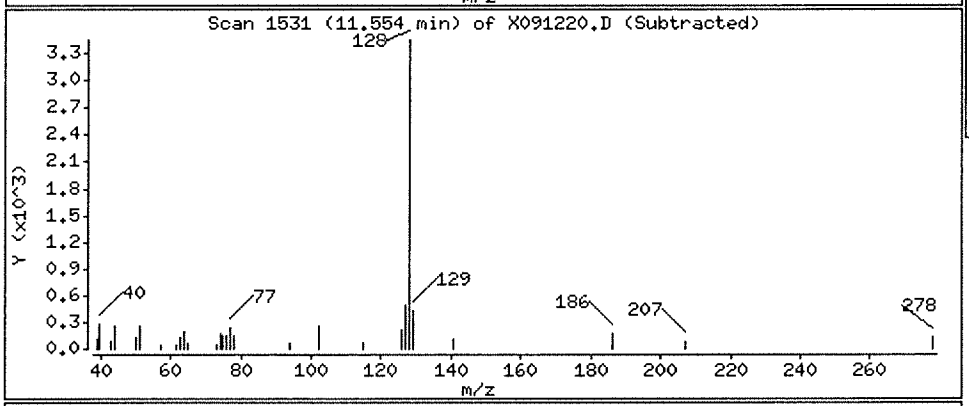
Column diameter: 0.18

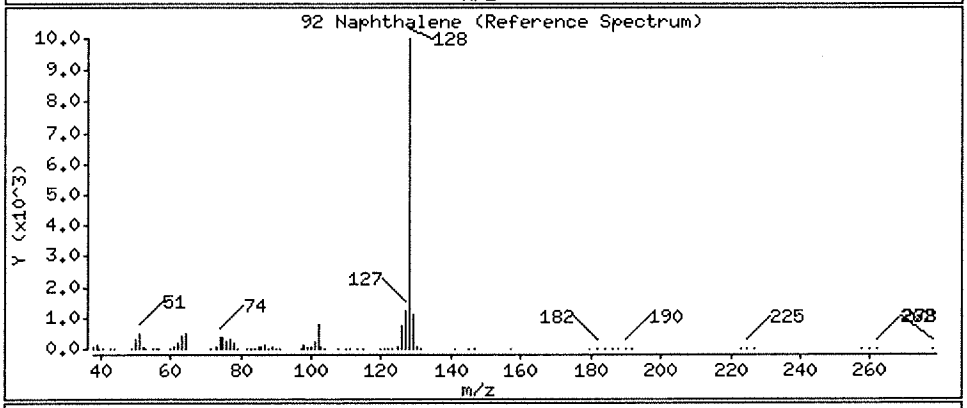
92 Naphthalene

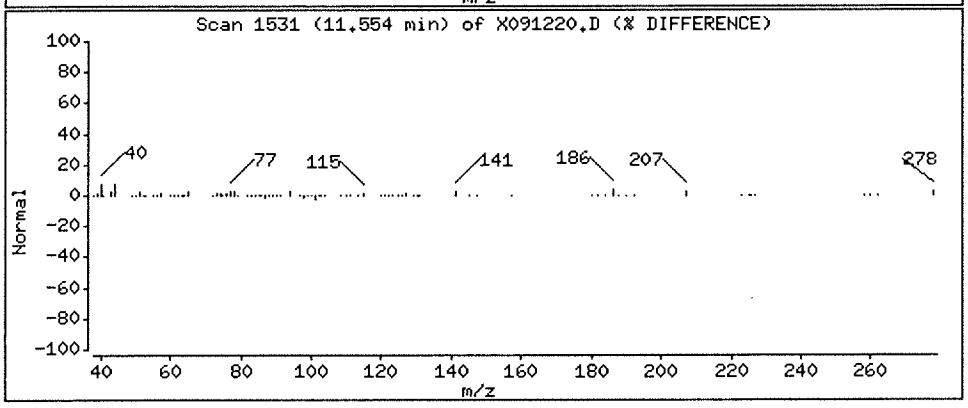
Concentration: 0.81 ug/l











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Data file : \\nahstws005\Target\chem\voa6.i\X190912.b\X091221.D
Lab Smp Id: HS19090511-06 Client Smp ID: HS19090511-06
Inj Date : 12-SEP-2019 19:52
Operator : PC Inst ID: voa6.i
Smp Info : HS19090511-06;HS19090511-06;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X190912.b\8260W.m
Meth Date : 25-Sep-2019 14:34 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 20
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

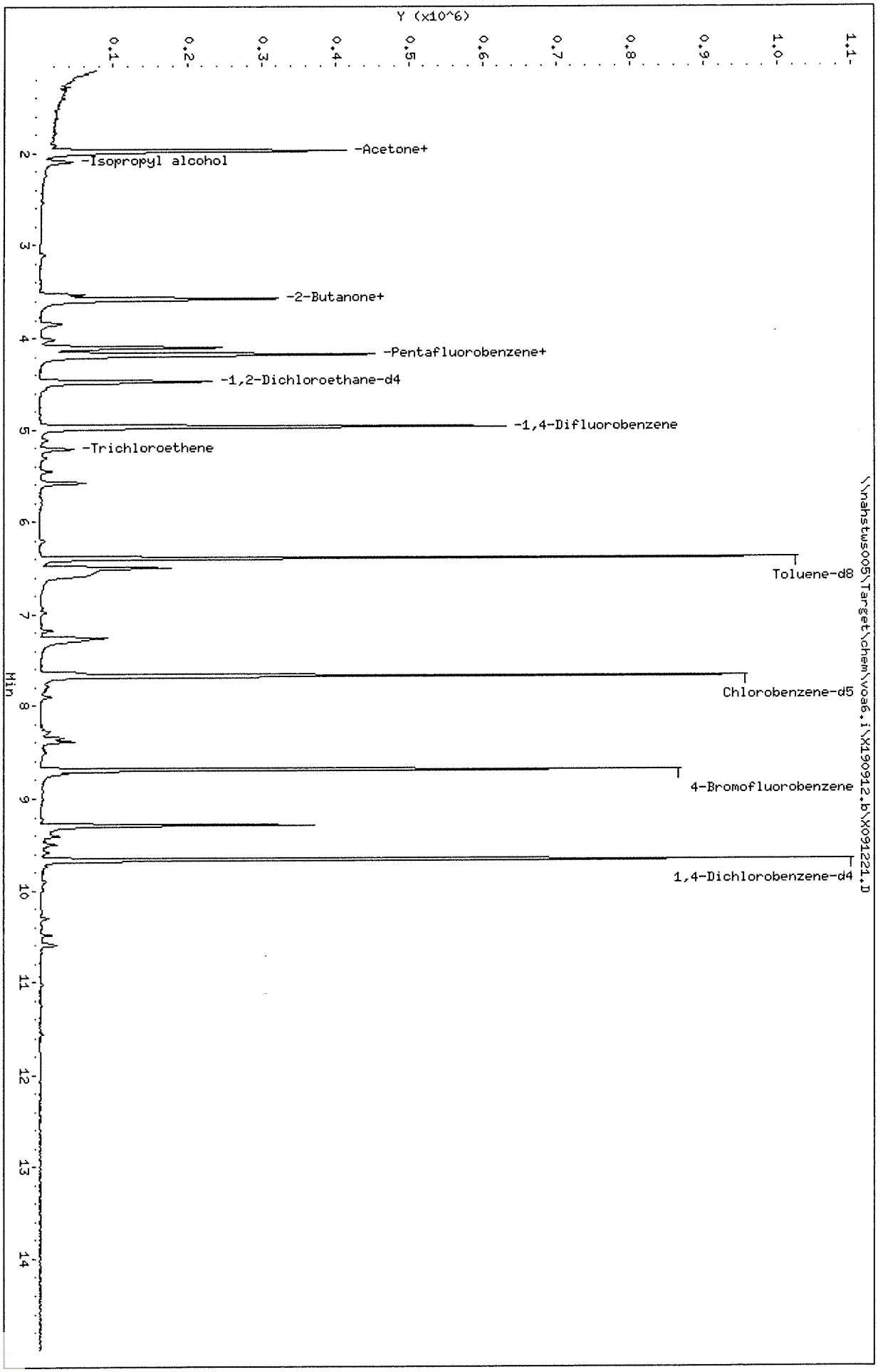
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.189	(1.000)	419942	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	558674	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	485419	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	276387	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	169856	46.6756	46.67
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	174547	45.0236	45.02
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	635757	47.4209	47.42
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	236962	51.7931	51.79
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	2506	0.70014	0.70(a)
24 2-Butanone	43	3.573	3.580	(0.854)	439700	341.077	341.07(A)
10 Acetone	43	1.969	1.976	(0.471)	465700	426.394	426.39(A)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	33501	7.78107	7.78
38 Trichloroethene	130	5.214	5.214	(1.049)	16383	3.80260	3.80(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091221.D
Date : 12-SEP-2019 19:52
Client ID: HS19090511-06
Sample Info: HS19090511-06;HS19090511-06;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091221.D

Date : 12-SEP-2019 19:52

Client ID: HS19090511-06

Instrument: voa6.i

Sample Info: HS19090511-06;HS19090511-06;;;

Purge Volume: 5.0

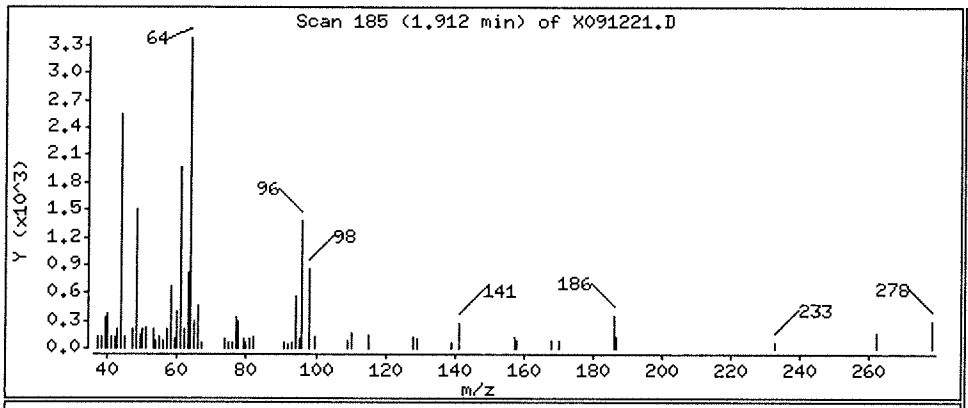
Operator: PC

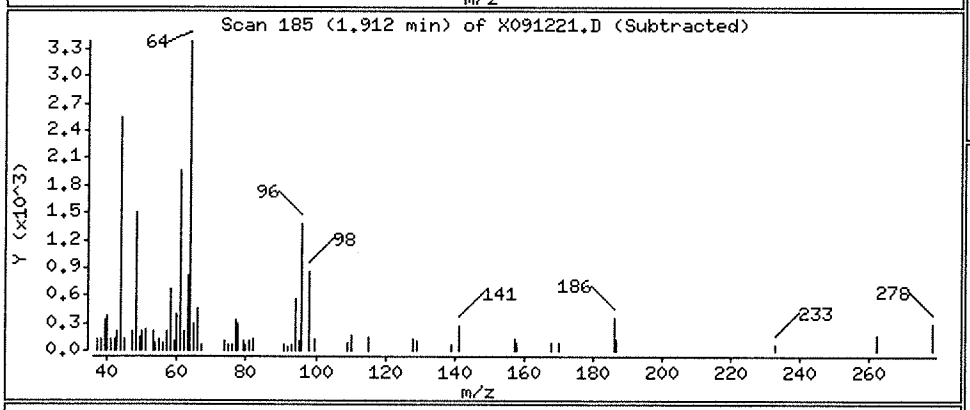
Column phase: DB624

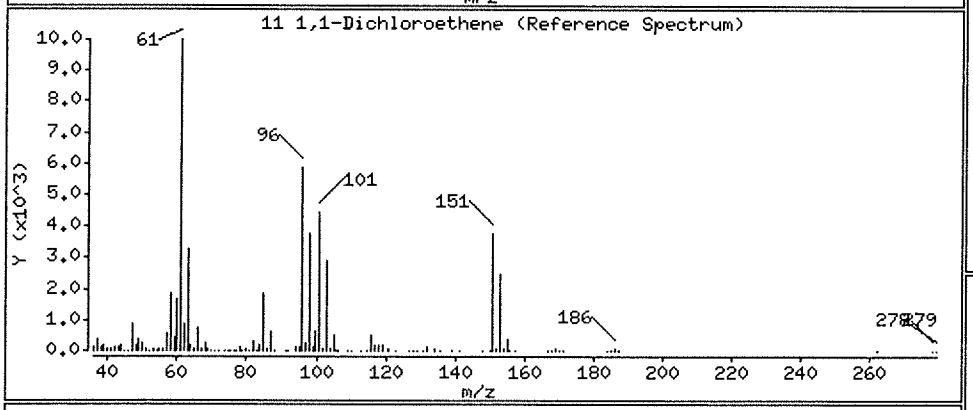
Column diameter: 0.18

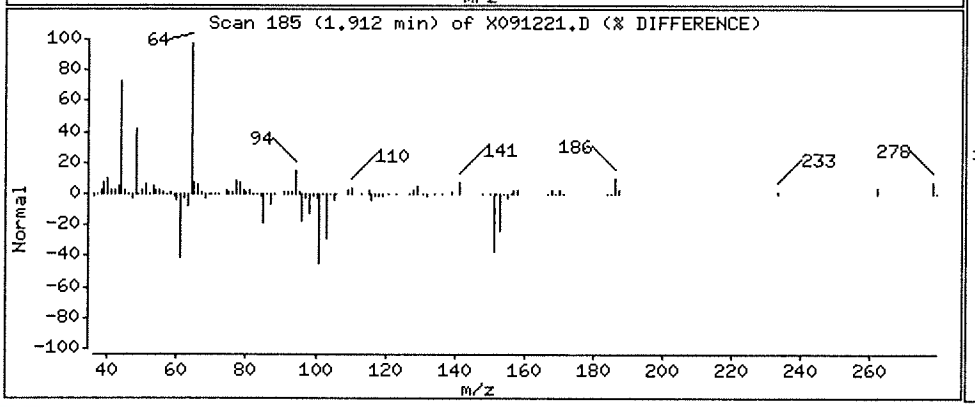
11 1,1-Dichloroethene

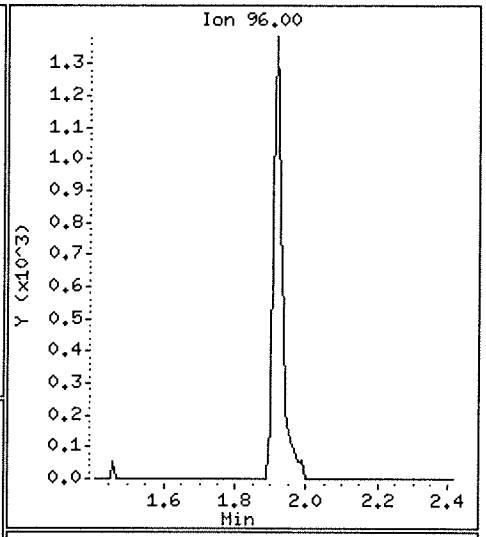
Concentration: 0.70 ug/l

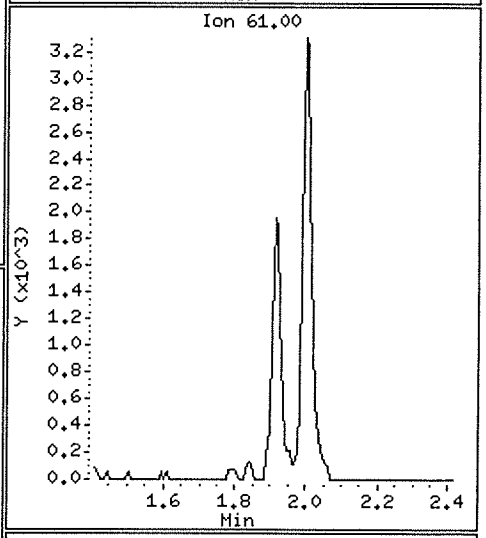


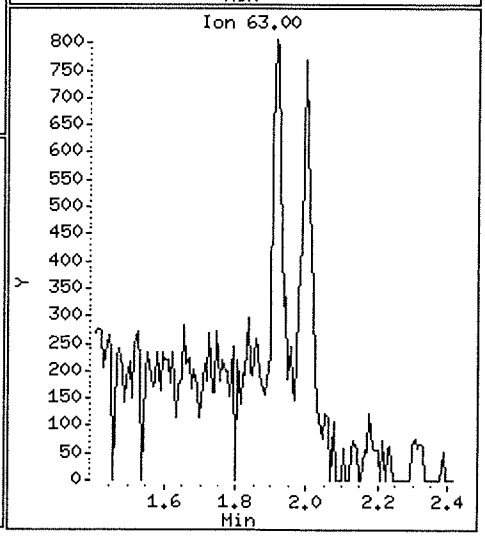












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091221.D

Date : 12-SEP-2019 19:52

Client ID: HS19090511-06

Instrument: voa6.i

Sample Info: HS19090511-06;HS19090511-06;;;

Purge Volume: 5.0

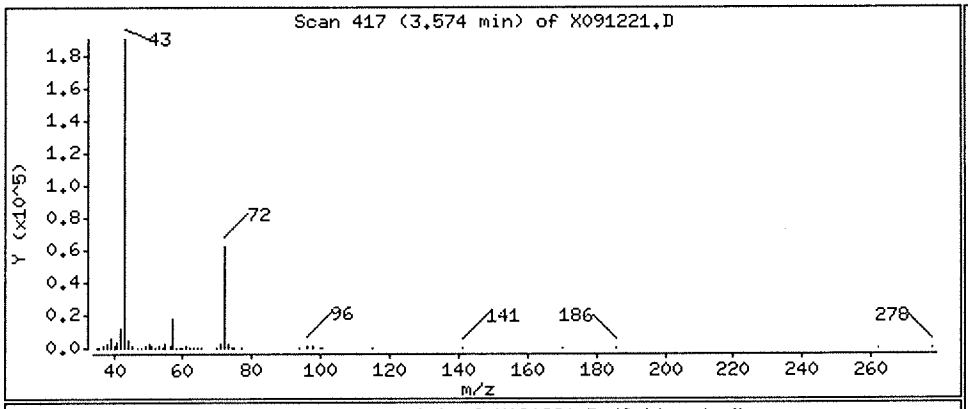
Operator: PC

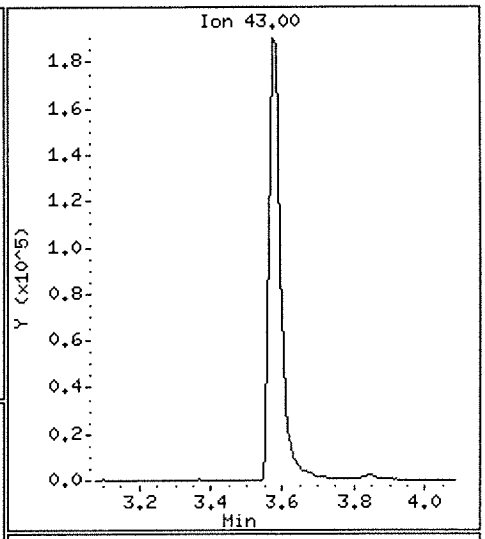
Column phase: DB624

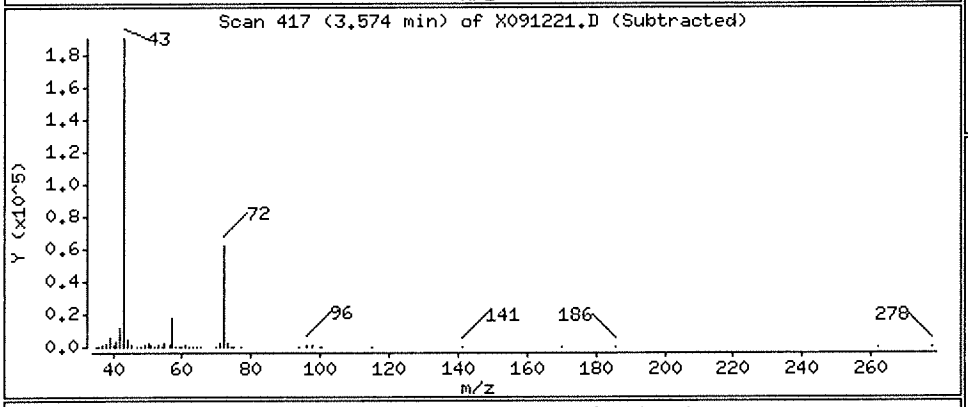
Column diameter: 0.18

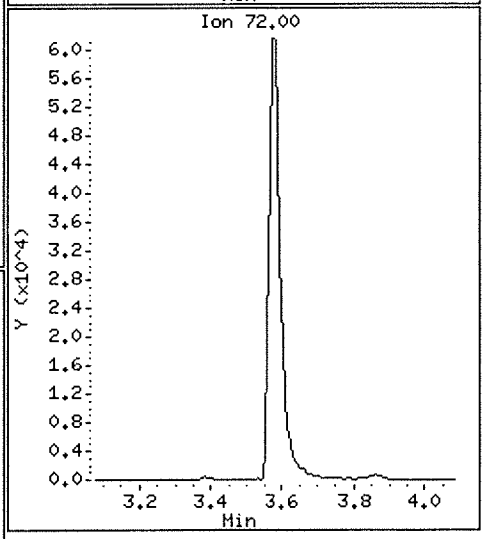
24 2-Butanone

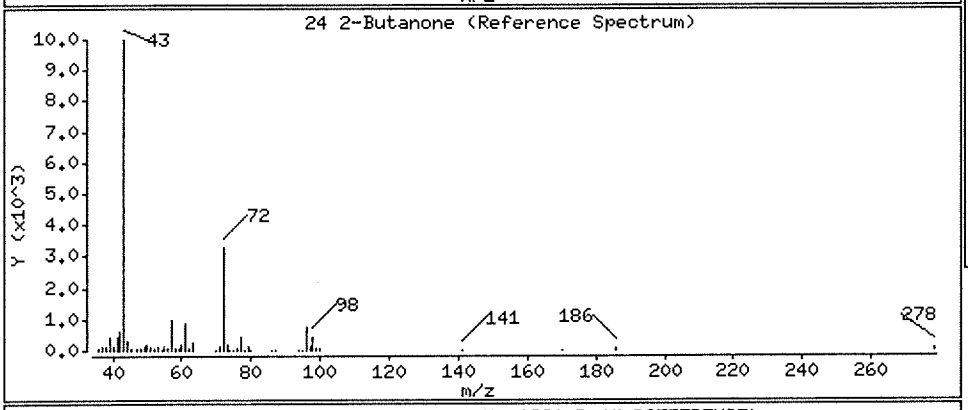
Concentration: 341.07 ug/l

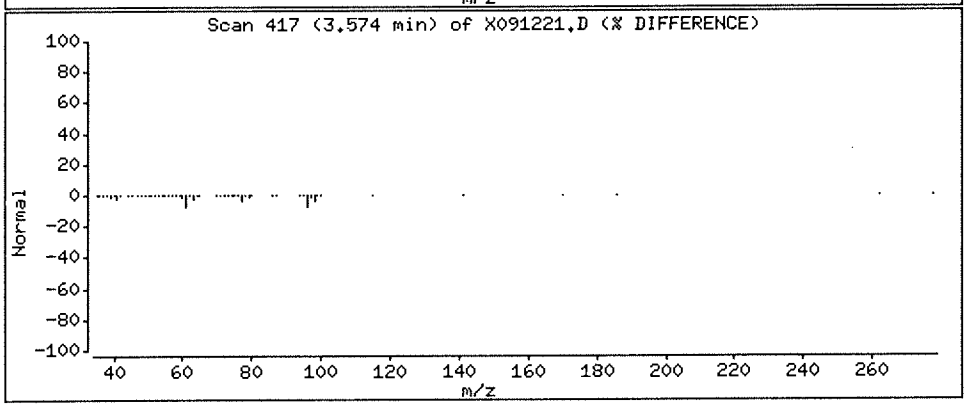












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091221.D

Date : 12-SEP-2019 19:52

Client ID: HS19090511-06

Instrument: voa6.i

Sample Info: HS19090511-06;HS19090511-06;;;

Purge Volume: 5.0

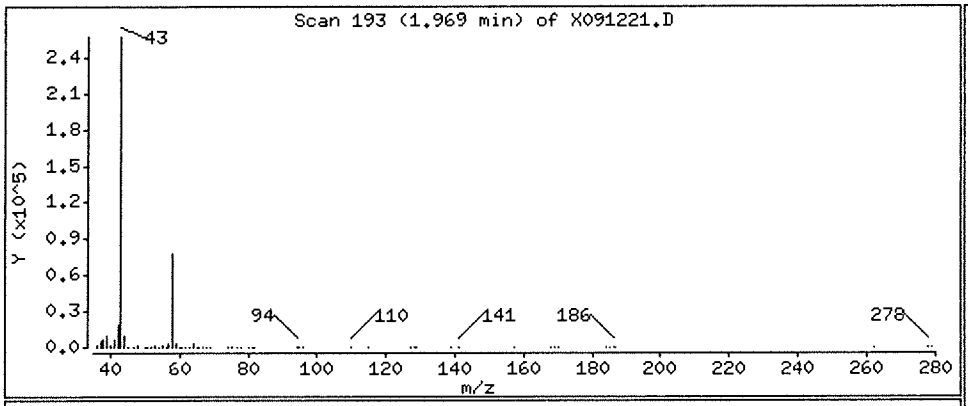
Operator: PC

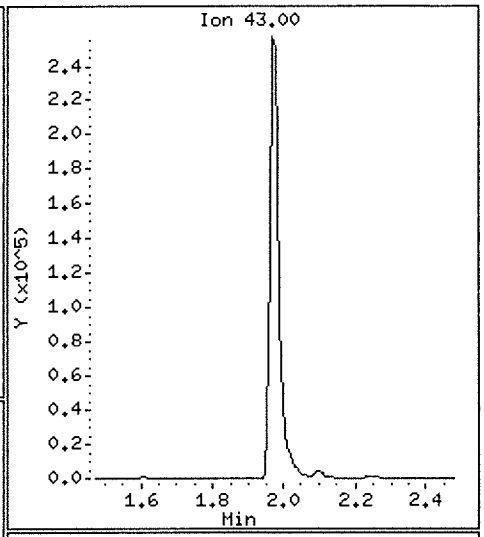
Column phase: DB624

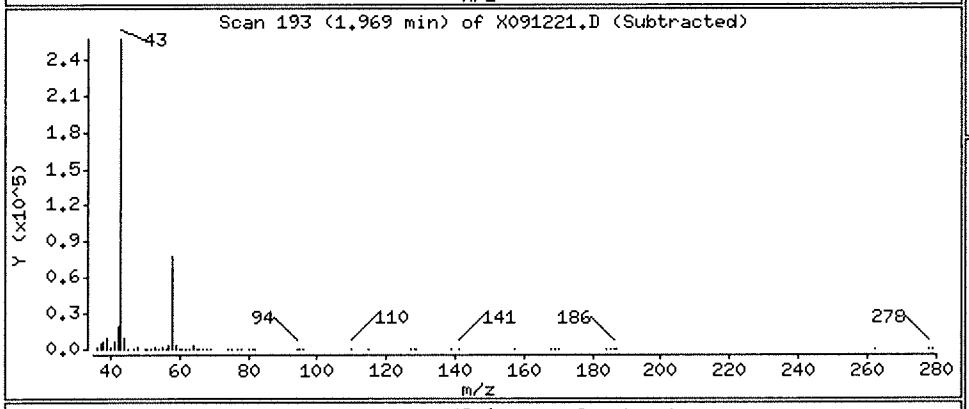
Column diameter: 0.18

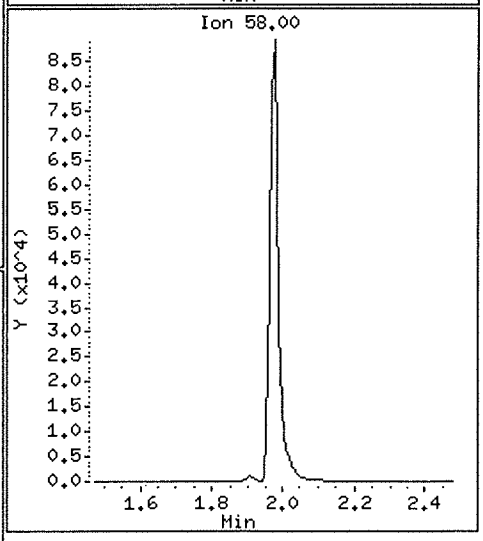
10 Acetone

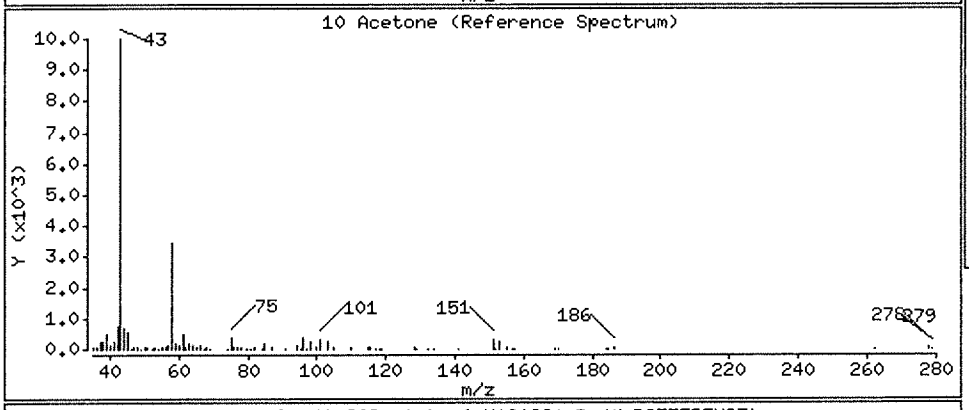
Concentration: 426.39 ug/l

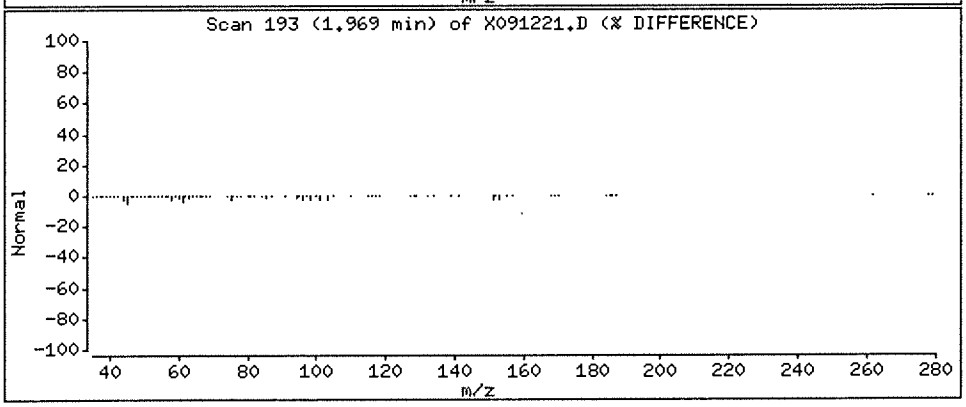












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091221.D

Date : 12-SEP-2019 19:52

Client ID: HS19090511-06

Instrument: voa6.i

Sample Info: HS19090511-06;HS19090511-06;;;

Purge Volume: 5.0

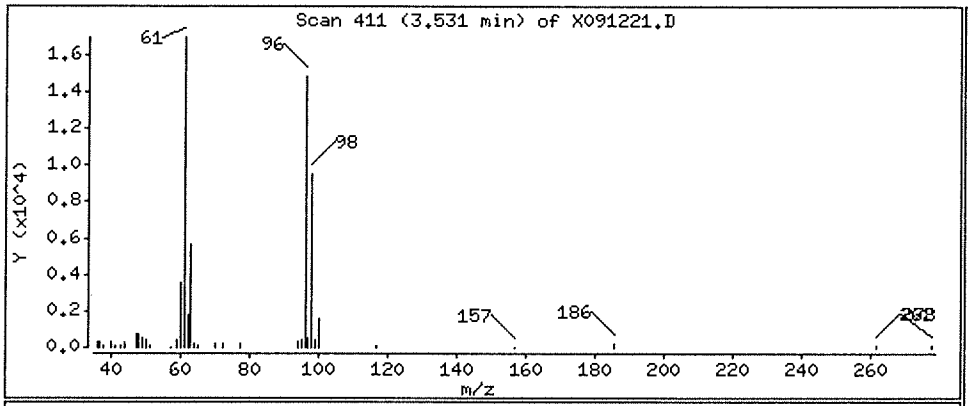
Operator: PC

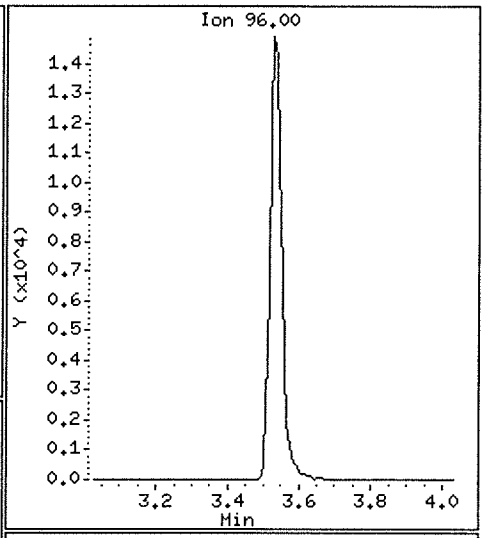
Column phase: DB624

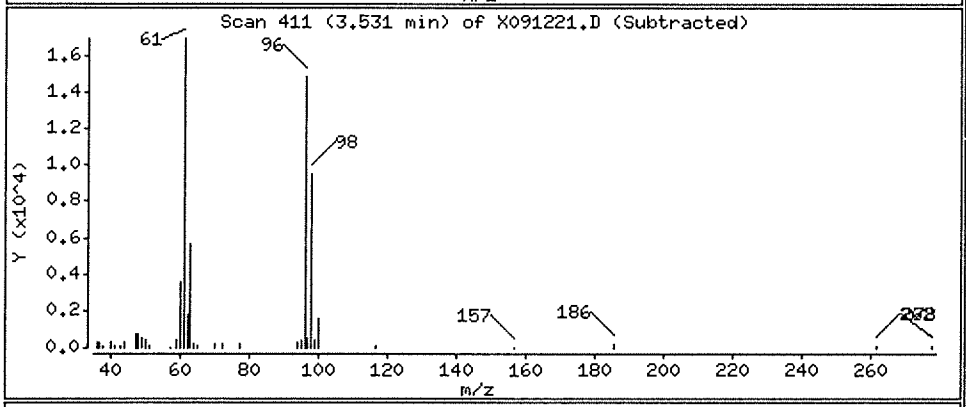
Column diameter: 0.18

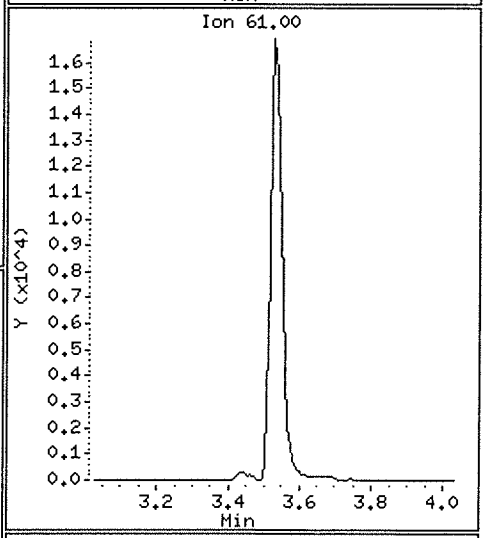
27 cis-1,2-Dichloroethene

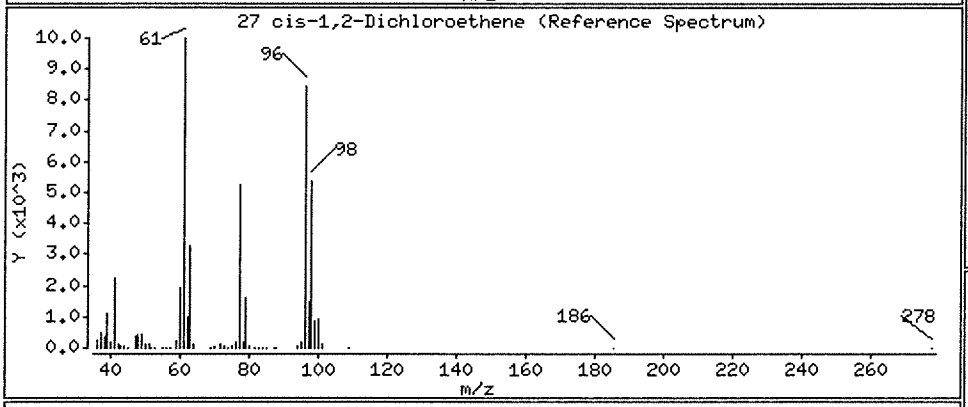
Concentration: 7.78 ug/l

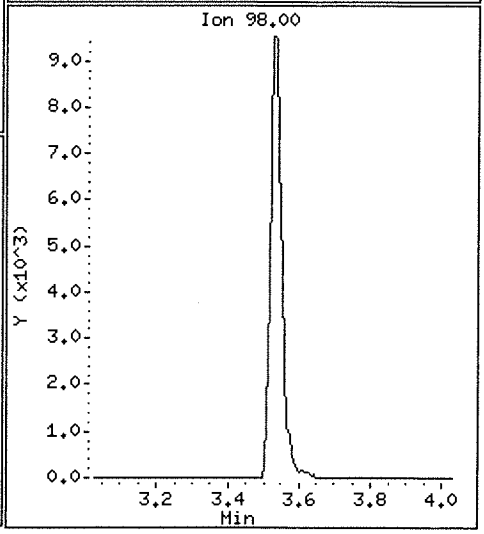


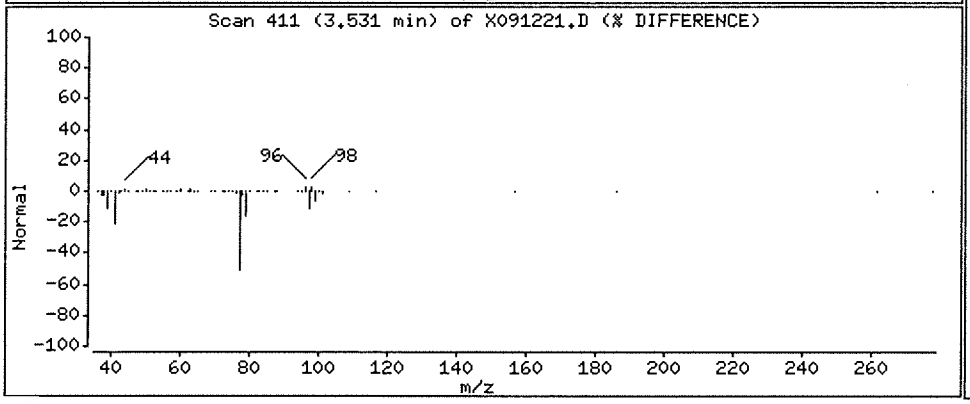












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091221.D

Date : 12-SEP-2019 19:52

Client ID: HS19090511-06

Instrument: voa6.i

Sample Info: HS19090511-06;HS19090511-06;;;

Purge Volume: 5.0

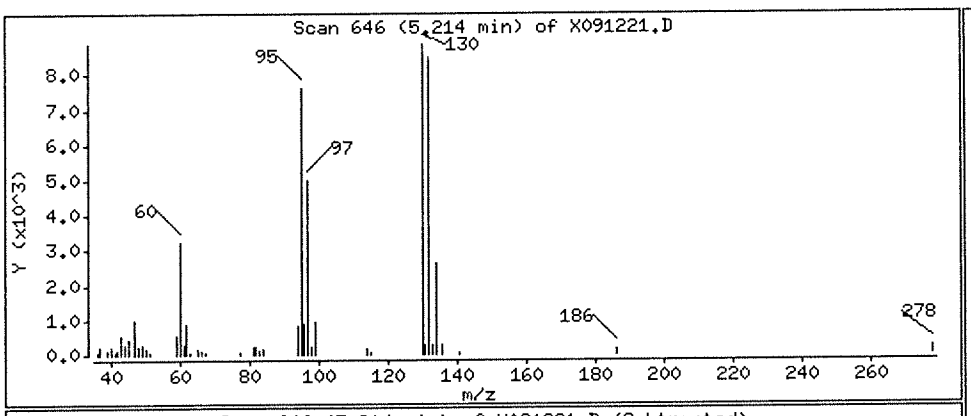
Operator: PC

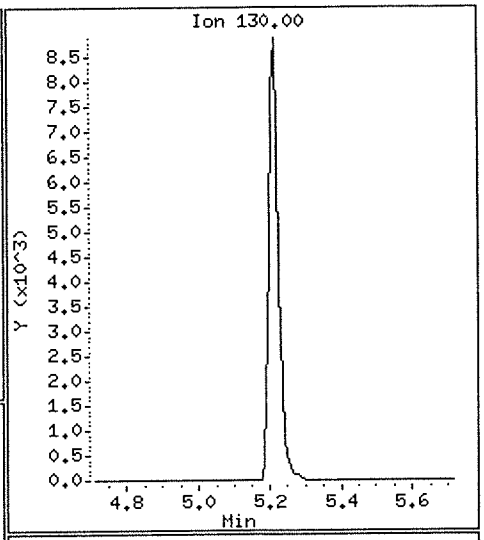
Column phase: DB624

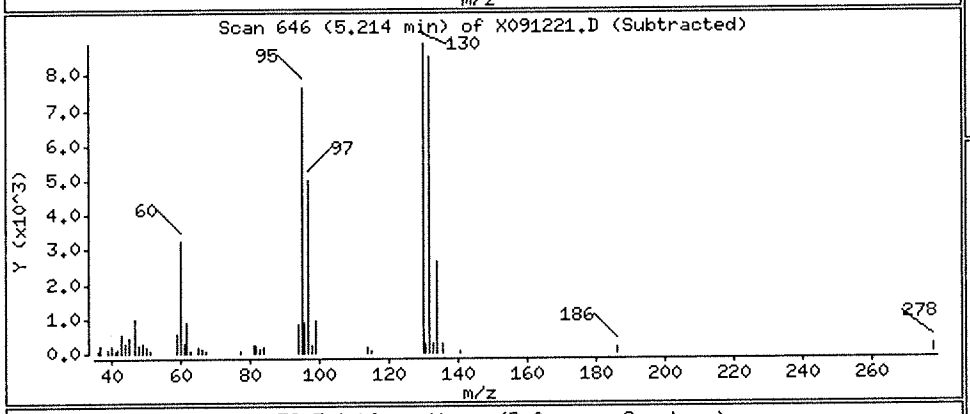
Column diameter: 0.18

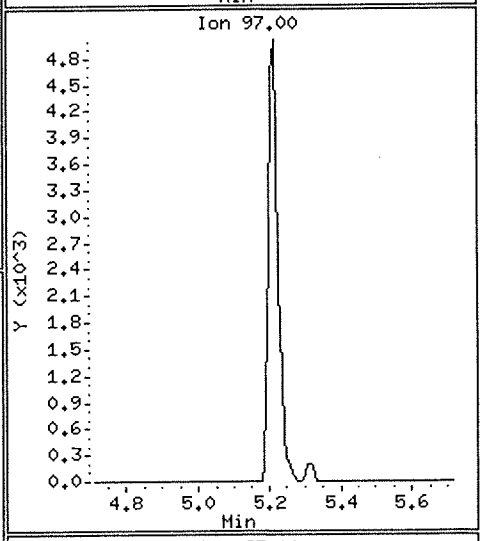
38 Trichloroethene

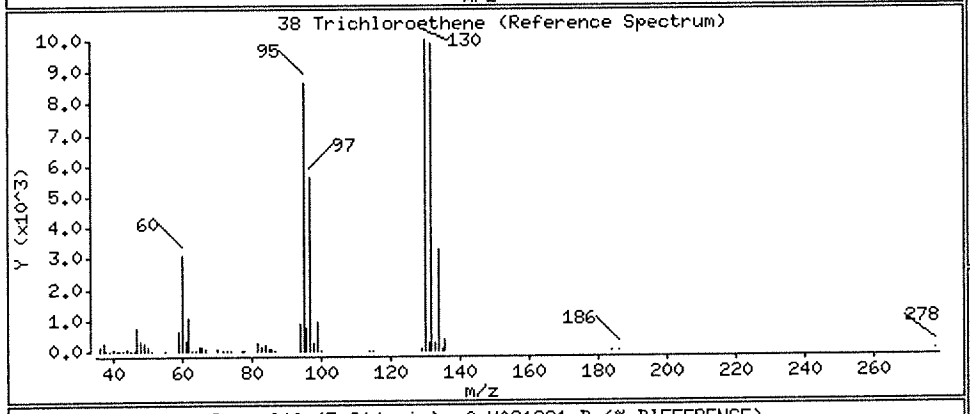
Concentration: 3.80 ug/l

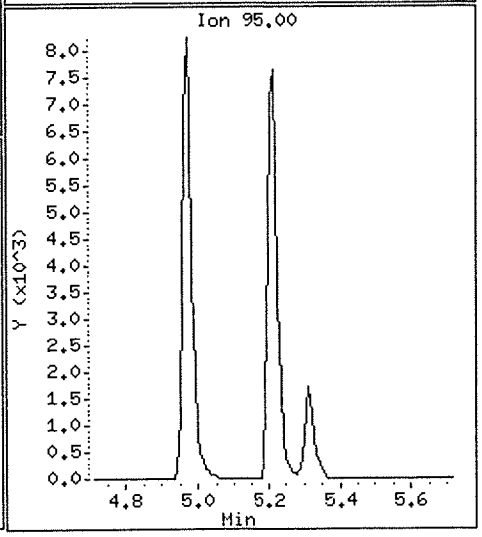


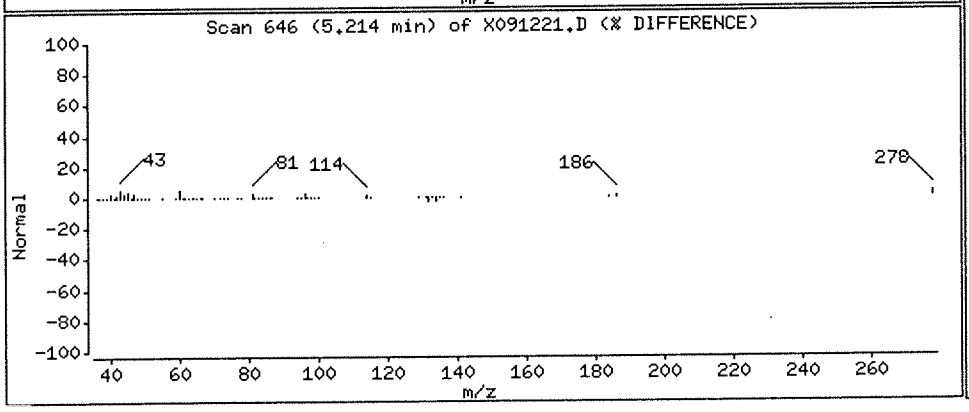












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Report Date: 25-Sep-2019 14:35

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X190912.b\X091222.D
Lab Smp Id: HS19090511-07 Client Smp ID: HS19090511-07
Inj Date : 12-SEP-2019 20:17
Operator : PC Inst ID: voa6.i
Smp Info : HS19090511-07;HS19090511-07;;;
Misc Info : HS18090001;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa6.i\X190912.b\8260W.m
Meth Date : 25-Sep-2019 14:34 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 21
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	406289	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	536880	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	456218	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	253308	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	167700	47.6486	47.64
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	172377	45.9738	45.97
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	610366	48.4410	48.44
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	217783	50.6348	50.63
24 2-Butanone	43	3.581	3.580	(0.855)	83711	67.1171	67.11
10 Acetone	43	1.976	1.976	(0.472)	83991	74.7256	74.72

Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091222.D

Date : 12-SEP-2019 20:17

Client ID: HS19090511-07

Instrument: voa6.i

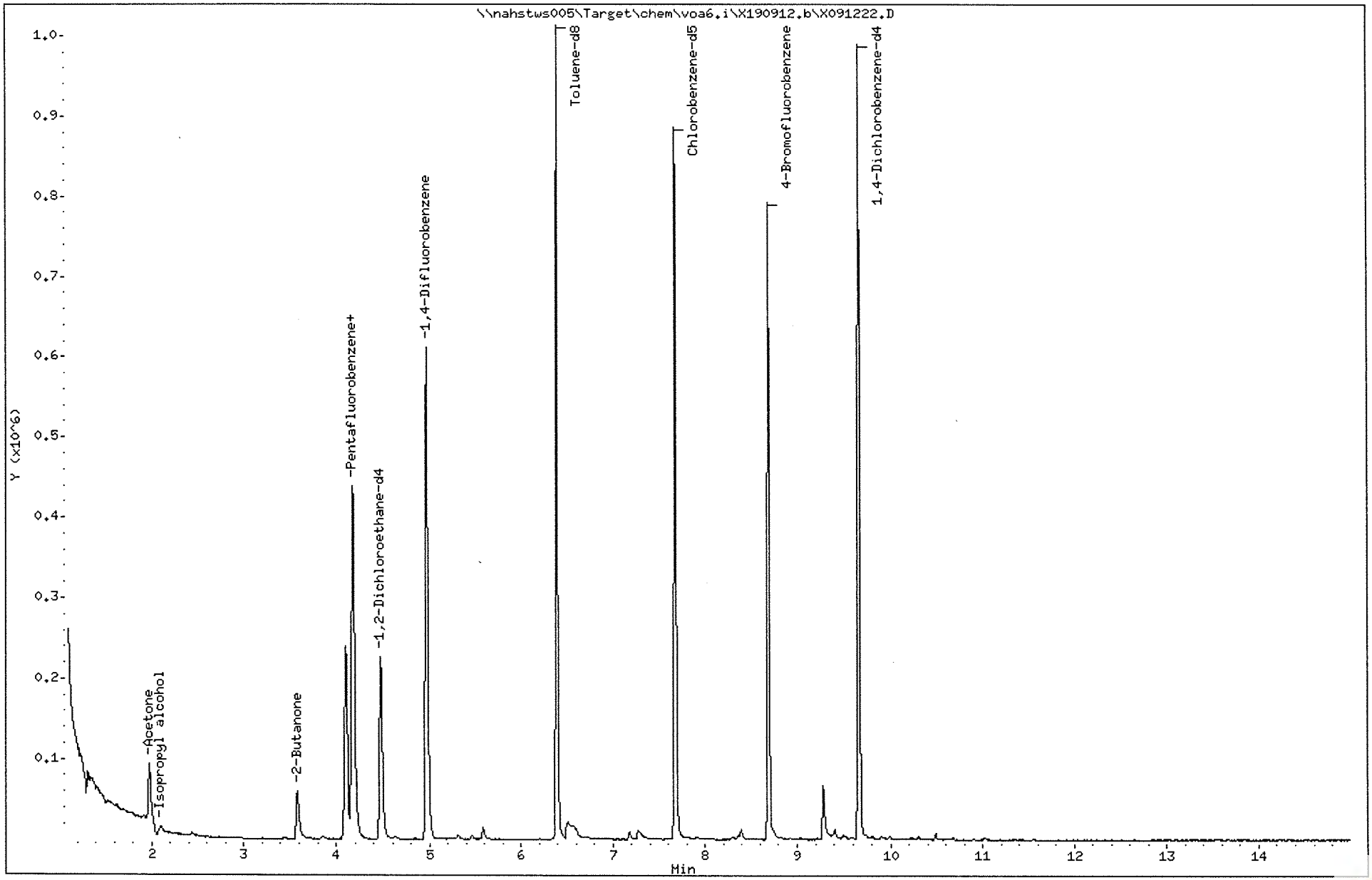
Sample Info: HS19090511-07;HS19090511-07;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



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Date : 12-SEP-2019 20:17

Client ID: HS19090511-07

Instrument: voa6.i

Sample Info: HS19090511-07;HS19090511-07;;;

Purge Volume: 5.0

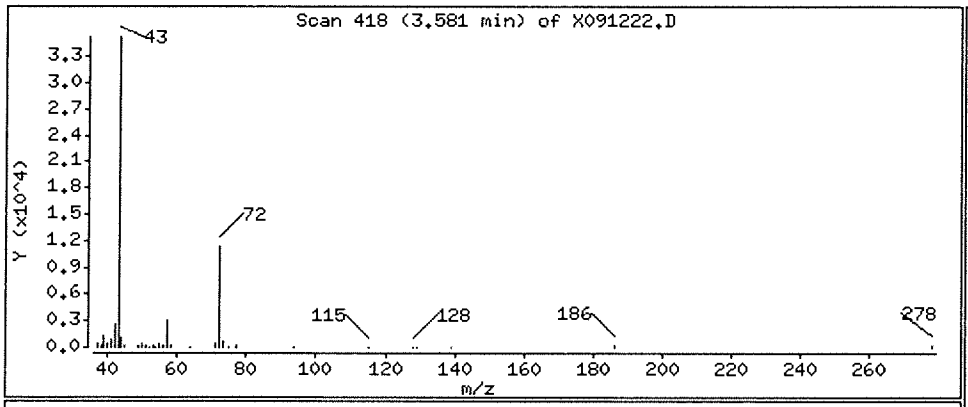
Operator: PC

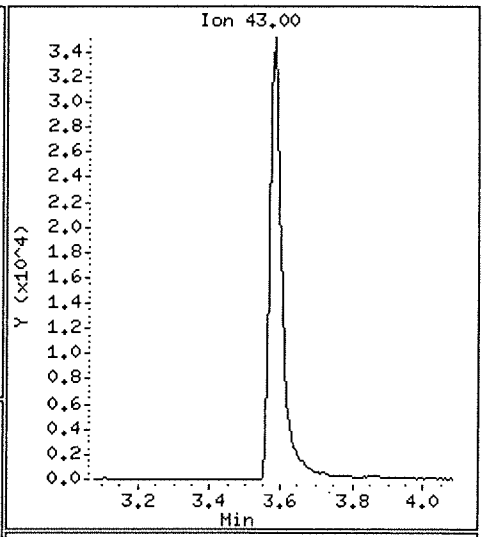
Column phase: DB624

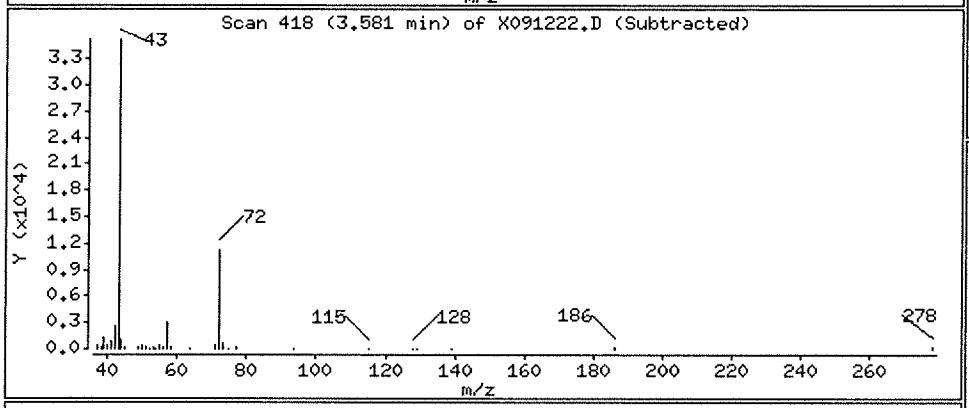
Column diameter: 0.18

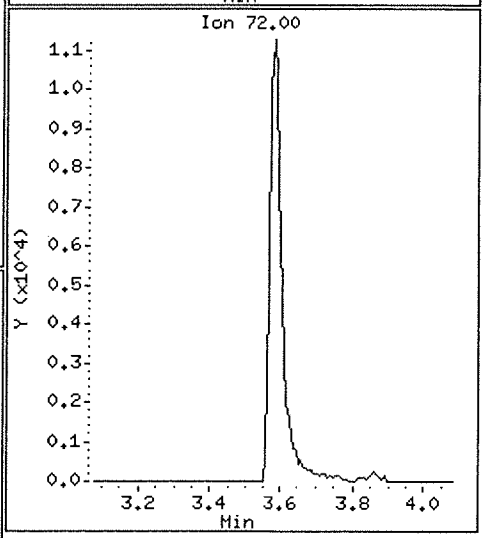
24 2-Butanone

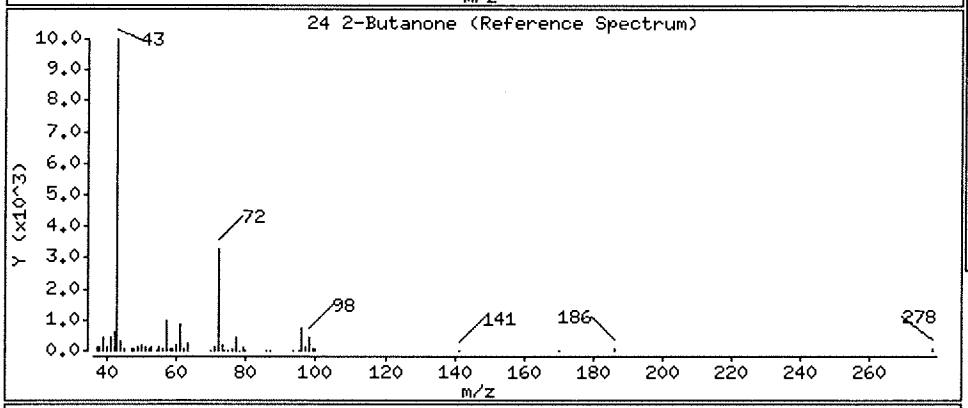
Concentration: 67.11 ug/l

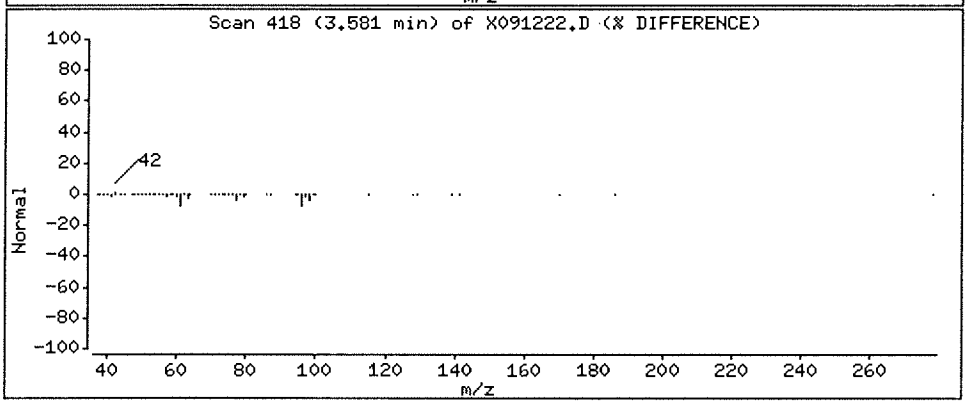












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091222.D

Date : 12-SEP-2019 20:17

Client ID: HS19090511-07

Instrument: voa6.i

Sample Info: HS19090511-07;HS19090511-07;;;

Purge Volume: 5.0

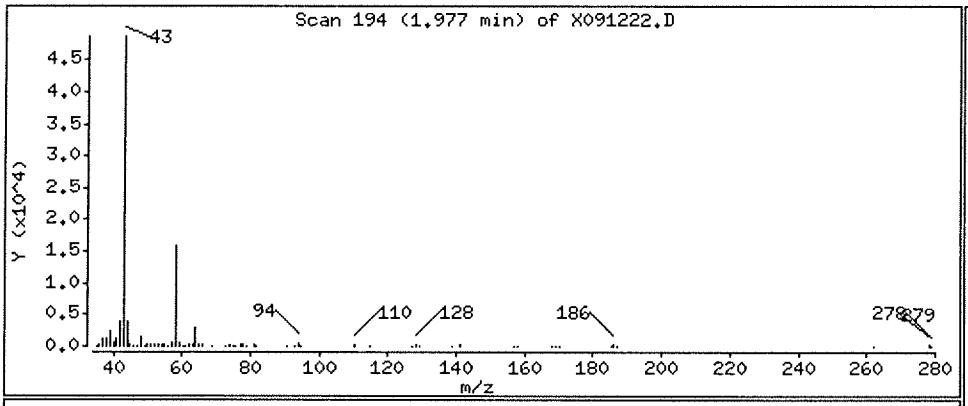
Operator: PC

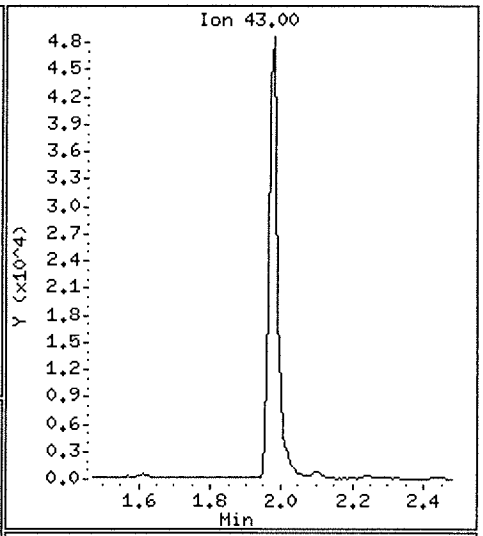
Column phase: DB624

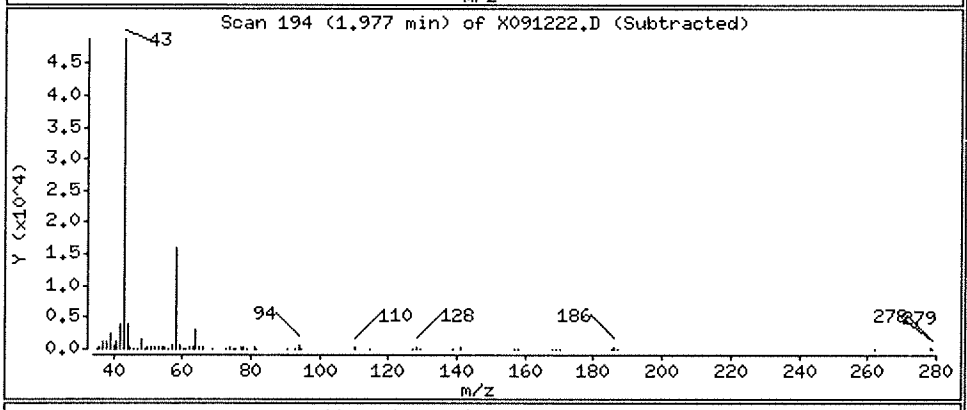
Column diameter: 0.18

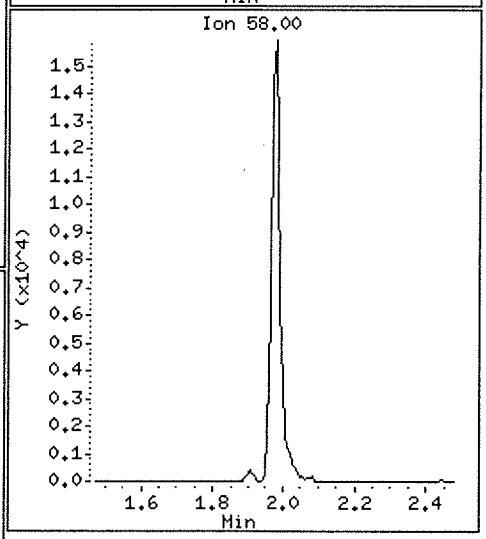
10 Acetone

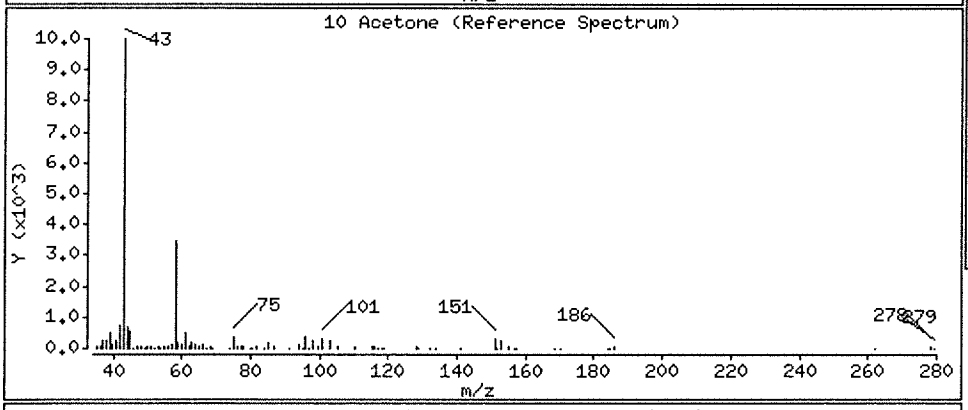
Concentration: 74.72 ug/l

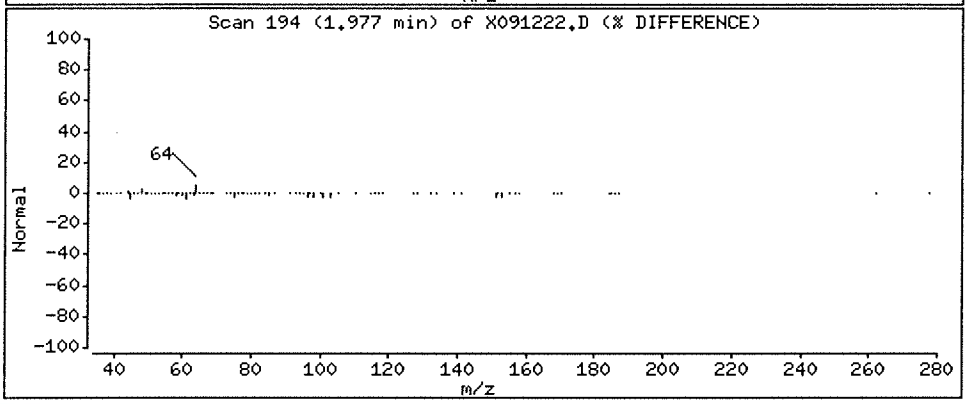












Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091225.D Page 1
Report Date: 25-Sep-2019 14:04

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X190912.b\X091225.D
Lab Smp Id: CCV-END Client Smp ID: CCV-END
Inj Date : 12-SEP-2019 21:29
Operator : PC Inst ID: voa6.i
Smp Info : CCV-END;CCV-END;2;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X190912.b\8260W.m
Meth Date : 25-Sep-2019 14:03 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 24 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

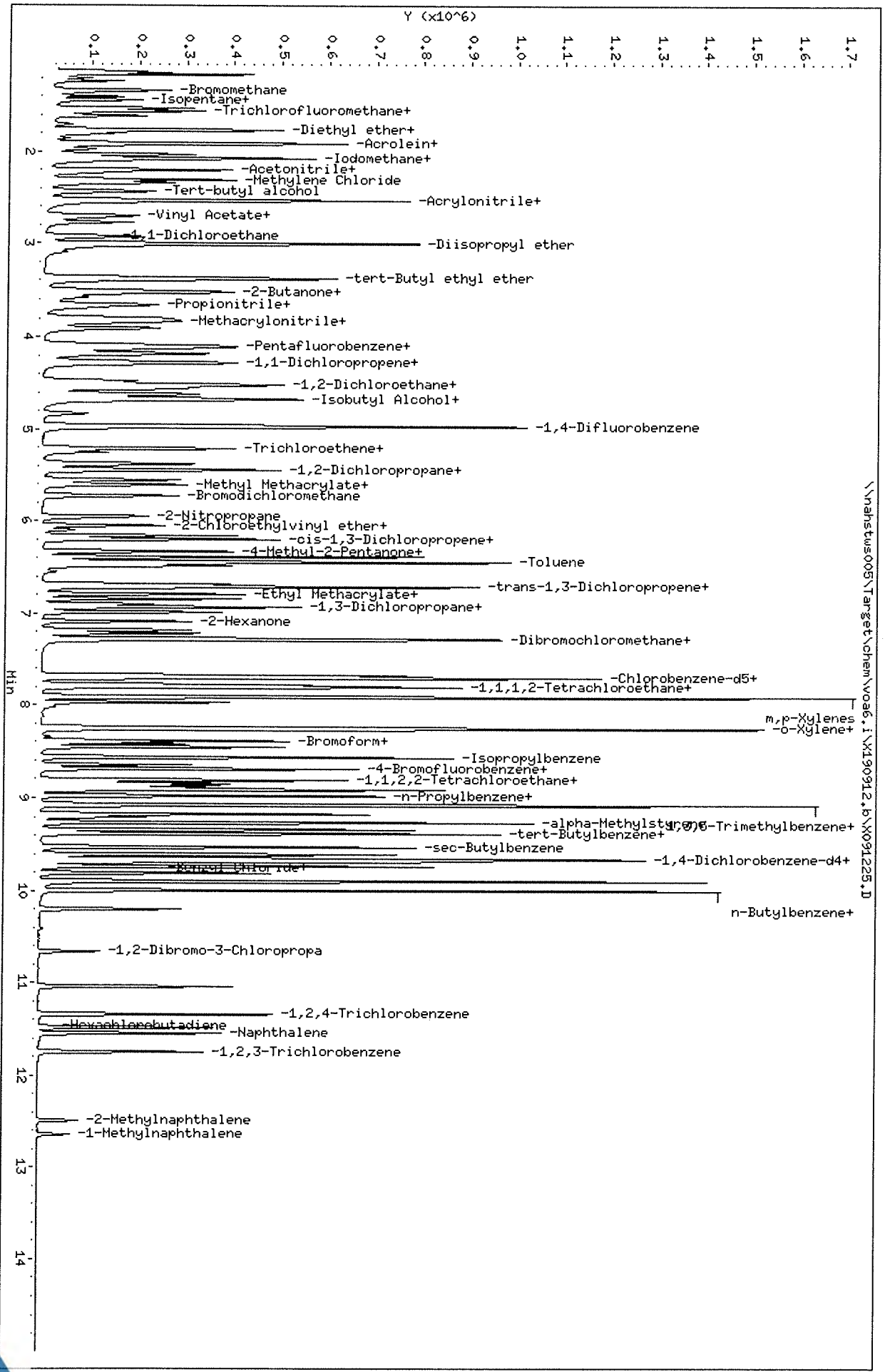
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.189	4.189	(1.000)	316398	50.0000	
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	431783	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	386741	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	213239	50.0000	
$	30 Dibromofluoromethane	113	4.103	4.103	(0.979)	138094	50.0000	50.43
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	142948	50.0000	49.00
$	48 Toluene-d8	98	6.388	6.388	(0.833)	487244	50.0000	45.61
$	69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	182152	50.0000	49.95
	60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	138501	50.0000	47.21
	31 1,1,1-Trichloroethane	97	4.089	4.089	(0.976)	186879	50.0000	43.14
	68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	153595	50.0000	49.33
	53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	98784	50.0000	46.29
	22 1,1-Dichloroethane	63	2.929	2.929	(0.699)	217098	50.0000	43.76
	11 1,1-Dichloroethene	96	1.911	1.911	(0.456)	122175	50.0000	45.30
	32 1,1-Dichloropropene	75	4.282	4.282	(0.862)	152276	50.0000	41.97
	93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	98483	50.0000	43.30
	71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	127760	50.0000	47.33(M)
	90 1,2,4-Trichlorobenzene	180	11.345	11.345	(1.173)	153575	50.0000	44.47
	79 1,2,4-Trimethylbenzene	105	9.382	9.382	(0.970)	448820	50.0000	40.50
	89 1,2-Dibromo-3-Chloropropane	155	10.658	10.658	(1.102)	28067	50.0000	51.23
	57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	135109	50.0000	47.10
	88 1,2-Dichlorobenzene	146	9.999	9.999	(1.034)	274481	50.0000	43.29
	33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	163391	50.0000	45.77

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42 1,2-Dichloropropane	63	5.443	5.443	(1.095)	118149	50.0000	43.66
75 1,3,5-Trimethylbenzene	105	9.074	9.074	(0.939)	430631	50.0000	39.89
83 1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	287660	50.0000	43.06
54 1,3-Dichloropropane	76	6.983	6.983	(0.910)	201300	50.0000	45.51
84 1,4-Dichlorobenzene	146	9.683	9.683	(1.001)	286293	50.0000	42.26
26 2,2-Dichloropropane	77	3.516	3.516	(0.839)	167946	50.0000	40.52
24 2-Butanone	43	3.580	3.580	(0.855)	95150	100.000	97.96
76 2-Chlorotoluene	91	8.981	8.981	(0.929)	353444	50.0000	44.19
52 2-Hexanone	43	7.090	7.090	(0.924)	148435	100.000	95.29
77 4-Chlorotoluene	91	9.074	9.074	(0.939)	413919	50.0000	41.54
82 p-Isopropyltoluene	119	9.655	9.655	(0.999)	424745	50.0000	37.97
45 4-Methyl-2-Pentanone	43	6.331	6.331	(0.825)	214820	100.000	93.41
10 Acetone	43	1.976	1.976	(0.472)	84001	100.000	97.63
37 Benzene	78	4.519	4.519	(0.909)	489344	50.0000	44.25
74 Bromobenzene	156	8.809	8.809	(0.911)	177488	50.0000	45.23
29 Bromochloromethane	128	3.802	3.802	(0.908)	83146	50.0000	45.37
39 Bromodichloromethane	83	5.729	5.729	(1.153)	169383	50.0000	45.77
66 Bromoform	173	8.415	8.415	(1.097)	115625	50.0000	49.91
6 Bromomethane	94	1.338	1.338	(0.320)	110510	50.0000	43.29
19 Carbon Disulfide	76	2.069	2.069	(0.494)	692733	100.000	86.87
34 Carbon Tetrachloride	117	4.268	4.268	(0.859)	161934	50.0000	41.80
59 Chlorobenzene	112	7.699	7.699	(1.004)	351920	50.0000	43.43
7 Chloroethane	64	1.403	1.403	(0.335)	94356	50.0000	51.99(M)
28 Chloroform	83	3.910	3.910	(0.933)	228386	50.0000	45.37
3 Chloromethane	50	1.081	1.081	(0.258)	101137	50.0000	42.64
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	148788	50.0000	45.86
46 cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	208246	50.0000	46.29
55 Dibromochloromethane	129	7.183	7.183	(0.937)	149503	50.0000	47.92
44 Dibromomethane	93	5.557	5.557	(1.118)	89311	50.0000	45.80
2 Dichlorodifluoromethane	85	0.973	0.973	(0.232)	97617	50.0000	42.09
61 Ethylbenzene	106	7.799	7.799	(1.017)	176247	50.0000	41.92
91 Hexachlorobutadiene	225	11.488	11.488	(1.188)	70310	50.0000	35.39
67 Isopropylbenzene	105	8.566	8.566	(1.117)	484029	50.0000	38.82
62 m,p-Xylenes	106	7.907	7.907	(1.031)	426627	100.000	84.07
17 Methylene Chloride	84	2.305	2.305	(0.550)	136459	50.0000	50.29
87 n-Butylbenzene	91	9.999	9.999	(1.034)	318857	50.0000	37.14
73 n-Propylbenzene	91	8.917	8.917	(0.922)	540674	50.0000	38.49
92 Naphthalene	128	11.546	11.546	(1.194)	262440	50.0000	47.80
63 o-Xylene	106	8.244	8.244	(1.075)	212436	50.0000	42.74
81 sec-Butylbenzene	105	9.526	9.526	(0.985)	446164	50.0000	35.96
64 Styrene	104	8.265	8.265	(1.078)	381324	50.0000	44.76
78 tert-Butylbenzene	119	9.340	9.340	(0.966)	338929	50.0000	37.37
56 Tetrachloroethene	164	6.933	6.933	(0.904)	114087	50.0000	40.80
50 Toluene	91	6.453	6.453	(0.841)	516852	50.0000	43.31
20 trans-1,2-Dichloroethene	96	2.527	2.527	(0.603)	122437	50.0000	44.24
51 trans-1,3-Dichloropropene	75	6.682	6.682	(1.344)	184900	50.0000	45.92
38 Trichloroethene	130	5.214	5.214	(1.049)	149506	50.0000	44.89
8 Trichlorofluoromethane	101	1.560	1.560	(0.373)	213829	50.0000	44.92
5 Vinyl Chloride	62	1.138	1.138	(0.272)	156127	50.0000	47.33

QC Flag Legend

M - Compound response manually integrated.

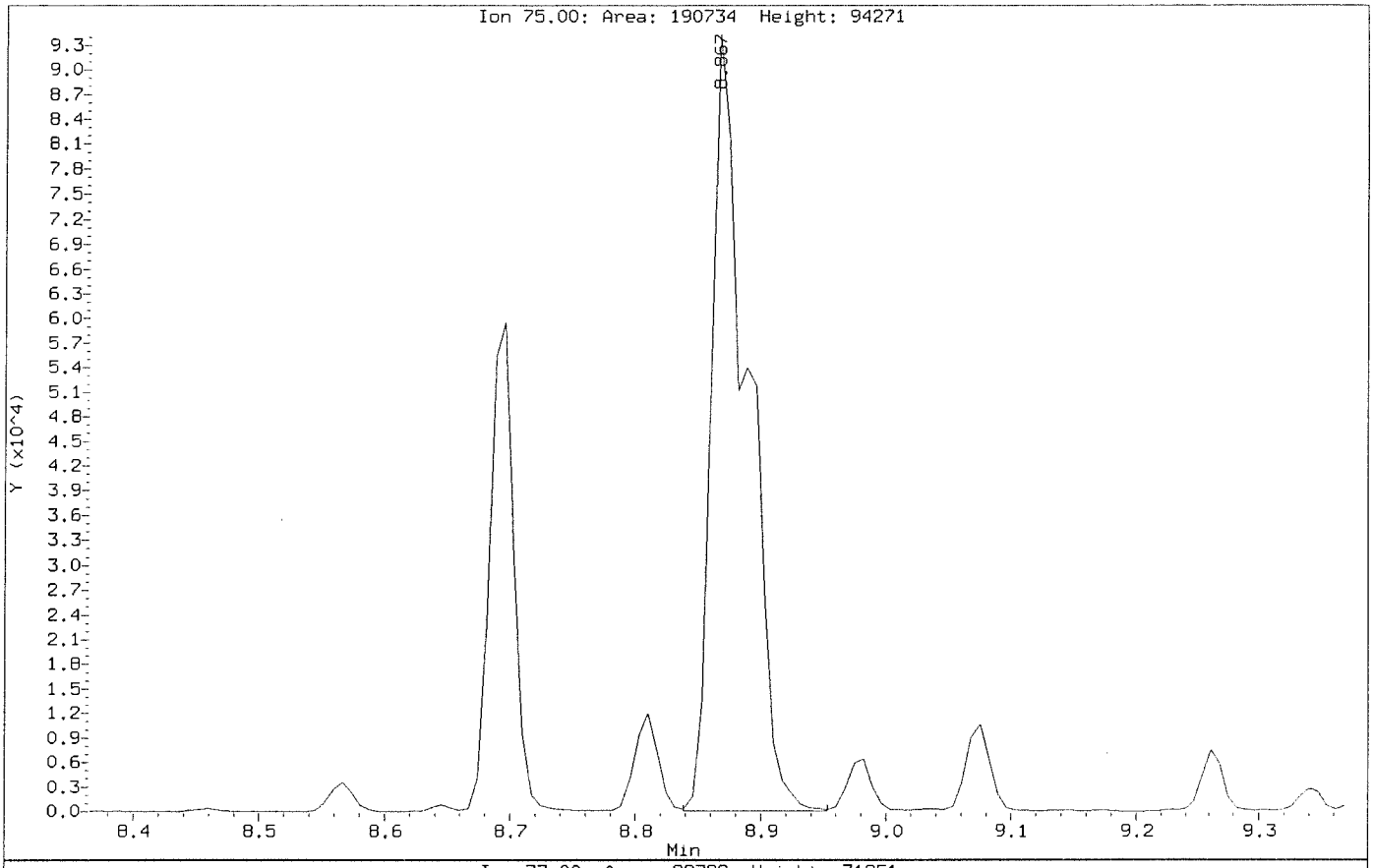


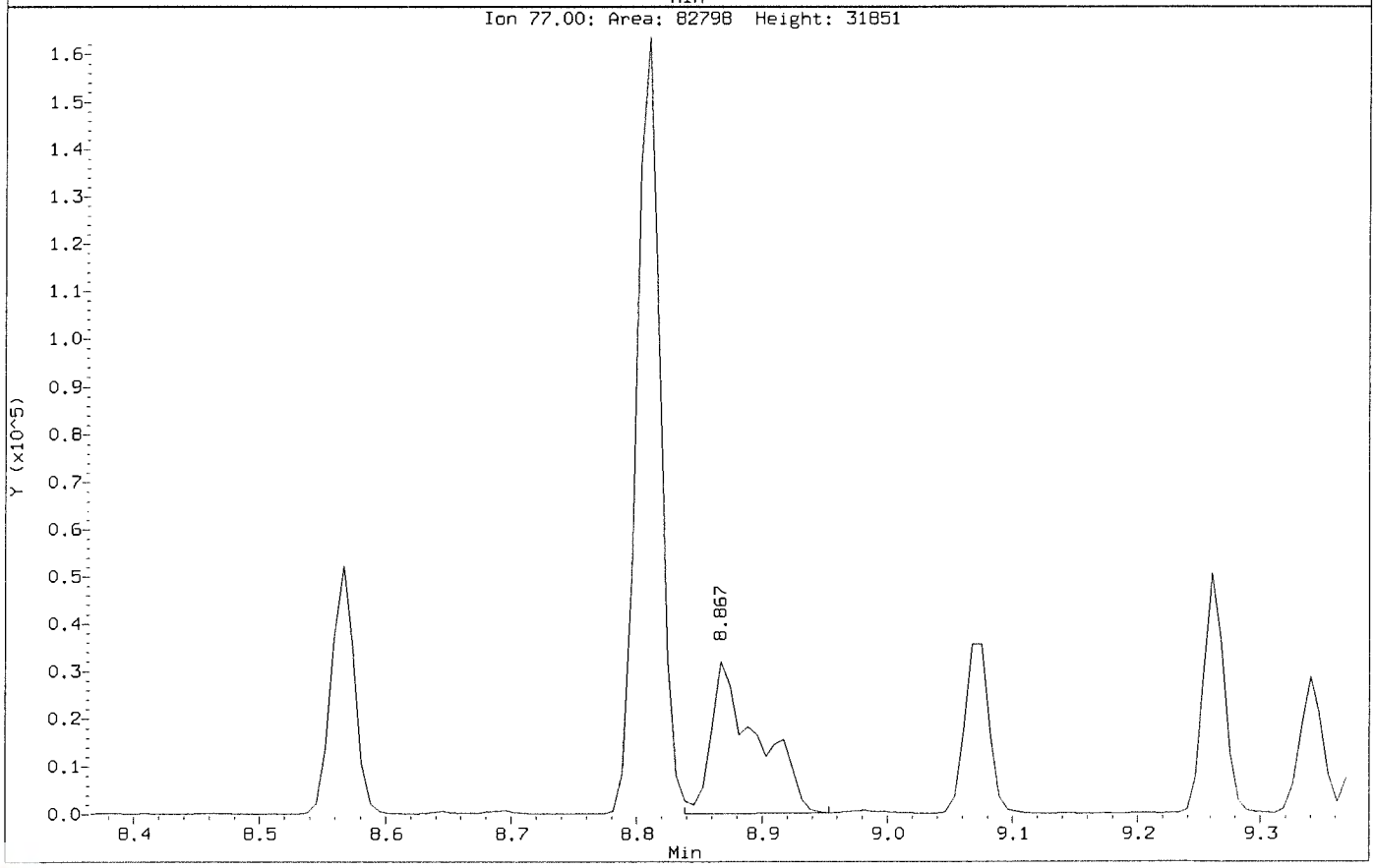
Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091225.D
Date : 12-SEP-2019 21:29
Client ID: CCV-END
Sample Info: CCV-END;CCV-END;2;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\BEFORE\X091225.D
Injection Date: 12-SEP-2019 21:29
Instrument: voa6.i
Client Sample ID: CCV-END

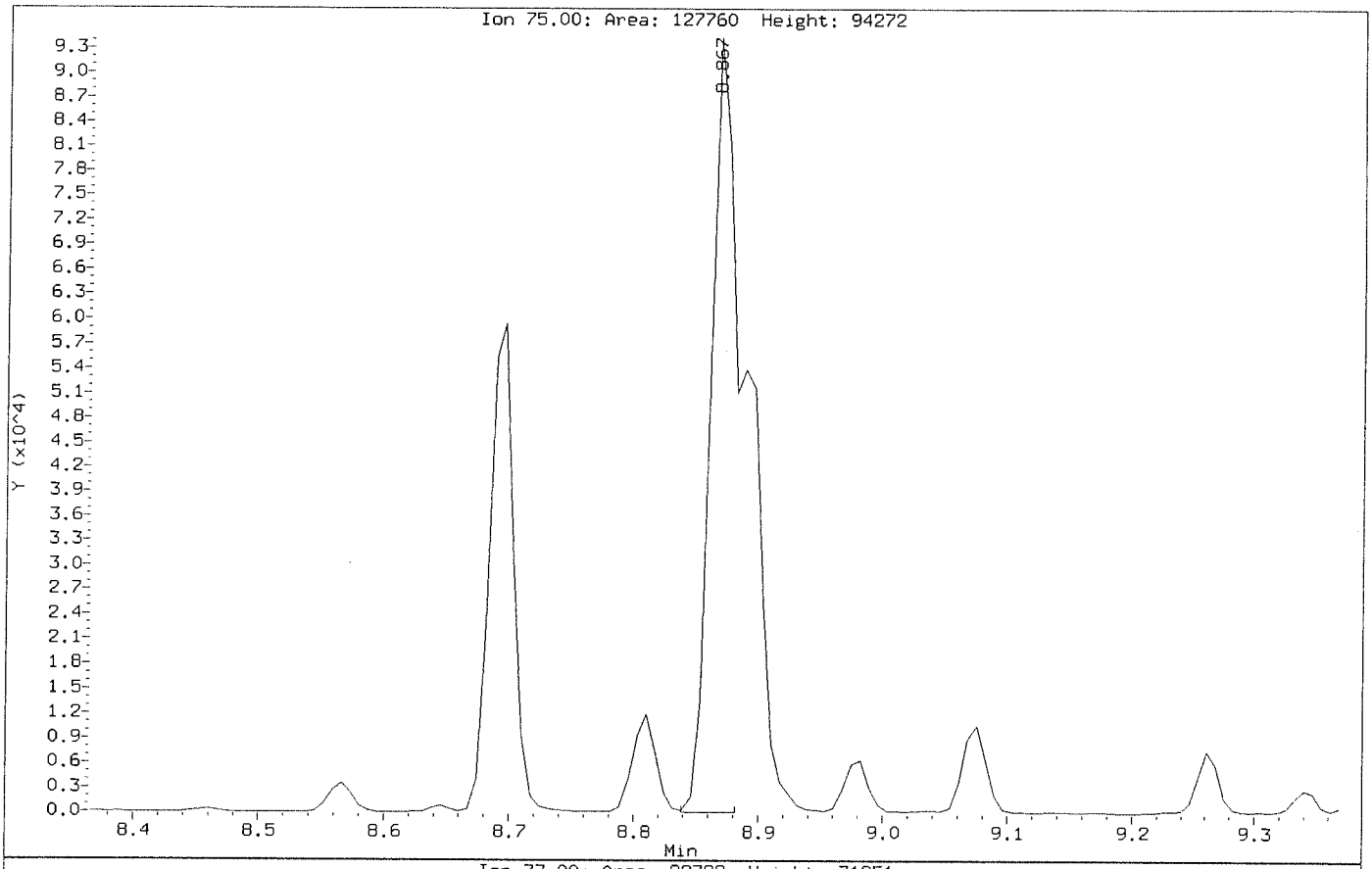
Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4

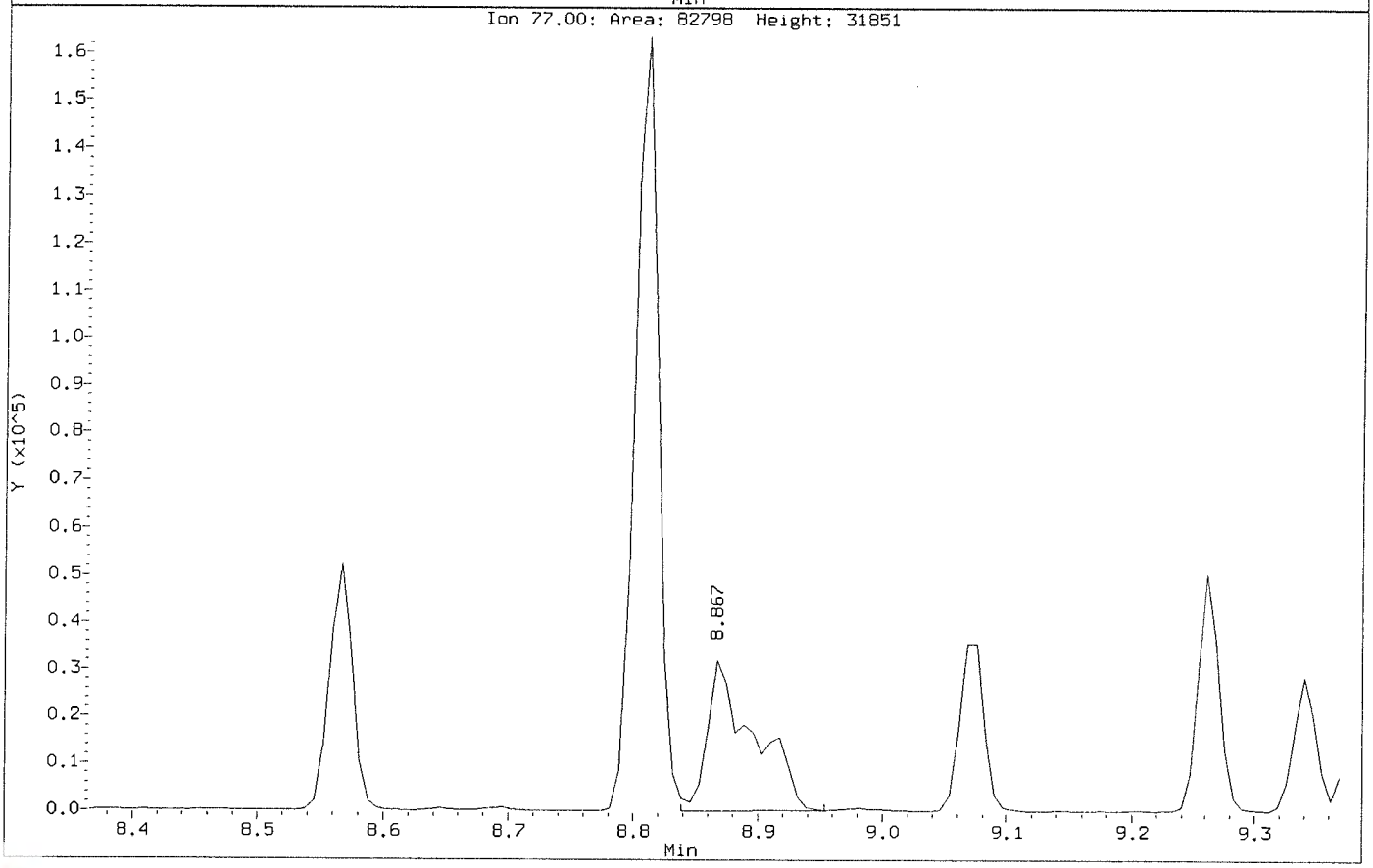




Data File: \\nahstws005\Target\chem\voa6.i\X190912.b\X091225.D
Injection Date: 12-SEP-2019 21:29
Instrument: voa6.i
Client Sample ID: CCV-END

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





MSVOA06 -Logbook

Batch: 37518
Date: 09-13-2019
Method: 8260
Comments:

Analyst: Devak Giga
Reviewer:
Laboratory: Houston

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	09-13-2019 10:39 am	1.00	0.00 mL	0.00 mL	X091301a.D	Liquid	Y	NA
	Auto find/purged									
2	BFB	TUNE	09-13-2019 11:03 am	1.00	0.00 mL	0.00 mL	X091302.D	Liquid	Y	NA
	Auto find/purged									
3	CCV	CCV	09-13-2019 11:27 am	1.00	5.00 mL	0.00 mL	X091303.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
4	CCB	SAMP	09-13-2019 11:51 am	1.00	5.00 mL	0.00 mL	X091304.D	Liquid	Y	NA
	CCB									
5	VLCSW-190913	LCS	09-13-2019 12:15 pm	1.00	5.00 mL	0.00 mL	X091305.D	Liquid	Y	NA
	4 uL LCS std/50 mL DI									
6	BLK	SAMP	09-13-2019 12:39 pm	1.00	5.00 mL	0.00 mL	X091306.D	Liquid	Y	NA
	Cleanup blk									
7	VBLKW-190913	MBLK	09-13-2019 01:03 pm	1.00	5.00 mL	0.00 mL	X091307.D	Liquid	Y	NA
8	HS19090535-01	SAMP	09-13-2019 01:27 pm	1.00	5.00 mL	0.00 mL	X091308.D	Liquid	Y	<2
9	HS19090535-02	SAMP	09-13-2019 01:51 pm	1.00	5.00 mL	0.00 mL	X091309.D	Liquid	Y	<2
10	HS19090535-04	SAMP	09-13-2019 02:15 pm	1.00	5.00 mL	0.00 mL	X091310.D	Liquid	Y	<2
11	HS19090538-01	SAMP	09-13-2019 02:40 pm	1.00	5.00 mL	0.00 mL	X091311.D	Liquid	Y	<2
12	HS19090511-06	SAMP	09-13-2019 03:03 pm	5.00	5.00 mL	0.00 mL	X091312.D	Liquid	Y	<2
13	HS19090535-01MS	MS	09-13-2019 03:28 pm	1.00	5.00 mL	0.00 mL	X091313.D	Liquid	Y	NA
	3.2 uL cal std/40 mL sample									
14	HS19090535-01MSD	MSD	09-13-2019 03:52 pm	1.00	5.00 mL	0.00 mL	X091314.D	Liquid	Y	NA
	3.2 uL cal std/40 mL sample									
15	CCV-END	CCV	09-13-2019 04:16 pm	1.00	5.00 mL	0.00 mL	X091315.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
16	MBLK-145203 091219	MBLK	09-13-2019 04:40 pm	20.00	5.00 mL	0.00 mL	X091316.D	Liquid	Y	NA
17	HS19090476-01	SAMP	09-13-2019 05:04 pm	20.00	5.00 mL	0.00 mL	X091317.D	Liquid	Y	<2
18	MBLK-145182 091219	MBLK	09-13-2019 05:28 pm	20.00	5.00 mL	0.00 mL	X091318.D	Liquid	Y	NA
19	HS19090527-01	SAMP	09-13-2019 05:52 pm	20.00	5.00 mL	0.00 mL	X091319.D	Liquid	Y	<2
20	HS19090530-01	SAMP	09-13-2019 06:16 pm	20.00	5.00 mL	0.00 mL	X091320.D	Liquid	Y	<2
21	HS19090542-13	SAMP	09-13-2019 06:40 pm	1.00	5.00 mL	0.00 mL	X091321.D	Liquid	Y	<2
22	HS19090542-04	SAMP	09-13-2019 07:04 pm	1.00	5.00 mL	0.00 mL	X091322.D	Liquid	Y	<2
23	HS19090542-06	SAMP	09-13-2019 07:28 pm	1.00	5.00 mL	0.00 mL	X091323.D	Liquid	Y	<2
24	HS19090542-07	SAMP	09-13-2019 07:52 pm	1.00	5.00 mL	0.00 mL	X091324.D	Liquid	Y	<2
25	HS19090542-08	SAMP	09-13-2019 08:16 pm	1.00	5.00 mL	0.00 mL	X091325.D	Liquid	Y	<2
26	HS19090542-09	SAMP	09-13-2019 08:40 pm	1.00	5.00 mL	0.00 mL	X091326.D	Liquid	Y	<2
27	HS19090542-10	SAMP	09-13-2019 09:04 pm	1.00	5.00 mL	0.00 mL	X091327.D	Liquid	Y	<2
28	HS19090542-11	SAMP	09-13-2019 09:28 pm	1.00	5.00 mL	0.00 mL	X091328.D	Liquid	Y	<2
29	HS19090542-02	SAMP	09-13-2019 09:52 pm	5.00	5.00 mL	0.00 mL	X091329.D	Liquid	Y	<2
30	HS19090542-03	SAMP	09-13-2019 10:16 pm	5.00	5.00 mL	0.00 mL	X091330.D	Liquid	Y	<2
31	HS19090542-12	SAMP	09-13-2019 10:40 pm	5.00	5.00 mL	0.00 mL	X091331.D	Liquid	Y	<2

MSVOA06 -Logbook

Chemical	Value
SURR SPK ID	30502-90-03
IS ID	30502-90-04
ICV STD ID	30603-83-01
LCS/MS ID	30603-83-01
CAL STD ID	30502-93-01/02
BFB ID	30502-90-03
pH Paper	634-64-11

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19090511

	CLIENT SAMPLE NO.	SMC1 (DCE) #	SMC2 #	SMC3 (TOL) #	OTHER #	TOT OUT
01	VLCSW-190913	107	106	96	109	0
02	VBLKW-190913	90	93	96	103	0
03	HS19090511-0	92	92	95	102	0
04						
05						
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27						
28						

		QC LIMITS
SMC1 (DCE)	= 1,2-Dichloroethane-d4	(0-130)
SMC2	= Dibromofluoromethane	(0-130)
SMC3 (TOL)	= Toluene-d8	(0-130)
OTHER	= 4-Bromofluorobenzene	(0-130)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKW-190913

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19090511

Lab File ID: X091307 Lab Sample ID: VBLKW-190913

Date Analyzed: 09/13/19 Time Analyzed: 1303

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

Instrument ID: VOA6

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VLCSW-190913	VLCSW-190913	X091305	1215
02	HS19090511-0	HS19090511-06	X091312	1503
03	HS19090535-0	HS19090535-01M	X091313	1528
04	HS19090535-0	HS19090535-01M	X091314	1552
05				
06				
07				
08				
09				
10				
11				
12				
13				
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30				

COMMENTS:

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19090511

Lab File ID: X091302 BFB Injection Date: 09/13/19

Instrument ID: VOA6 BFB Injection Time: 1103

GC Column: DB624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.1
75	30.0 - 60.0% of mass 95	48.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.6
173	Less than 2.0% of mass 174	0.5 (0.7)1
174	Greater than 50.0% of mass 95	71.5
175	5.0 - 9.0% of mass 174	6.0 (8.4)1
176	95.0 - 101.0% of mass 174	70.1 (98.1)1
177	5.0 - 9.0% of mass 176	4.7 (6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV	CCV	X091303	09/13/19	1127
02	VLCSW-190913	VLCSW-190913	X091305	09/13/19	1215
03	VBLKW-190913	VBLKW-190913	X091307	09/13/19	1303
04	HS19090511-0	HS19090511-06	X091312	09/13/19	1503
05	HS19090535-0	HS19090535-01M	X091313	09/13/19	1528
06	HS19090535-0	HS19090535-01M	X091314	09/13/19	1552
07	CCV-END	CCV-END	X091315	09/13/19	1616
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19090511

Instrument ID: VOA6 Calibration Date: 09/13/19 Time: 1127

Lab File ID: X091303 Init. Calib. Date(s): 09/11/19 09/11/19

Init. Calib. Times: 1131 1531

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
cis-1,3-Dichloropropene	0.5210000	0.5126185	0.5126185	0.2	1.61	20.00	AVRG
trans-1,3-Dichloropropene	0.4660000	0.4588846	0.4588846	0.1	1.53	20.00	AVRG
1,3-Dichlorobenzene	1.5660000	1.4614293	1.4614293	0.6	6.68	20.00	AVRG
2,2-Dichloropropane	0.6550000	0.6049511	0.6049511	0.1	7.64	20.00	AVRG
1,1-Dichloropropene	0.4200000	0.3871058	0.3871058	0.1	7.83	20.00	AVRG
Dibromomethane	0.2260000	0.2142993	0.2142993	0.1	5.18	20.00	AVRG
1,2-Dibromoethane	0.3710000	0.3571518	0.3571518	0.1	3.73	20.00	AVRG
trans-1,2-Dichloroethene	0.4370000	0.3899797	0.3899797	0.1	10.76	20.00	AVRG
1,1,1,2-Tetrachloroethane	0.3790000	0.3733295	0.3733295	0.1	1.50	20.00	AVRG
1,1,1-Trichloroethane	0.6840000	0.6367764	0.6367764	0.1	6.90	20.00	AVRG
1,1,2,2-Tetrachloroethane	50.355137	50.000000	0.7351207	0.3	-0.71	20.00	LINR
1,1,2-Trichloroethane	0.2760000	0.2568342	0.2568342	0.1	6.94	20.00	AVRG
1,1-Dichloroethane	0.7840000	0.6760933	0.6760933	0.2	13.76	20.00	AVRG
1,1-Dichloroethene	0.4260000	0.3941056	0.3941056	0.1	7.49	20.00	AVRG
Trichloroethene	0.3860000	0.3652159	0.3652159	0.2	5.38	20.00	AVRG
1,2,3-Trichlorobenzene	0.5330000	0.5588744	0.5588744	0.1	-4.85	20.00	AVRG
Trichlorofluoromethane	0.7520000	0.6863804	0.6863804	0.1	8.73	20.00	AVRG
1,2,4-Trichlorobenzene	0.8100000	0.8508943	0.8508943	0.2	-5.05	20.00	AVRG
1,2,4-Trimethylbenzene	2.5980000	2.3697424	2.3697424	0.1	8.78	20.00	AVRG
Tetrachloroethene	0.3620000	0.3389198	0.3389198	0.2	6.38	20.00	AVRG
1,2-Dichlorobenzene	1.4860000	1.3644818	1.3644818	0.4	8.18	20.00	AVRG
1,2-Dichloroethane	0.4130000	0.3898061	0.3898061	0.1	5.62	20.00	AVRG
1,2-Dichloropropane	0.3130000	0.2789808	0.2789808	0.1	10.87	20.00	AVRG
1,3,5-Trimethylbenzene	2.5310000	2.3148800	2.3148800	0.1	8.54	20.00	AVRG
1,3-Dichloropropane	0.5720000	0.5241260	0.5241260	0.1	8.37	20.00	AVRG
1,4-Dichlorobenzene	1.5880000	1.4484304	1.4484304	0.4	8.79	20.00	AVRG
Toluene	1.5430000	1.3916061	1.3916061	0.4	9.81	20.00	AVRG
2-Butanone	0.1530000	0.1573437	0.1573437	0.1	-2.84	20.00	AVRG
2-Chlorotoluene	47.990275	50.000000	1.8001350	0.1	4.02	20.00	LINR
2-Hexanone	0.2010000	0.1979074	0.1979074	0.1	1.54	20.00	AVRG
4-Chlorotoluene	2.3360000	2.1048188	2.1048188	0.1	9.90	20.00	AVRG
tert-Butylbenzene	2.1260000	1.9300945	1.9300945	0.1	9.21	20.00	AVRG
4-Methyl-2-Pentanone	0.2970000	0.2801029	0.2801029	0.1	5.69	20.00	AVRG
Acetone	106.81724	100.00000	0.1445306	0.1	-6.82	20.00	LINR
Benzene	1.2800000	1.1549132	1.1549132	0.5	9.77	20.00	AVRG
Bromobenzene	0.9200000	0.8661491	0.8661491	0.1	5.85	20.00	AVRG
Bromochloromethane	0.2890000	0.2686080	0.2686080	0.1	7.06	20.00	AVRG
Bromodichloromethane	0.4280000	0.4115009	0.4115009	0.2	3.85	20.00	AVRG
Bromoform	0.3000000	0.3148731	0.3148731	0.1	-4.96	20.00	AVRG
Bromomethane	48.826411	50.000000	0.3924020	0.1	2.35	20.00	LINR
Carbon Disulfide	1.2600000	1.0903187	1.0903187	0.1	13.47	20.00	AVRG
Carbon Tetrachloride	0.4480000	0.4295021	0.4295021	0.1	4.13	20.00	AVRG

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1909051

Instrument ID: VOA6 Calibration Date: 09/13/19 Time: 1127

Lab File ID: X091303 Init. Calib. Date(s): 09/11/19 09/11/19

Init. Calib. Times: 1131 1531

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Chlorobenzene	1.0480000	0.9557422	0.9557422	0.5	8.80	20.00	AVRG
Chloroethane	53.716925	50.000000	0.3076450	0.1	-7.43	20.00	LINR
Chloroform	0.7950000	0.7216336	0.7216336	0.2	9.23	20.00	AVRG
Chloromethane	41.931462	50.000000	0.3142969	0.1	16.14	20.00	LINR
cis-1,2-Dichloroethene	0.5120000	0.4616714	0.4616714	0.1	9.83	20.00	AVRG
Dibromochloromethane	0.4030000	0.4005216	0.4005216	0.1	0.61	20.00	AVRG
Dichlorodifluoromethane	0.3660000	0.3139582	0.3139582	0.1	14.22	20.00	AVRG
Ethylbenzene	0.5430000	0.4986876	0.4986876	0.1	8.16	20.00	AVRG
Hexachlorobutadiene	50.752320	50.000000	0.4767581	0.1	-1.50	20.00	LINR
Isopropylbenzene	1.6120000	1.4867658	1.4867658	0.1	7.77	20.00	AVRG
m,p-Xylenes	0.6560000	0.6058317	0.6058317	0.1	7.65	20.00	AVRG
Methylene Chloride	48.585987	50.000000	0.4173509	0.1	2.83	20.00	LINR
n-Butylbenzene	2.0130000	1.9380544	1.9380544	0.5	3.72	20.00	AVRG
n-Propylbenzene	3.2930000	2.9945719	2.9945719	0.1	9.06	20.00	AVRG
Naphthalene	1.2870000	1.3712793	1.3712793	0.2	-6.55	20.00	AVRG
o-Xylene	0.6420000	0.5936803	0.5936803	0.3	7.53	20.00	AVRG
sec-Butylbenzene	2.9090000	2.6411581	2.6411581	0.1	9.21	20.00	AVRG
Styrene	1.1010000	1.0458611	1.0458611	0.3	5.01	20.00	AVRG
Vinyl Chloride	0.5210000	0.4412873	0.4412873	0.1	15.30	20.00	AVRG
1,2,3-Trichloropropane	0.6330000	0.6063630	0.6063630	0.1	4.21	20.00	AVRG
p-Isopropyltoluene	2.6220000	2.4684928	2.4684928	0.1	5.85	20.00	AVRG
1,2-Dibromo-3-Chloropropane	0.1280000	0.1410769	0.1410769	0.05	-10.22	20.00	AVRG
1,2-Dichloroethane-d4	50.340866	50.000000	0.4639175	0.1	-0.68	20.00	LINR
Dibromofluoromethane	51.199217	50.000000	0.4429977	0.1	-2.40	20.00	LINR
Toluene-d8	1.3810000	1.2692514	1.2692514	0.1	8.09	20.00	AVRG
4-Bromofluorobenzene	52.042039	50.000000	0.4904790	0.1	-4.08	20.00	LINR

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19090511

Instrument ID: VOA6 Calibration Date: 09/13/19 Time: 1616

Lab File ID: X091315 Init. Calib. Date(s): 09/11/19 09/11/19

Init. Calib. Times: 1131 1531

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
cis-1,3-Dichloropropene	0.5210000	0.5126185	0.5126185	0.2	1.61	50.00	AVRG
trans-1,3-Dichloropropene	0.4660000	0.4588846	0.4588846	0.1	1.53	50.00	AVRG
1,3-Dichlorobenzene	1.5660000	1.4614293	1.4614293	0.6	6.68	50.00	AVRG
2,2-Dichloropropane	0.6550000	0.6049511	0.6049511	0.1	7.64	50.00	AVRG
1,1-Dichloropropene	0.4200000	0.3871058	0.3871058	0.1	7.83	50.00	AVRG
Dibromomethane	0.2260000	0.2142993	0.2142993	0.1	5.18	50.00	AVRG
1,2-Dibromoethane	0.3710000	0.3571518	0.3571518	0.1	3.73	50.00	AVRG
trans-1,2-Dichloroethene	0.4370000	0.3899797	0.3899797	0.1	10.76	50.00	AVRG
1,1,1,2-Tetrachloroethane	0.3790000	0.3733295	0.3733295	0.1	1.50	50.00	AVRG
1,1,1-Trichloroethane	0.6840000	0.6367764	0.6367764	0.1	6.90	50.00	AVRG
1,1,2,2-Tetrachloroethane	50.461550	50.000000	0.7351207	0.3	-0.92	50.00	LINR
1,1,2-Trichloroethane	0.2760000	0.2568342	0.2568342	0.1	6.94	50.00	AVRG
1,1-Dichloroethane	0.7840000	0.6760933	0.6760933	0.2	13.76	50.00	AVRG
1,1-Dichloroethene	0.4260000	0.3941056	0.3941056	0.1	7.49	50.00	AVRG
Trichloroethene	0.3860000	0.3652159	0.3652159	0.2	5.38	50.00	AVRG
1,2,3-Trichlorobenzene	0.5330000	0.5588744	0.5588744	0.1	-4.85	50.00	AVRG
Trichlorofluoromethane	0.7520000	0.6863804	0.6863804	0.1	8.73	50.00	AVRG
1,2,4-Trichlorobenzene	0.8100000	0.8508943	0.8508943	0.2	-5.05	50.00	AVRG
1,2,4-Trimethylbenzene	2.5980000	2.3697424	2.3697424	0.1	8.78	50.00	AVRG
Tetrachloroethene	0.3620000	0.3389198	0.3389198	0.2	6.38	50.00	AVRG
1,2-Dichlorobenzene	1.4860000	1.3644818	1.3644818	0.4	8.18	50.00	AVRG
1,2-Dichloroethane	0.4130000	0.3898061	0.3898061	0.1	5.62	50.00	AVRG
1,2-Dichloropropane	0.3130000	0.2789808	0.2789808	0.1	10.87	50.00	AVRG
1,3,5-Trimethylbenzene	2.5310000	2.3148800	2.3148800	0.1	8.54	50.00	AVRG
1,3-Dichloropropane	0.5720000	0.5241260	0.5241260	0.1	8.37	50.00	AVRG
1,4-Dichlorobenzene	1.5880000	1.4484304	1.4484304	0.4	8.79	50.00	AVRG
Toluene	1.5430000	1.3916061	1.3916061	0.4	9.81	50.00	AVRG
2-Butanone	0.1530000	0.1573437	0.1573437	0.1	-2.84	50.00	AVRG
2-Chlorotoluene	44.234787	50.000000	1.8001350	0.1	11.53	50.00	LINR
2-Hexanone	0.2010000	0.1979074	0.1979074	0.1	1.54	50.00	AVRG
4-Chlorotoluene	2.3360000	2.1048188	2.1048188	0.1	9.90	50.00	AVRG
tert-Butylbenzene	2.1260000	1.9300945	1.9300945	0.1	9.21	50.00	AVRG
4-Methyl-2-Pentanone	0.2970000	0.2801029	0.2801029	0.1	5.69	50.00	AVRG
Acetone	99.850730	100.00000	0.1445306	0.1	0.15	50.00	LINR
Benzene	1.2800000	1.1549132	1.1549132	0.5	9.77	50.00	AVRG
Bromobenzene	0.9200000	0.8661491	0.8661491	0.1	5.85	50.00	AVRG
Bromochloromethane	0.2890000	0.2686080	0.2686080	0.1	7.06	50.00	AVRG
Bromodichloromethane	0.4280000	0.4115009	0.4115009	0.2	3.85	50.00	AVRG
Bromoform	0.3000000	0.3148731	0.3148731	0.1	-4.96	50.00	AVRG
Bromomethane	48.196256	50.000000	0.3924020	0.1	3.61	50.00	LINR
Carbon Disulfide	1.2600000	1.0903187	1.0903187	0.1	13.47	50.00	AVRG
Carbon Tetrachloride	0.4480000	0.4295021	0.4295021	0.1	4.13	50.00	AVRG

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1909051

Instrument ID: VOA6 Calibration Date: 09/13/19 Time: 1616

Lab File ID: X091315 Init. Calib. Date(s): 09/11/19 09/11/19

Init. Calib. Times: 1131 1531

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Chlorobenzene	1.0480000	0.9557422	0.9557422	0.5	8.80	50.00	AVRG
Chloroethane	46.764942	50.000000	0.3076450	0.1	6.47	50.00	LINR
Chloroform	0.7950000	0.7216336	0.7216336	0.2	9.23	50.00	AVRG
Chloromethane	41.251966	50.000000	0.3142969	0.1	17.50	50.00	LINR
cis-1,2-Dichloroethene	0.5120000	0.4616714	0.4616714	0.1	9.83	50.00	AVRG
Dibromochloromethane	0.4030000	0.4005216	0.4005216	0.1	0.61	50.00	AVRG
Dichlorodifluoromethane	0.3660000	0.3139582	0.3139582	0.1	14.22	50.00	AVRG
Ethylbenzene	0.5430000	0.4986876	0.4986876	0.1	8.16	50.00	AVRG
Hexachlorobutadiene	45.010167	50.000000	0.4767581	0.1	9.98	50.00	LINR
Isopropylbenzene	1.6120000	1.4867658	1.4867658	0.1	7.77	50.00	AVRG
m,p-Xylenes	0.6560000	0.6058317	0.6058317	0.1	7.65	50.00	AVRG
Methylene Chloride	48.257136	50.000000	0.4173509	0.1	3.48	50.00	LINR
n-Butylbenzene	2.0130000	1.9380544	1.9380544	0.5	3.72	50.00	AVRG
n-Propylbenzene	3.2930000	2.9945719	2.9945719	0.1	9.06	50.00	AVRG
Naphthalene	1.2870000	1.3712793	1.3712793	0.2	-6.55	50.00	AVRG
o-Xylene	0.6420000	0.5936803	0.5936803	0.3	7.53	50.00	AVRG
sec-Butylbenzene	2.9090000	2.6411581	2.6411581	0.1	9.21	50.00	AVRG
Styrene	1.1010000	1.0458611	1.0458611	0.3	5.01	50.00	AVRG
Vinyl Chloride	0.5210000	0.4412873	0.4412873	0.1	15.30	50.00	AVRG
1,2,3-Trichloropropane	0.6330000	0.6063630	0.6063630	0.1	4.21	50.00	AVRG
p-Isopropyltoluene	2.6220000	2.4684928	2.4684928	0.1	5.85	50.00	AVRG
1,2-Dibromo-3-Chloropropane	0.1280000	0.1410769	0.1410769	0.05	-10.22	50.00	AVRG
1,2-Dichloroethane-d4	51.530054	50.000000	0.4639175	0.1	-3.06	50.00	LINR
Dibromofluoromethane	52.354426	50.000000	0.4429977	0.1	-4.71	50.00	LINR
Toluene-d8	1.3810000	1.2692514	1.2692514	0.1	8.09	50.00	AVRG
4-Bromofluorobenzene	52.808483	50.000000	0.4904790	0.1	-5.62	50.00	LINR

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19090511

Lab File ID (Standard): X091303 Date Analyzed: 09/13/19

Instrument ID: VOA6 Time Analyzed: 1127

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS1(CBZ) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(DCB) AREA #	RT #
	12 HOUR STD	359259	7.67	389586	4.97	203017	9.67
	UPPER LIMIT	718518	8.17	779172	5.47	406034	10.17
	LOWER LIMIT	179630	7.17	194793	4.47	101509	9.17
	CLIENT SAMPLE NO.						
01	VLCSW-190913	384617	7.67	425392	4.97	217675	9.67
02	VBLKW-190913	467750	7.67	541179	4.97	261424	9.67
03	HS19090511-0	481319	7.67	553867	4.97	275730	9.67
04	HS19090535-0	446016	7.67	526797	4.97	245040	9.67
05	HS19090535-0	445137	7.67	517539	4.97	245462	9.67
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS1 (CBZ) = Chlorobenzene-d5
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (DCB) = 1,4-Dichlorobenzene-d4

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

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19090511

Lab File ID (Standard): X091303 Date Analyzed: 09/13/19

Instrument ID: VOA6 Time Analyzed: 1127

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS4 AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	289392	4.19				
	UPPER LIMIT	578784	4.69				
	LOWER LIMIT	144696	3.69				
	CLIENT SAMPLE NO.						
01	VLCSW-190913	312866	4.18				
02	VBLKW-190913	414251	4.18				
03	HS19090511-0	422593	4.19				
04	HS19090535-0	407037	4.19				
05	HS19090535-0	399226	4.19				
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS4 = Pentafluorobenzene

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

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM VIII VOA

Data File: \\nahstws005\Target\chem\voa6.i\X190913.b\X091302.D

Date : 13-SEP-2019 11:03

Client ID: BFB

Instrument: voa6.i

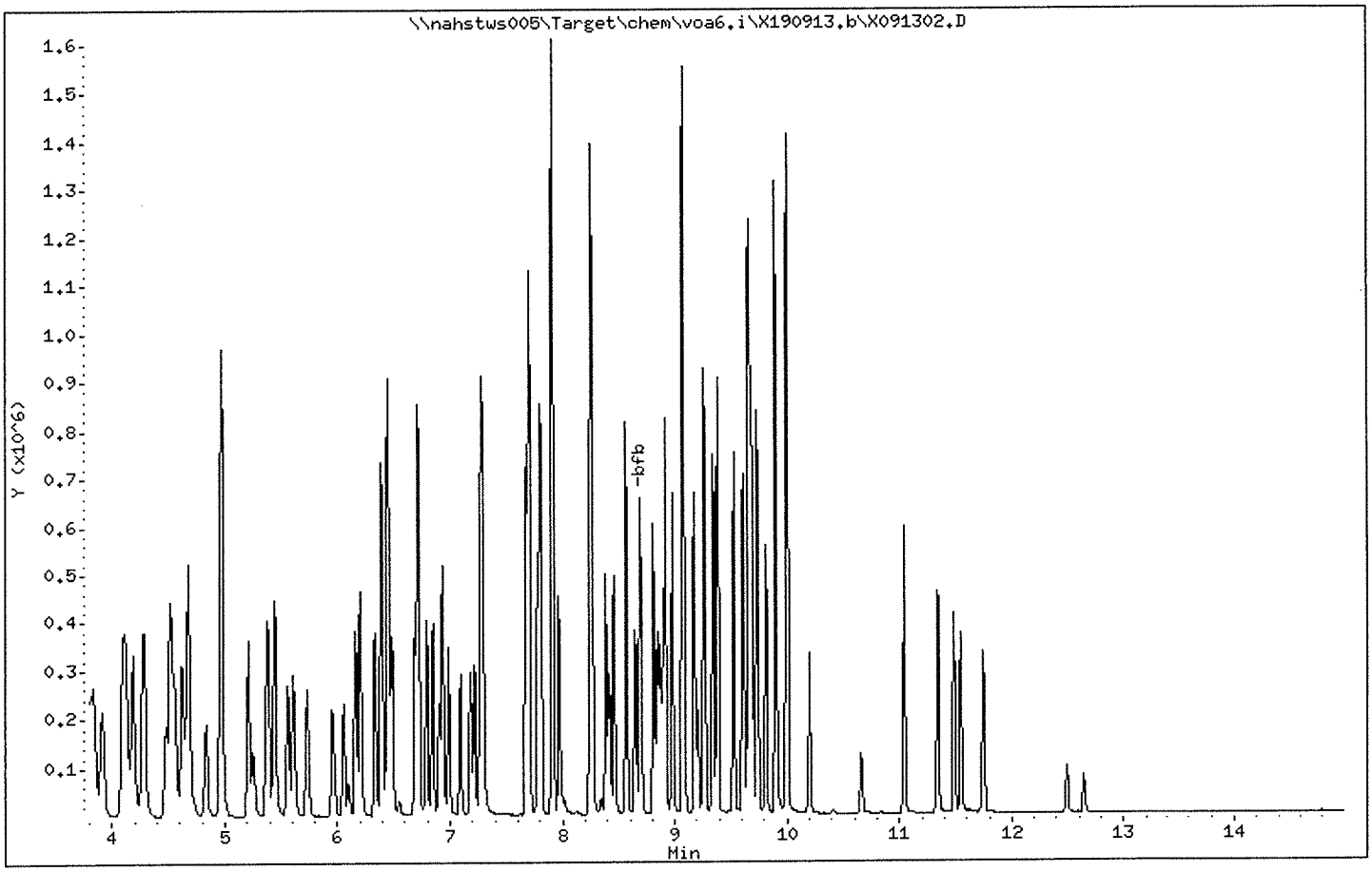
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\nahstws005\Target\chem\voa6.i\X190913.b\X091302.D

Date : 13-SEP-2019 11:03

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

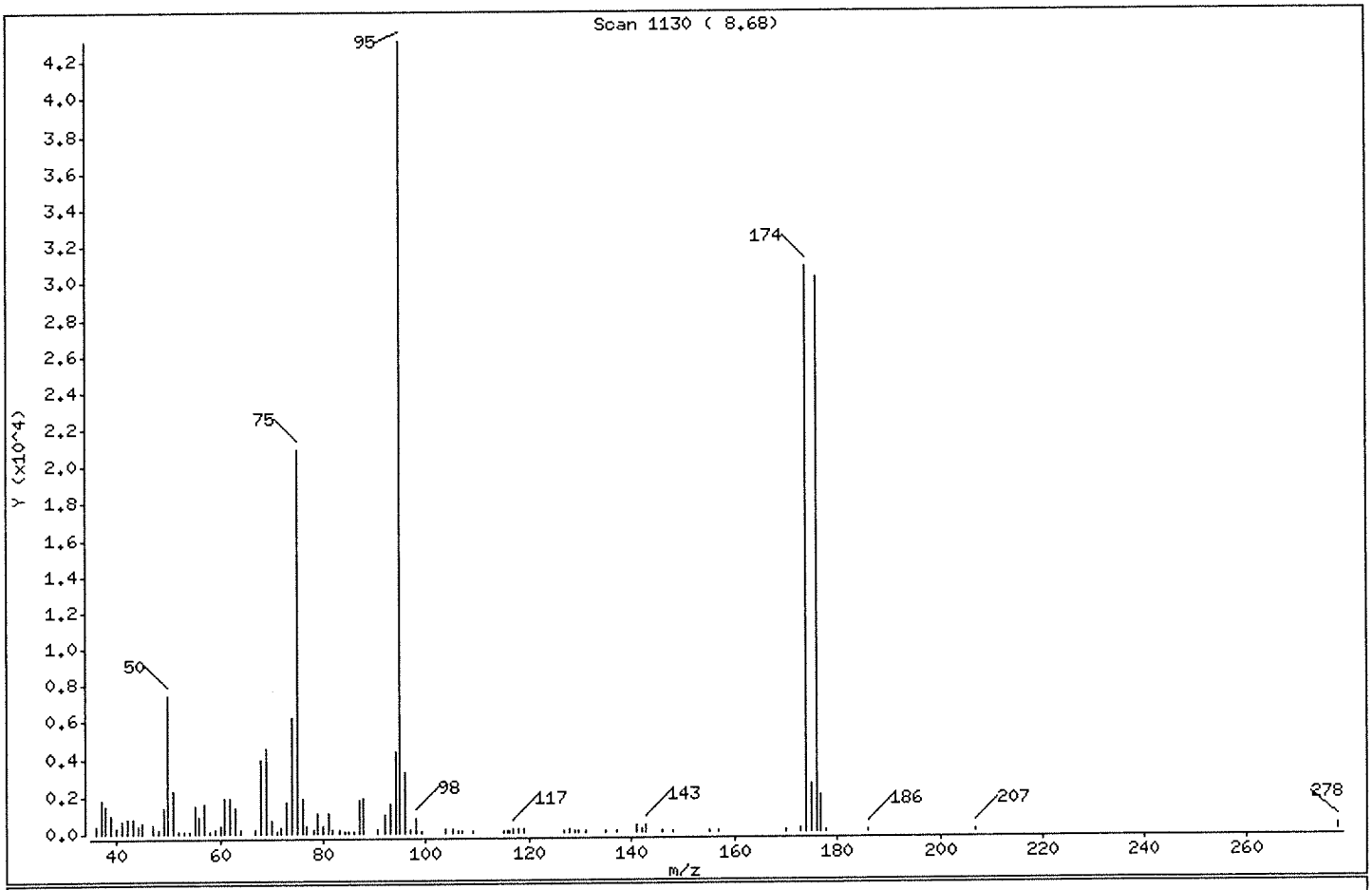
Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	17.14
75	30.00 - 60.00% of mass 95	48.42
96	5.00 - 9.00% of mass 95	7.63
173	Less than 2.00% of mass 174	0.51 (0.71)
174	Greater than 50.00% of mass 95	71.48
175	5.00 - 9.00% of mass 174	5.99 (8.38)
176	95.00 - 101.00% of mass 174	70.09 (98.05)
177	5.00 - 9.00% of mass 176	4.68 (6.68)

Data File: \\nahstws005\Target\chem\voa6.i\X190913.b\X091302.D

Date : 13-SEP-2019 11:03

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

Data File: X091302.D
Spectrum: Scan 1130 (8.68)
Location of Maximum: 95.00
Number of points: 94

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	354	61.00	1859	87.00	1743	129.00	88
37.00	1760	62.00	1877	87.90	1889	129.80	146
38.00	1497	63.00	1362	90.80	185	131.00	85
39.00	1007	63.90	214	91.90	1030	134.80	90
40.00	344	67.00	225	93.10	1591	137.10	116
41.00	689	68.00	3988	94.10	4332	140.90	351
42.10	841	69.00	4576	95.00	43120	142.00	209
43.10	800	70.00	683	96.00	3292	142.90	353
44.10	394	71.00	115	96.90	197	145.80	70
45.00	607	72.00	252	98.10	785	147.90	102
47.00	476	73.00	1687	99.10	129	155.00	122
48.10	209	74.00	6255	103.90	177	157.00	104
49.00	1407	75.00	20880	105.00	159	170.10	52
50.00	7391	76.10	1923	106.10	126	172.90	218
51.00	2284	76.90	444	106.90	105	174.00	30824
52.00	128	78.20	229	109.00	53	175.00	2582
52.90	123	78.90	1105	115.00	105	176.00	30224
54.10	110	79.90	440	115.70	120	176.90	2020
55.10	1449	80.90	1080	116.20	117	177.90	92
56.00	923	81.80	245	117.00	214	186.10	128
57.10	1552	83.10	240	118.00	151	206.90	51
58.00	103	84.10	54	118.90	190	278.20	251
59.10	218	85.00	94	126.80	79		
60.10	383	86.10	67	127.80	160		

Data File: \\nahstws005\Target\chem\voa6.i\X190913.b\X091303.D Page 1
Report Date: 25-Sep-2019 14:59

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X190913.b\X091303.D
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 13-SEP-2019 11:27
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X190913.b\8260W.m
Meth Date : 25-Sep-2019 14:58 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

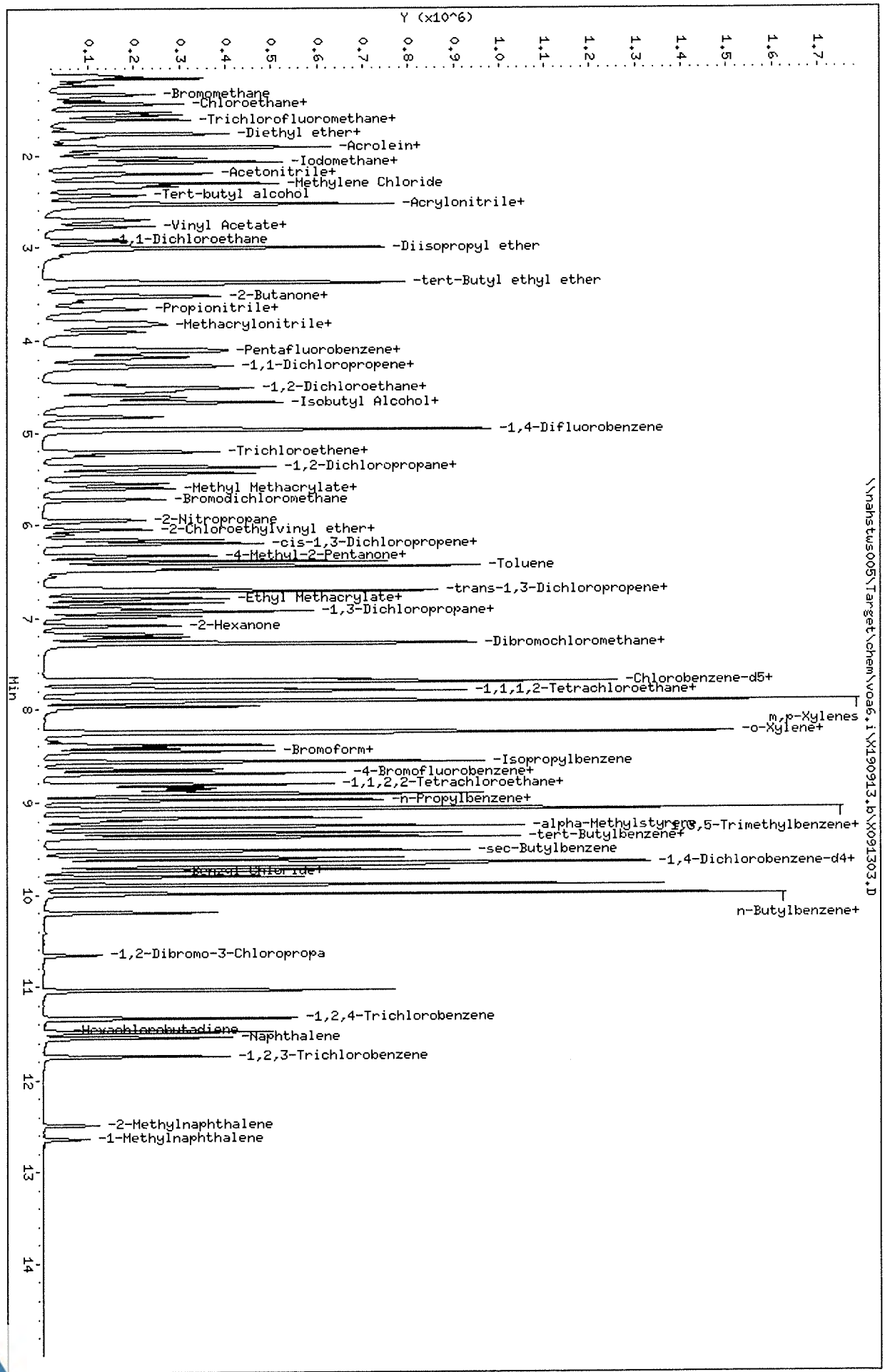
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.189	4.189	(1.000)	289392	50.0000	
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	389586	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.678	(1.000)	359259	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	203017	50.0000	
$	30 Dibromofluoromethane	113	4.103	4.103	(0.979)	128200	50.0000	51.19
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	134254	50.0000	50.34
$	48 Toluene-d8	98	6.388	6.388	(0.833)	455990	50.0000	45.95
$	69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	176209	50.0000	52.04
	60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	134122	50.0000	49.22
	31 1,1,1-Trichloroethane	97	4.089	4.089	(0.976)	184278	50.0000	46.51
	68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	149242	50.0000	50.35
	53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	92270	50.0000	46.55
	22 1,1-Dichloroethane	63	2.929	2.929	(0.699)	195656	50.0000	43.12
	11 1,1-Dichloroethene	96	1.912	1.911	(0.456)	114051	50.0000	46.23
	32 1,1-Dichloropropene	75	4.283	4.282	(0.862)	150811	50.0000	46.07
	93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	113461	50.0000	52.40
	71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	123102	50.0000	47.90(M)
	90 1,2,4-Trichlorobenzene	180	11.345	11.345	(1.173)	172746	50.0000	52.54
	79 1,2,4-Trimethylbenzene	105	9.383	9.382	(0.970)	481098	50.0000	45.60
	89 1,2-Dibromo-3-Chloropropane	155	10.658	10.665	(1.102)	28641	50.0000	54.91
	57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	128310	50.0000	48.15
	88 1,2-Dichlorobenzene	146	9.999	9.998	(1.034)	277013	50.0000	45.89
	33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	151863	50.0000	47.15

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42	1,2-Dichloropropane	63	5.443	5.443	(1.095)	108687	50.0000	44.52
75	1,3,5-Trimethylbenzene	105	9.067	9.074	(0.938)	469960	50.0000	45.73
83	1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	296695	50.0000	46.65
54	1,3-Dichloropropane	76	6.983	6.983	(0.910)	188297	50.0000	45.82
84	1,4-Dichlorobenzene	146	9.683	9.690	(1.001)	294056	50.0000	45.60
26	2,2-Dichloropropane	77	3.516	3.516	(0.839)	175068	50.0000	46.18
24	2-Butanone	43	3.581	3.580	(0.855)	91068	100.000	102.50
76	2-Chlorotoluene	91	8.981	8.981	(0.929)	365458	50.0000	47.99
52	2-Hexanone	43	7.090	7.090	(0.924)	142200	100.000	98.27
77	4-Chlorotoluene	91	9.075	9.074	(0.939)	427314	50.0000	45.05
82	p-Isopropyltoluene	119	9.655	9.655	(0.999)	501146	50.0000	47.06
45	4-Methyl-2-Pentanone	43	6.331	6.331	(0.825)	201259	100.000	94.21
10	Acetone	43	1.976	1.976	(0.472)	83652	100.000	106.81
37	Benzene	78	4.519	4.519	(0.909)	449938	50.0000	45.10
74	Bromobenzene	156	8.810	8.809	(0.911)	175843	50.0000	47.07
29	Bromochloromethane	128	3.803	3.802	(0.908)	77733	50.0000	46.38
39	Bromodichloromethane	83	5.729	5.729	(1.153)	160315	50.0000	48.01
66	Bromoform	173	8.416	8.415	(1.097)	113121	50.0000	52.56
6	Bromomethane	94	1.339	1.338	(0.320)	113558	50.0000	48.82
19	Carbon Disulfide	76	2.069	2.069	(0.494)	631059	100.000	86.53
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	167328	50.0000	47.87
59	Chlorobenzene	112	7.699	7.699	(1.004)	343359	50.0000	45.61
7	Chloroethane	64	1.403	1.403	(0.335)	89030	50.0000	53.71
28	Chloroform	83	3.910	3.910	(0.933)	208835	50.0000	45.35
3	Chloromethane	50	1.073	1.080	(0.256)	90955	50.0000	41.93
27	cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	133604	50.0000	45.03
46	cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	199709	50.0000	49.20
55	Dibromochloromethane	129	7.184	7.183	(0.937)	143891	50.0000	49.65
44	Dibromomethane	93	5.558	5.557	(1.118)	83488	50.0000	47.45
2	Dichlorodifluoromethane	85	0.973	0.973	(0.232)	90857	50.0000	42.84
61	Ethylbenzene	106	7.807	7.807	(1.018)	179158	50.0000	45.88
91	Hexachlorobutadiene	225	11.489	11.488	(1.188)	96790	50.0000	50.75
67	Isopropylbenzene	105	8.566	8.566	(1.117)	534134	50.0000	46.11
62	m,p-Xylenes	106	7.907	7.907	(1.031)	435301	100.000	92.34
17	Methylene Chloride	84	2.306	2.305	(0.550)	120778	50.0000	48.58
87	n-Butylbenzene	91	9.999	9.998	(1.034)	393458	50.0000	48.14
73	n-Propylbenzene	91	8.917	8.917	(0.922)	607949	50.0000	45.46
92	Naphthalene	128	11.546	11.546	(1.194)	278393	50.0000	53.26
63	o-Xylene	106	8.244	8.244	(1.075)	213285	50.0000	46.20
81	sec-Butylbenzene	105	9.526	9.526	(0.985)	536200	50.0000	45.40
64	Styrene	104	8.265	8.265	(1.078)	375735	50.0000	47.48
78	tert-Butylbenzene	119	9.340	9.339	(0.966)	391842	50.0000	45.38
56	Tetrachloroethene	164	6.933	6.933	(0.904)	121760	50.0000	46.87
50	Toluene	91	6.453	6.453	(0.841)	499947	50.0000	45.10
20	trans-1,2-Dichloroethene	96	2.535	2.535	(0.605)	112857	50.0000	44.59
51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.344)	178775	50.0000	49.21
38	Trichloroethene	130	5.214	5.214	(1.049)	142283	50.0000	47.35
8	Trichlorofluoromethane	101	1.561	1.560	(0.373)	198633	50.0000	45.62
5	Vinyl Chloride	62	1.138	1.138	(0.272)	127705	50.0000	42.33

QC Flag Legend

M - Compound response manually integrated.



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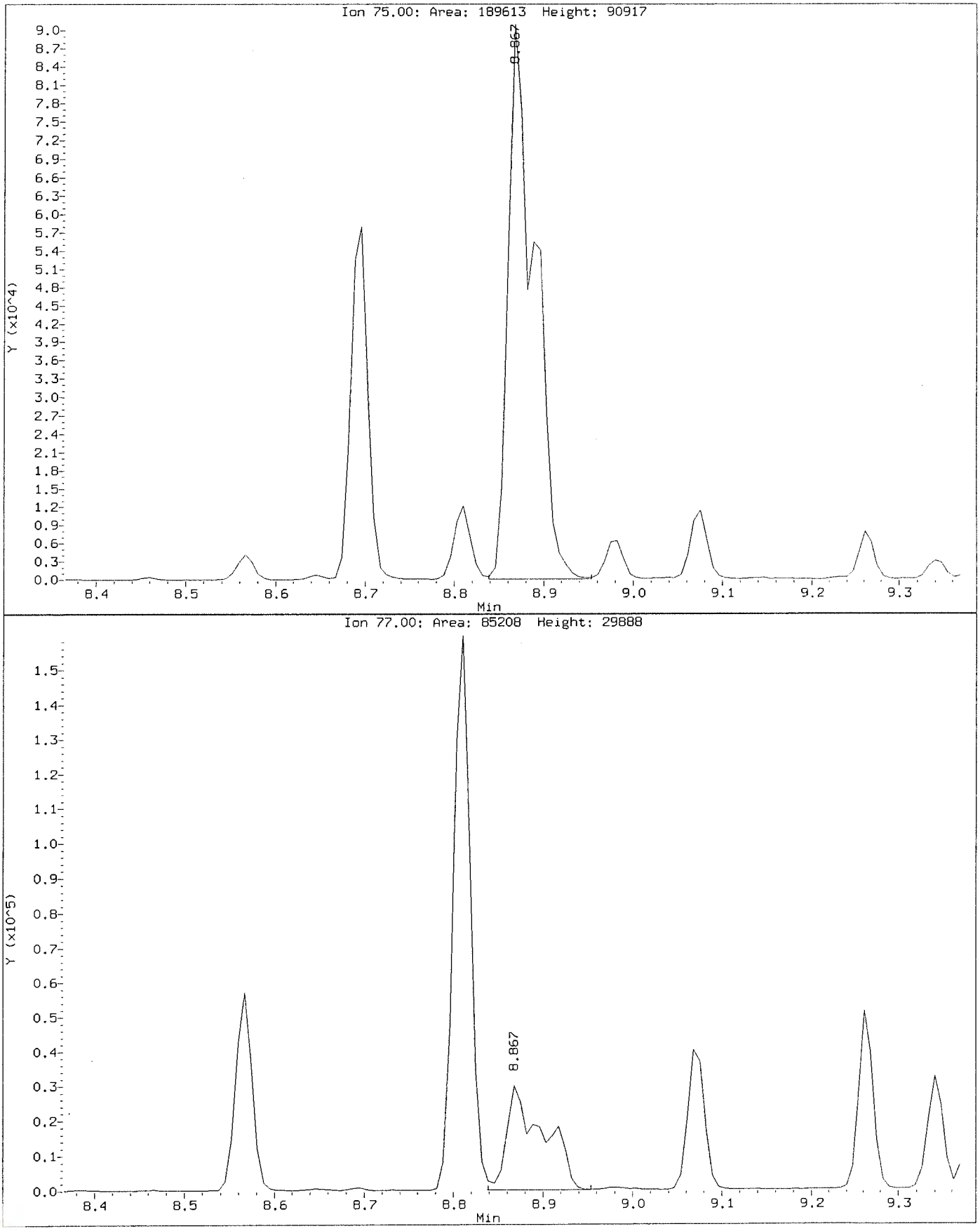
Date : 13-SEP-2019 11:27
Client ID: CCV
Sample Info: CCV;CCV;2;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X190913.b\BEFORE\X091303.D
Injection Date: 13-SEP-2019 11:27
Instrument: voa6.i
Client Sample ID: CCV

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



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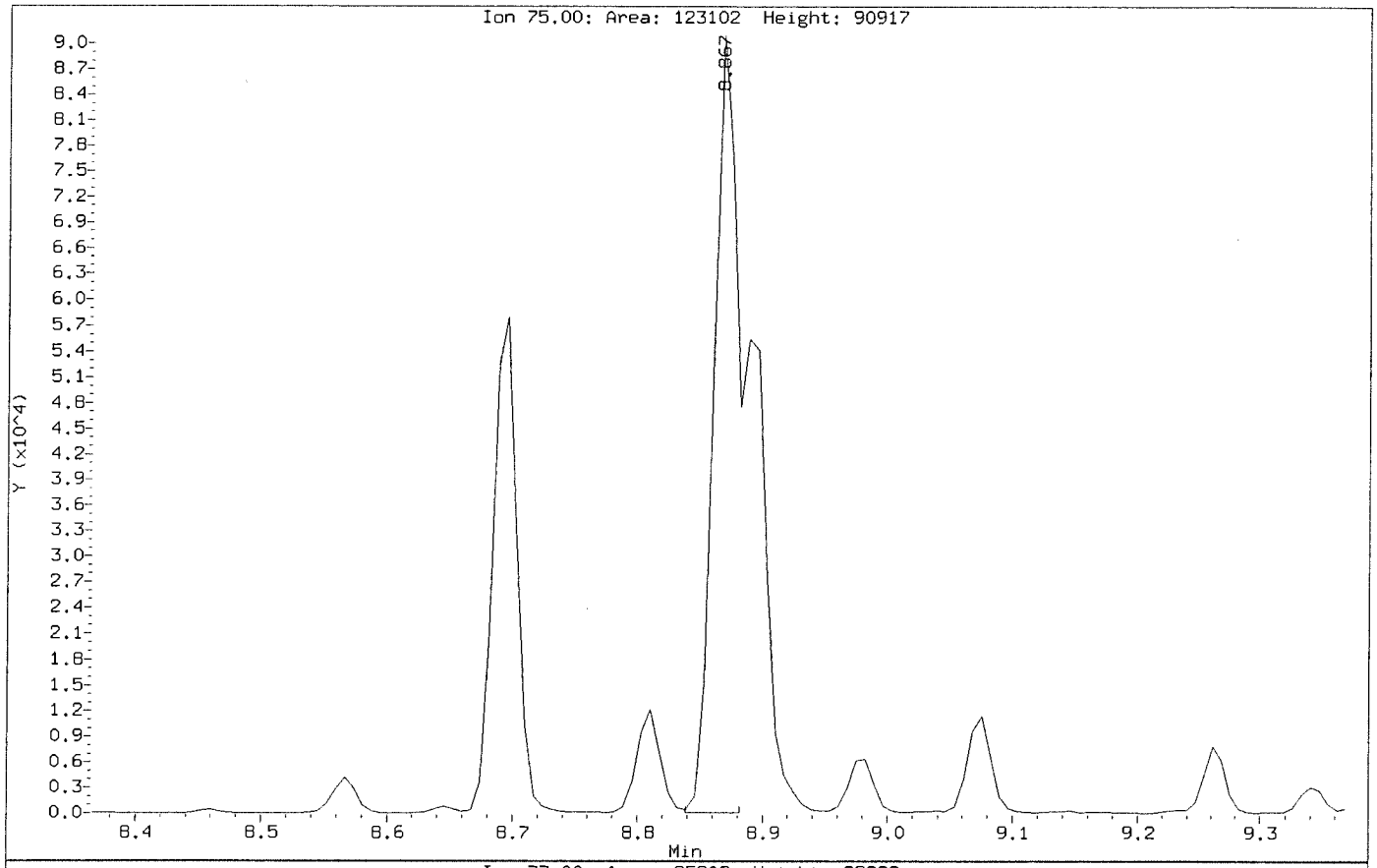
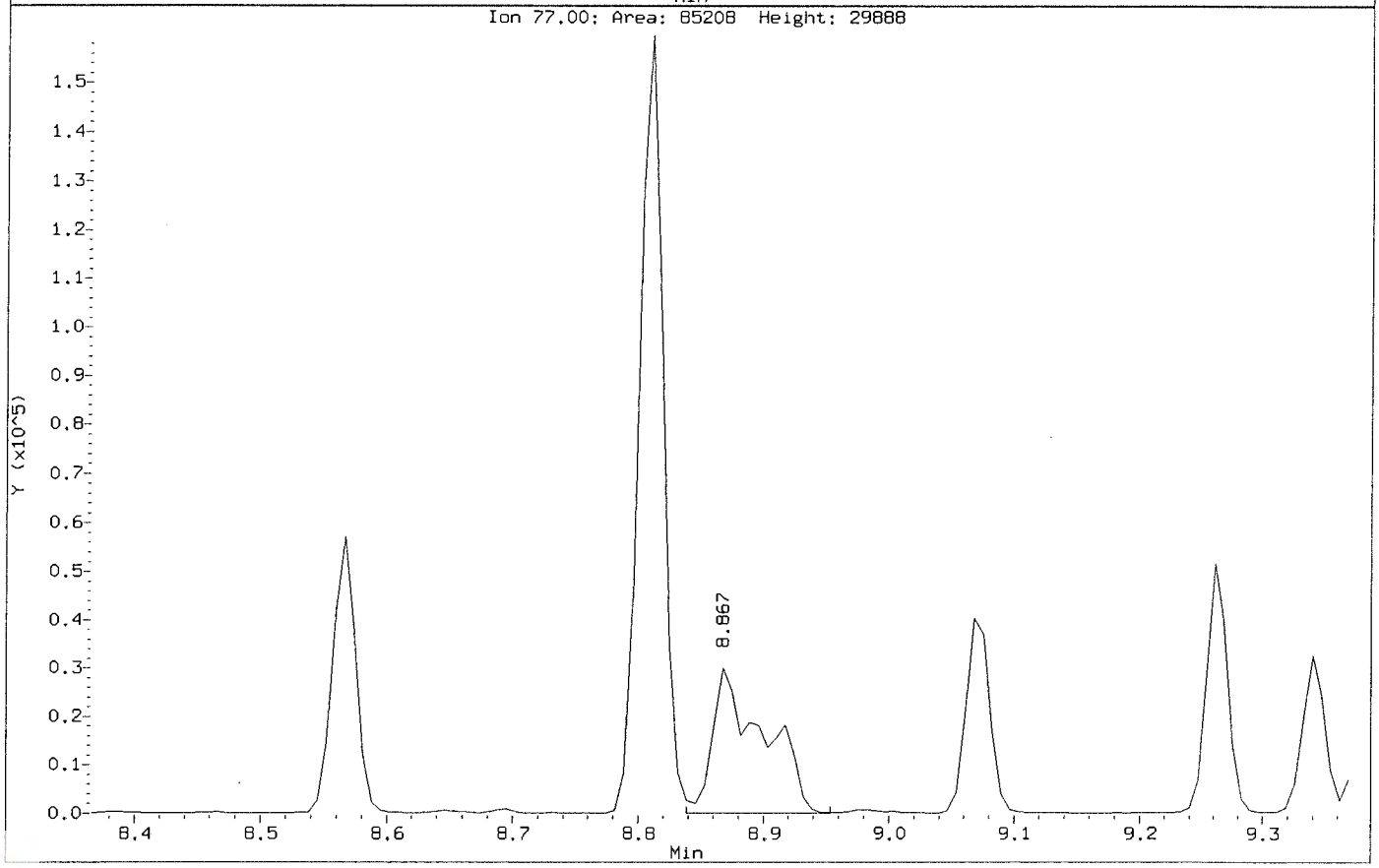
Injection Date: 13-SEP-2019 11:27
Instrument: voa6.i
Client Sample ID: CCV

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





Data File: \\nahstws005\Target\chem\voa6.i\X190913.b\X091305.D Page 1
Report Date: 25-Sep-2019 14:59

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X190913.b\X091305.D
Lab Smp Id: VLCSW-190913 Client Smp ID: VLCSW-190913
Inj Date : 13-SEP-2019 12:15
Operator : PC Inst ID: voa6.i
Smp Info : VLCSW-190913;VLCSW-190913;3;;LCS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X190913.b\8260W.m
Meth Date : 25-Sep-2019 14:58 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 5 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

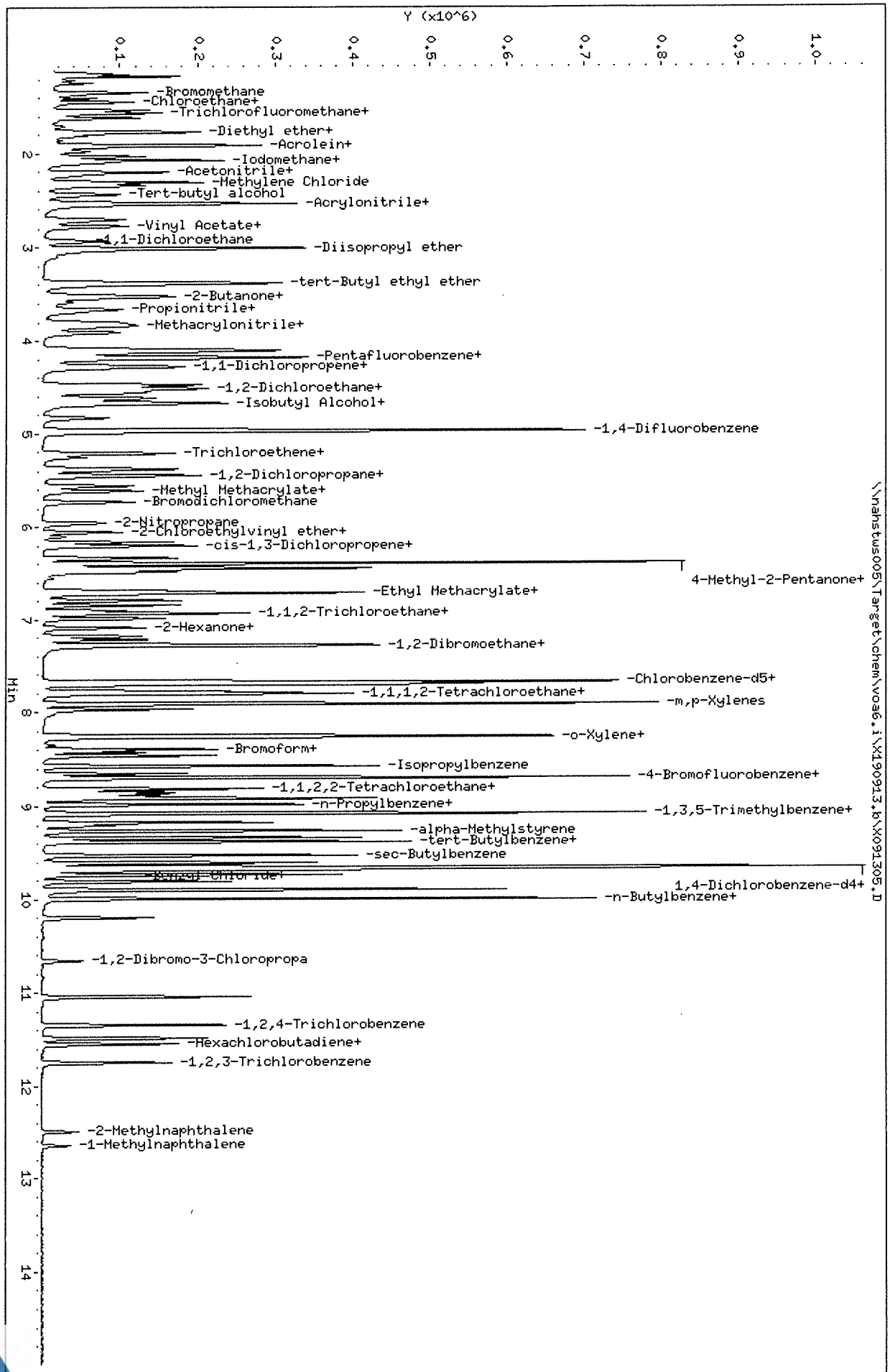
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.182	4.189	(1.000)	312866	50.0000	
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	425392	50.0000	
*	47 Chlorobenzene-d5	117	7.670	7.678	(1.000)	384617	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	217675	50.0000	
$	30 Dibromofluoromethane	113	4.103	4.103	(0.981)	144021	53.2343	53.23
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	154716	53.7109	53.71
$	48 Toluene-d8	98	6.388	6.388	(0.833)	507345	47.7607	47.76
$	69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	198066	54.6703	54.67
	60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	58378	20.0125	20.01
	31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	81708	19.0756	19.07
	68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	67093	20.9854	20.98
	53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	41724	19.6629	19.66
	22 1,1-Dichloroethane	63	2.929	2.929	(0.700)	87290	17.7960	17.79
	11 1,1-Dichloroethene	96	1.919	1.911	(0.459)	50471	18.9267	18.92
	32 1,1-Dichloropropene	75	4.282	4.282	(0.862)	67446	18.8721	18.87
	93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	49053	21.1302	21.13
	71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	54535	19.7916	19.79(M)
	90 1,2,4-Trichlorobenzene	180	11.345	11.345	(1.173)	74333	21.0874	21.08
	79 1,2,4-Trimethylbenzene	105	9.382	9.382	(0.970)	212677	18.8044	18.80
	89 1,2-Dibromo-3-Chloropropane	155	10.657	10.665	(1.102)	12513	22.3758	22.37
	57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	56497	19.8058	19.80
	88 1,2-Dichlorobenzene	146	9.998	9.998	(1.034)	122779	18.9735	18.97
	33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	68804	19.5657	19.56

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
42	1,2-Dichloropropane	63	5.443	5.443	(1.095)	49872	18.7095	18.70
75	1,3,5-Trimethylbenzene	105	9.074	9.074	(0.939)	208232	18.8986	18.89
83	1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	131826	19.3341	19.33
54	1,3-Dichloropropane	76	6.983	6.983	(0.910)	84548	19.2207	19.22
84	1,4-Dichlorobenzene	146	9.690	9.690	(1.002)	130472	18.8707	18.87
26	2,2-Dichloropropane	77	3.516	3.516	(0.841)	79420	19.3805	19.38
24	2-Butanone	43	3.580	3.580	(0.856)	39674	41.3079	41.30
76	2-Chlorotoluene	91	8.981	8.981	(0.929)	162584	19.9389	19.93
52	2-Hexanone	43	7.090	7.090	(0.924)	65178	42.0732	42.07
77	4-Chlorotoluene	91	9.074	9.074	(0.939)	190000	18.6830	18.68
82	p-Isopropyltoluene	119	9.655	9.655	(0.999)	218549	19.1427	19.14
45	4-Methyl-2-Pentanone	43	6.331	6.331	(0.825)	89589	39.1732	39.17
10	Acetone	43	1.976	1.976	(0.473)	43409	48.2284	48.22
37	Benzene	78	4.519	4.519	(0.909)	200584	18.4145	18.41
74	Bromobenzene	156	8.809	8.809	(0.911)	76821	19.1815	19.18
29	Bromochloromethane	128	3.802	3.802	(0.909)	34463	19.0203	19.02
39	Bromodichloromethane	83	5.729	5.729	(1.153)	69729	19.1271	19.12
66	Bromoform	173	8.415	8.415	(1.097)	48577	21.0854	21.08
6	Bromomethane	94	1.338	1.338	(0.320)	52804	20.1482	20.14
19	Carbon Disulfide	76	2.069	2.069	(0.495)	280881	35.6245	35.62
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	74472	19.5159	19.51
59	Chlorobenzene	112	7.699	7.699	(1.004)	152461	18.9202	18.92
7	Chloroethane	64	1.403	1.403	(0.336)	41615	21.7851	21.78
28	Chloroform	83	3.910	3.910	(0.935)	92755	18.6352	18.63
3	Chloromethane	50	1.080	1.080	(0.258)	40170	17.0372	17.03
27	cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	59590	18.5774	18.57
46	cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	88152	19.8928	19.89
55	Dibromochloromethane	129	7.176	7.183	(0.936)	61073	19.6856	19.68
44	Dibromomethane	93	5.557	5.557	(1.118)	36854	19.1845	19.18
2	Dichlorodifluoromethane	85	0.973	0.973	(0.233)	39758	17.3398	17.33
61	Ethylbenzene	106	7.807	7.807	(1.018)	80424	19.2382	19.23
91	Hexachlorobutadiene	225	11.488	11.488	(1.188)	41978	21.0918	21.09
67	Isopropylbenzene	105	8.566	8.566	(1.117)	238451	19.2308	19.23
62	m,p-Xylenes	106	7.907	7.907	(1.031)	193499	38.3431	38.34
17	Methylene Chloride	84	2.305	2.305	(0.551)	55585	19.1948	19.19
87	n-Butylbenzene	91	9.998	9.998	(1.034)	173422	19.7909	19.79
73	n-Propylbenzene	91	8.917	8.917	(0.922)	269752	18.8147	18.81
92	Naphthalene	128	11.546	11.546	(1.194)	120605	21.5199	21.51
63	o-Xylene	106	8.243	8.244	(1.075)	95350	19.2924	19.29
81	sec-Butylbenzene	105	9.526	9.526	(0.985)	237976	18.7932	18.79
64	Styrene	104	8.265	8.265	(1.078)	164595	19.4280	19.42
78	tert-Butylbenzene	119	9.339	9.339	(0.966)	174892	18.8926	18.89
56	Tetrachloroethene	164	6.933	6.933	(0.904)	54721	19.6786	19.67
50	Toluene	91	6.453	6.453	(0.841)	222430	18.7434	18.74
20	trans-1,2-Dichloroethene	96	2.535	2.535	(0.606)	50204	18.3481	18.34
51	trans-1,3-Dichloropropene	75	6.689	6.682	(1.346)	79149	19.9541	19.95
38	Trichloroethene	130	5.214	5.214	(1.049)	63328	19.3042	19.30
8	Trichlorofluoromethane	101	1.560	1.560	(0.373)	91945	19.5356	19.53
5	Vinyl Chloride	62	1.138	1.138	(0.272)	59318	18.1885	18.18

QC Flag Legend

M - Compound response manually integrated.

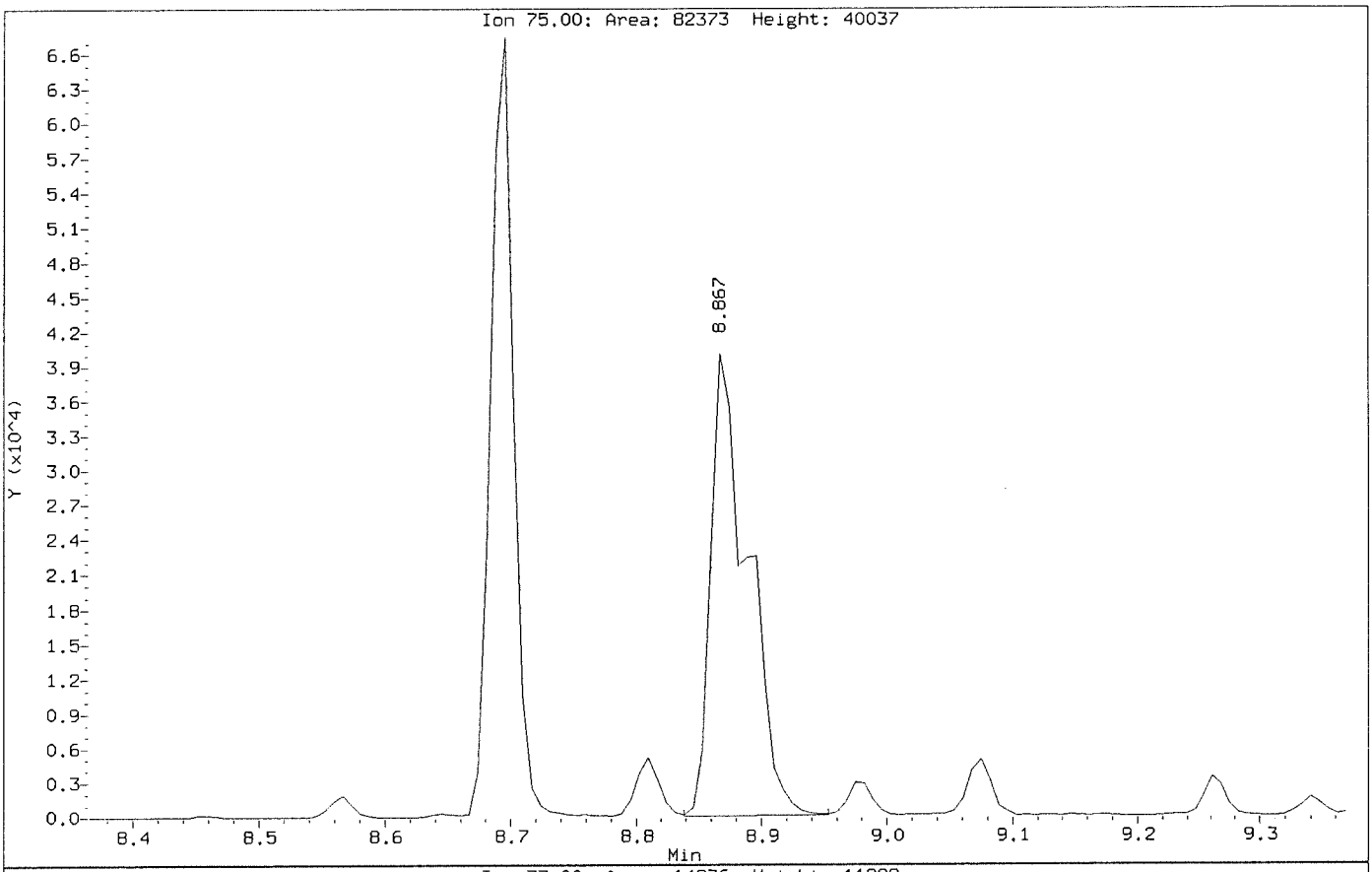


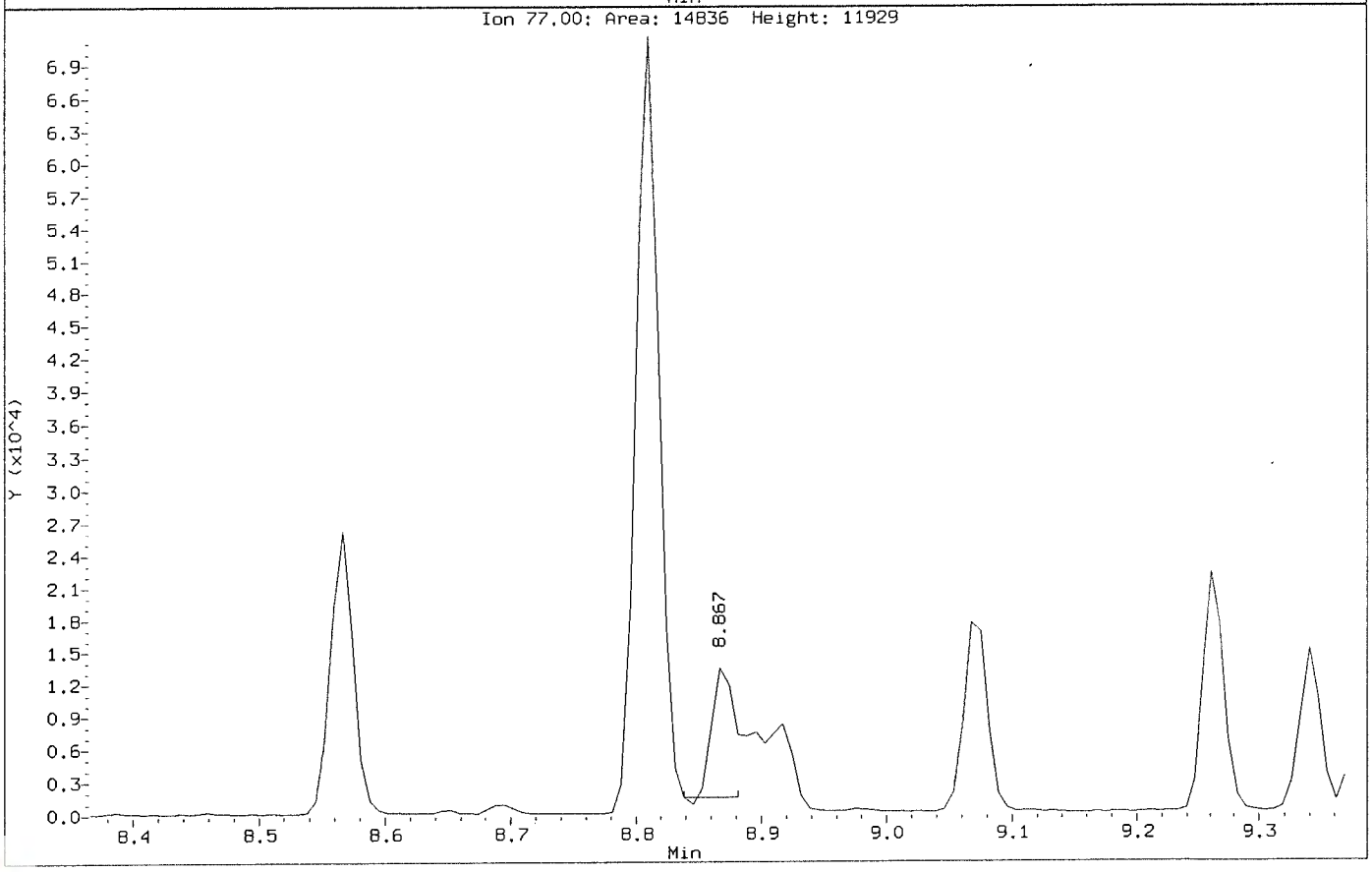
Data File: \\nahstus005\Target\chem\voa6.i\X190913.b\X091305.D
Date : 13-SEP-2019 12:15
Client ID: VLCSW-190913
Sample Info: VLCSW-190913;VLCSW-190913;3;;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X190913.b\BEFORE\X091305.D
Injection Date: 13-SEP-2019 12:15
Instrument: voa6.i
Client Sample ID: VLCSW-190913

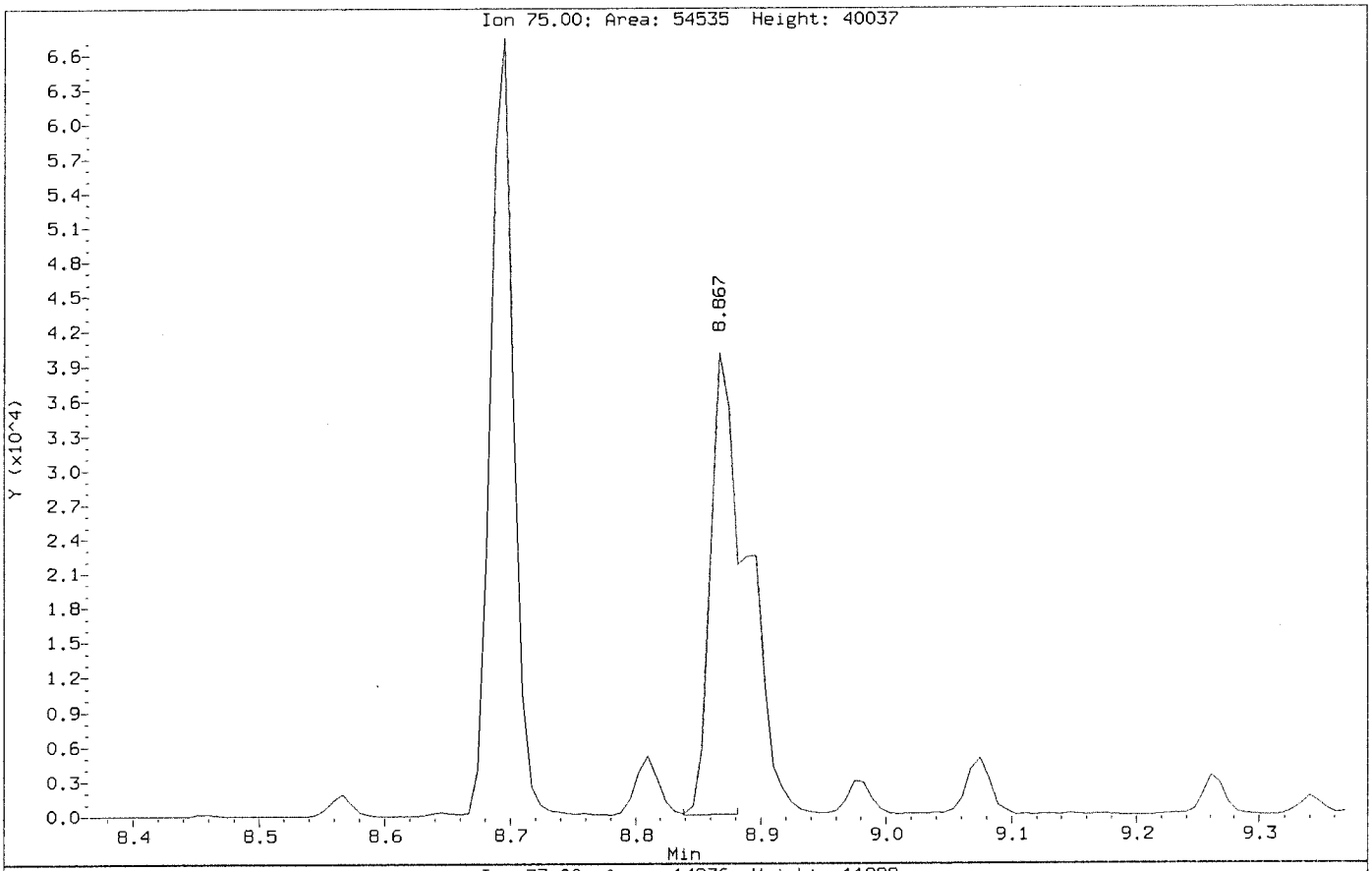
Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4

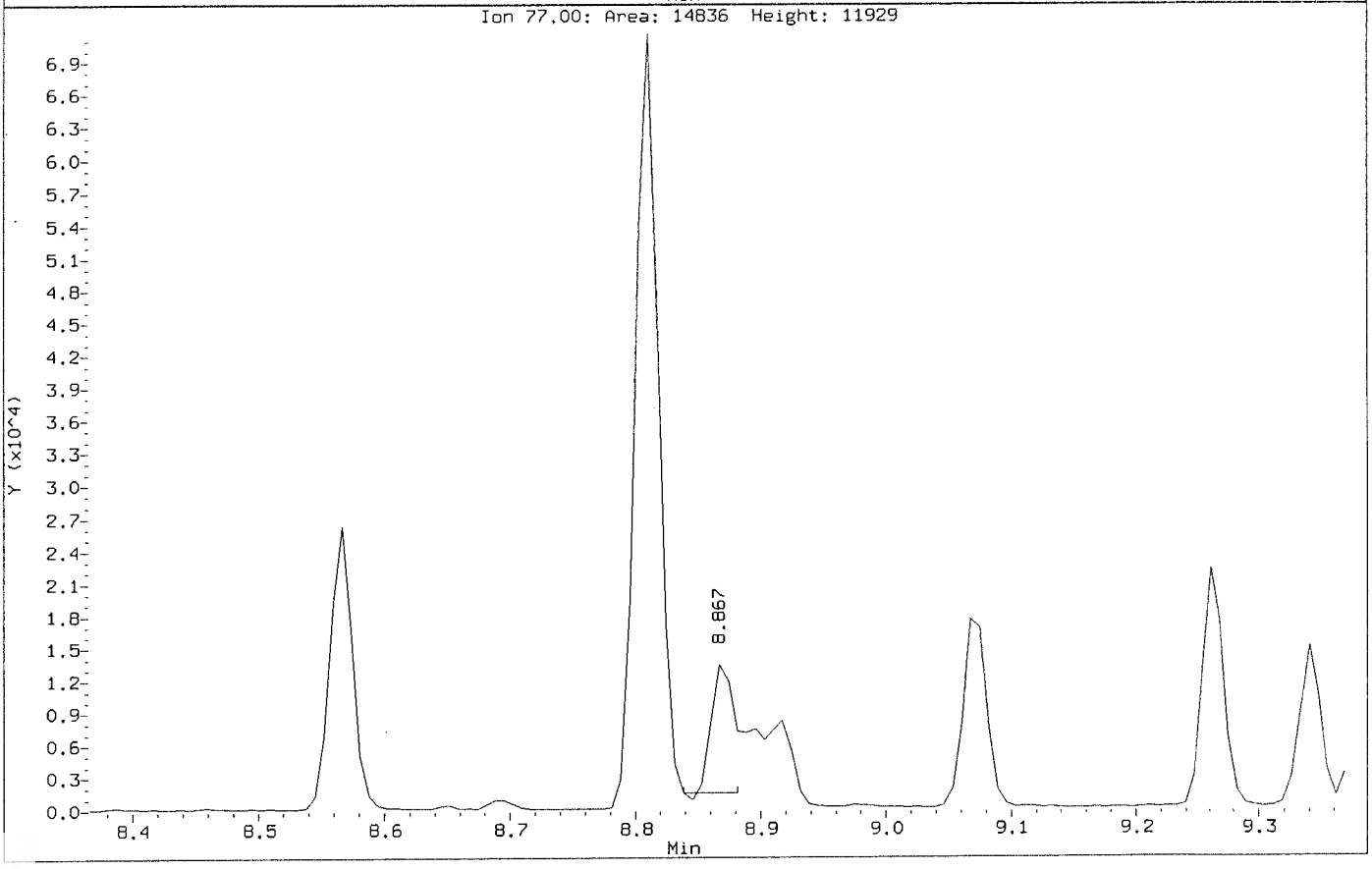




Data File: \\nahstws005\Target\chem\voa6.i\X190913.b\X091305.D
Injection Date: 13-SEP-2019 12:15
Instrument: voa6.i
Client Sample ID: VLCSW-190913

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X190913.b\X091307.D
Lab Smp Id: VBLKW-190913 Client Smp ID: VBLKW-190913
Inj Date : 13-SEP-2019 13:03
Operator : PC Inst ID: voa6.i
Smp Info : VBLKW-190913;VBLKW-190913;3;;BLANK
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X190913.b\8260W.m
Meth Date : 25-Sep-2019 14:58 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 7 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

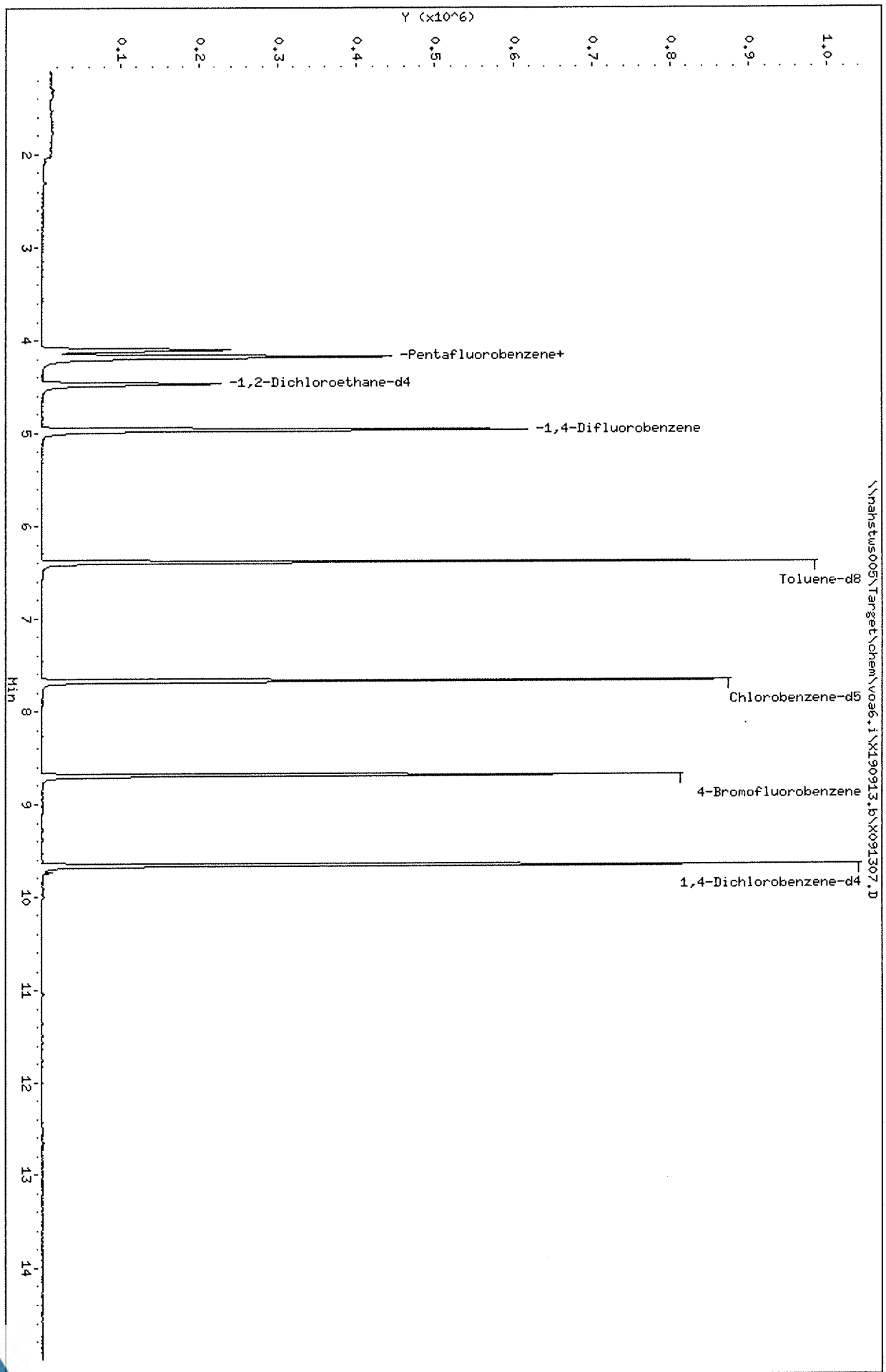
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.189	(1.000)	414251	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	541179	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.678	(1.000)	467750	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	261424	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	166516	46.3813	46.38
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	171188	44.7594	44.75
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	617146	47.7716	47.77
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	226375	51.3431	51.34

Data File: \\nahstws005\Target\chem\voa6.i\X190913.b\X091307.D
Date : 13-SEP-2019 13:03
Client ID: VBLKW-190913
Sample Info: VBLKW-190913;VBLKW-190913;3;;BLANK
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X190913.b\X091312.D Page 1
Report Date: 25-Sep-2019 15:09

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X190913.b\X091312.D
Lab Smp Id: HS19090511-06 Client Smp ID: HS19090511-06
Inj Date : 13-SEP-2019 15:03
Operator : PC Inst ID: voa6.i
Smp Info : HS19090511-06;HS19090511-06;;;
Misc Info : HS18090001;WATER;0;5;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X190913.b\8260W.m
Meth Date : 25-Sep-2019 15:08 Devak.Giga Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 12
Dil Factor: 5.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

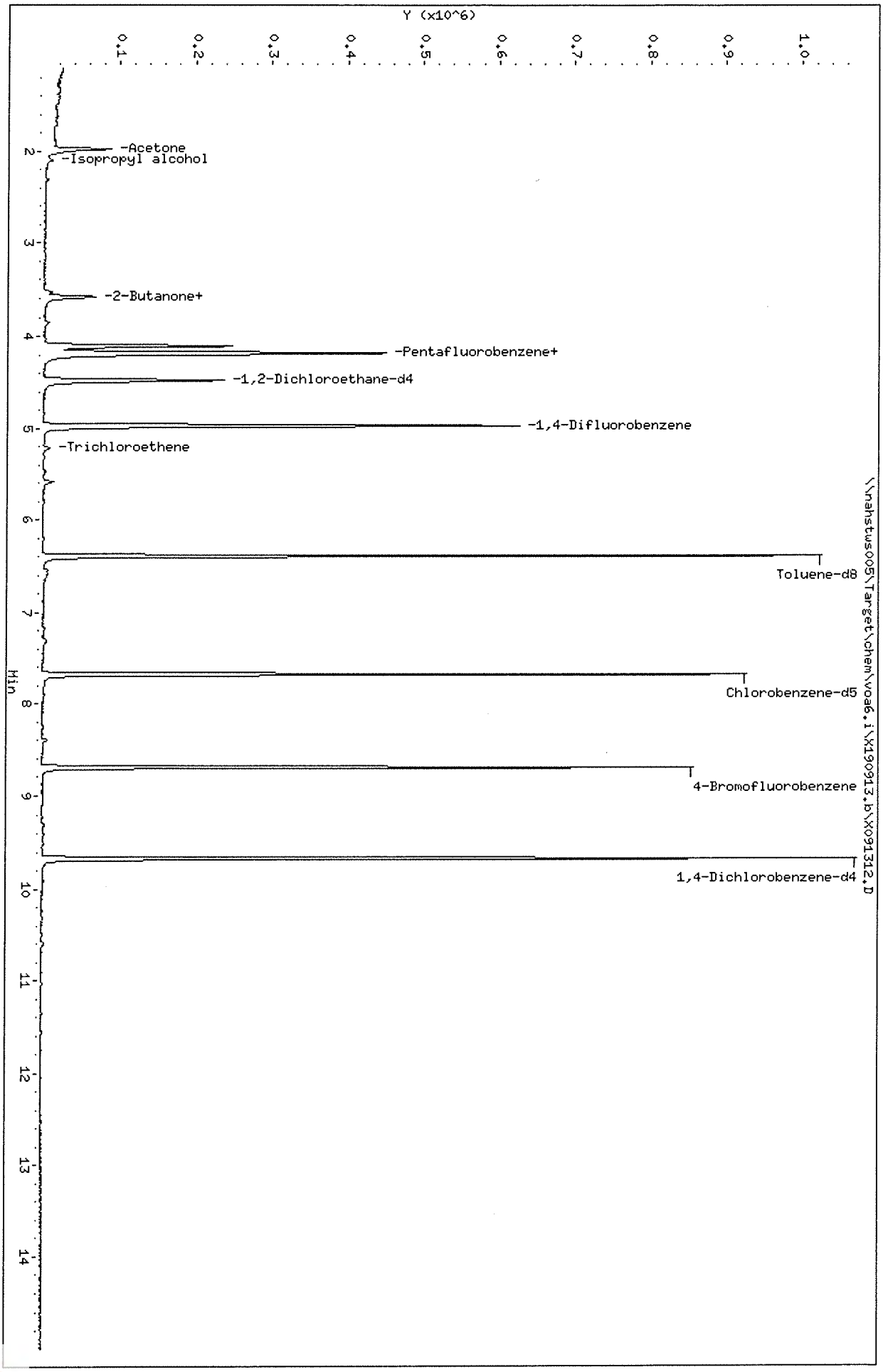
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	5.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	422593	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	553867	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.671	(1.000)	481319	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	275730	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	168781	46.0790	46.07
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	178934	45.8799	45.87
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	631890	47.5340	47.53
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	231271	50.9705	50.97
24 2-Butanone	43	3.580	3.581	(0.855)	95832	73.8710	369.35
10 Acetone	43	1.976	1.976	(0.472)	88785	76.0385	380.19
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	6626	1.52933	7.64(a)
38 Trichloroethene	130	5.221	5.214	(1.050)	3391	0.79390	3.96(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).



Data File: \\nahstws005\Target\chem\voa6.i\X190913.b\X091312.D
Date : 13-SEP-2019 15:03
Client ID: HS19090511-06
Sample Info: HS19090511-06;HS19090511-06;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X190913.b\X091312.D

Date : 13-SEP-2019 15:03

Client ID: HS19090511-06

Instrument: voa6.i

Sample Info: HS19090511-06;HS19090511-06;;;

Purge Volume: 5.0

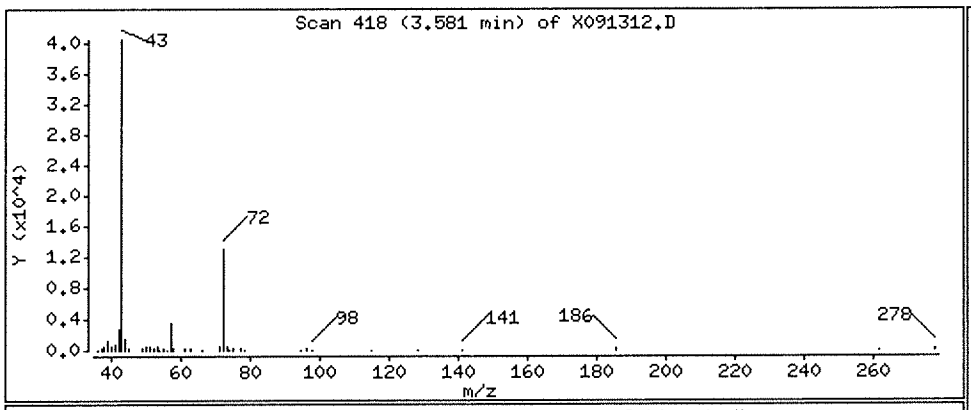
Operator: PC

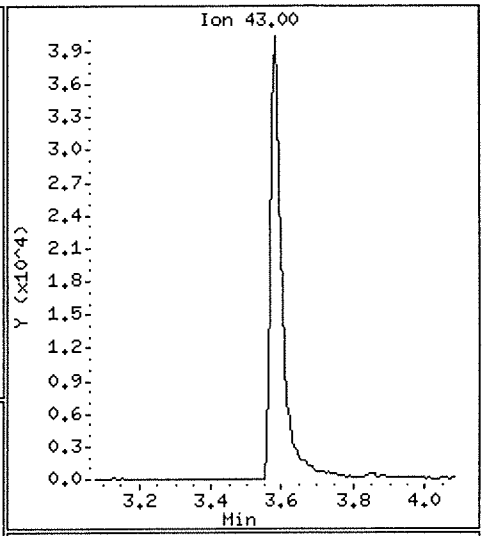
Column phase: DB624

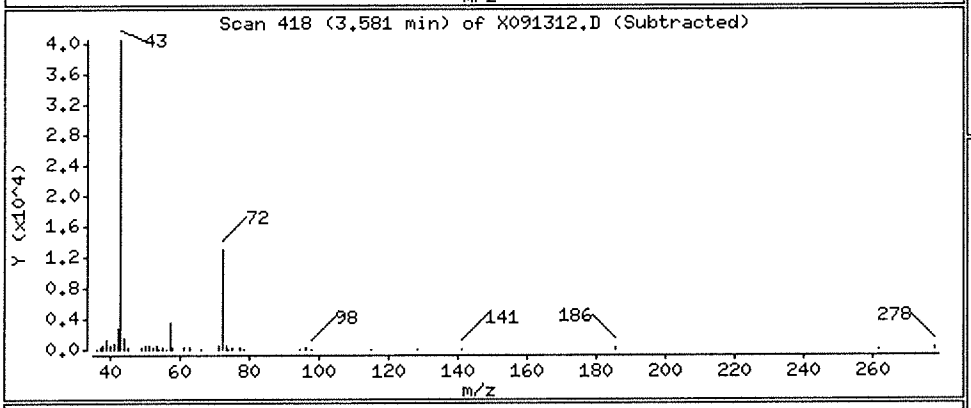
Column diameter: 0.18

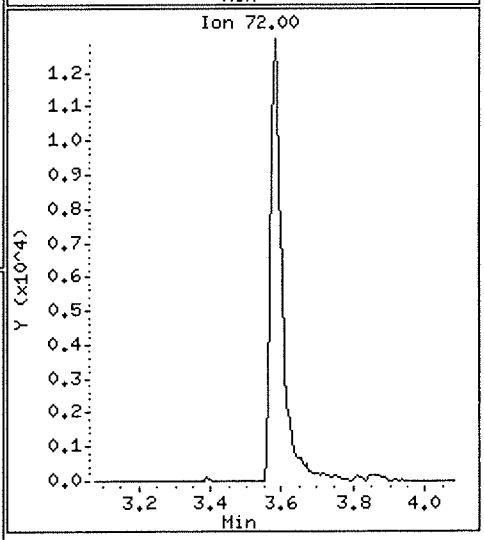
24 2-Butanone

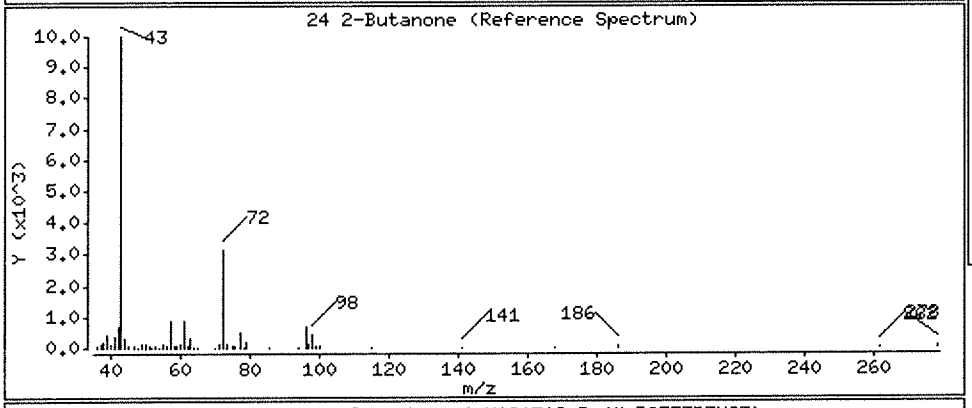
Concentration: 369.35 ug/l

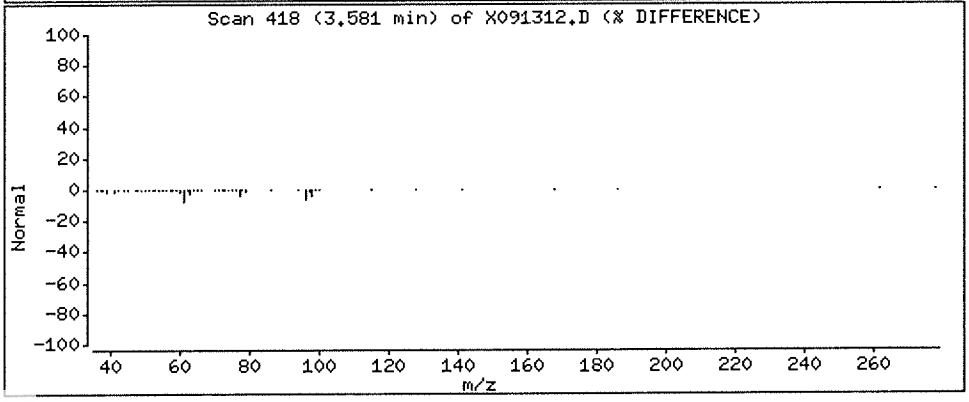












Data File: \\nahstws005\Target\chem\voa6.i\X190913.b\X091312.D

Date : 13-SEP-2019 15:03

Client ID: HS19090511-06

Instrument: voa6.i

Sample Info: HS19090511-06;HS19090511-06;;;

Purge Volume: 5.0

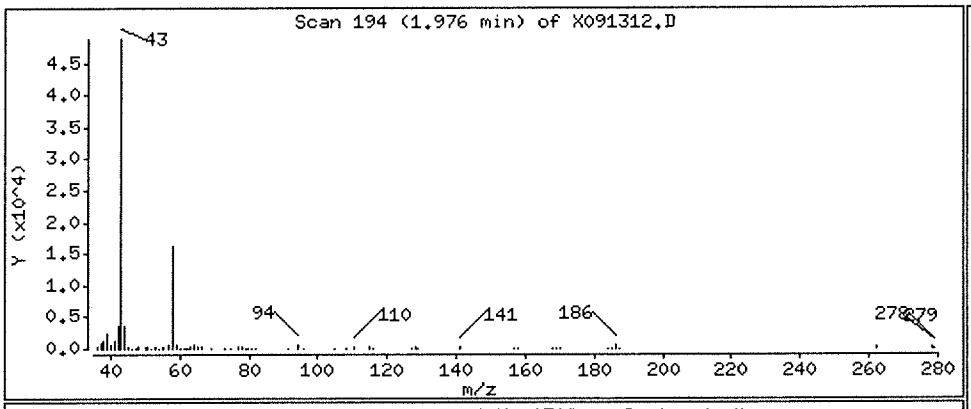
Operator: PC

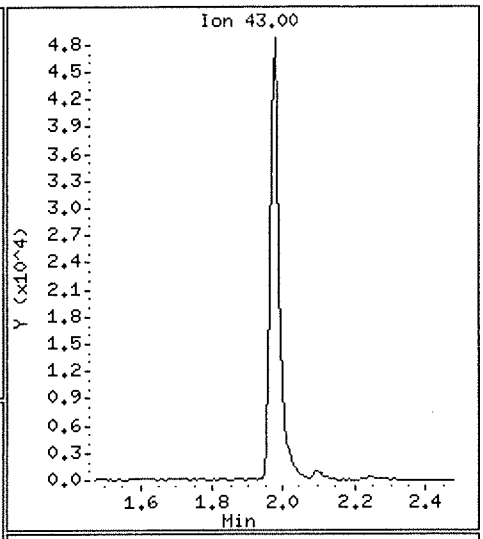
Column phase: DB624

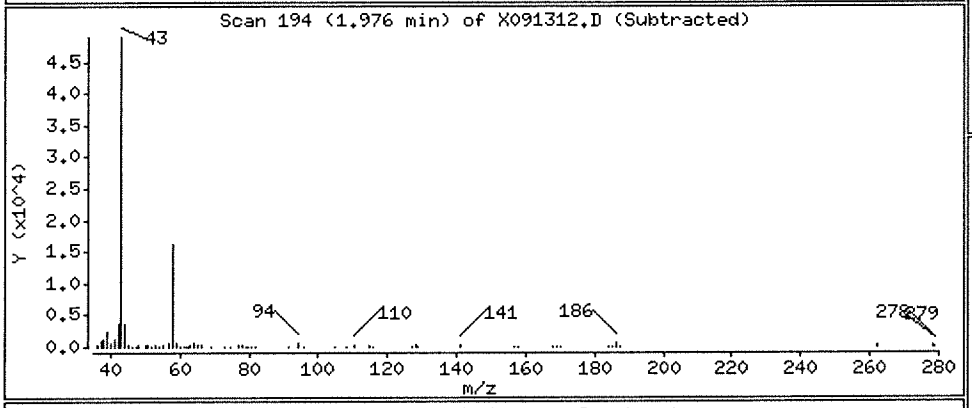
Column diameter: 0.18

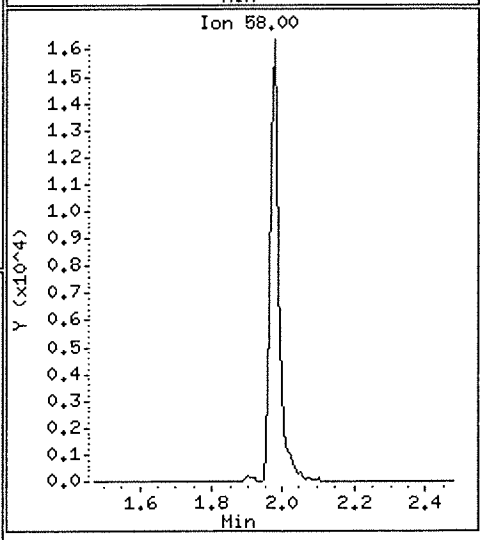
10 Acetone

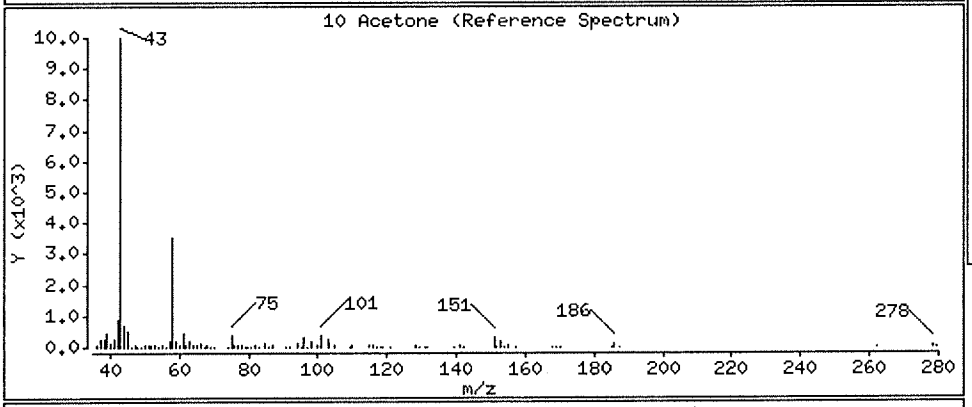
Concentration: 380.19 ug/l

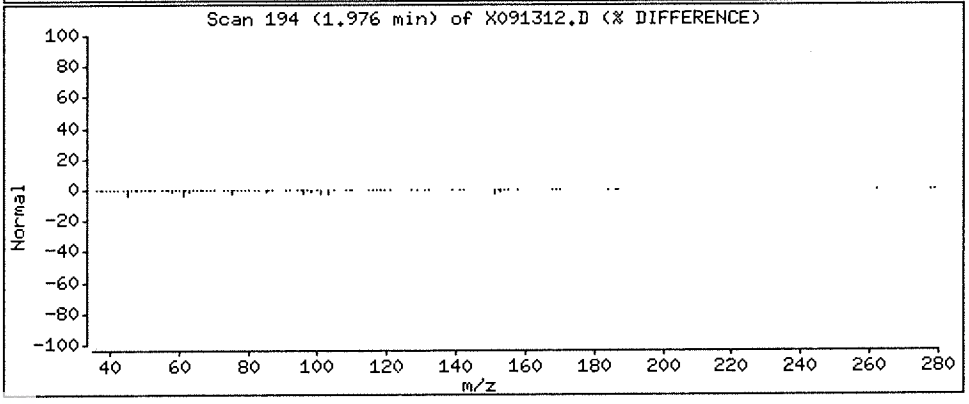












Data File: \\nahstws005\Target\chem\voa6.i\X190913.b\X091312.D Page 5

Date : 13-SEP-2019 15:03

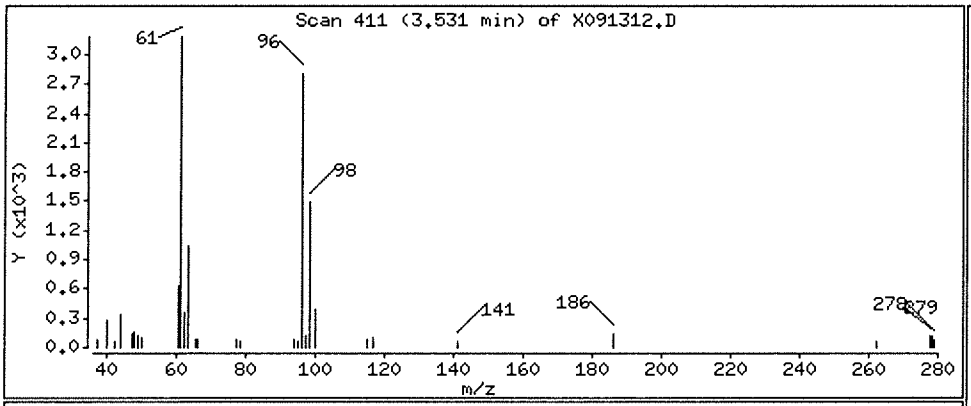
Client ID: HS19090511-06 Instrument: voa6.i

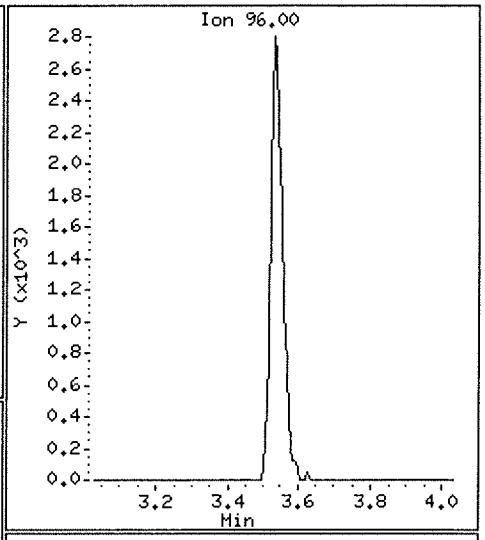
Sample Info: HS19090511-06;HS19090511-06;;;

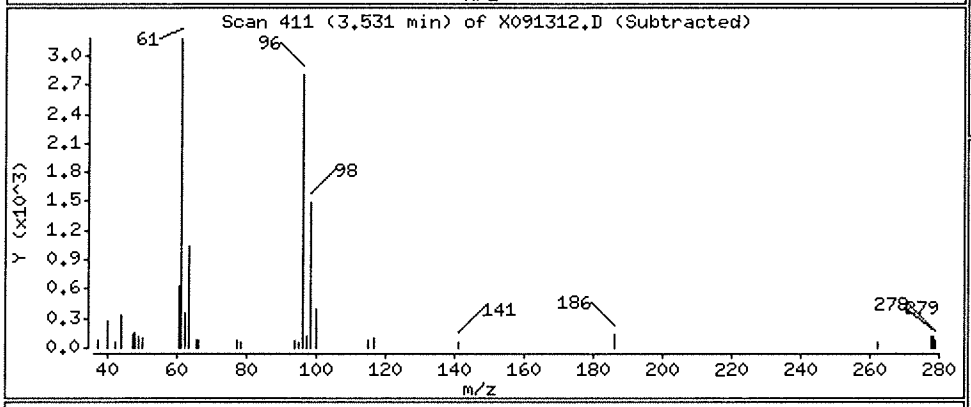
Purge Volume: 5.0 Operator: PC

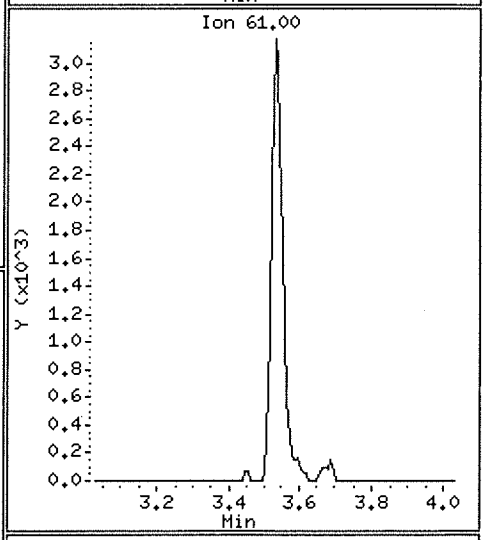
Column phase: DB624 Column diameter: 0.18

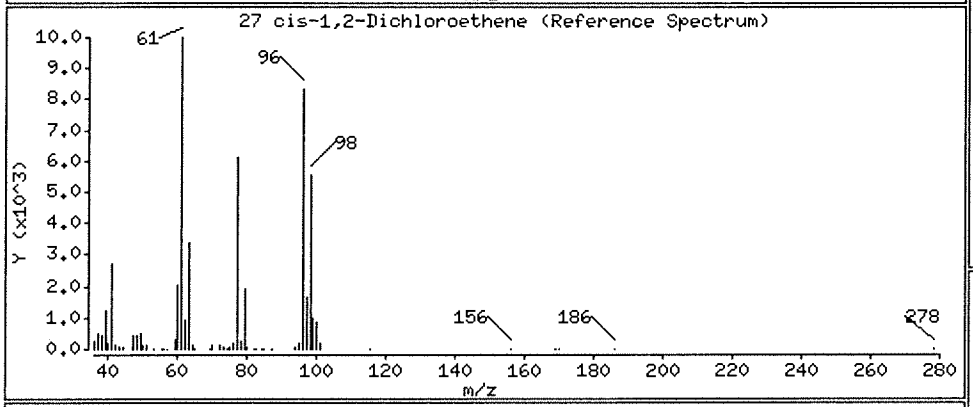
27 cis-1,2-Dichloroethene Concentration: 7.64 ug/l

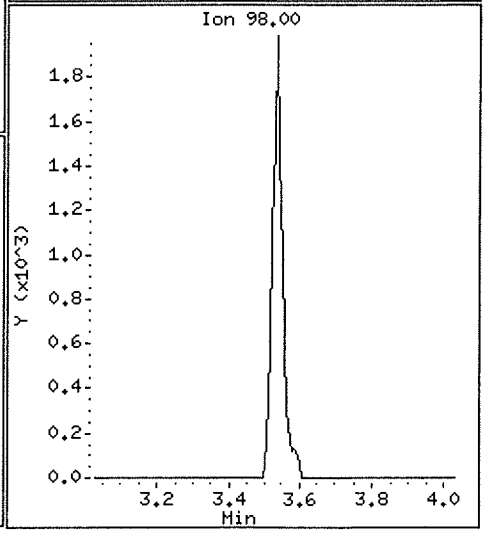


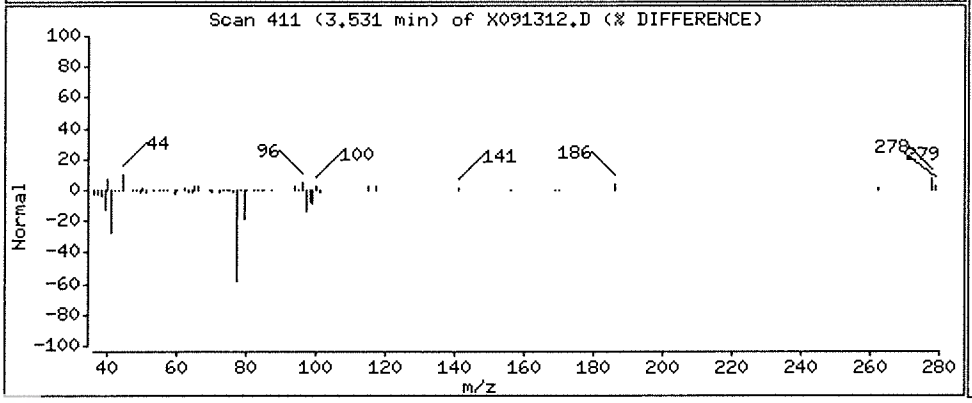












Data File: \\nahstws005\Target\chem\voa6.i\X190913.b\X091312.D

Date : 13-SEP-2019 15:03

Client ID: HS19090511-06

Instrument: voa6.i

Sample Info: HS19090511-06;HS19090511-06;;;

Purge Volume: 5.0

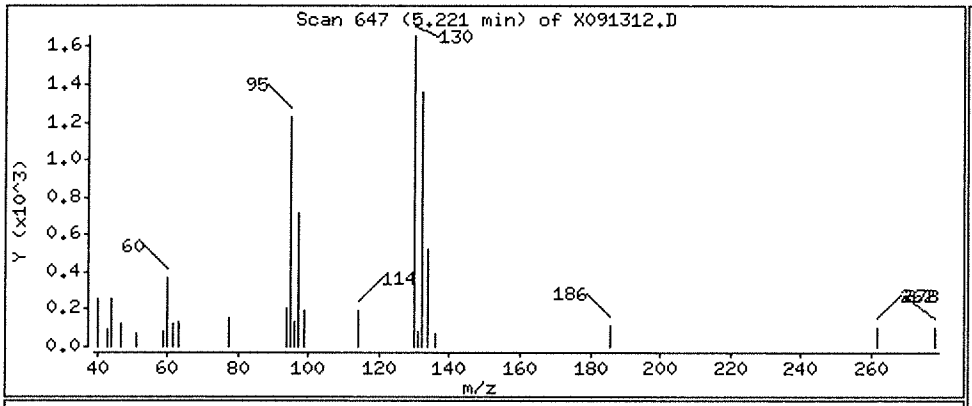
Operator: PC

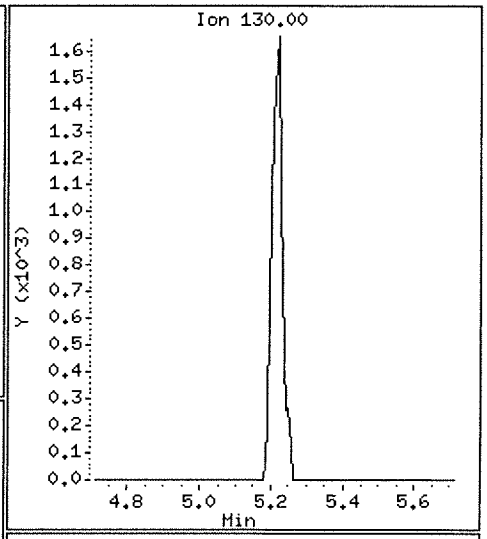
Column phase: DB624

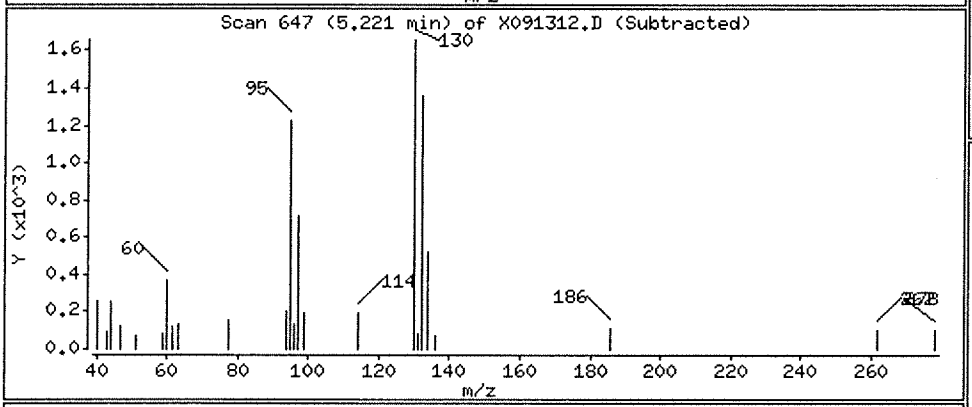
Column diameter: 0.18

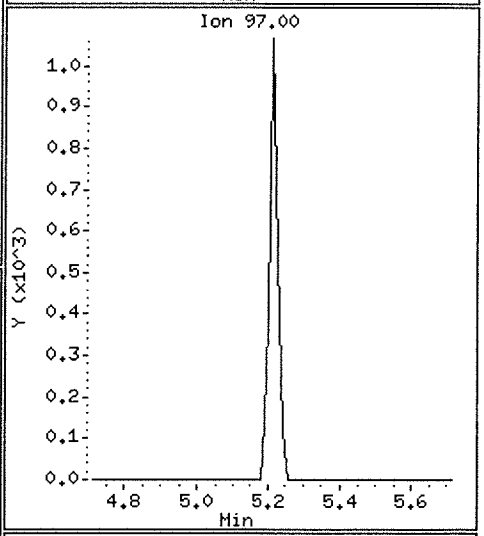
38 Trichloroethene

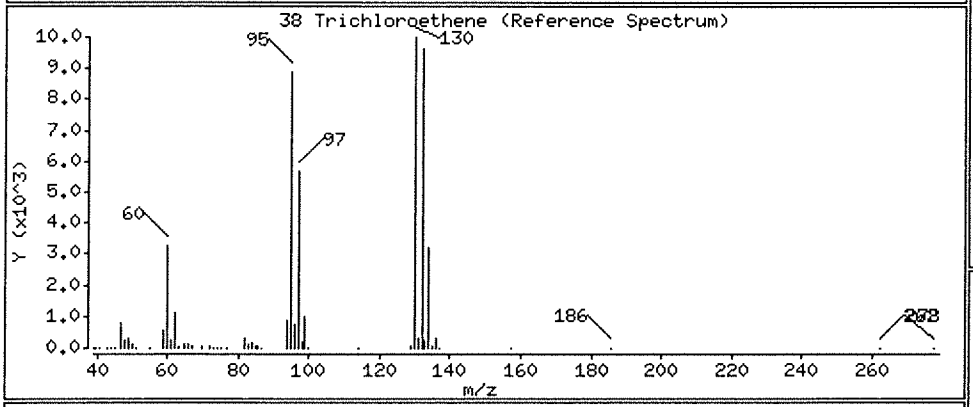
Concentration: 3.96 ug/l

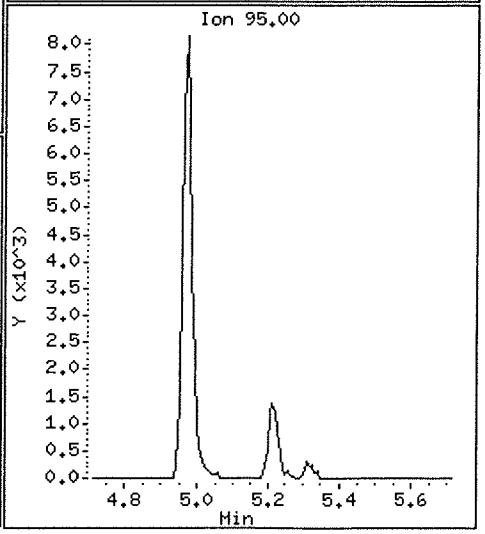


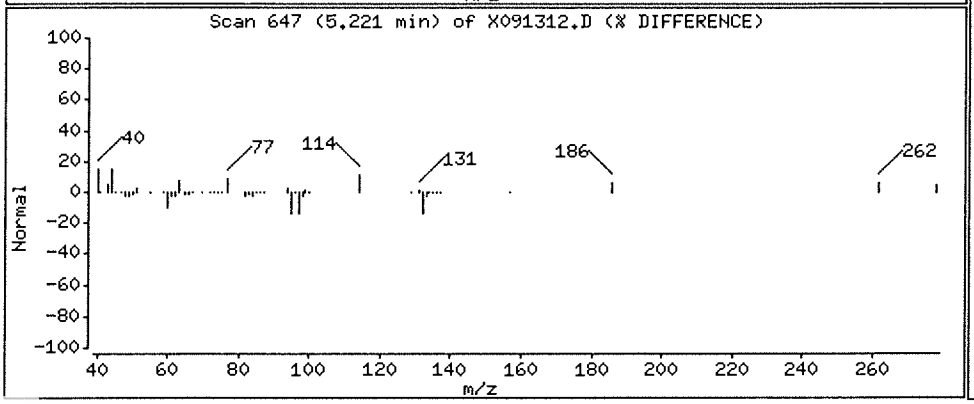












Data File: \\nahstws005\Target\chem\voa6.i\X190913.b\X091313.D Page 1
Report Date: 25-Sep-2019 14:59

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X190913.b\X091313.D
Lab Smp Id: HS19090535-01MS Client Smp ID: HS19090535-01MS
Inj Date : 13-SEP-2019 15:28
Operator : PC Inst ID: voa6.i
Smp Info : HS19090535-01MS;HS19090535-01MS;3;;MS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X190913.b\8260W.m
Meth Date : 25-Sep-2019 14:58 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 13 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

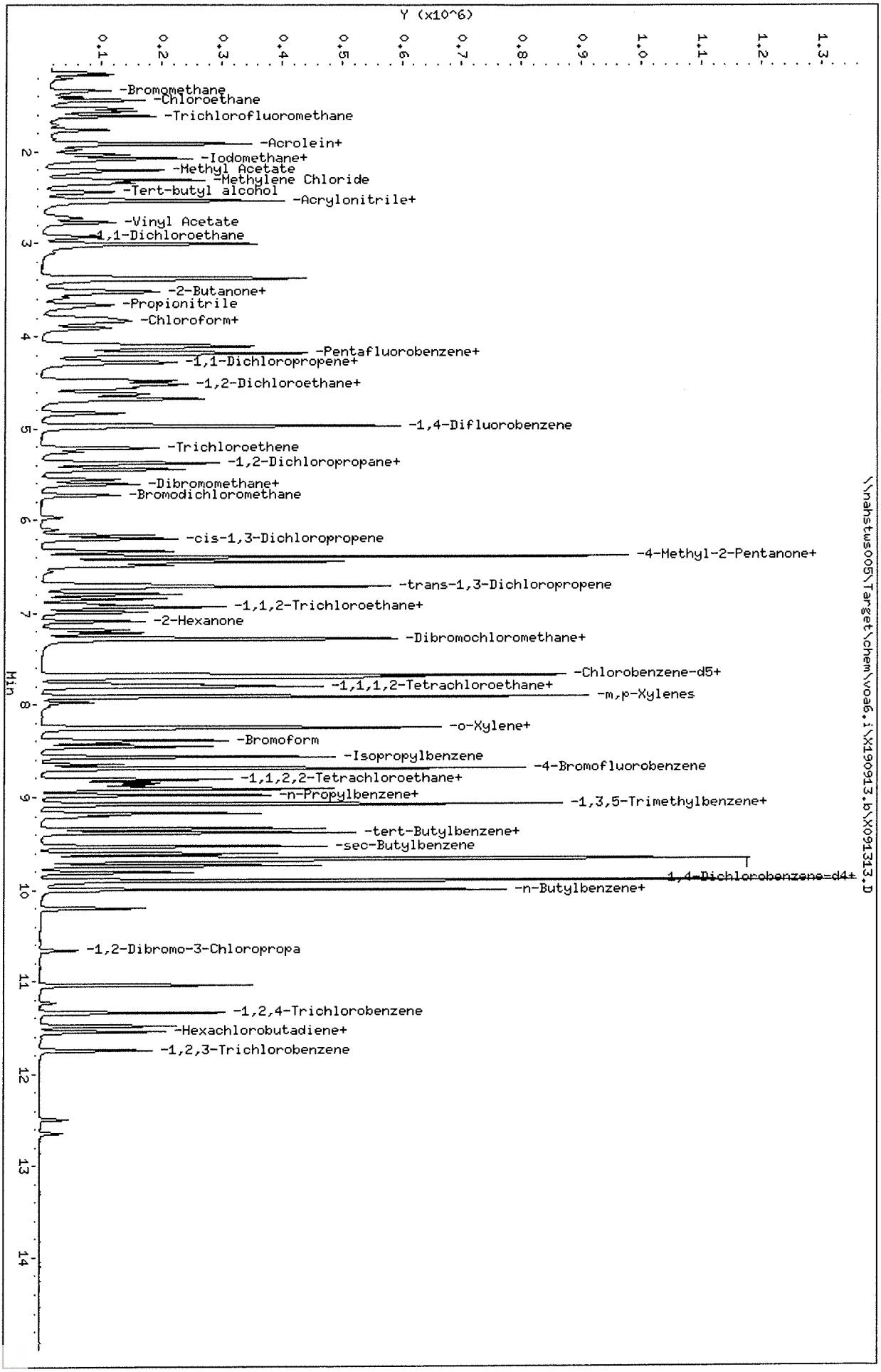
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	407037	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	526797	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.678	(1.000)	446016	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	245040	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	164291	46.5760	46.57
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	174996	46.5967	46.59
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	595576	48.3484	48.34
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	211098	50.1981	50.19
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	64515	19.0718	19.07
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.976)	96702	17.3529	17.35
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	77259	21.4716	21.47
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	47223	19.1908	19.19
22 1,1-Dichloroethane	63	2.929	2.929	(0.699)	102210	16.0168	16.01
11 1,1-Dichloroethene	96	1.911	1.911	(0.456)	58564	16.8806	16.88
32 1,1-Dichloropropene	75	4.282	4.282	(0.862)	80905	18.2804	18.28
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	54142	20.7178	20.71
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	62226	20.0608	20.06(M)
90 1,2,4-Trichlorobenzene	180	11.345	11.345	(1.173)	80719	20.3418	20.34
79 1,2,4-Trimethylbenzene	105	9.382	9.382	(0.970)	239177	18.7858	18.78
89 1,2-Dibromo-3-Chloropropane	155	10.665	10.665	(1.103)	14148	22.4742	22.47
57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	63654	19.2429	19.24
88 1,2-Dichlorobenzene	146	9.998	9.998	(1.034)	135038	18.5375	18.53
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	76647	17.6005	17.60

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
42	1,2-Dichloropropane	63	5.443	5.443	(1.095)	55815	16.9084	16.90
75	1,3,5-Trimethylbenzene	105	9.074	9.074	(0.939)	234860	18.9349	18.93
83	1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	144392	18.8121	18.81
54	1,3-Dichloropropane	76	6.990	6.983	(0.911)	95275	18.6777	18.67
84	1,4-Dichlorobenzene	146	9.683	9.690	(1.001)	144053	18.5082	18.50
26	2,2-Dichloropropane	77	3.516	3.516	(0.839)	90374	16.9513	16.95
24	2-Butanone	43	3.580	3.580	(0.855)	44973	35.9918	35.99
76	2-Chlorotoluene	91	8.981	8.981	(0.929)	182968	19.9328	19.93
52	2-Hexanone	43	7.090	7.090	(0.924)	81882	45.5796	45.57
77	4-Chlorotoluene	91	9.074	9.074	(0.939)	211076	18.4375	18.43
82	p-Isopropyltoluene	119	9.655	9.655	(0.999)	249054	19.3785	19.37
45	4-Methyl-2-Pentanone	43	6.331	6.331	(0.825)	117347	44.2470	44.24
10	Acetone	43	1.976	1.976	(0.472)	41043	33.4510	33.45
37	Benzene	78	4.519	4.519	(0.909)	232789	17.2573	17.25
74	Bromobenzene	156	8.809	8.809	(0.911)	86372	19.1579	19.15
29	Bromochloromethane	128	3.802	3.802	(0.908)	38876	16.4919	16.49
39	Bromodichloromethane	83	5.729	5.729	(1.153)	77262	17.1139	17.11
66	Bromoform	173	8.415	8.415	(1.097)	54005	20.2145	20.21
6	Bromomethane	94	1.331	1.338	(0.318)	54347	15.6268	15.62
19	Carbon Disulfide	76	2.069	2.069	(0.494)	308933	30.1172	30.11
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	89210	18.8779	18.87
59	Chlorobenzene	112	7.699	7.699	(1.004)	169015	18.0872	18.08
7	Chloroethane	64	1.403	1.403	(0.335)	44586	17.4928	17.49
28	Chloroform	83	3.910	3.910	(0.933)	106744	16.4841	16.48
3	Chloromethane	50	1.081	1.080	(0.258)	40796	13.2654	13.26
27	cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	68858	16.5003	16.50
46	cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	97191	17.7107	17.71
55	Dibromochloromethane	129	7.183	7.183	(0.937)	68524	19.0467	19.04
44	Dibromomethane	93	5.557	5.557	(1.118)	41156	17.3000	17.29
2	Dichlorodifluoromethane	85	0.973	0.973	(0.232)	27522	9.22625	9.22
61	Ethylbenzene	106	7.799	7.807	(1.017)	90653	18.6999	18.69
91	Hexachlorobutadiene	225	11.488	11.488	(1.188)	44275	19.8212	19.82
67	Isopropylbenzene	105	8.566	8.566	(1.117)	276093	19.2013	19.20
62	m,p-Xylenes	106	7.907	7.907	(1.031)	220764	37.7238	37.72
17	Methylene Chloride	84	2.305	2.305	(0.550)	60452	15.6208	15.62
87	n-Butylbenzene	91	9.998	9.998	(1.034)	193833	19.6499	19.64
73	n-Propylbenzene	91	8.917	8.917	(0.922)	309861	19.1987	19.19
92	Naphthalene	128	11.546	11.546	(1.194)	142272	22.5510	22.55
63	o-Xylene	106	8.244	8.244	(1.075)	108383	18.9105	18.91
81	sec-Butylbenzene	105	9.526	9.526	(0.985)	273698	19.2004	19.20
64	Styrene	104	8.265	8.265	(1.078)	74033	7.53556	7.53
78	tert-Butylbenzene	119	9.339	9.339	(0.966)	202217	19.4049	19.40
56	Tetrachloroethene	164	6.933	6.933	(0.904)	63255	19.6162	19.61
50	Toluene	91	6.453	6.453	(0.841)	255430	18.5611	18.56
20	trans-1,2-Dichloroethene	96	2.535	2.535	(0.605)	58385	16.4013	16.40
51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.344)	86561	17.6220	17.62
38	Trichloroethene	130	5.214	5.214	(1.049)	73605	18.1180	18.11
8	Trichlorofluoromethane	101	1.560	1.560	(0.373)	99436	16.2393	16.23
5	Vinyl Chloride	62	1.138	1.138	(0.272)	65140	15.3526	15.35

QC Flag Legend

M - Compound response manually integrated.



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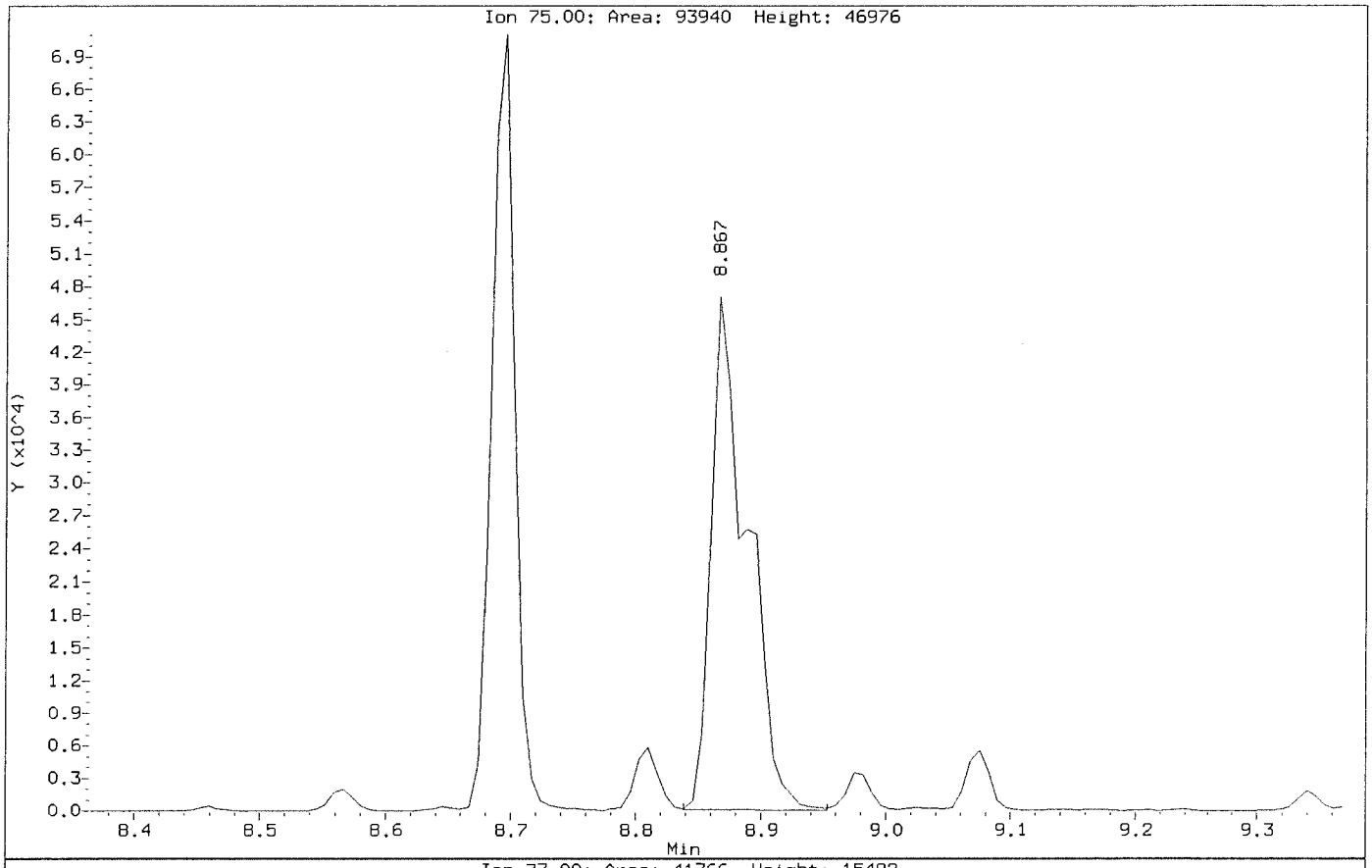
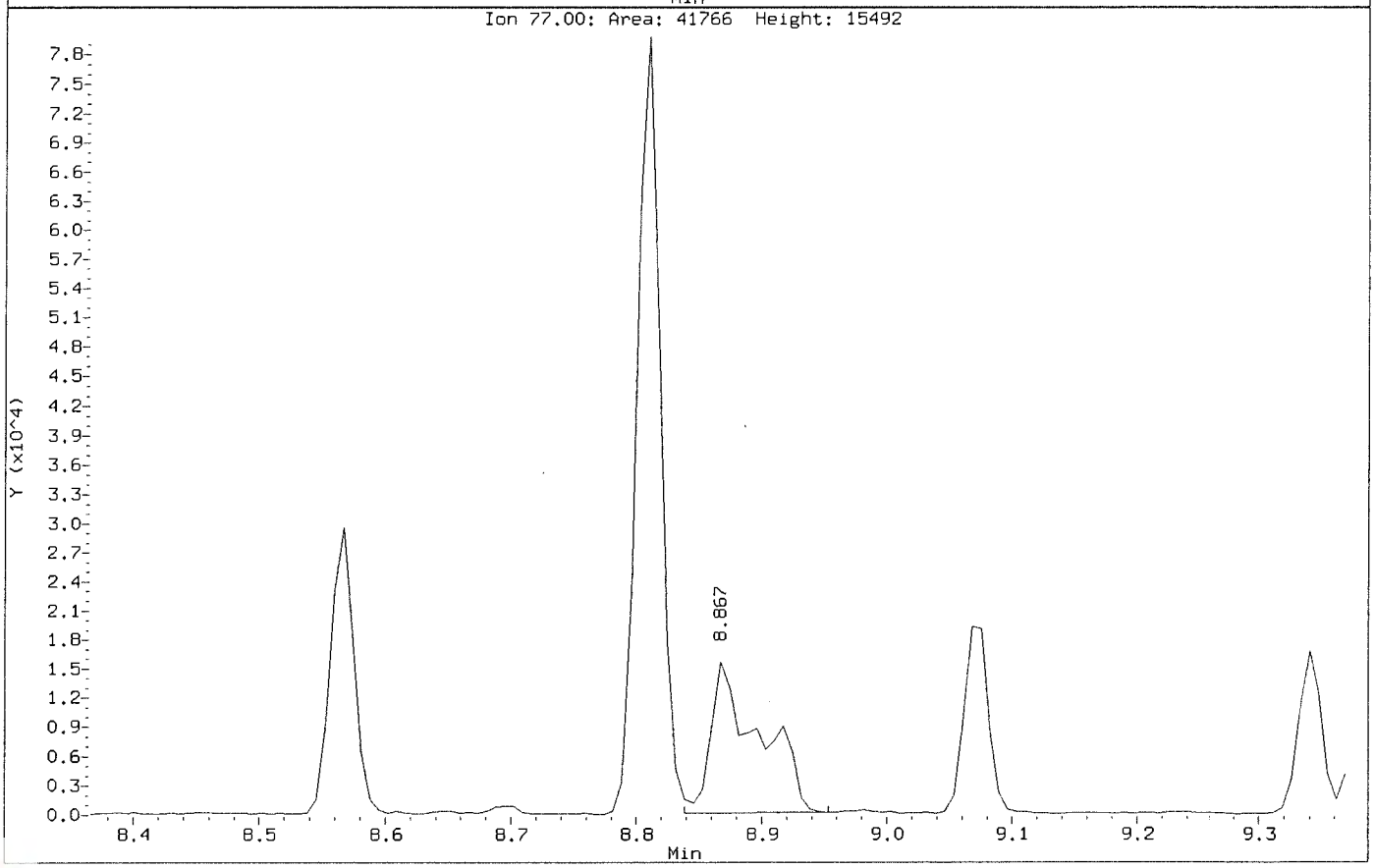
Date : 13-SEP-2019 15:28
Client ID: HS19090535-01MS
Sample Info: HS19090535-01MS;HS19090535-01MS;3;;MS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X190913.b\BEFORE\X091313.D
Injection Date: 13-SEP-2019 15:28
Instrument: voa6.i
Client Sample ID: HS19090535-01MS

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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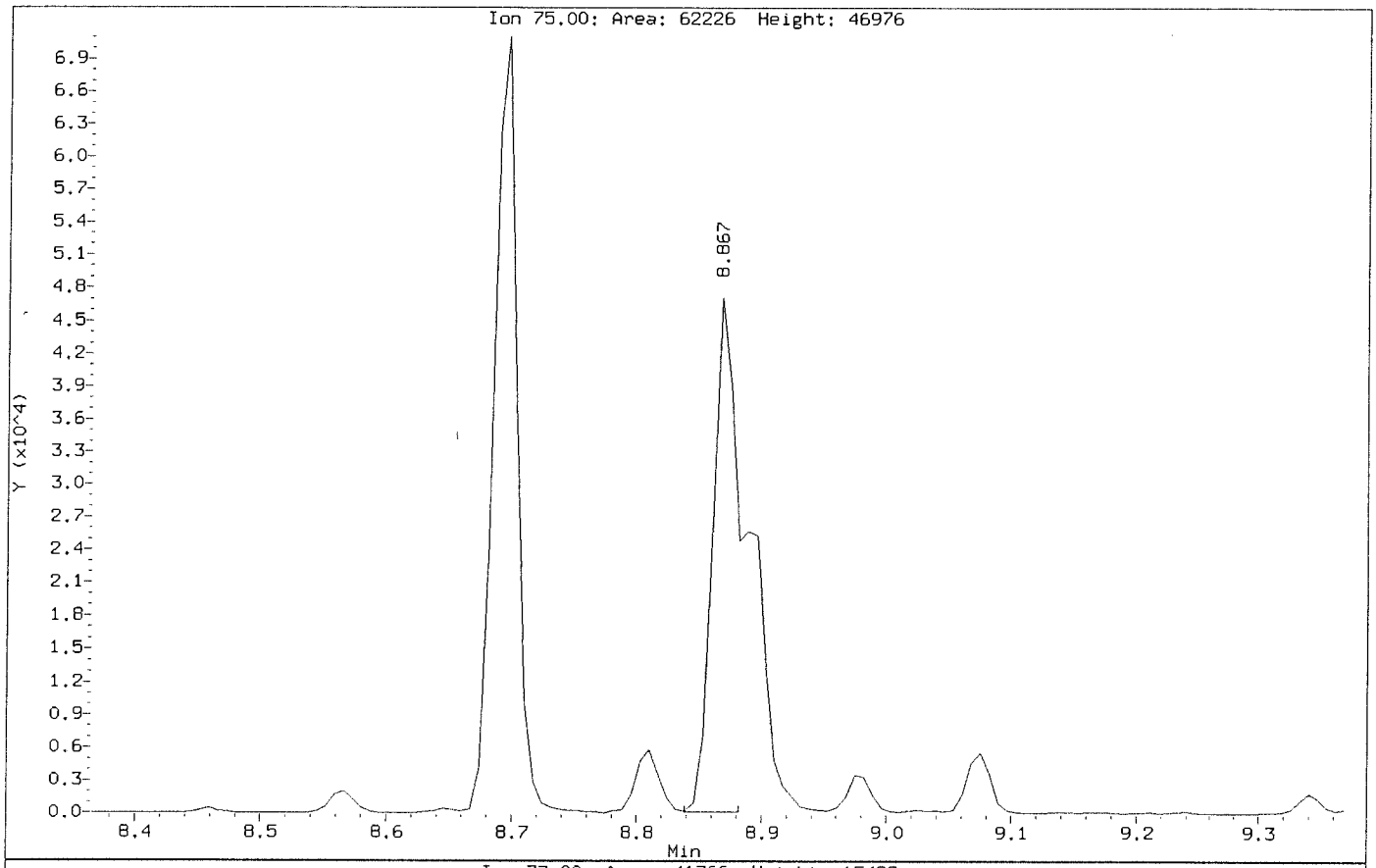
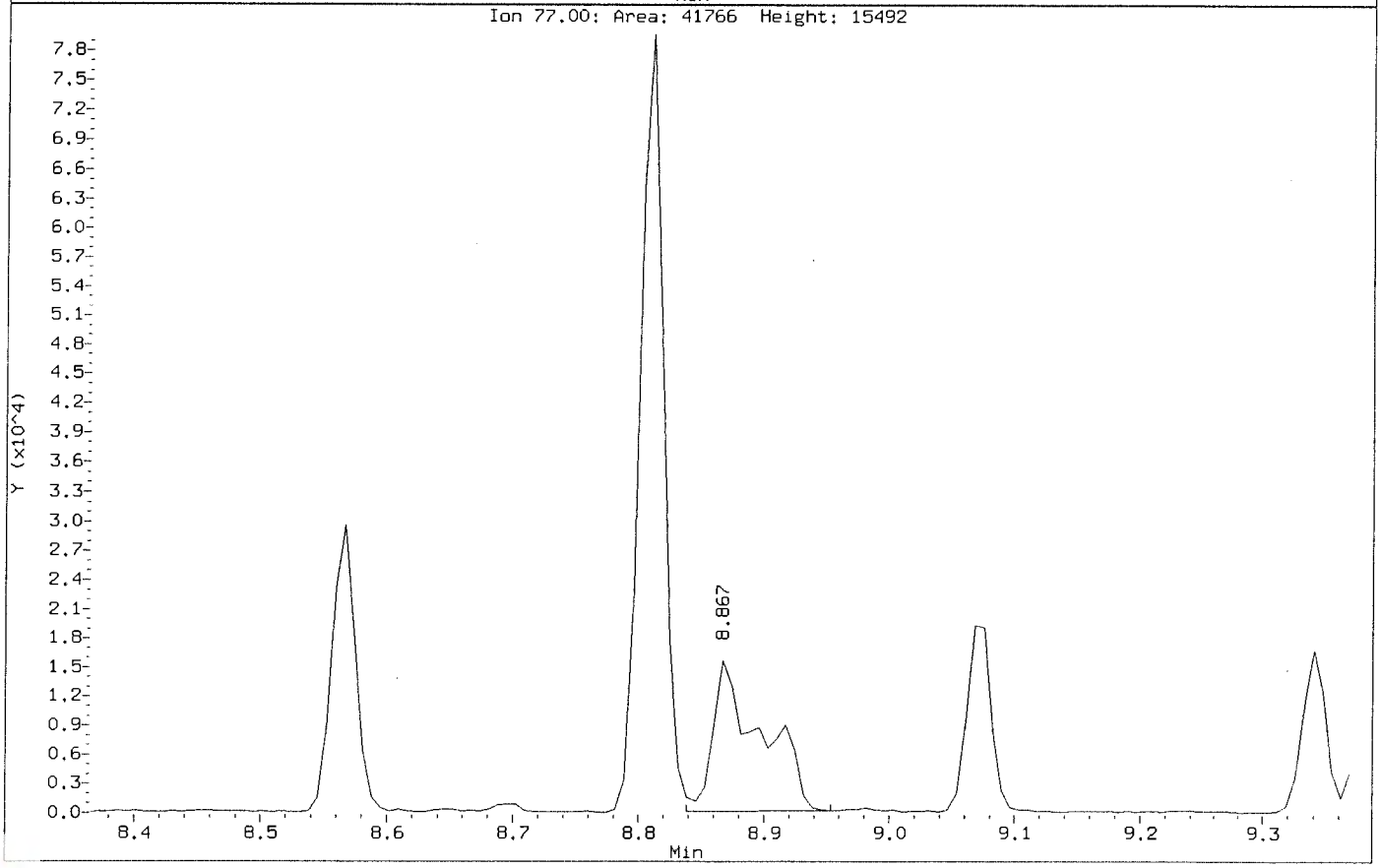
Injection Date: 13-SEP-2019 15:28
Instrument: voa6.i
Client Sample ID: HS19090535-01MS

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





Data File: \\nahstws005\Target\chem\voa6.i\X190913.b\X091314.D Page 1
Report Date: 25-Sep-2019 14:59

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X190913.b\X091314.D
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Inj Date : 13-SEP-2019 15:52
Operator : PC Inst ID: voa6.i
Smp Info : HS19090535-01MSD;HS19090535-01MSD;3;;MSD
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X190913.b\8260W.m
Meth Date : 25-Sep-2019 14:58 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 13 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

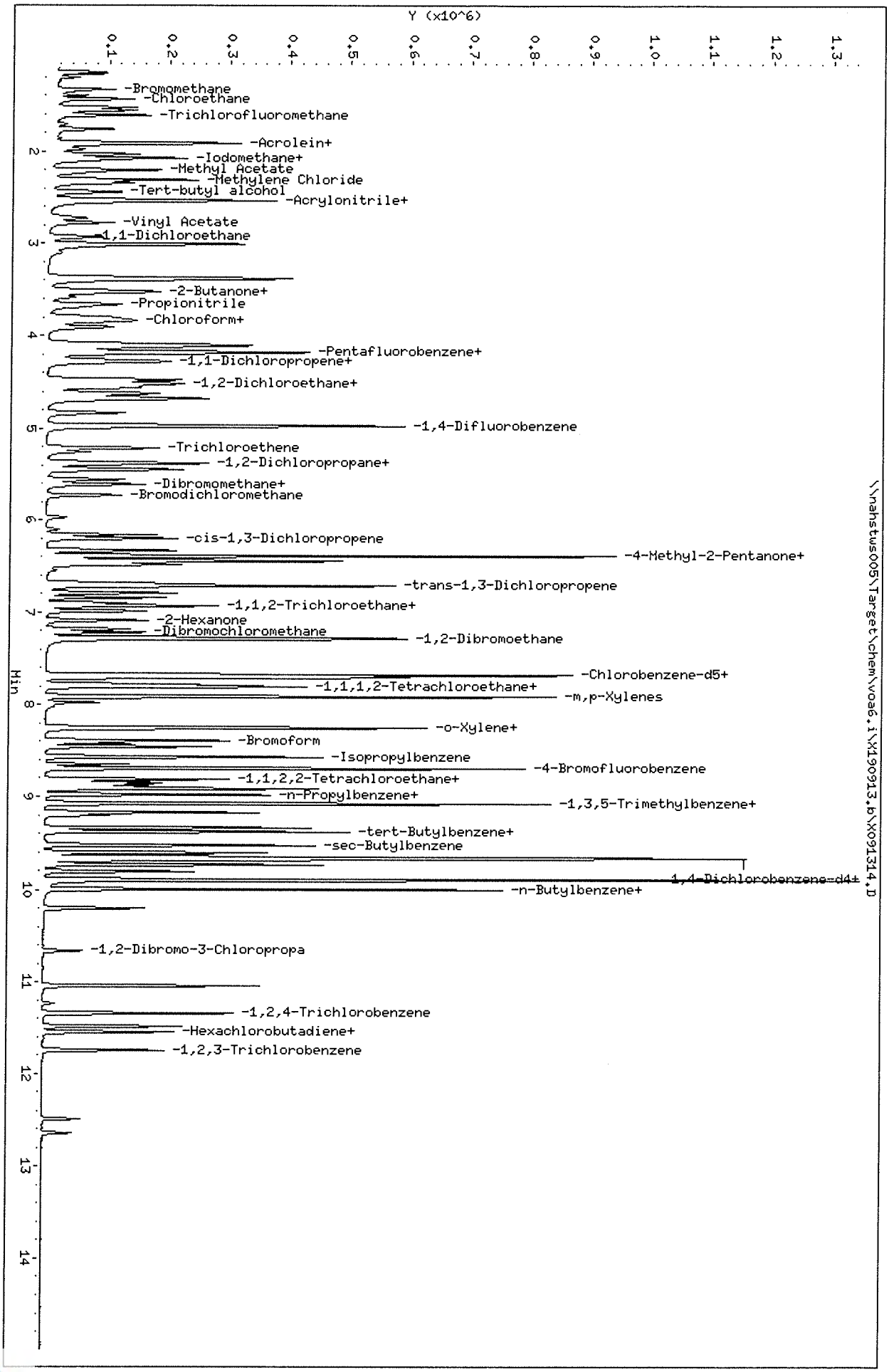
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	399226	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	517539	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.678	(1.000)	445137	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	245462	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	161516	46.6871	46.68
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	170249	46.2135	46.21
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	588578	47.8747	47.87
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	212382	50.6079	50.60
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	62101	18.3944	18.39
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.976)	88175	16.1324	16.13
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	75974	21.0741	21.07
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	45079	18.3557	18.35
22 1,1-Dichloroethane	63	2.929	2.929	(0.699)	95484	15.2556	15.25
11 1,1-Dichloroethene	96	1.911	1.911	(0.456)	52485	15.4244	15.42
32 1,1-Dichloropropene	75	4.282	4.282	(0.862)	74328	17.0948	17.09
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	58650	22.4043	22.40
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	61791	19.8863	19.88(M)
90 1,2,4-Trichlorobenzene	180	11.345	11.345	(1.173)	82262	20.6950	20.69
79 1,2,4-Trimethylbenzene	105	9.383	9.382	(0.970)	228834	17.9425	17.94
89 1,2-Dibromo-3-Chloropropane	155	10.665	10.665	(1.103)	14744	23.3807	23.38
57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	62108	18.8126	18.81
88 1,2-Dichlorobenzene	146	9.999	9.998	(1.034)	131448	18.0136	18.01
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	73073	17.0799	17.07

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
42 1,2-Dichloropropane	63	5.443	5.443	(1.095)	52427	16.1662	16.16
75 1,3,5-Trimethylbenzene	105	9.075	9.074	(0.939)	221301	17.8110	17.81
83 1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	140214	18.2364	18.23
54 1,3-Dichloropropane	76	6.990	6.983	(0.911)	89757	17.6307	17.63
84 1,4-Dichlorobenzene	146	9.683	9.690	(1.001)	138014	17.7018	17.70
26 2,2-Dichloropropane	77	3.516	3.516	(0.839)	83762	16.0185	16.01
24 2-Butanone	43	3.580	3.580	(0.855)	44133	36.0106	36.01
76 2-Chlorotoluene	91	8.981	8.981	(0.929)	179974	19.5738	19.57
52 2-Hexanone	43	7.090	7.090	(0.924)	81863	45.6590	45.65
77 4-Chlorotoluene	91	9.075	9.074	(0.939)	200433	17.4778	17.47
82 p-Isopropyltoluene	119	9.655	9.655	(0.999)	238342	18.5131	18.51
45 4-Methyl-2-Pentanone	43	6.331	6.331	(0.825)	115184	43.5172	43.51
10 Acetone	43	1.976	1.976	(0.472)	39338	32.5553	32.55
37 Benzene	78	4.519	4.519	(0.909)	217727	16.4294	16.42
74 Bromobenzene	156	8.809	8.809	(0.911)	82503	18.2682	18.26
29 Bromochloromethane	128	3.803	3.802	(0.908)	36571	15.8176	15.81
39 Bromodichloromethane	83	5.729	5.729	(1.153)	74560	16.8108	16.81
66 Bromoform	173	8.416	8.415	(1.097)	54223	20.3362	20.33
6 Bromomethane	94	1.331	1.338	(0.318)	49404	14.3740	14.37
19 Carbon Disulfide	76	2.069	2.069	(0.494)	278247	27.6564	27.65
34 Carbon Tetrachloride	117	4.268	4.268	(0.859)	83106	17.9008	17.90
59 Chlorobenzene	112	7.699	7.699	(1.004)	161633	17.3313	17.33
7 Chloroethane	64	1.396	1.403	(0.333)	38065	14.8980	14.89
28 Chloroform	83	3.910	3.910	(0.933)	100325	15.7959	15.79
3 Chloromethane	50	1.081	1.080	(0.258)	35516	11.7569	11.75
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	64752	15.8200	15.81
46 cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	92213	17.1042	17.10
55 Dibromochloromethane	129	7.183	7.183	(0.937)	66498	18.5201	18.52
44 Dibromomethane	93	5.557	5.557	(1.118)	39617	16.9509	16.95
2 Dichlorodifluoromethane	85	0.973	0.973	(0.232)	24523	8.38173	8.38
61 Ethylbenzene	106	7.807	7.807	(1.018)	85502	17.6721	17.67
91 Hexachlorobutadiene	225	11.488	11.488	(1.188)	45150	20.1612	20.16
67 Isopropylbenzene	105	8.566	8.566	(1.117)	259052	18.0517	18.05
62 m,p-Xylenes	106	7.907	7.907	(1.031)	205574	35.1975	35.19
17 Methylene Chloride	84	2.305	2.305	(0.550)	56871	14.8772	14.87
87 n-Butylbenzene	91	9.999	9.998	(1.034)	187034	18.9280	18.92
73 n-Propylbenzene	91	8.917	8.917	(0.922)	290010	17.9378	17.93
92 Naphthalene	128	11.546	11.546	(1.194)	148172	23.4458	23.44
63 o-Xylene	106	8.244	8.244	(1.075)	100207	17.5185	17.51
81 sec-Butylbenzene	105	9.526	9.526	(0.985)	259427	18.1680	18.16
64 Styrene	104	8.265	8.265	(1.078)	52410	5.34516	5.34
78 tert-Butylbenzene	119	9.340	9.339	(0.966)	191342	18.3298	18.32
56 Tetrachloroethene	164	6.933	6.933	(0.904)	59379	18.4505	18.45
50 Toluene	91	6.453	6.453	(0.841)	236307	17.2054	17.20
20 trans-1,2-Dichloroethene	96	2.528	2.535	(0.603)	53763	15.3984	15.39
51 trans-1,3-Dichloropropene	75	6.689	6.682	(1.346)	83744	17.3535	17.35
38 Trichloroethene	130	5.214	5.214	(1.049)	68043	17.0485	17.04
8 Trichlorofluoromethane	101	1.560	1.560	(0.373)	92643	15.4259	15.42
5 Vinyl Chloride	62	1.138	1.138	(0.272)	55203	13.2651	13.26

QC Flag Legend

M - Compound response manually integrated.



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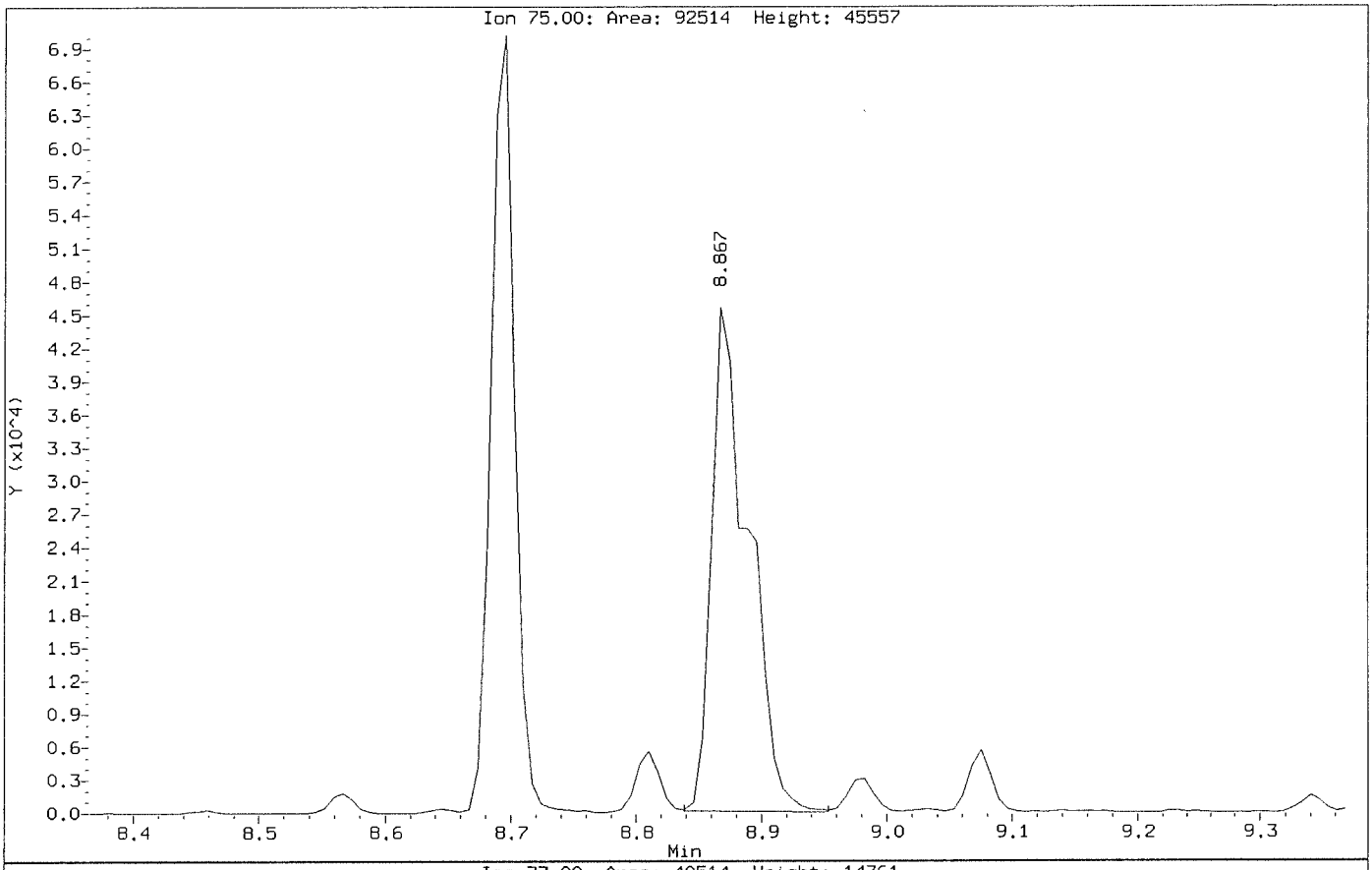
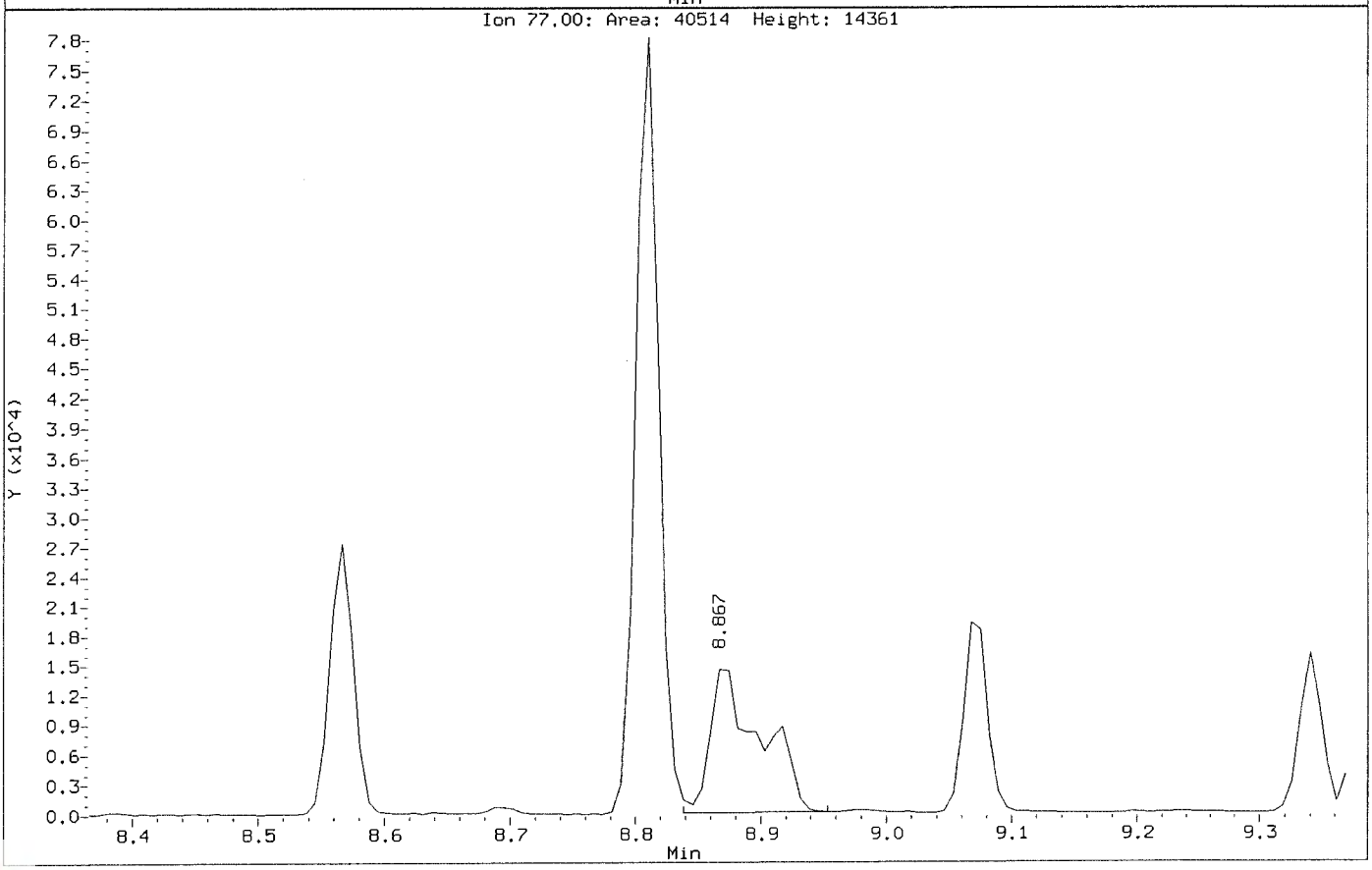
Date : 13-SEP-2019 15:52
Client ID: HS19090535-01MSD
Sample Info: HS19090535-01MSD;HS19090535-01MSD;3;;MSD
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X190913.b\BEFORE\X091314.D
Injection Date: 13-SEP-2019 15:52
Instrument: voa6.i
Client Sample ID: HS19090535-01MSD

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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Injection Date: 13-SEP-2019 15:52
Instrument: voa6.i
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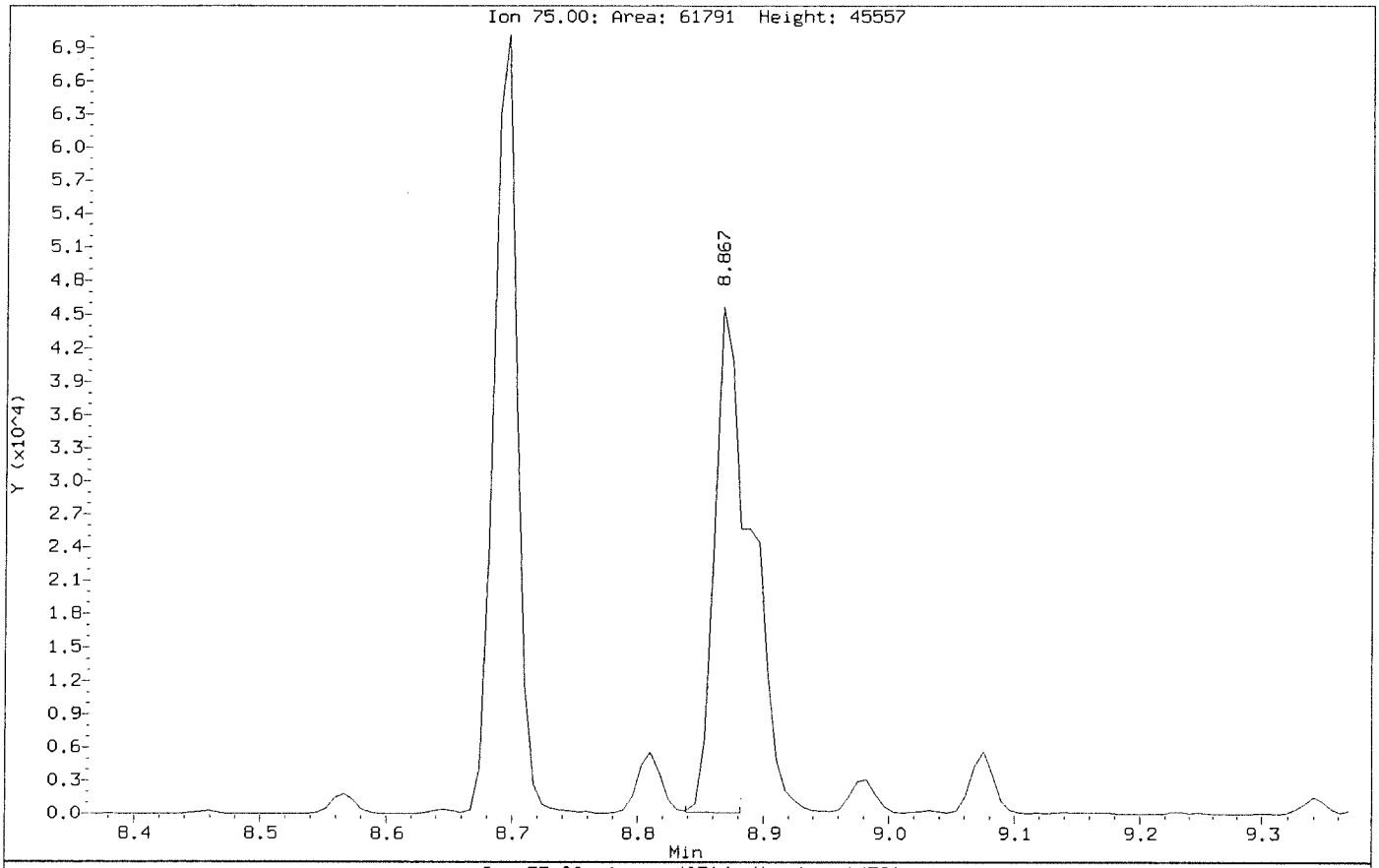
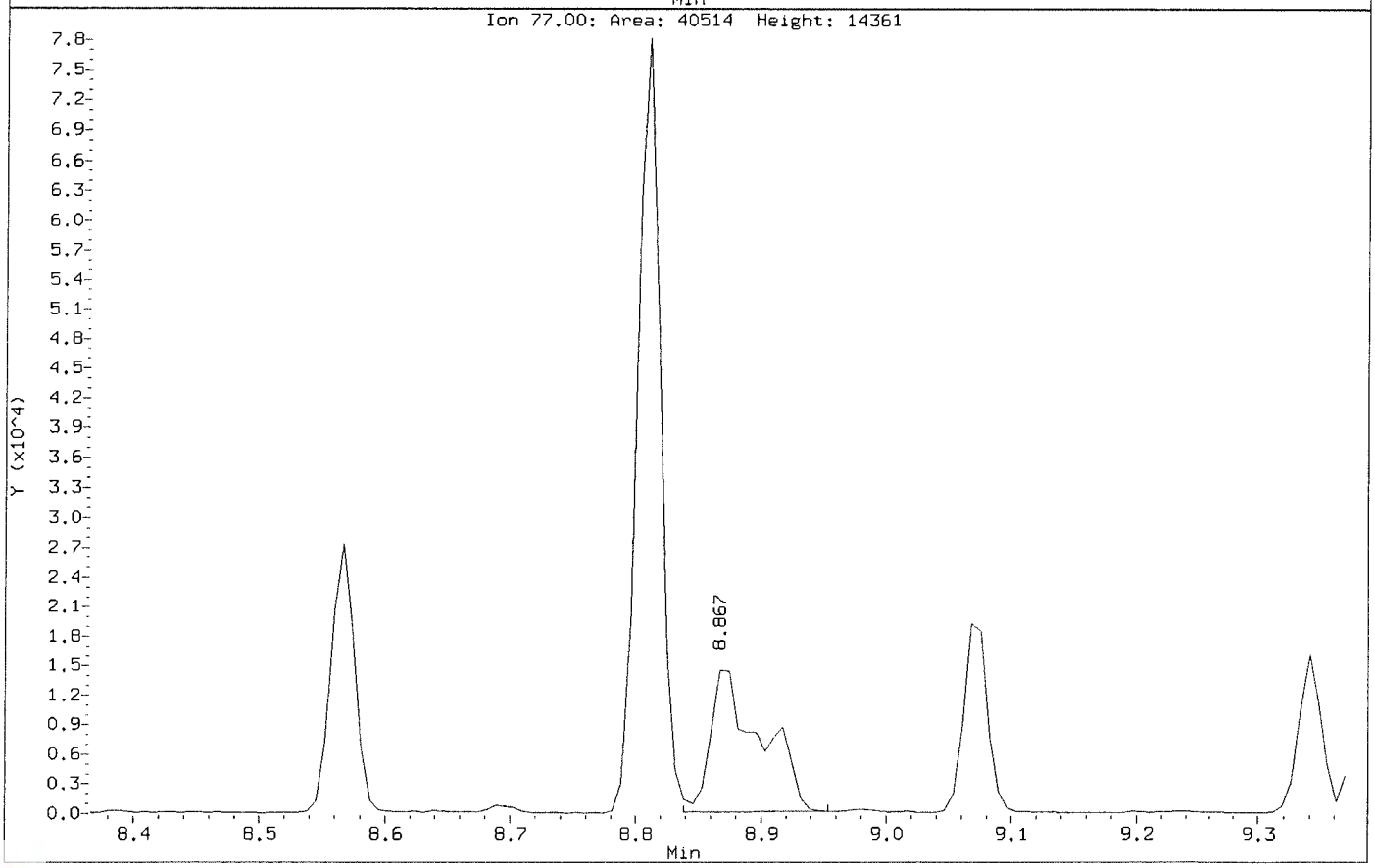
Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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Report Date: 25-Sep-2019 14:59

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X190913.b\X091315.D
Lab Smp Id: CCV-END Client Smp ID: CCV-END
Inj Date : 13-SEP-2019 16:16
Operator : PC Inst ID: voa6.i
Smp Info : CCV-END;CCV-END;2;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X190913.b\8260W.m
Meth Date : 25-Sep-2019 14:58 voa6.i Quant Type: ISTD
Cal Date : 11-SEP-2019 14:19 Cal File: X091108.D
Als bottle: 14 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

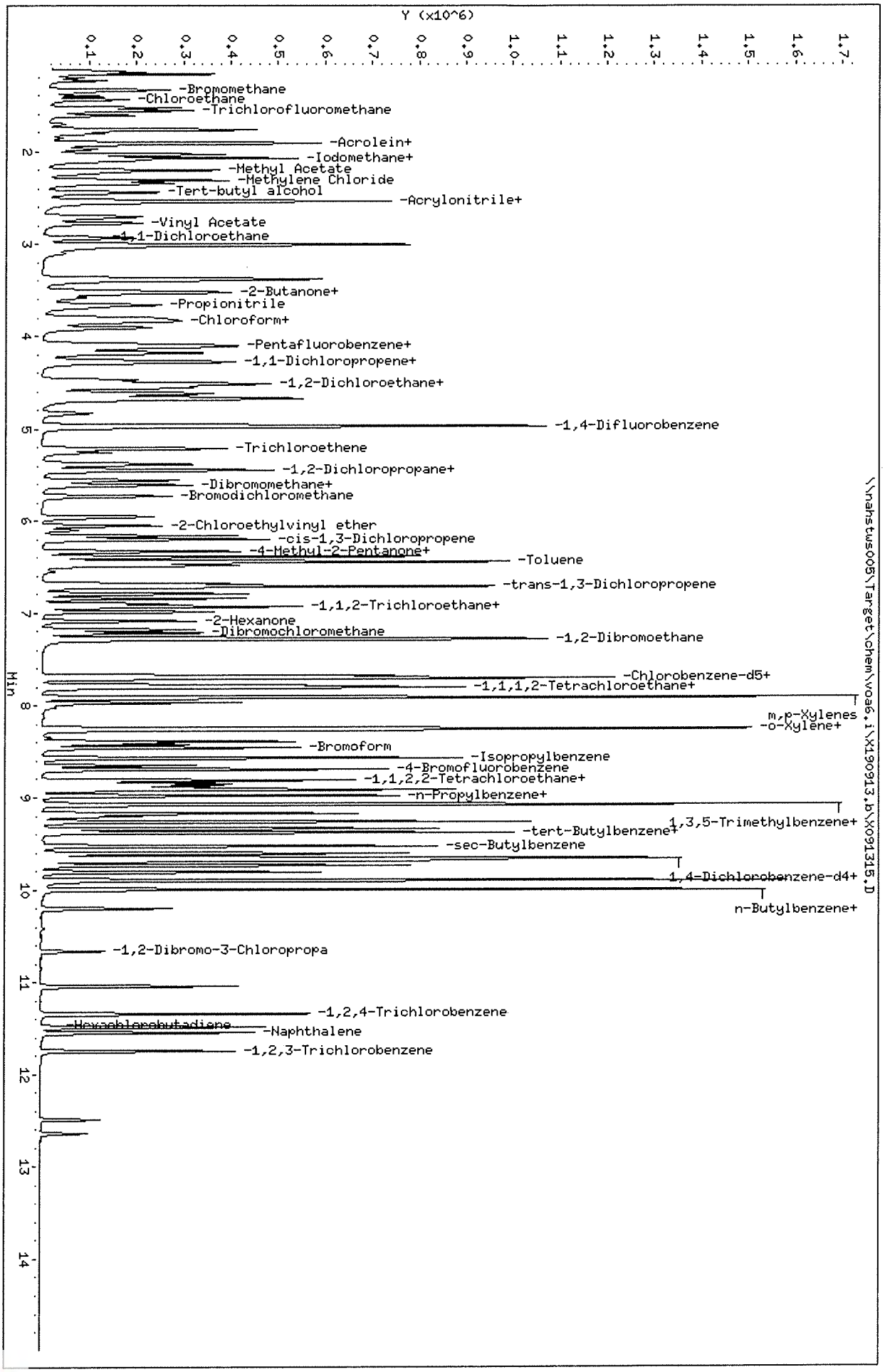
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.189	4.189	(1.000)	310954	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	422317	50.0000	
* 47 Chlorobenzene-d5	117	7.678	7.678	(1.000)	383322	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	215150	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.979)	140811	50.0000	52.35
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.068)	147614	50.0000	51.53
$ 48 Toluene-d8	98	6.388	6.388	(0.832)	494529	50.0000	46.71
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.132)	190749	50.0000	52.80
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.013)	137640	50.0000	47.34
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.976)	184636	50.0000	43.37
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	158494	50.0000	50.46
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.892)	97327	50.0000	46.02
22 1,1-Dichloroethane	63	2.929	2.929	(0.699)	205167	50.0000	42.08
11 1,1-Dichloroethene	96	1.911	1.911	(0.456)	114729	50.0000	43.28
32 1,1-Dichloropropene	75	4.282	4.282	(0.862)	150454	50.0000	42.40
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	118530	50.0000	51.65
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	130202	50.0000	47.80(M)
90 1,2,4-Trichlorobenzene	180	11.345	11.345	(1.173)	176596	50.0000	50.68
79 1,2,4-Trimethylbenzene	105	9.382	9.382	(0.970)	461824	50.0000	41.31
89 1,2-Dibromo-3-Chloropropane	155	10.665	10.665	(1.103)	30198	50.0000	54.63
57 1,2-Dibromoethane	107	7.262	7.262	(0.946)	134400	50.0000	47.27
88 1,2-Dichlorobenzene	146	9.998	9.998	(1.034)	275706	50.0000	43.10
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	159923	50.0000	45.80

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42 1,2-Dichloropropane	63	5.443	5.443	(1.095)	114681	50.0000	43.33
75 1,3,5-Trimethylbenzene	105	9.074	9.074	(0.939)	442336	50.0000	40.61
83 1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	292680	50.0000	43.42
54 1,3-Dichloropropane	76	6.983	6.983	(0.910)	196157	50.0000	44.74
84 1,4-Dichlorobenzene	146	9.690	9.690	(1.002)	292419	50.0000	42.79
26 2,2-Dichloropropane	77	3.516	3.516	(0.839)	179350	50.0000	44.03
24 2-Butanone	43	3.580	3.580	(0.855)	96501	100.000	101.09
76 2-Chlorotoluene	91	8.981	8.981	(0.929)	356962	50.0000	44.23
52 2-Hexanone	43	7.090	7.090	(0.924)	152992	100.000	99.09
77 4-Chlorotoluene	91	9.074	9.074	(0.939)	415090	50.0000	41.29
82 p-Isopropyltoluene	119	9.655	9.655	(0.999)	453098	50.0000	40.15
45 4-Methyl-2-Pentanone	43	6.331	6.331	(0.825)	218656	100.000	95.93
10 Acetone	43	1.976	1.976	(0.472)	84327	100.000	99.85
37 Benzene	78	4.519	4.519	(0.909)	469690	50.0000	43.43
74 Bromobenzene	156	8.809	8.809	(0.911)	179263	50.0000	45.28
29 Bromochloromethane	128	3.802	3.802	(0.908)	81059	50.0000	45.01
39 Bromodichloromethane	83	5.729	5.729	(1.153)	166801	50.0000	46.08
66 Bromoform	173	8.415	8.415	(1.096)	118988	50.0000	51.82
6 Bromomethane	94	1.338	1.338	(0.320)	120491	50.0000	48.19
19 Carbon Disulfide	76	2.069	2.069	(0.494)	658042	100.000	83.97
34 Carbon Tetrachloride	117	4.268	4.268	(0.859)	161745	50.0000	42.69
59 Chlorobenzene	112	7.699	7.699	(1.003)	348788	50.0000	43.43
7 Chloroethane	64	1.403	1.403	(0.335)	83841	50.0000	46.76
28 Chloroform	83	3.910	3.910	(0.933)	219795	50.0000	44.42
3 Chloromethane	50	1.080	1.080	(0.258)	96154	50.0000	41.25
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.843)	141359	50.0000	44.34
46 cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	204566	50.0000	46.49
55 Dibromochloromethane	129	7.183	7.183	(0.936)	149597	50.0000	48.38
44 Dibromomethane	93	5.557	5.557	(1.118)	88467	50.0000	46.38
2 Dichlorodifluoromethane	85	0.973	0.973	(0.232)	92326	50.0000	40.51
61 Ethylbenzene	106	7.807	7.807	(1.017)	176457	50.0000	42.35
91 Hexachlorobutadiene	225	11.488	11.488	(1.188)	90749	50.0000	45.01
67 Isopropylbenzene	105	8.566	8.566	(1.116)	500395	50.0000	40.49
62 m,p-Xylenes	106	7.907	7.907	(1.030)	424167	100.000	84.33
17 Methylene Chloride	84	2.305	2.305	(0.550)	128943	50.0000	48.25
87 n-Butylbenzene	91	9.998	9.998	(1.034)	353817	50.0000	40.85
73 n-Propylbenzene	91	8.917	8.917	(0.922)	559555	50.0000	39.48
92 Naphthalene	128	11.546	11.546	(1.194)	300435	50.0000	54.23
63 o-Xylene	106	8.244	8.244	(1.074)	210646	50.0000	42.76
81 sec-Butylbenzene	105	9.526	9.526	(0.985)	479123	50.0000	38.28
64 Styrene	104	8.265	8.265	(1.076)	374170	50.0000	44.31
78 tert-Butylbenzene	119	9.339	9.339	(0.966)	357826	50.0000	39.10
56 Tetrachloroethene	164	6.933	6.933	(0.903)	114348	50.0000	41.26
50 Toluene	91	6.453	6.453	(0.840)	503963	50.0000	42.61
20 trans-1,2-Dichloroethene	96	2.535	2.535	(0.605)	116018	50.0000	42.66
51 trans-1,3-Dichloropropene	75	6.682	6.682	(1.344)	186085	50.0000	47.25
38 Trichloroethene	130	5.214	5.214	(1.049)	145281	50.0000	44.60
8 Trichlorofluoromethane	101	1.560	1.560	(0.373)	202850	50.0000	43.36
5 Vinyl Chloride	62	1.138	1.138	(0.272)	134686	50.0000	41.55

QC Flag Legend

M - Compound response manually integrated.



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Client ID: CCV-END
Sample Info: CCV-END;CCV-END;2;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

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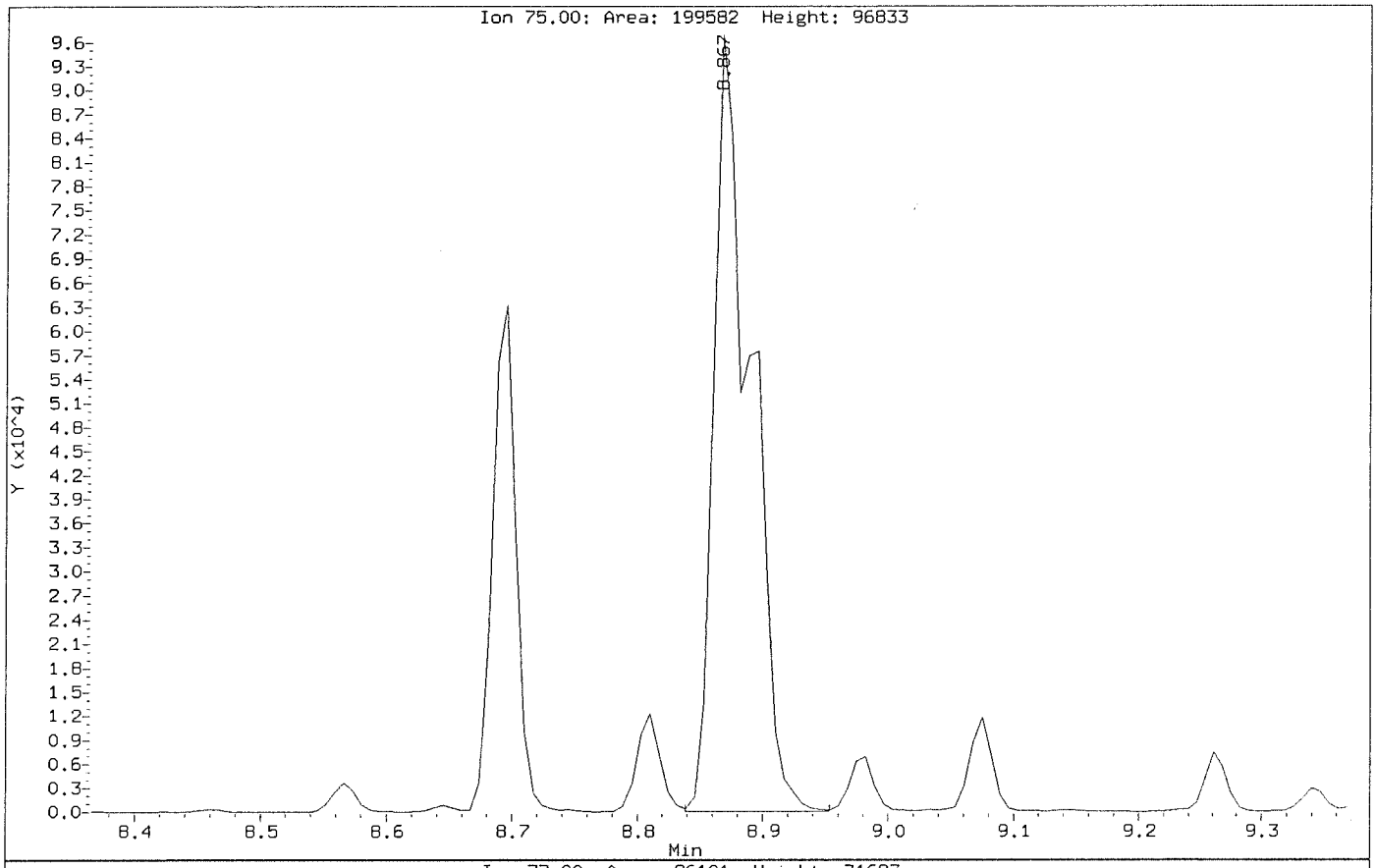
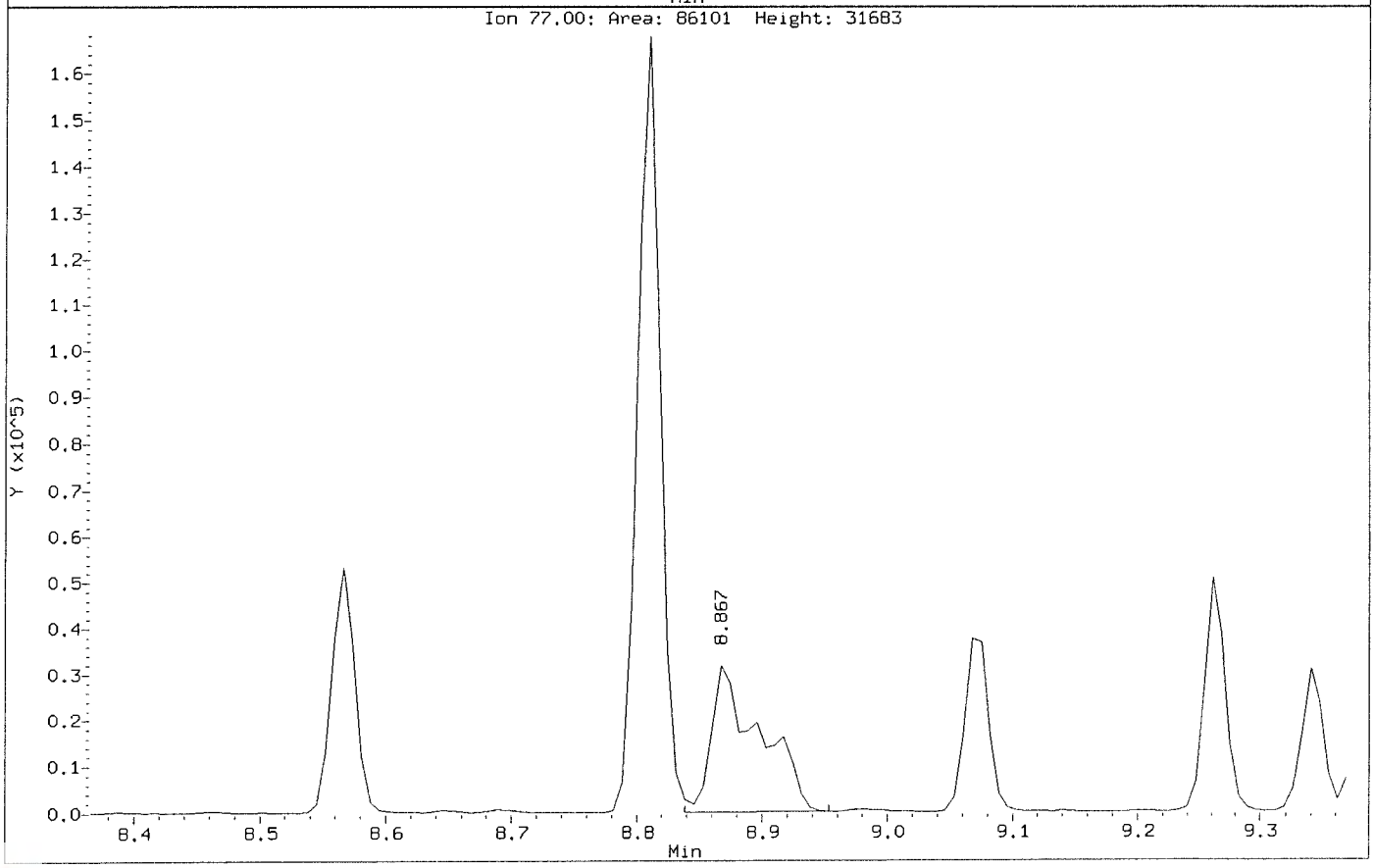
Injection Date: 13-SEP-2019 16:16
Instrument: voa6.i
Client Sample ID: CCV-END

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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Instrument: voa6.i
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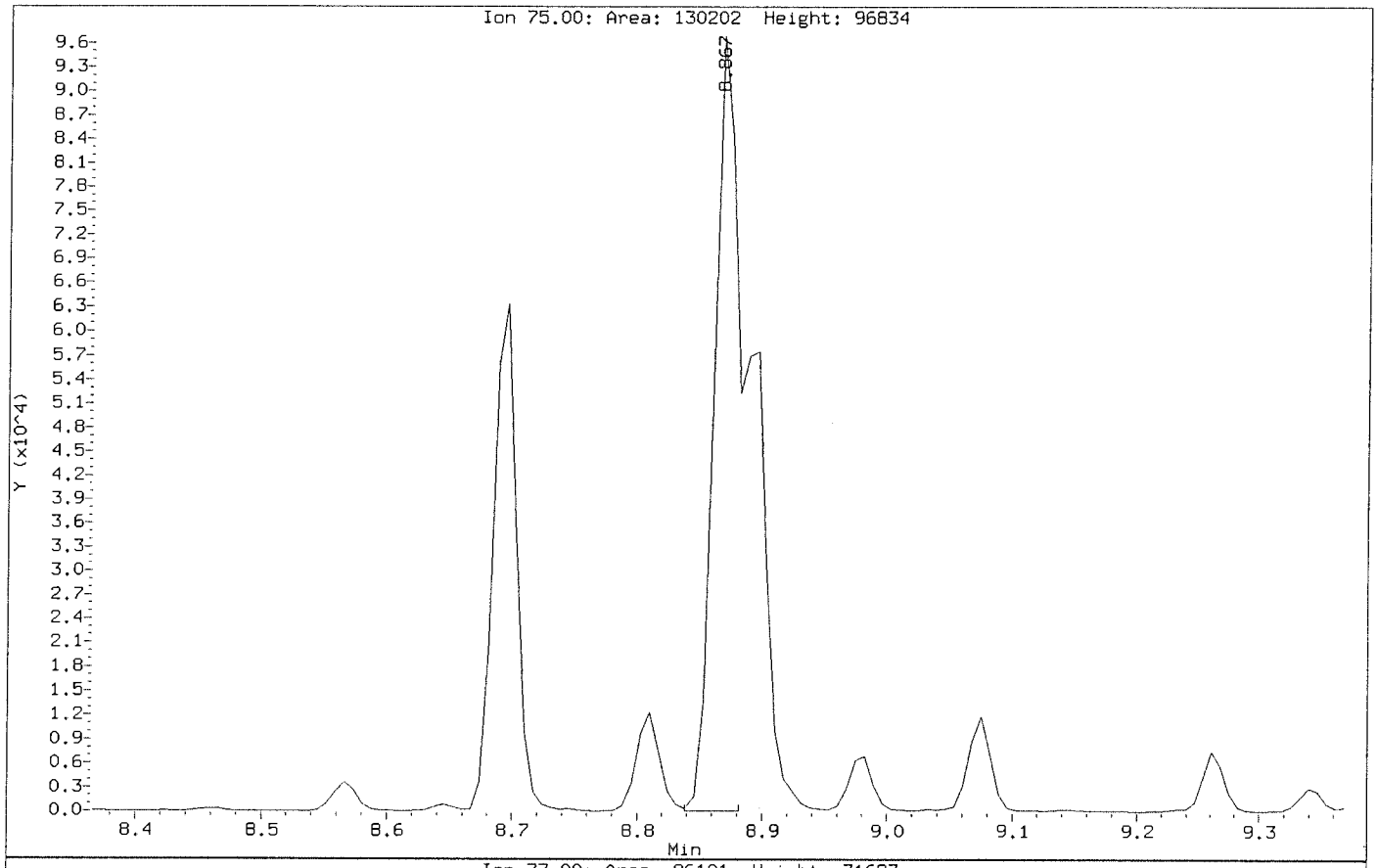
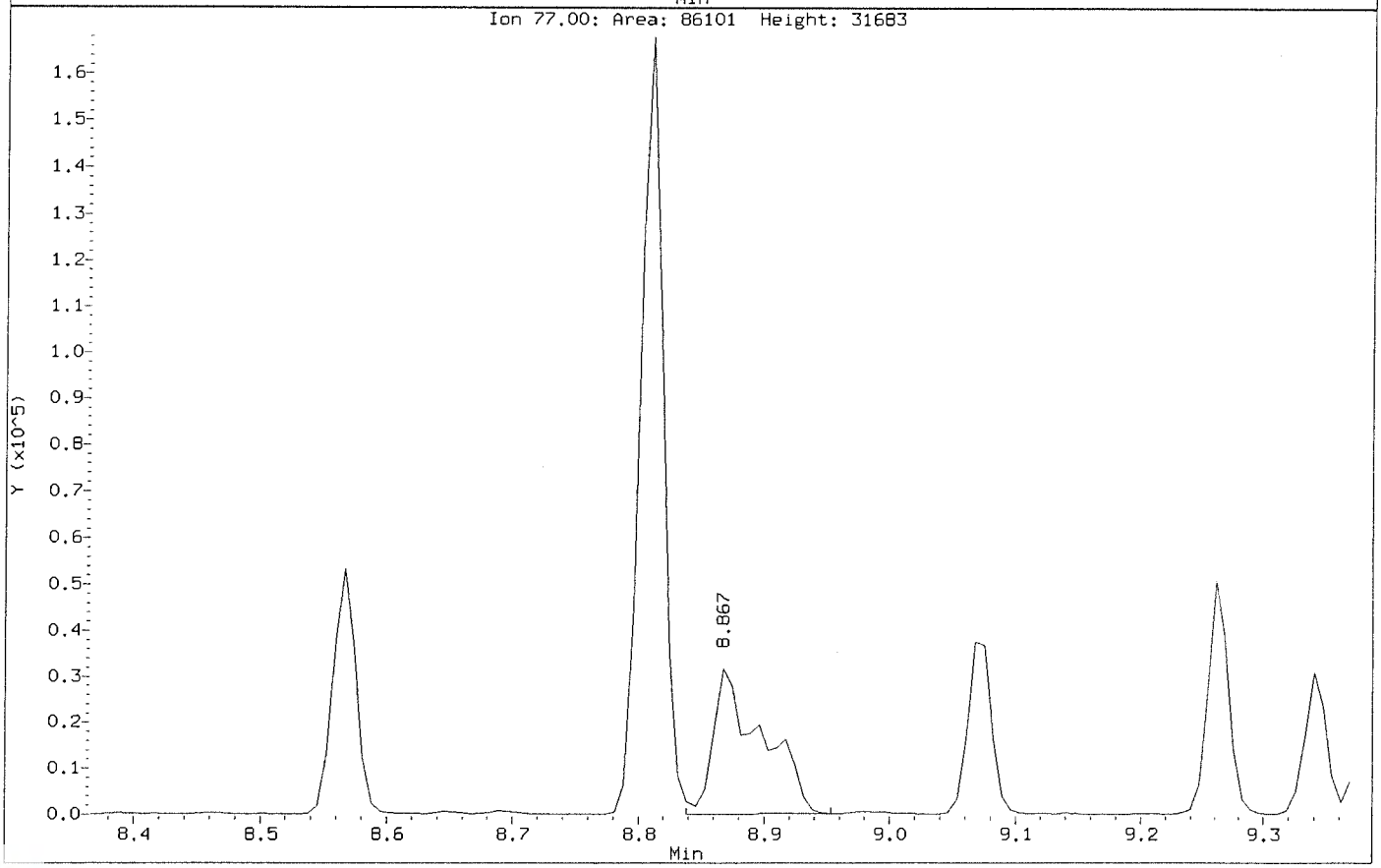
Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



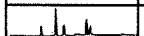
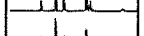
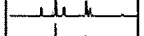
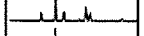
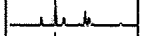
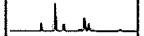


HS19090511 Wet Chem Raw Data

ALS WO# HS19090511

Sequence: 090619
Last Update Operator: alshs.nouser

HS19096511

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method	Processing Method	Volume full	Status	Inject Time
	STD1	2970209205	Calibration S	GA1	1.0000	1	Anions Pro	Anions Proce	5.0	Finished	8/12/2019 2:08:06 PM -05:00
	STD2		Calibration S	GA2	1.0000	2	Anions Pro	Anions Proce	5.0	Finished	8/12/2019 2:24:42 PM -05:00
	STD3		Calibration S	GA3	1.0000	3	Anions Pro	Anions Proce	5.0	Finished	8/12/2019 2:41:19 PM -05:00
	STD4		Calibration S	GA4	1.0000	4	Anions Pro	Anions Proce	5.0	Finished	8/12/2019 2:57:54 PM -05:00
	STD5		Calibration S	GA5	1.0000	5	Anions Pro	Anions Proce	5.0	Finished	8/12/2019 3:14:30 PM -05:00
	STD6	NO2,F MAX 10PPM	Calibration S	GB8	1.0000	6	Anions Pro	Anions Proce	5.0	Finished	8/12/2019 6:37:32 PM -05:00
	ICV	2970209123	Unknown	GA7	1.0000		Anions Pro	Anions Proce	5.0	Finished	8/12/2019 6:54:07 PM -05:00
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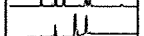
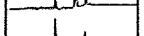
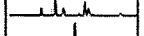
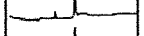
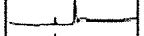
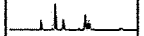
	CCV1		Unknown	BA7	1.0000		Anions Pro	Anions Proce	5.0	Finished	9/12/2019 5:09:18 PM -05:00
	CCB		Unknown	BA8	1.0000		Anions Pro	Anions Proce	5.0	Finished	9/12/2019 5:25:54 PM -05:00
	WBLKW1-091219		Unknown	RA1	1.0000		Anions Pro	Anions Proce	5.0	Finished	9/12/2019 5:42:45 PM -05:00
	WLCSW1-091219		Unknown	RA2	1.0000		Anions Pro	Anions Proce	5.0	Finished	9/12/2019 5:59:21 PM -05:00
	WLCSDW1-091219		Unknown	RA3	1.0000		Anions Pro	Anions Proce	5.0	Finished	9/12/2019 6:15:56 PM -05:00
	HS19090504-01		Unknown	RA4	1.0000		Anions Pro	Anions Proce	5.0	Finished	9/12/2019 6:32:37 PM -05:00
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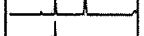
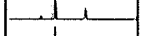
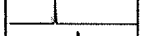
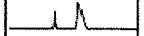
	HS19090504-05		Unknown	RA8	1.0000		Anions Pro	Anions Proce	5.0	Finished	9/12/2019 7:39:07 PM -05:00
	HS19090504-06		Unknown	RB1	1.0000		Anions Pro	Anions Proce	5.0	Finished	9/12/2019 7:55:49 PM -05:00
	HS19081511-01DF5		Unknown	RD3	5.0000		Anions Pro	Anions Proce	5.0	Finished	9/12/2019 8:12:23 PM -05:00
	CCV		Unknown	BA5	1.0000		Anions Pro	Anions Proce	5.0	Finished	9/12/2019 8:29:03 PM -05:00
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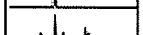
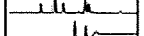
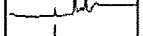
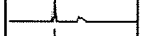
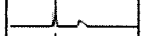
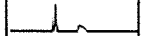
	HS19090511-02		Unknown	RB3	1.0000		Anions Pro	Anions Proce	5.0	Finished	9/12/2019 9:18:53 PM -05:00
	HS19090511-02MS	man.int no3 mtx KM	Unknown	RB4	1.0000		Anions Pro	Anions Proce	5.0	Finished	9/12/2019 9:35:29 PM -05:00
	HS19090511-02MSD	man.int no3 mtx KM	Unknown	RB5	1.0000		Anions Pro	Anions Proce	5.0	Finished	9/12/2019 9:52:04 PM -05:00
	HS19090511-03		Unknown	RB6	1.0000		Anions Pro	Anions Proce	5.0	Finished	9/12/2019 10:08:44 PM -05:00
	HS19090511-04		Unknown	RB7	1.0000		Anions Pro	Anions Proce	5.0	Finished	9/12/2019 10:25:19 PM -05:00
	HS19090511-05		Unknown	RB8	1.0000		Anions Pro	Anions Proce	5.0	Finished	9/12/2019 10:41:54 PM -05:00
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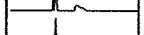	HS19081511-01DF20		Unknown	RD4	20.0000		Anions Pro	Anions Proce	5.0	Finished	9/12/2019 11:31:47 PM -05:00
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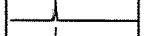
	CCB		Unknown	BA8	1.0000		Anions Pro	Anions Proce	5.0	Finished	9/13/2019 12:05:01 AM -05:00

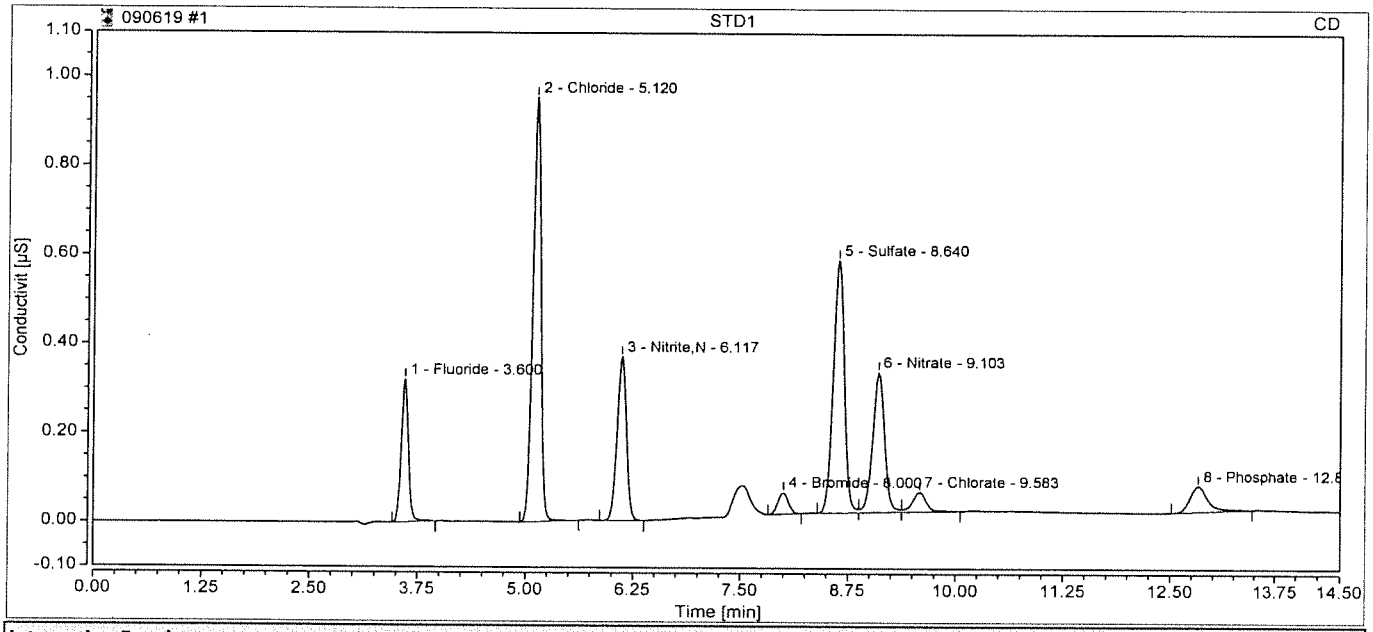
Sequence: 090619
Injection #6: STD6

Calibration

Peak No.	Peak Name	Cal.Type	Eval.Type	Number of Points	Rel.Std.Dev. %	Coeff.of Determination	C0 (Offset)	C1 (Slope)	C2 (Curve)
1	*Fluoride*	*Lin, WithOffset, 1/x*	*Area*	*5*	*10.1532*	*0.99927*	*-0.0056*	*0.3716*	*0.0000*
2	Chloride	Lin, WithOffset, 1/x	Area	6	0.2804	1.00000	-0.0135	0.2355	0.0000
3	Nitrite,N	Lin, WithOffset, 1/x	Area	5	15.1147	0.99824	0.0003	0.5120	0.0000
4	Bromide	Lin, WithOffset, 1/x	Area	6	14.0217	0.99919	-0.0052	0.1009	0.0000
5	Sulfate	Lin, WithOffset, 1/x	Area	6	1.1258	0.99999	-0.0022	0.1717	0.0000
6	Nitrate	Lin, WithOffset, 1/x	Area	6	2.2249	0.99998	-0.0102	0.5876	0.0000
7	Chlorate	Lin, WithOffset, 1/x	Area	6	10.0265	0.99953	-0.0024	0.0944	0.0000
8	Phosphate	Lin, WithOffset, 1/x	Area	6	6.5991	0.99982	-0.0110	0.2321	0.0000
Maximum					**15.1147**	1.00000			
Minimum					0.2804	**0.99824**			

1 STD1

Sample Name:	**STD1**	*Injection Volume:*	**5.00**
Vial Number:	**GA1**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 14:08**	*Sample Weight:*	**1.0000**
Run Time:			



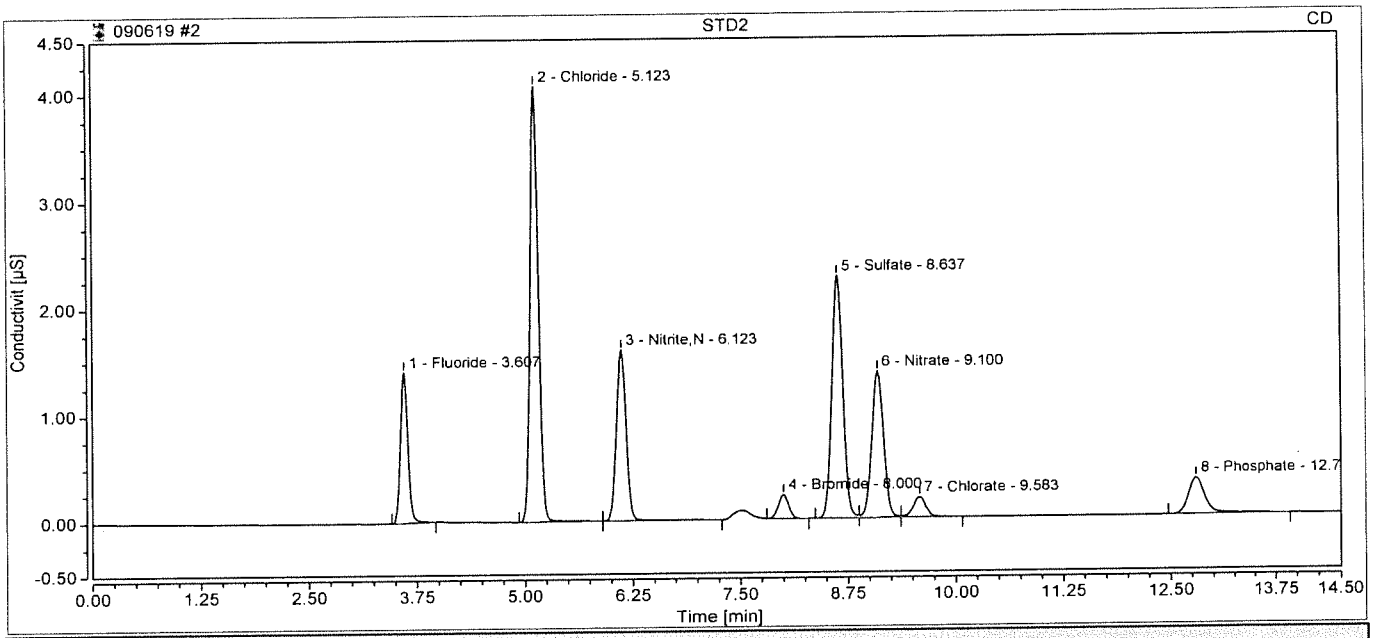
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.60	Fluoride	BMB	0.031	0.0973	0.0973	1.0000
2	5.12	Chloride	BMB	0.105	0.5026	0.5026	1.0000
3	6.12	Nitrite,N	BMB	0.046	0.0893	0.0893	1.0000
4	8.00	Bromide	BMB	0.007	0.1192	0.1192	1.0000
5	8.64	Sulfate	BM	0.084	0.5042	0.5042	1.0000
6	9.10	Nitrate	M	0.051	0.1034	0.1034	1.0000
7	9.58	Chlorate	MB	0.008	0.1143	0.1143	1.0000
8	12.83	Phosphate	BMB	0.014	0.1085	0.1085	1.0000
Total:			**0.000**	**0.346**		**1.64**	

2 STD2

Sample Name:	**STD2**	*Injection Volume:*	**5.00**
Vial Number:	**GA2**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 14:24**	*Sample Weight:*	**1.0000**

Run Time:



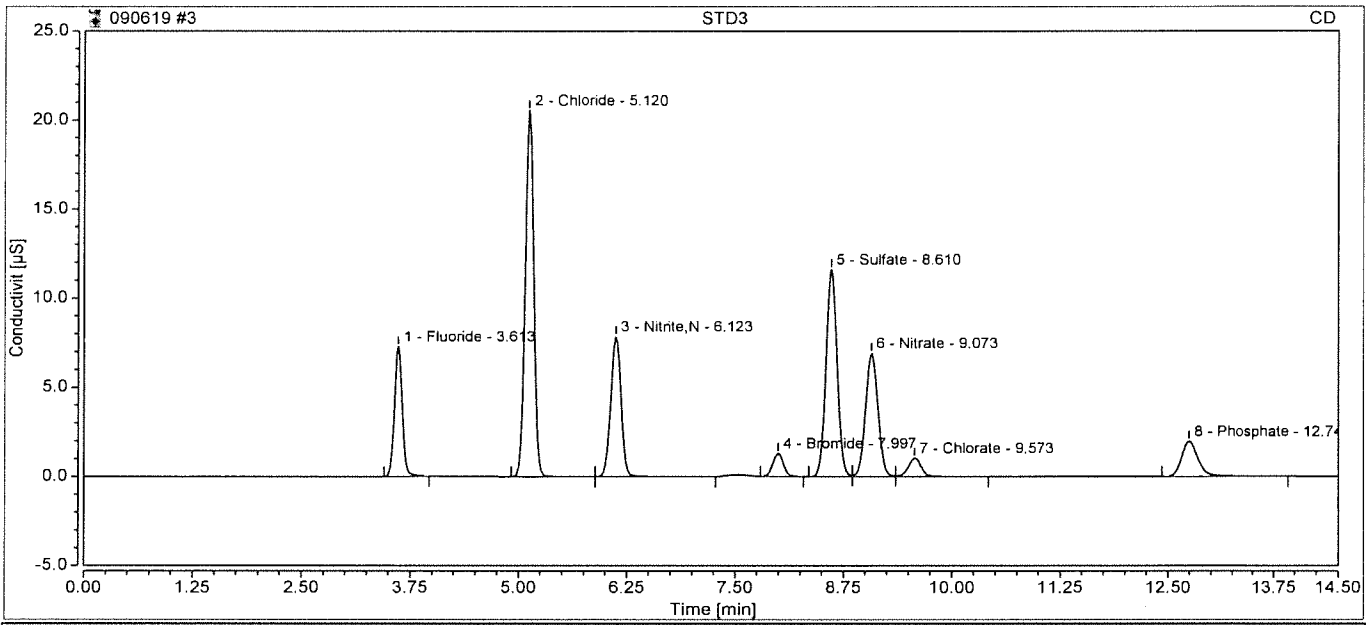
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.61	Fluoride	BMB	0.140	0.3929	0.3929	1.0000
2	5.12	Chloride	BMB	0.456	1.9918	1.9918	1.0000
3	6.12	Nitrite,N	BMB	0.211	0.4119	0.4119	1.0000
4	8.00	Bromide	BMB	0.031	0.3593	0.3593	1.0000
5	8.64	Sulfate	BM	0.337	1.9733	1.9733	1.0000
6	9.10	Nitrate	M	0.220	0.3917	0.3917	1.0000
7	9.58	Chlorate	MB	0.033	0.3704	0.3704	1.0000
8	12.80	Phosphate	BMB	0.078	0.3842	0.3842	1.0000
Total:			**0.000**	**1.506**		**6.28**	

3 STD3

Sample Name:	**STD3**	*Injection Volume:*	**5.00**
Vial Number:	**GA3**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 14:41**	*Sample Weight:*	**1.0000**

Run Time:

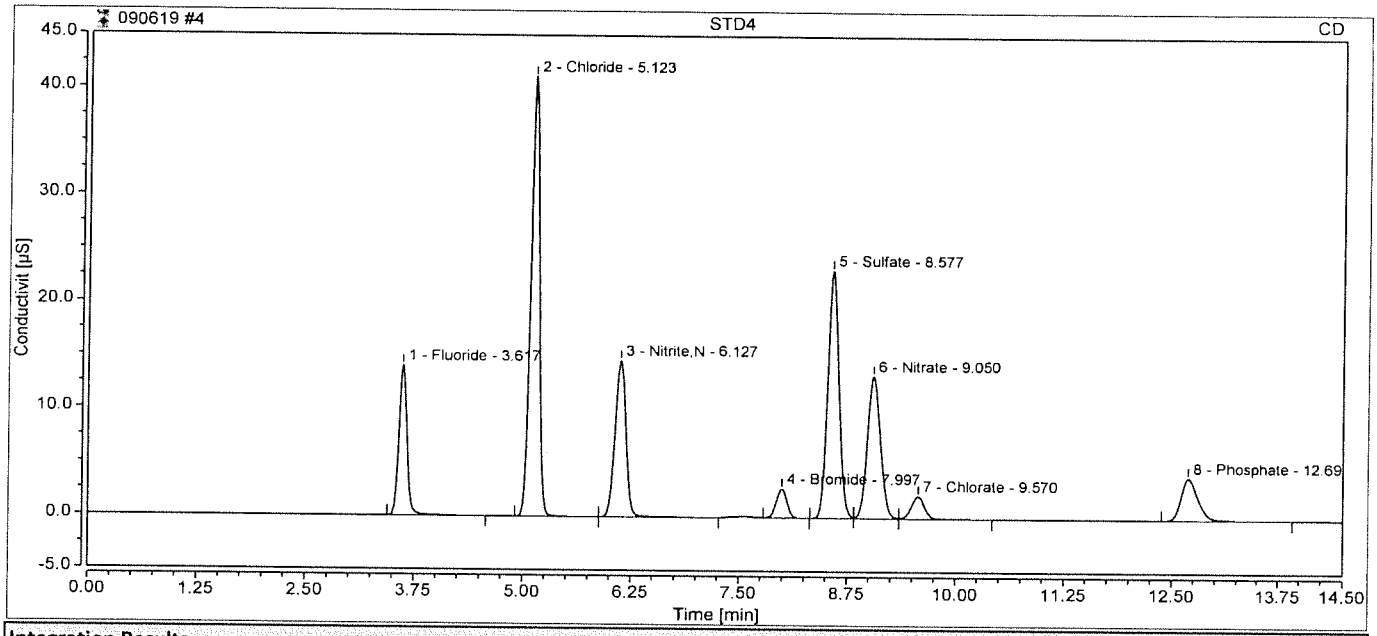


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.61	Fluoride	BMB	0.758	2.0551	2.0551	1.0000
2	5.12	Chloride	BMB	2.339	9.9888	9.9888	1.0000
3	6.12	Nitrite,N	BMB	1.091	2.1305	2.1305	1.0000
4	8.00	Bromide	BMB	0.182	1.8590	1.8590	1.0000
5	8.61	Sulfate	BM	1.715	10.0007	10.0007	1.0000
6	9.07	Nitrate	M	1.153	1.9792	1.9792	1.0000
7	9.57	Chlorate	MB	0.176	1.8940	1.8940	1.0000
8	12.75	Phosphate	BMB	0.436	1.9271	1.9271	1.0000
Total:			**0.000**	**7.851**		**31.83**	

4 STD4

Sample Name:	**STD4**	*Injection Volume:*	**5.00**
Vial Number:	**GA4**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 14:57**	*Sample Weight:*	**1.0000**
Run Time:			



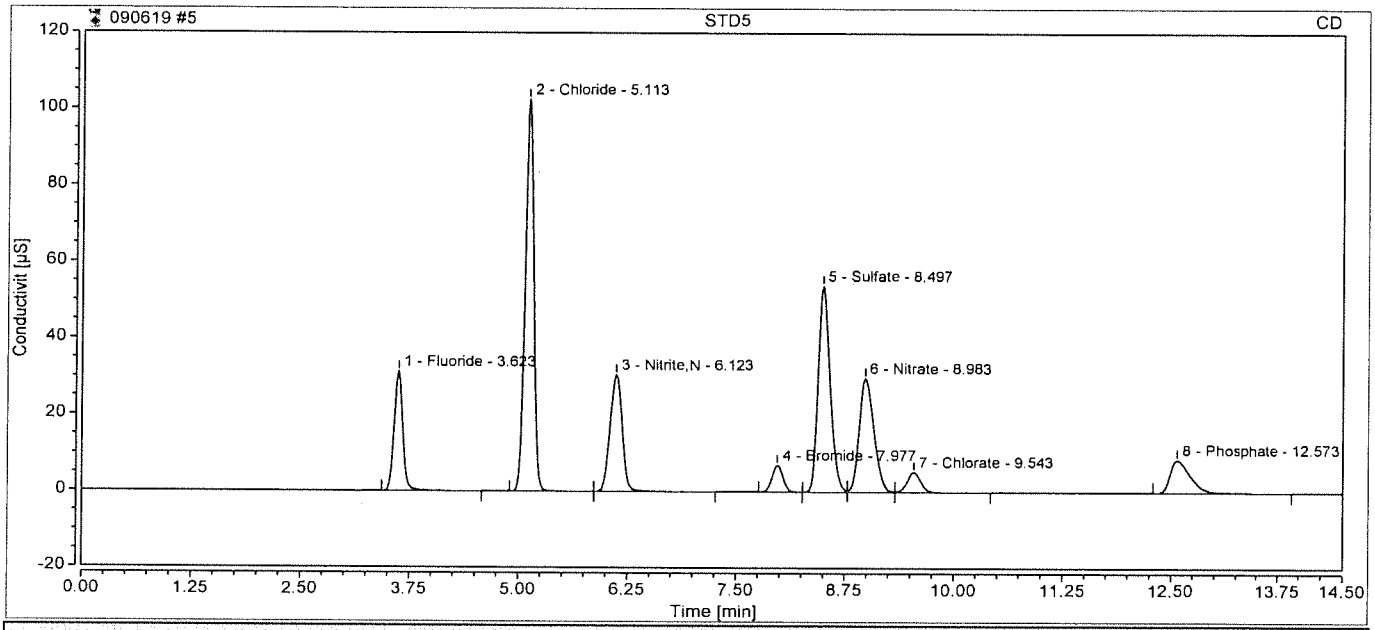
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	1.535	4.1457	4.1457	1.0000
2	5.12	Chloride	BMB	4.695	19.9948	19.9948	1.0000
3	6.13	Nitrite,N	BMB	2.133	4.1659	4.1659	1.0000
4	8.00	Bromide	BMB	0.385	3.8642	3.8642	1.0000
5	8.58	Sulfate	BM	3.451	20.1082	20.1082	1.0000
6	9.05	Nitrate	M	2.330	3.9823	3.9823	1.0000
7	9.57	Chlorate	MB	0.365	3.8956	3.8956	1.0000
8	12.69	Phosphate	BMB	0.903	3.9396	3.9396	1.0000
Total:			**0.000**	**15.798**		**64.10**	

5 STD5

Sample Name:	**STD5**	*Injection Volume:*	**5.00**
Vial Number:	**GA5**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 15:14**	*Sample Weight:*	**1.0000**

Run Time:



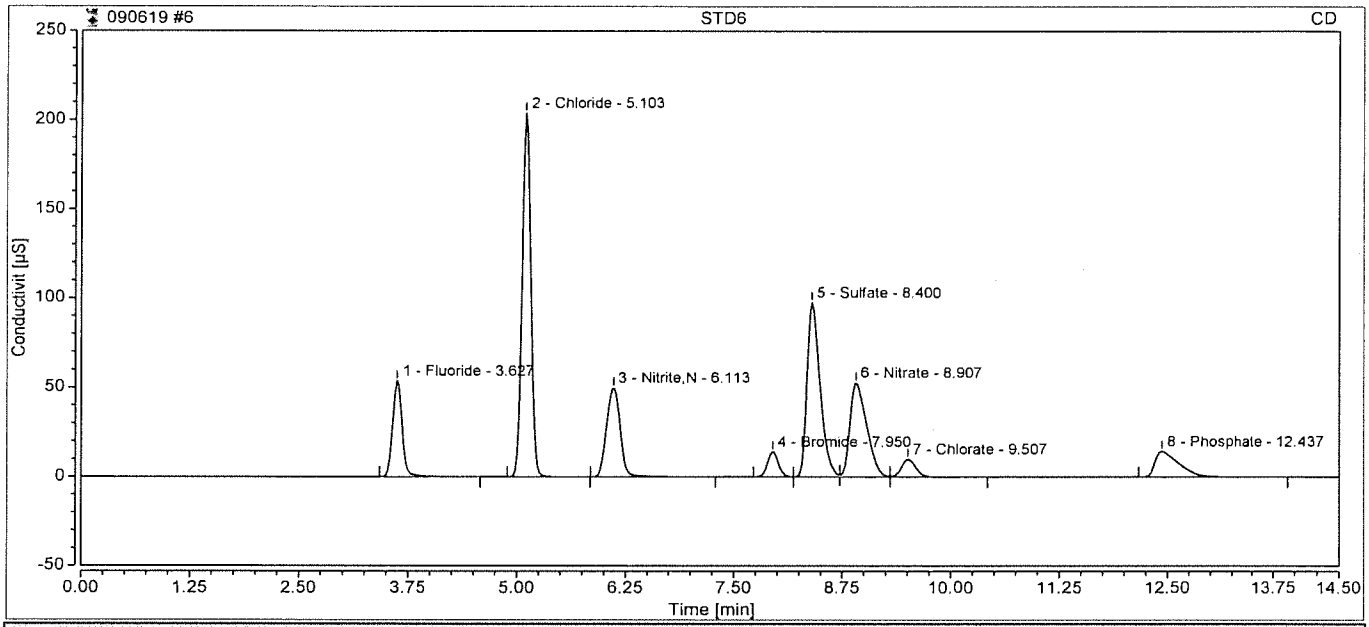
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	3.639	9.8090	9.8090	1.0000
2	5.11	Chloride	BMB	11.762	49.9996	49.9996	1.0000
3	6.12	Nitrite,N	BMB	4.968	9.7023	9.7023	1.0000
4	7.98	Bromide	BMB	1.001	9.9786	9.9786	1.0000
5	8.50	Sulfate	BM	8.590	50.0271	50.0271	1.0000
6	8.98	Nitrate	M	5.854	9.9805	9.9805	1.0000
7	9.54	Chlorate	MB	0.939	9.9670	9.9670	1.0000
8	12.57	Phosphate	BMB	2.305	9.9807	9.9807	1.0000
Total:			**0.000**	**39.058**		**159.44**	

6 STD6

Sample Name:	**STD6**	*Injection Volume:*	**5.00**
Vial Number:	**GB8**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 18:37**	*Sample Weight:*	**1.0000**

Run Time:



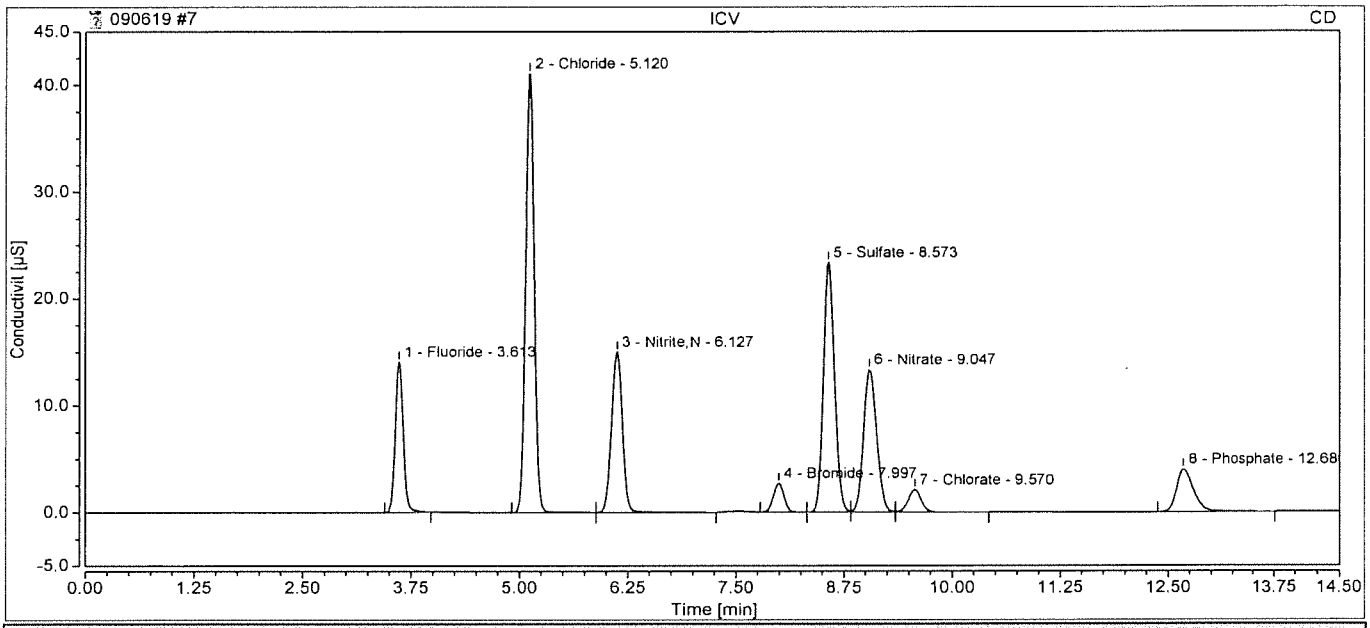
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.63	Fluoride	BMB	6.773	18.2418	18.2418	1.0000
2	5.10	Chloride	BMB	23.542	100.0224	100.0224	1.0000
3	6.11	Nitrite,N	BMB	9.157	17.8850	17.8850	1.0000
4	7.95	Bromide	BM	2.045	20.3197	20.3197	1.0000
5	8.40	Sulfate	M	17.153	99.8863	99.8863	1.0000
6	8.91	Nitrate	M	11.778	20.0629	20.0629	1.0000
7	9.51	Chlorate	MB	1.910	20.2586	20.2586	1.0000
8	12.44	Phosphate	BMB	4.668	20.1599	20.1599	1.0000
Total:			**0.000**	**77.026**		**316.84**	

7 ICV

Sample Name:	**ICV**	*Injection Volume:*	**5.00**
Vial Number:	**GA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 18:54**	*Sample Weight:*	**1.0000**

Run Time:



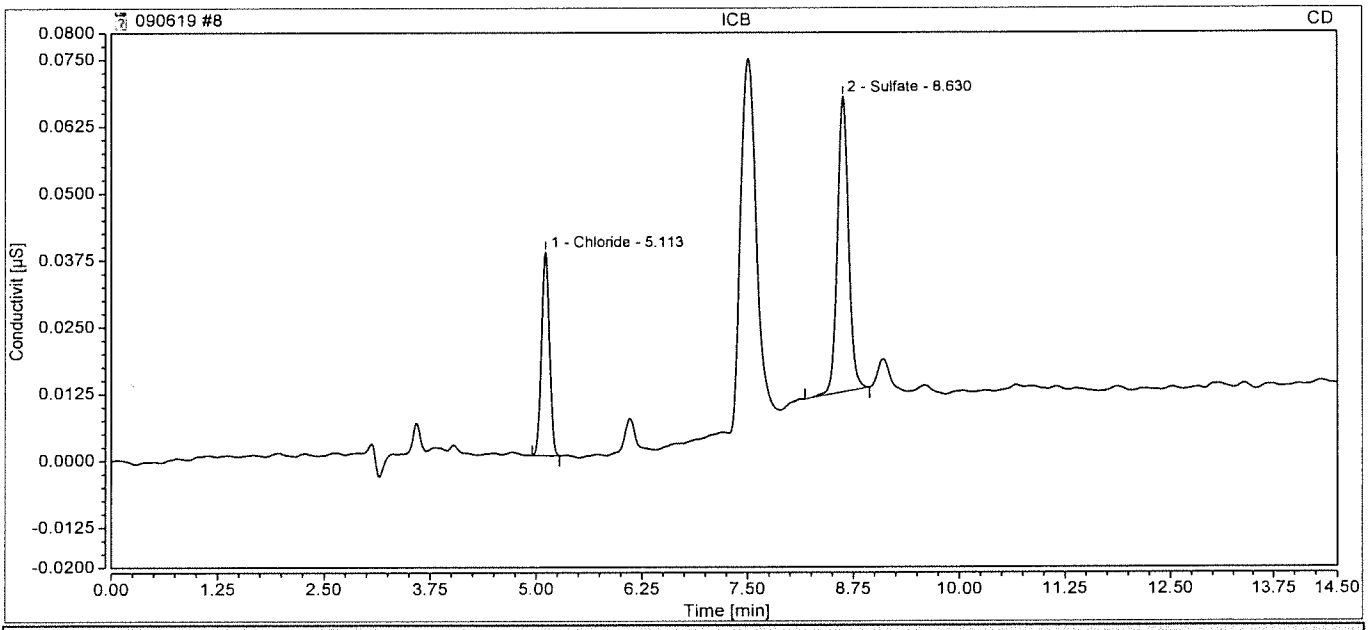
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.61	Fluoride	BMB	1.495	4.0374	4.0374	1.0000
2	5.12	Chloride	BMB	4.681	19.9333	19.9333	1.0000
3	6.13	Nitrite,N	BMB	2.195	4.2858	4.2858	1.0000
4	8.00	Bromide	BMB	0.384	3.8585	3.8585	1.0000
5	8.57	Sulfate	BM	3.469	20.2132	20.2132	1.0000
6	9.05	Nitrate	M	2.340	3.9993	3.9993	1.0000
7	9.57	Chlorate	MB	0.367	3.9104	3.9104	1.0000
8	12.68	Phosphate	BMB	0.911	3.9729	3.9729	1.0000
Total:			**0.000**	**15.841**		**64.21**	

8 ICB

Sample Name:	**ICB**	*Injection Volume:*	**5.00**
Vial Number:	**GB8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 19:29**	*Sample Weight:*	**1.0000**

Run Time:



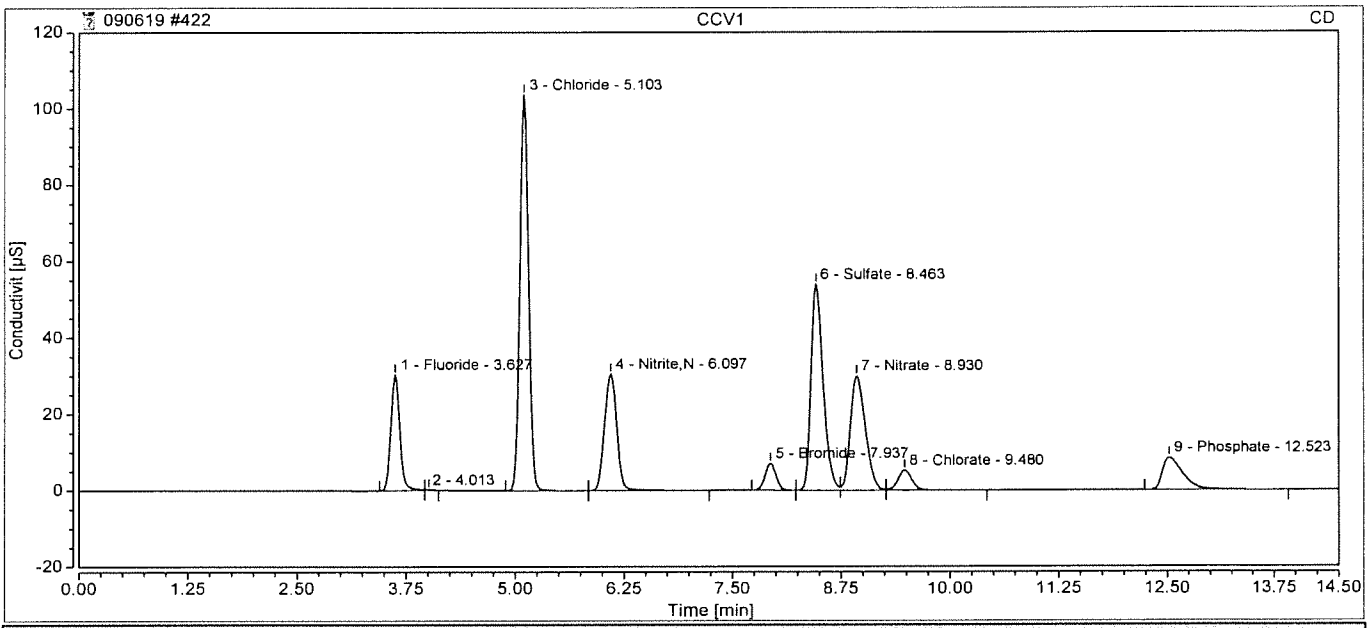
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.11	Chloride	BMB	0.004	0.0748	0.0748	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
2	8.63	Sulfate	BMB	0.008	0.0618	0.0618	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.013**		**0.14**	

422 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/12/2019 17:09**	*Sample Weight:*	**1.0000**

Run Time:

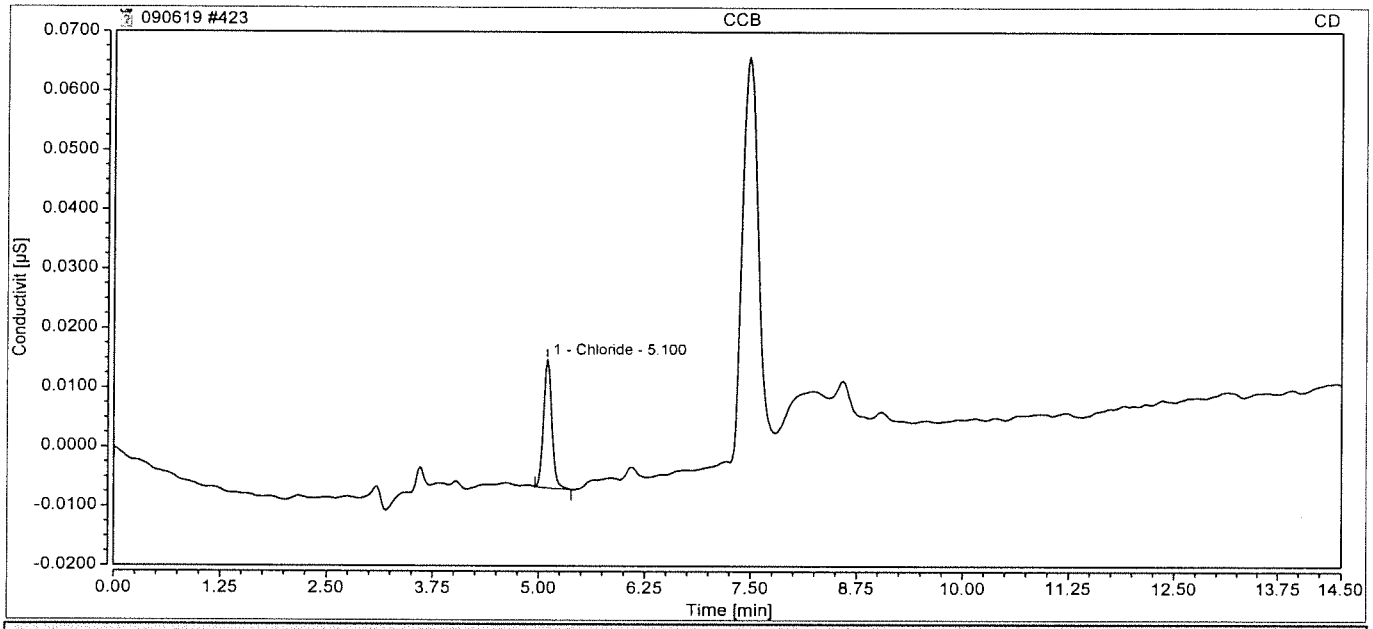


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.63	Fluoride	BMB	3.582	9.6549	9.6549	1.0000
3	5.10	Chloride	BMB	11.998	51.0031	51.0031	1.0000
4	6.10	Nitrite,N	BMB	5.026	9.8148	9.8148	1.0000
5	7.94	Bromide	BMB	1.009	10.0582	10.0582	1.0000
6	8.46	Sulfate	BM	8.729	50.8351	50.8351	1.0000
7	8.93	Nitrate	M	5.968	10.1753	10.1753	1.0000
8	9.48	Chlorate	MB	0.953	10.1255	10.1255	1.0000
9	12.52	Phosphate	BMB	2.331	10.0913	10.0913	1.0000
Total:			**0.000**	**39.596**		**161.76**	

423 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/12/2019 17:25**	*Sample Weight:*	**1.0000**
Run Time:			

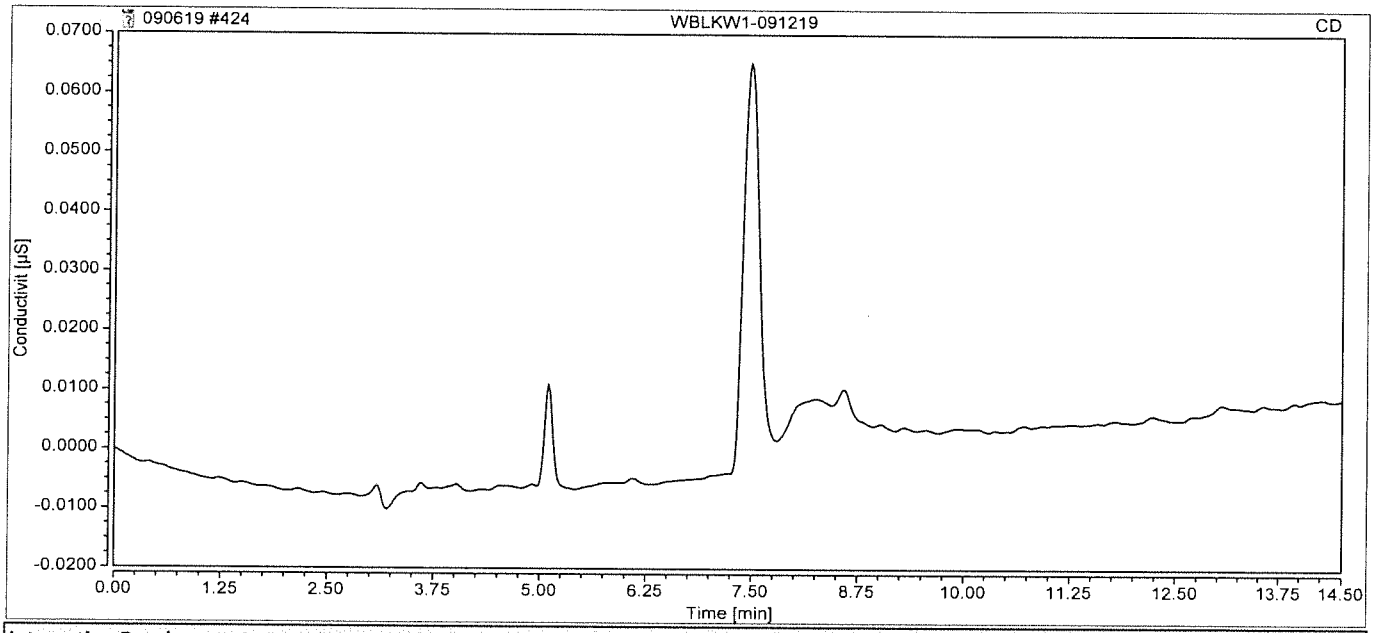


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.10	Chloride	BMB	0.002	0.0678	0.0678	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.002**		0.07	

424 WBLKW1-091219

Sample Name:	**WBLKW1-091219**	*Injection Volume:*	**5.00**
Vial Number:	**RA1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/12/2019 17:42**	*Sample Weight:*	**1.0000**
Run Time:			



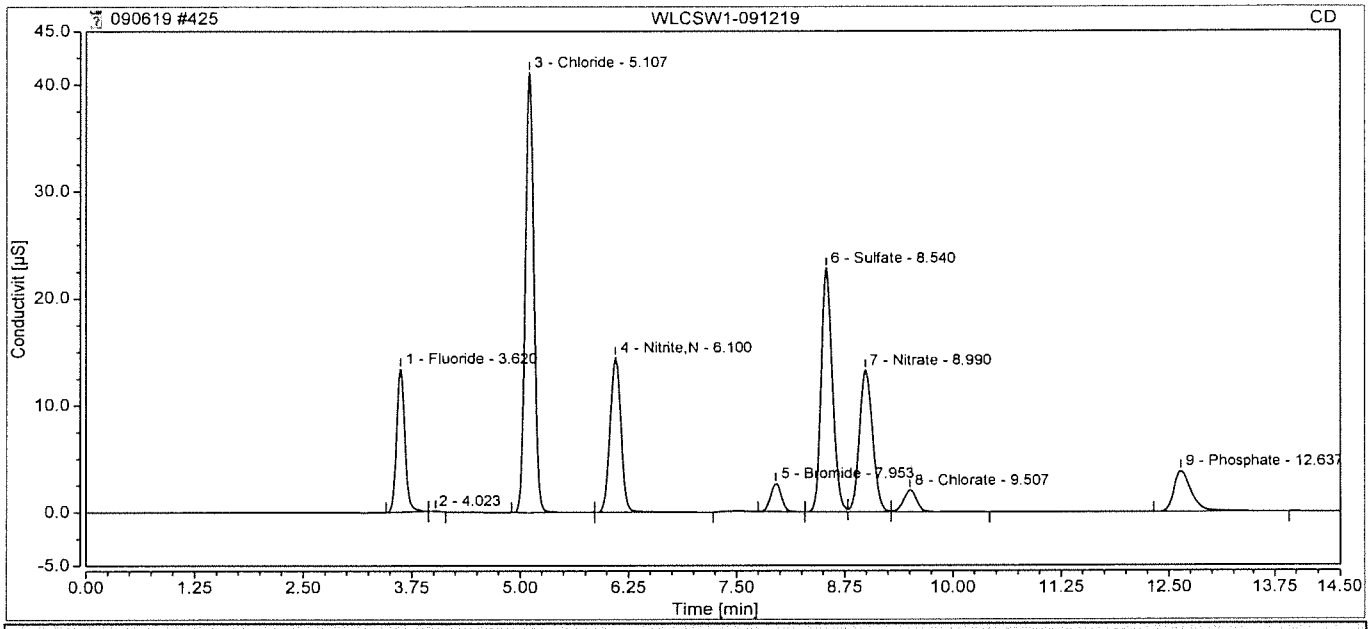
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.000**		**0.00**	

425 WLCSW1-091219

Sample Name:	**WLCSW1-091219**	*Injection Volume:*	**5.00**
Vial Number:	**RA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/12/2019 17:59**	*Sample Weight:*	**1.0000**

Run Time:



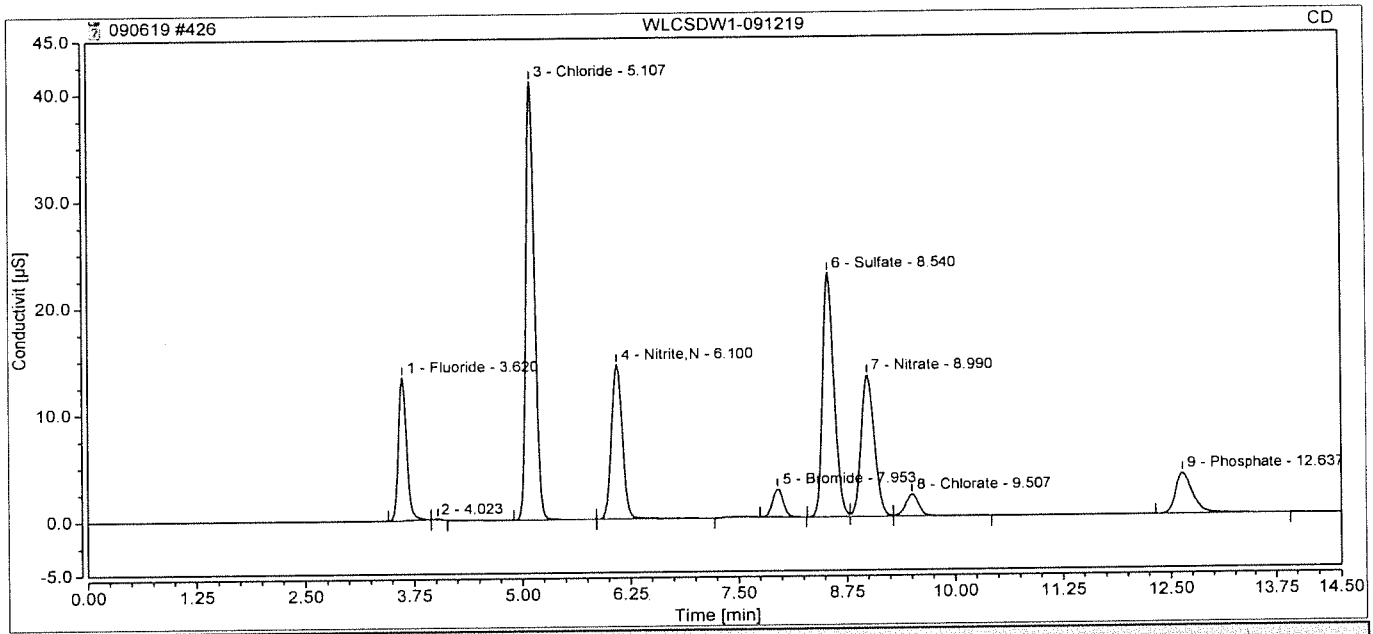
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	1.482	4.0021	4.0021	1.0000
3	5.11	Chloride	BMB	4.721	20.1058	20.1058	1.0000
4	6.10	Nitrite,N	BMB	2.131	4.1617	4.1617	1.0000
5	7.95	Bromide	BMB	0.377	3.7871	3.7871	1.0000
6	8.54	Sulfate	BM	3.455	20.1292	20.1292	1.0000
7	8.99	Nitrate	M	2.347	4.0112	4.0112	1.0000
8	9.51	Chlorate	MB	0.367	3.9120	3.9120	1.0000
9	12.64	Phosphate	BMB	0.897	3.9135	3.9135	1.0000
Total:			**0.000**	**15.777**		**64.02**	

426 WLCSDW1-091219

Sample Name:	**WLCSDW1-091219**	*Injection Volume:*	**5.00**
Vial Number:	**RA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/12/2019 18:15**	*Sample Weight:*	**1.0000**

Run Time:



Integration Results

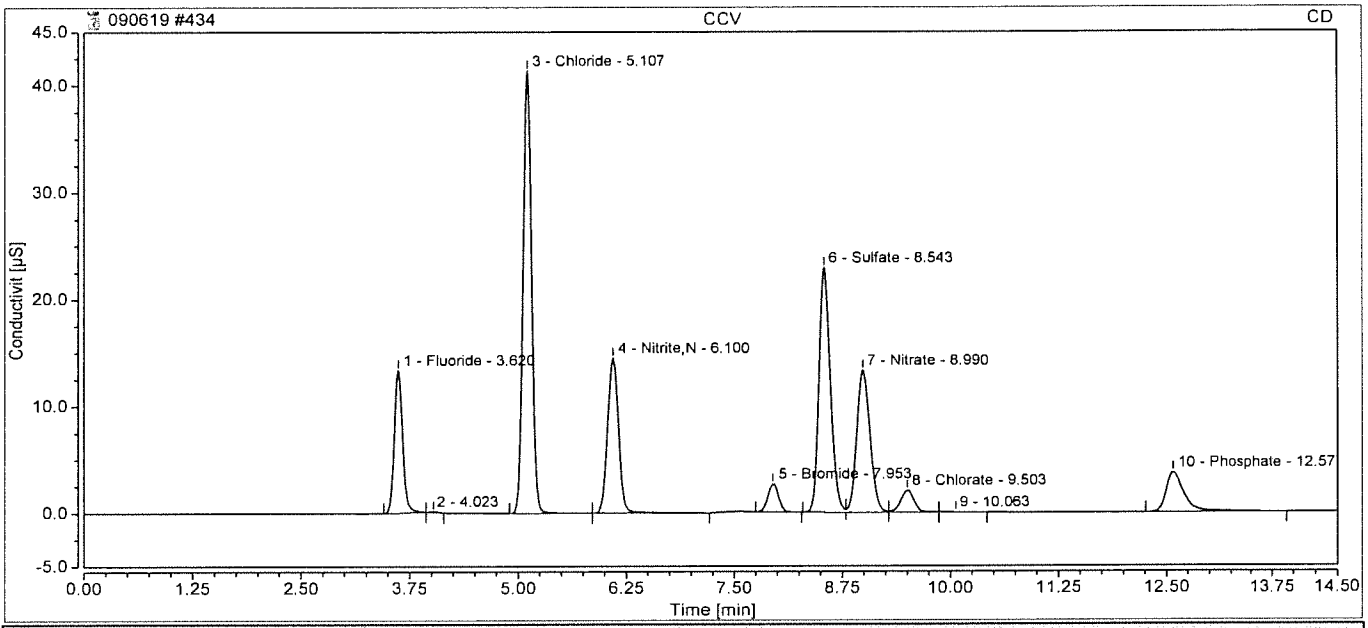
No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	1.471	3.9744	3.9744	1.0000
3	5.11	Chloride	BMB	4.706	20.0388	20.0388	1.0000
4	6.10	Nitrite,N	BMB	2.123	4.1465	4.1465	1.0000
5	7.95	Bromide	BMB	0.374	3.7573	3.7573	1.0000
6	8.54	Sulfate	BM	3.455	20.1277	20.1277	1.0000
7	8.99	Nitrate	M	2.338	3.9966	3.9966	1.0000
8	9.51	Chlorate	MB	0.365	3.8936	3.8936	1.0000
9	12.64	Phosphate	BMB	0.894	3.8982	3.8982	1.0000
Total:			**0.000**	**15.726**		**63.83**	

Chromeleon (c) Dionex
Version 7.2.9.11323

434 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/12/2019 20:29**	*Sample Weight:*	**1.0000**

Run Time:

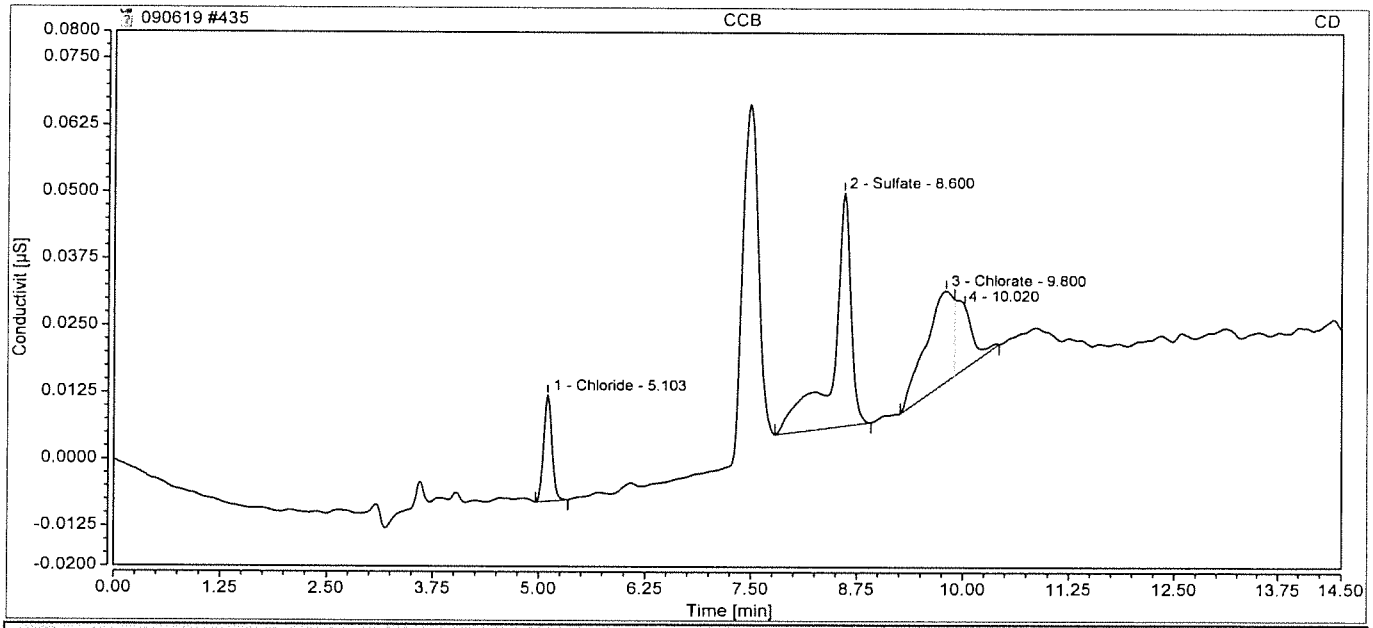


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	1.477	3.9894	3.9894	1.0000
3	5.11	Chloride	BMB	4.746	20.2110	20.2110	1.0000
4	6.10	Nitrite,N	BMB	2.136	4.1721	4.1721	1.0000
5	7.95	Bromide	BMB	0.375	3.7698	3.7698	1.0000
6	8.54	Sulfate	BM	3.483	20.2944	20.2944	1.0000
7	8.99	Nitrate	M	2.358	4.0304	4.0304	1.0000
8	9.50	Chlorate	M	0.363	3.8730	3.8730	1.0000
10	12.58	Phosphate	BMB	0.894	3.8990	3.8990	1.0000
Total:			**0.000**	**15.833**		**64.24**	

435 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/12/2019 20:45**	*Sample Weight:*	**1.0000**
Run Time:			



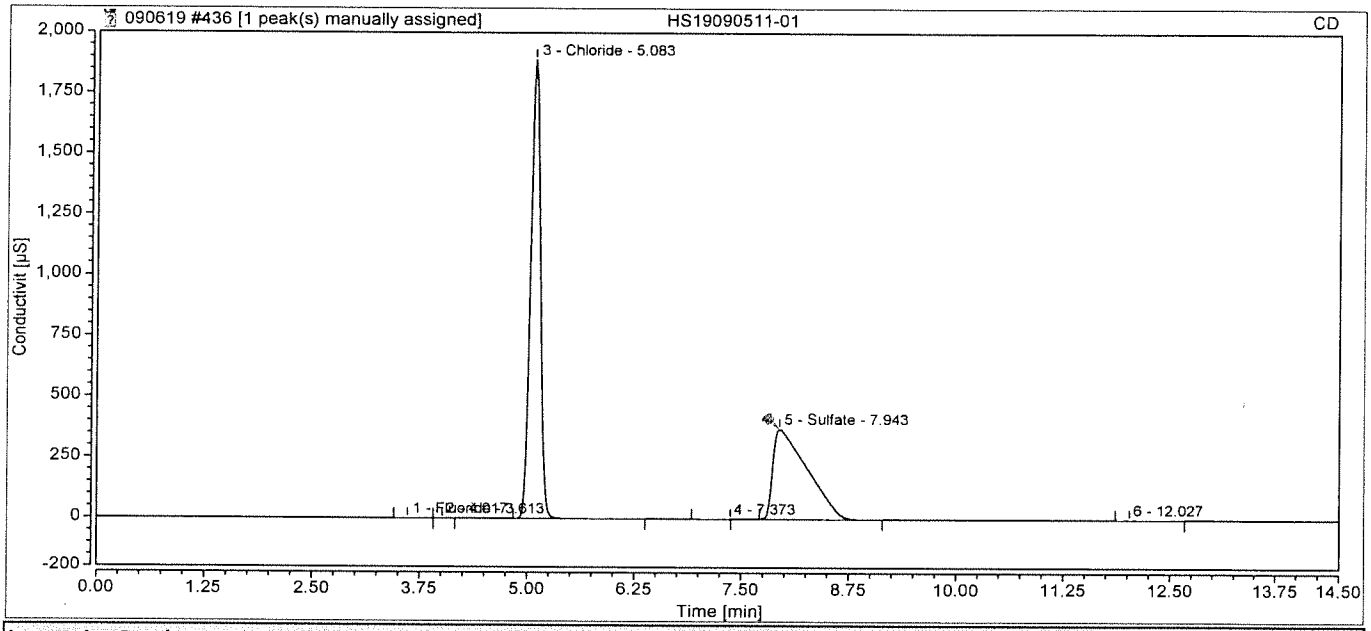
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.10	Chloride	BMB	0.002	0.0668	0.0668	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
2	8.60	Sulfate	BMB	0.011	0.0746	0.0746	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
3	9.80	Chlorate	BM	0.007	0.0944	0.0944	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.019**		**0.24**	

436 HS19090511-01

Sample Name:	**HS19090511-01**	*Injection Volume:*	**5.00**
Vial Number:	**RB2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/12/2019 21:02**	*Sample Weight:*	**1.0000**

Run Time:



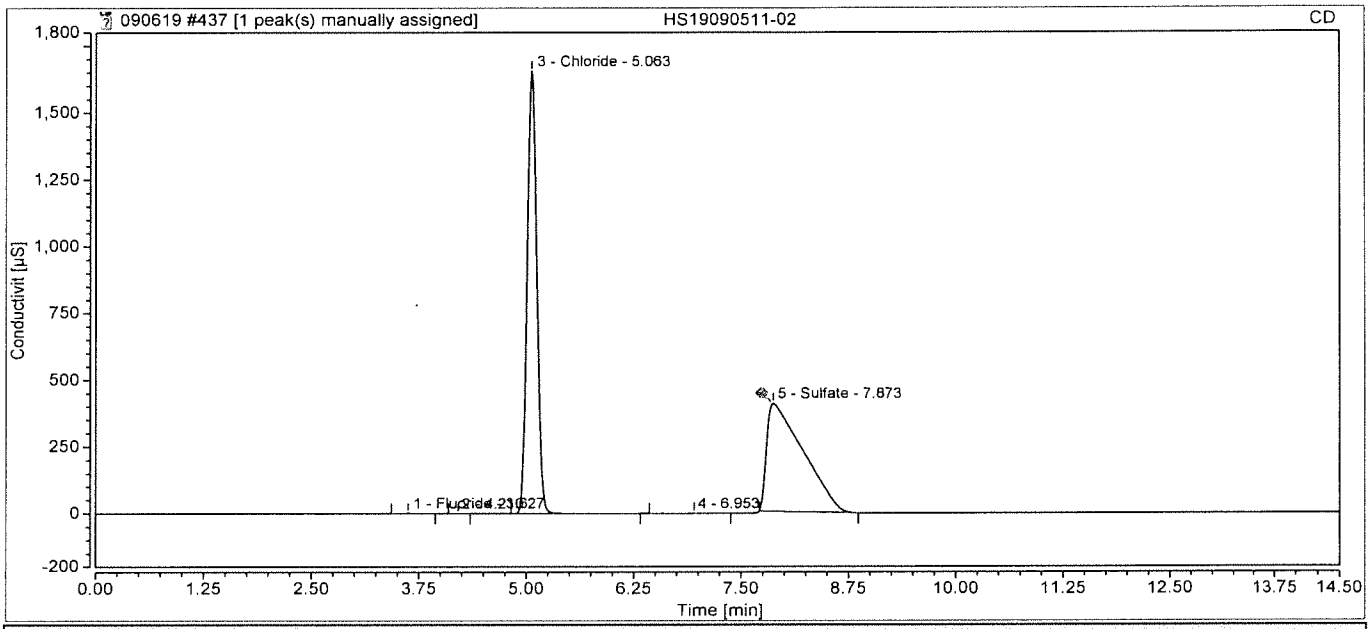
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.61	Fluoride	BMB	0.043	0.1320	0.1320	1.0000
3	5.08	Chloride	BMB	248.731	1056.2340	1056.2340	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
5	7.94	Sulfate	BMB^	170.261	991.3685	991.3685	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**419.036**		**2047.73**	

437 HS19090511-02

Sample Name:	**HS19090511-02**	*Injection Volume:*	**5.00**
Vial Number:	**RB3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/12/2019 21:18**	*Sample Weight:*	**1.0000**

Run Time:



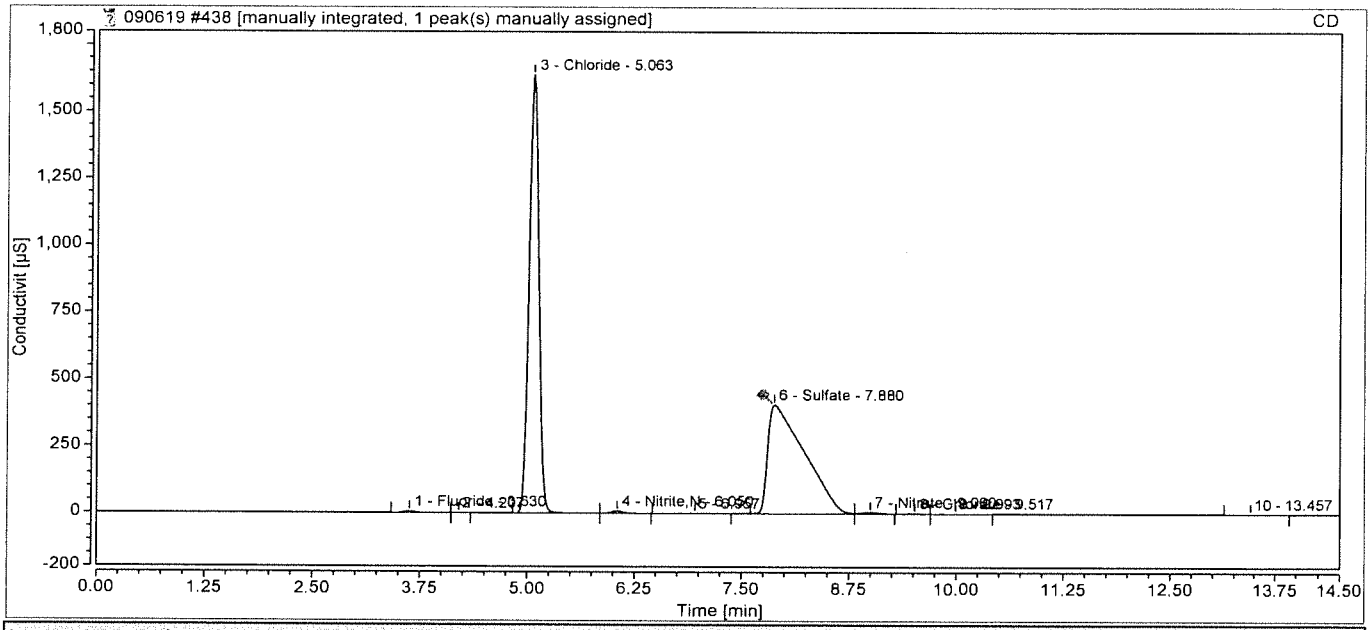
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.63	Fluoride	BMB	0.121	0.3397	0.3397	1.0000
3	5.06	Chloride	BMB	215.274	914.1647	914.1647	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
5	7.87	Sulfate	BMB^	198.615	1156.4642	1156.4642	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**414.010**		**2070.97**	

438 HS19090511-02MS

Sample Name:	**HS19090511-02MS**	*Injection Volume:*	**5.00**
Vial Number:	**RB4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/12/2019 21:35**	*Sample Weight:*	**1.0000**

Run Time:



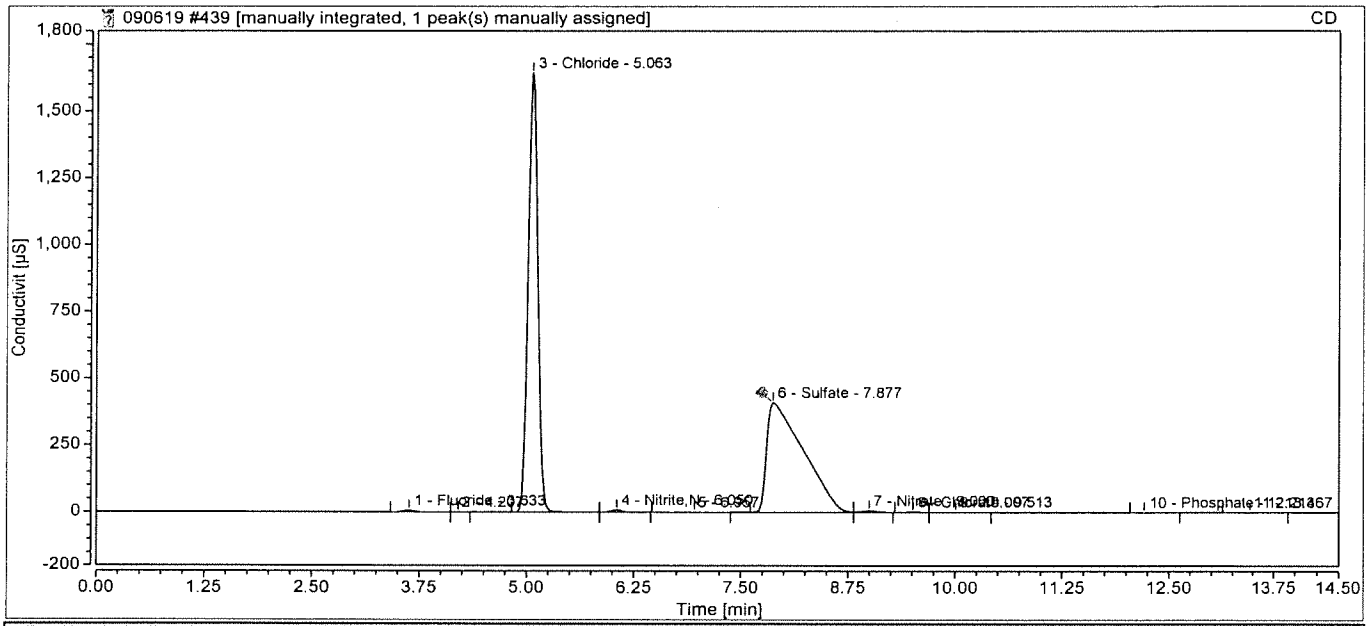
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.63	Fluoride	BMB	0.789	2.1389	2.1389	1.0000
3	5.06	Chloride	BMB	212.562	902.6488	902.6488	1.0000
4	6.05	Nitrite,N	BMB	1.078	2.1053	2.1053	1.0000
6	7.88	Sulfate	BM *^	199.875	1163.8016	1163.8016	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
7	9.00	Nitrate	MB*	1.177	2.0205	2.0205	1.0000
8	9.52	Chlorate	BM	0.149	1.6027	1.6027	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**415.630**		**2074.32**	

439 HS19090511-02MSD

Sample Name:	**HS19090511-02MSD**	*Injection Volume:*	**5.00**
Vial Number:	**RB5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/12/2019 21:52**	*Sample Weight:*	**1.0000**

Run Time:



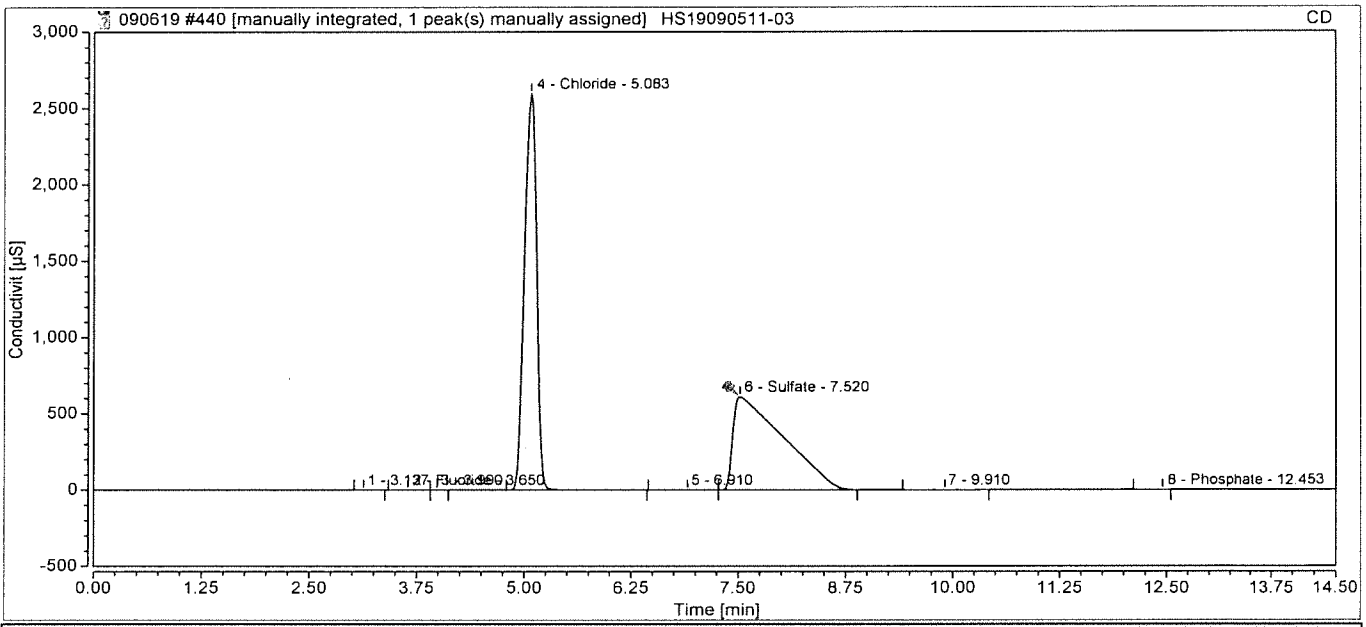
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.63	Fluoride	BMB	0.799	2.1650	2.1650	1.0000
3	5.06	Chloride	BMB	213.457	906.4493	906.4493	1.0000
4	6.05	Nitrite,N	BMB	1.090	2.1283	2.1283	1.0000
6	7.88	Sulfate	BM *^	201.466	1173.0653	1173.0653	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
7	9.00	Nitrate	MB*	1.186	2.0354	2.0354	1.0000
8	9.51	Chlorate	BM	0.148	1.5973	1.5973	1.0000
10	12.21	Phosphate	BMB	0.003	0.0623	0.0623	1.0000
Total:			**0.000**	**418.150**		**2087.50**	

440 HS19090511-03

Sample Name:	**HS19090511-03**	*Injection Volume:*	**5.00**
Vial Number:	**RB6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/12/2019 22:08**	*Sample Weight:*	**1.0000**

Run Time:



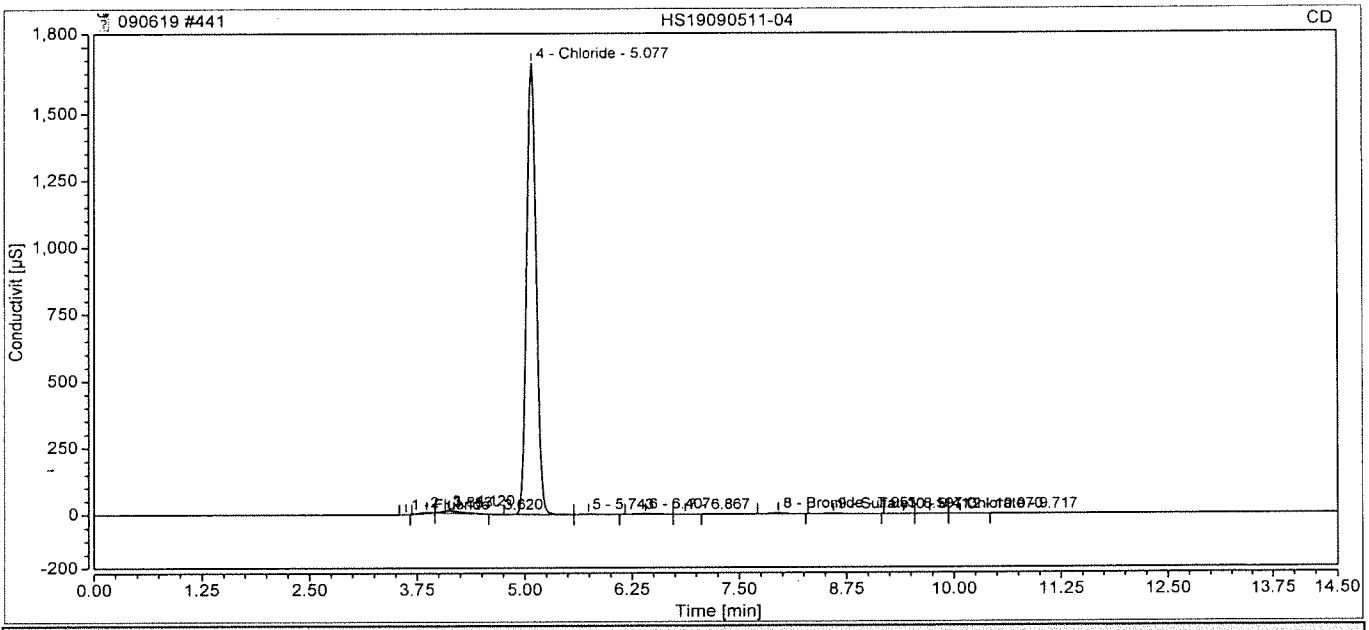
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
2	3.65	Fluoride	BMB	0.092	0.2615	0.2615	1.0000
4	5.08	Chloride	BMB	425.112	1805.1935	1805.1935	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
6	7.52	Sulfate	BMB*^	412.934	2404.3480	2404.3480	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
8	12.45	Phosphate	BMB	0.003	0.0597	0.0597	1.0000
Total:			**0.000**	**838.140**		**4209.86**	

441 HS19090511-04

Sample Name:	**HS19090511-04**	*Injection Volume:*	**5.00**
Vial Number:	**RB7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/12/2019 22:25**	*Sample Weight:*	**1.0000**

Run Time:



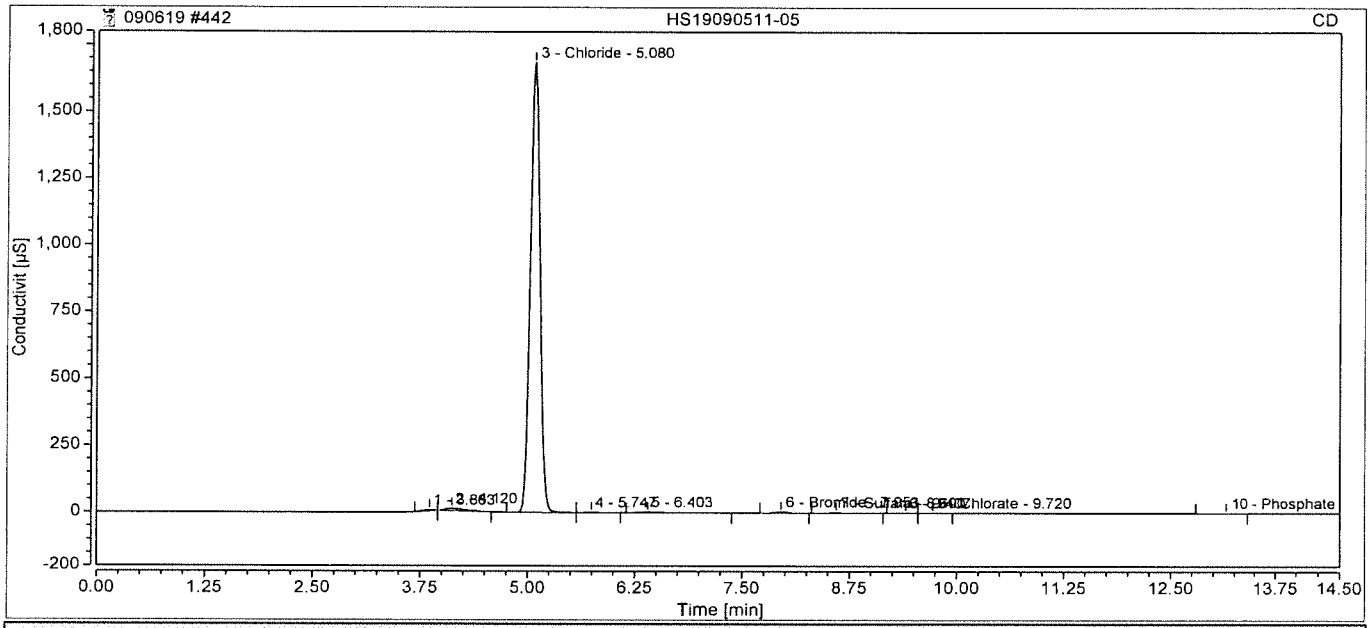
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	0.011	0.0435	0.0435	1.0000
4	5.08	Chloride	BMB	218.688	928.6624	928.6624	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
8	7.95	Bromide	BMB	0.473	4.7394	4.7394	1.0000
9	8.60	Sulfate	BMB	0.217	1.2765	1.2765	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
11	9.72	Chlorate	M	0.023	0.2646	0.2646	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**219.411**		**934.99**	

442 HS19090511-05

Sample Name:	**HS19090511-05**	*Injection Volume:*	**5.00**
Vial Number:	**RB8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/12/2019 22:41**	*Sample Weight:*	**1.0000**

Run Time:



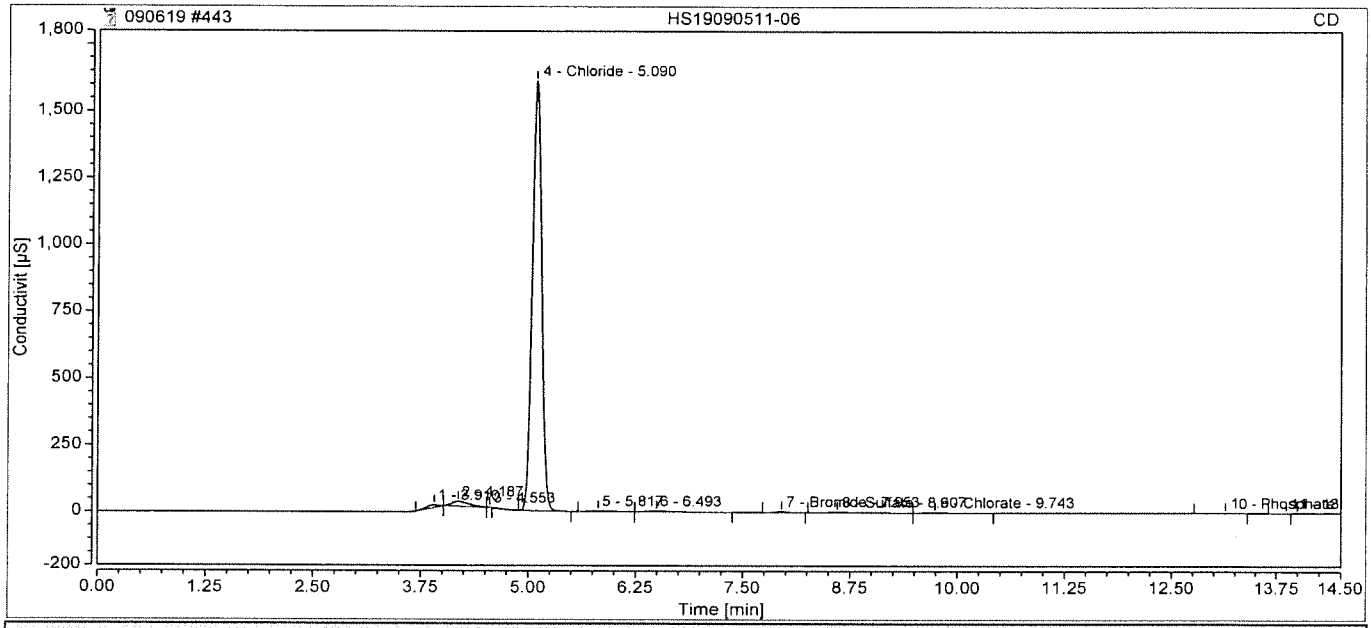
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
3	5.08	Chloride	BMB	218.510	927.9066	927.9066	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
6	7.95	Bromide	BMB	0.474	4.7474	4.7474	1.0000
7	8.60	Sulfate	BMB	0.134	0.7901	0.7901	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
9	9.72	Chlorate	MB	0.015	0.1842	0.1842	1.0000
10	13.15	Phosphate	BMB	0.004	0.0629	0.0629	1.0000
Total:			**0.000**	**219.136**		**933.69**	

443 HS19090511-06

Sample Name:	**HS19090511-06**	*Injection Volume:*	**5.00**
Vial Number:	**RC1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/12/2019 22:58**	*Sample Weight:*	**1.0000**

Run Time:



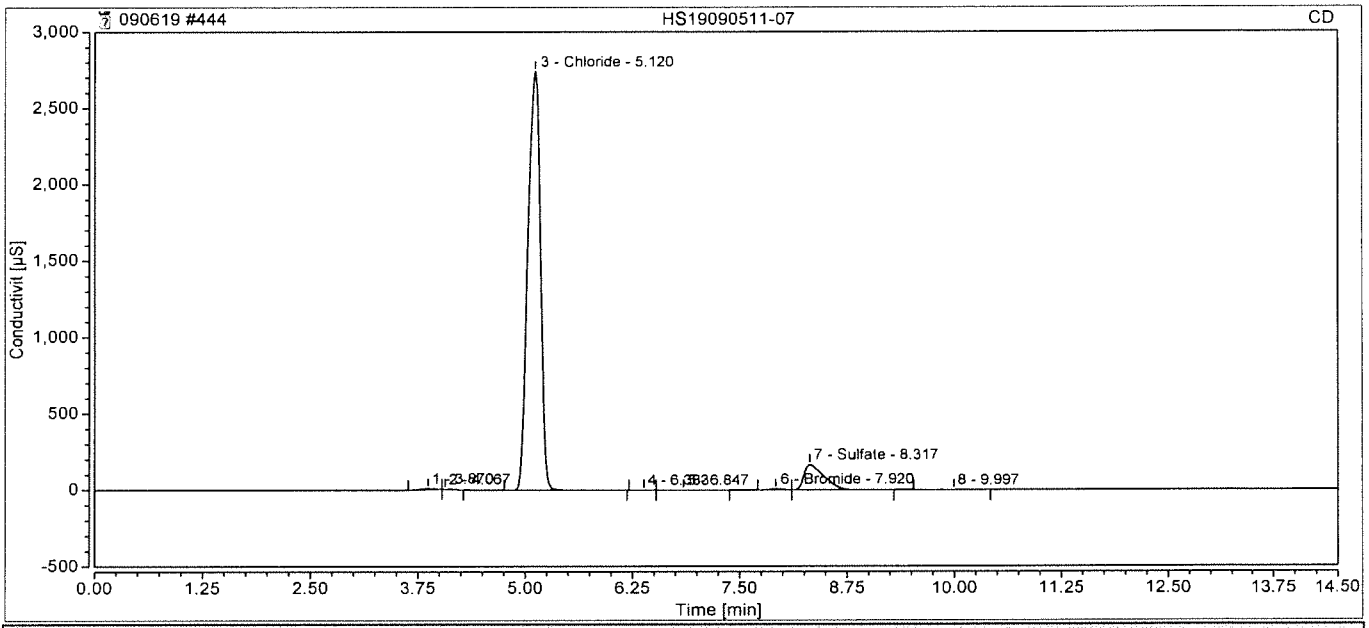
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
4	5.09	Chloride	BMB	202.374	859.3900	859.3900	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
7	7.95	Bromide	BMB	0.450	4.5146	4.5146	1.0000
8	8.61	Sulfate	BM	0.793	4.6293	4.6293	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
9	9.74	Chlorate	MB	0.165	1.7747	1.7747	1.0000
10	13.13	Phosphate	BMB	0.007	0.0781	0.0781	1.0000
Total:			**0.000**	**203.790**		**870.39**	

444 HS19090511-07

Sample Name:	**HS19090511-07**	*Injection Volume:*	**5.00**
Vial Number:	**RC2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/12/2019 23:15**	*Sample Weight:*	**1.0000**

Run Time:



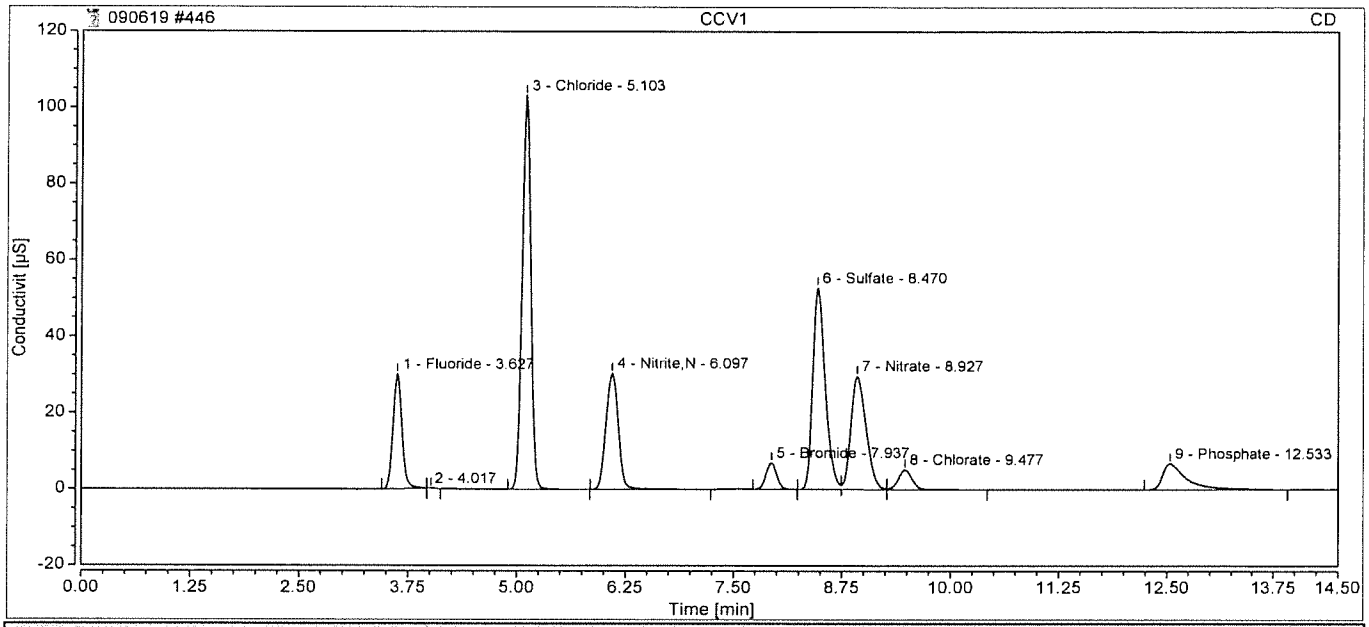
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
3	5.12	Chloride	BMB	467.411	1984.8023	1984.8023	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
6	7.92	Bromide	BM	0.978	9.7434	9.7434	1.0000
7	8.32	Sulfate	MB	44.291	257.9011	257.9011	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**512.679**		**2252.45**	

446 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/12/2019 23:48**	*Sample Weight:*	**1.0000**

Run Time:



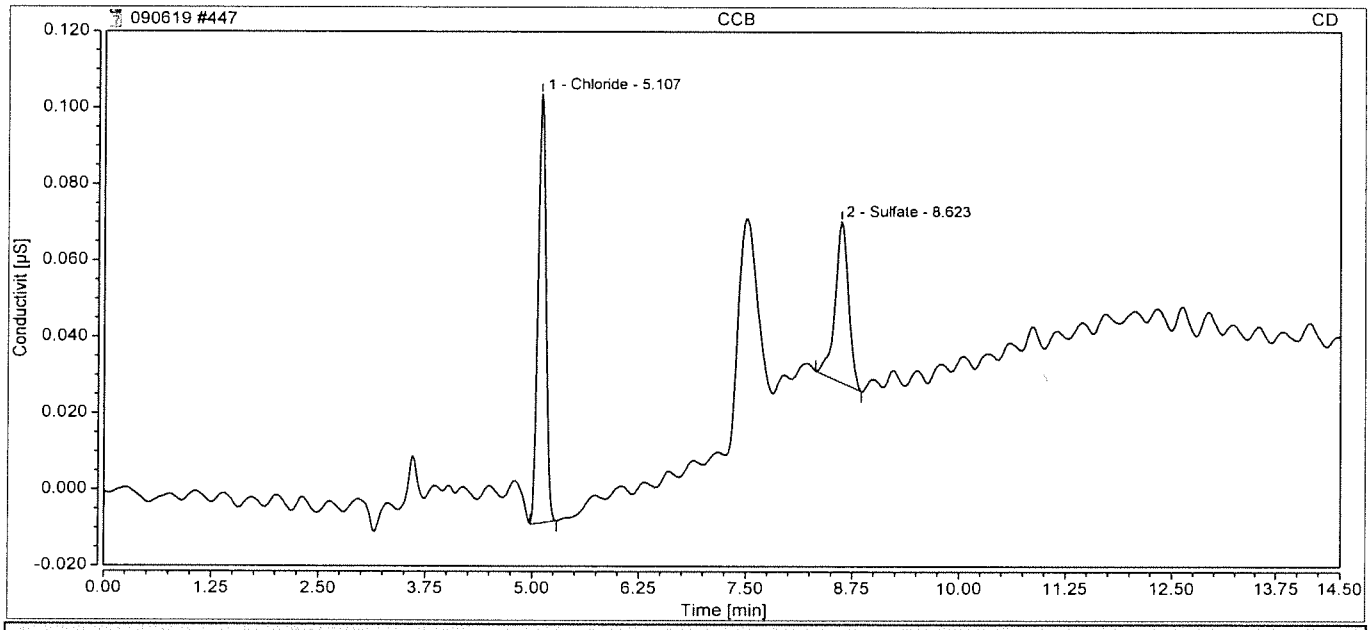
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.63	Fluoride	BMB	3.582	9.6546	9.6546	1.0000
3	5.10	Chloride	BMB	11.973	50.8996	50.8996	1.0000
4	6.10	Nitrite,N	BMB	5.031	9.8265	9.8265	1.0000
5	7.94	Bromide	BMB	1.007	10.0298	10.0298	1.0000
6	8.47	Sulfate	BM	8.781	51.1394	51.1394	1.0000
7	8.93	Nitrate	M	5.989	10.2101	10.2101	1.0000
8	9.48	Chlorate	MB	0.957	10.1616	10.1616	1.0000
9	12.53	Phosphate	BMB	2.210	9.5708	9.5708	1.0000
Total:			**0.000**	**39.530**		**161.49**	

447 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/13/2019 00:05**	*Sample Weight:*	**1.0000**

Run Time:



Integration Results

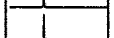
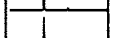
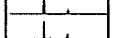
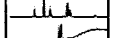
No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.11	Chloride	BMB	0.012	0.1089	0.1089	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
2	8.62	Sulfate	BMB	0.008	0.0575	0.0575	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.020**		**0.17**	

Sequence: 092519
Last Update Operator: alshs.nouser

HS19090511

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method	ng	Volume [ul]	Status	Inject Time
	STD1	2970209205	Calibration	GA1	1.0000	1	Anions Pro	Anions Pr	5.0	Finished	8/12/2019 2:08:06 PM -05:00
	STD2		Calibration	GA2	1.0000	2	Anions Pro	Anions Pr	5.0	Finished	8/12/2019 2:24:42 PM -05:00
	STD3		Calibration	GA3	1.0000	3	Anions Pro	Anions Pr	5.0	Finished	8/12/2019 2:41:19 PM -05:00
	STD4		Calibration	GA4	1.0000	4	Anions Pro	Anions Pr	5.0	Finished	8/12/2019 2:57:54 PM -05:00
	STD5		Calibration	GA5	1.0000	5	Anions Pro	Anions Pr	5.0	Finished	8/12/2019 3:14:30 PM -05:00
	STD6	NO2,F MAX 10PPM	Calibration	GB8	1.0000	6	Anions Pro	Anions Pr	5.0	Finished	8/12/2019 6:37:32 PM -05:00
	ICV	2970209123	Unknown	GA7	1.0000		Anions Pro	Anions Pr	5.0	Finished	8/12/2019 6:54:07 PM -05:00
	ICB		Unknown	GB8	1.0000		Anions Pro	Anions Pr	5.0	Finished	8/12/2019 7:29:52 PM -05:00
	CCV		Unknown	BA5	1.0000		Anions Pro	Anions Pr	5.0	Finished	9/25/2019 11:52:16 PM -05:00
	CCB		Unknown	BA6	1.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 12:08:51 AM -05:00
	WBLKW2-092519	9056_W	Unknown	GA1	1.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 12:25:32 AM -05:00
	WLCSW2-092519		Unknown	GA2	1.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 12:42:08 AM -05:00
	WLCSDW2-092519	DUE 26TH	Unknown	GA3	1.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 12:58:47 AM -05:00
	HS19090511-01DF20		Unknown	GA4	20.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 1:15:23 AM -05:00
	HS19090511-02DF20		Unknown	GA5	20.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 1:31:59 AM -05:00
	HS19090511-02MSDF20		Unknown	GA6	20.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 1:48:34 AM -05:00
	HS19090511-02MSDDF20		Unknown	GA7	20.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 2:05:13 AM -05:00
	HS19090511-03DF40		Unknown	GA8	40.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 2:21:48 AM -05:00
	HS19090511-04DF20		Unknown	GB1	20.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 2:38:23 AM -05:00
	HS19090511-05DF20		Unknown	GB2	20.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 2:54:58 AM -05:00
	CCV1		Unknown	BA7	1.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 3:11:39 AM -05:00
	CCB		Unknown	BA8	1.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 3:28:15 AM -05:00
	HS19090511-06DF20		Unknown	GB3	20.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 3:44:52 AM -05:00
	HS19090511-07DF40		Unknown	GB4	40.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 4:01:27 AM -05:00
	HS19090964-04DF10		Unknown	GB5	10.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 4:18:06 AM -05:00
	HS19090964-06DF10		Unknown	GB6	10.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 4:34:43 AM -05:00
	HS19090847-01DF10		Unknown	GB7	10.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 4:51:18 AM -05:00
	HS19090617-01DF10		Unknown	GB8	10.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 5:07:53 AM -05:00
	HS19090617-02DF50		Unknown	GC1	50.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 5:24:34 AM -05:00
	HS19090617-03DF20		Unknown	GC2	20.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 5:41:09 AM -05:00
	HS19090617-04DF100		Unknown	GC3	100.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 5:57:44 AM -05:00
	HS19090617-05DF50		Unknown	GC4	50.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 6:14:19 AM -05:00
	CCV		Unknown	BA5	1.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 6:31:00 AM -05:00
	CCB		Unknown	BA6	1.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 6:47:35 AM -05:00

Sequence: 092519
Last Update Operator: alshs.nouser

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method	ng	Volume [ul]	Status	Inject Time
	HS19090617-06DF50		Unknown	GC5	50.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 7:04:11 AM -05:00
	HS19090617-07DF50		Unknown	GC6	50.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 7:20:46 AM -05:00
	HS19090617-08DF20		Unknown	GC7	20.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 7:37:24 AM -05:00
	HS19090617-09DF20		Unknown	GC8	20.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 7:54:00 AM -05:00
	CCV1		Unknown	BA7	1.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 10:02:04 AM -05:00
	CCB		Unknown	BA8	1.0000		Anions Pro	Anions Pr	5.0	Finished	9/26/2019 10:18:40 AM -05:00

Sequence: 092519
Injection #6: STD6

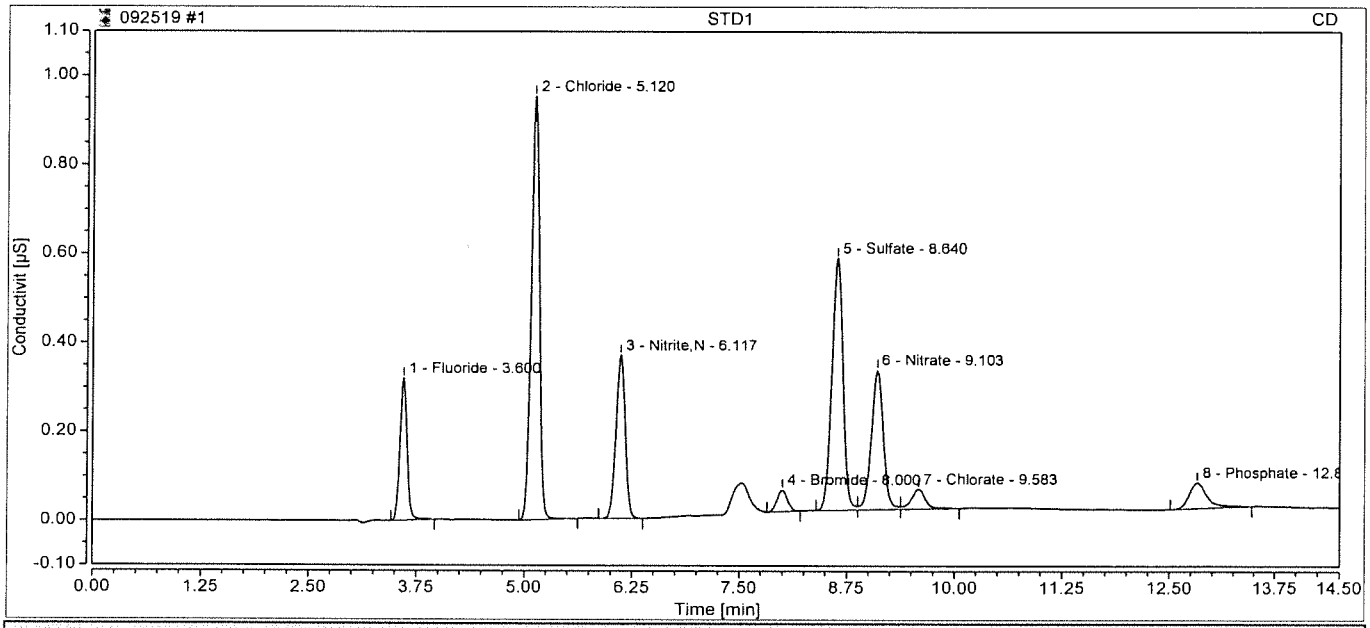
Calibration

Peak No.	Peak Name	Cal.Type	Eval.Type	Number of Points	Rel.Std.Dev. %	Coeff.of Determination	C0 (Offset)	C1 (Slope)	C2 (Curve)
1	*Fluoride*	*Lin, WithOffset, 1/x*	*Area*	*5*	*10.1532*	*0.99927*	*-0.0056*	*0.3716*	*0.0000*
2	Chloride	Lin, WithOffset, 1/x	Area	6	0.2804	1.00000	-0.0135	0.2355	0.0000
3	Nitrite,N	Lin, WithOffset, 1/x	Area	5	15.1147	0.99824	0.0003	0.5120	0.0000
4	Bromide	Lin, WithOffset, 1/x	Area	6	14.0217	0.99919	-0.0052	0.1009	0.0000
5	Sulfate	Lin, WithOffset, 1/x	Area	6	1.1258	0.99999	-0.0022	0.1717	0.0000
6	Nitrate	Lin, WithOffset, 1/x	Area	6	2.2249	0.99998	-0.0102	0.5876	0.0000
7	Chlorate	Lin, WithOffset, 1/x	Area	6	10.0265	0.99953	-0.0024	0.0944	0.0000
8	Phosphate	Lin, WithOffset, 1/x	Area	6	6.6198	0.99981	-0.0110	0.2321	0.0000
Maximum					**15.1147**	1.00000			
Minimum					0.2804	**0.99824**			

1 STD1

Sample Name:	**STD1**	*Injection Volume:*	**5.00**
Vial Number:	**GA1**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 14:08**	*Sample Weight:*	**1.0000**

Run Time:



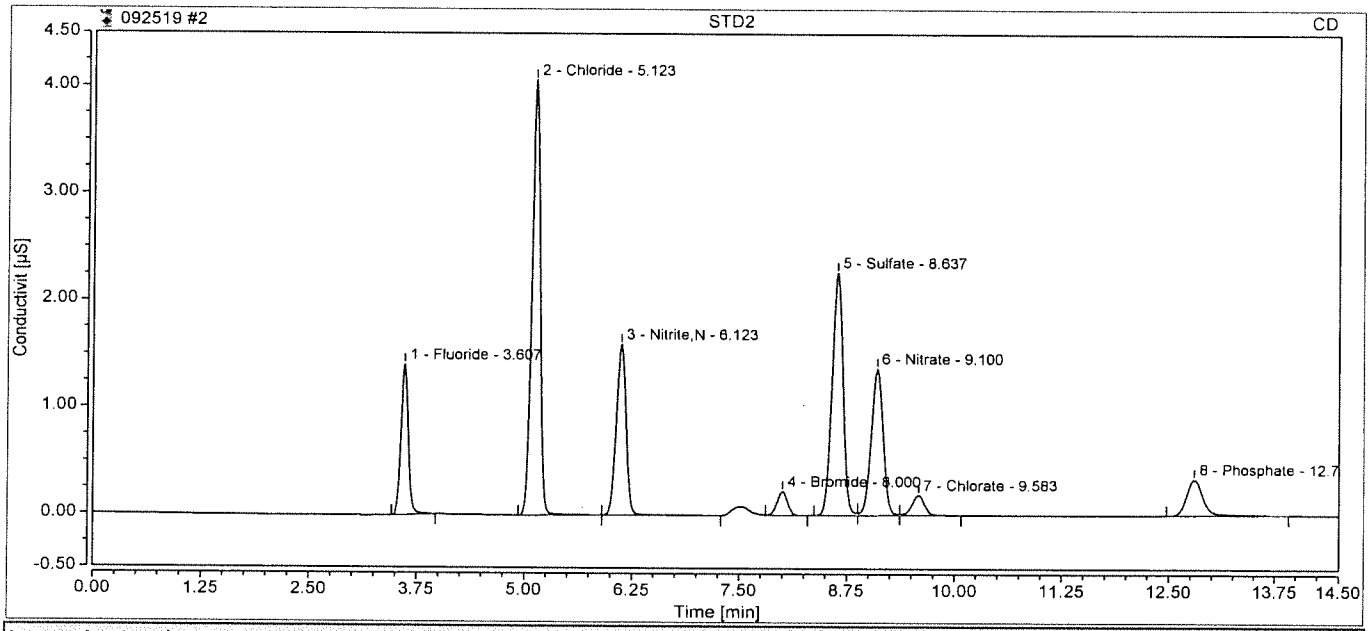
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.60	Fluoride	BMB	0.031	0.0973	0.0973	1.0000
2	5.12	Chloride	BMB	0.105	0.5026	0.5026	1.0000
3	6.12	Nitrite,N	BMB	0.046	0.0893	0.0893	1.0000
4	8.00	Bromide	BMB	0.007	0.1192	0.1192	1.0000
5	8.64	Sulfate	BM	0.084	0.5042	0.5042	1.0000
6	9.10	Nitrate	M	0.051	0.1034	0.1034	1.0000
7	9.58	Chlorate	MB	0.008	0.1143	0.1143	1.0000
8	12.83	Phosphate	BMB	0.014	0.1085	0.1085	1.0000
Total:			**0.000**	**0.346**		**1.64**	

2 *STD2*

Sample Name:	**STD2**	*Injection Volume:*	**5.00**
Vial Number:	**GA2**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 14:24**	*Sample Weight:*	**1.0000**

Run Time:



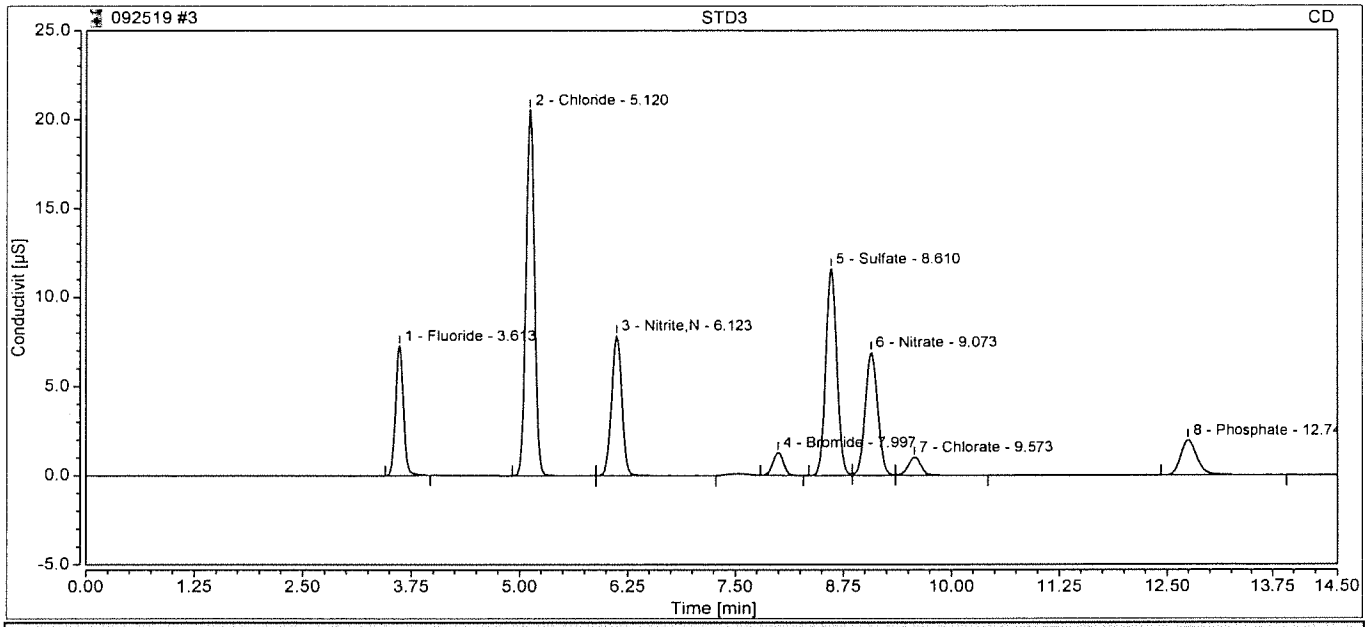
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.61	Fluoride	BMB	0.140	0.3929	0.3929	1.0000
2	5.12	Chloride	BMB	0.456	1.9918	1.9918	1.0000
3	6.12	Nitrite,N	BMB	0.211	0.4119	0.4119	1.0000
4	8.00	Bromide	BMB	0.031	0.3593	0.3593	1.0000
5	8.64	Sulfate	BM	0.337	1.9733	1.9733	1.0000
6	9.10	Nitrate	M	0.220	0.3917	0.3917	1.0000
7	9.58	Chlorate	MB	0.033	0.3704	0.3704	1.0000
8	12.80	Phosphate	BMB	0.078	0.3841	0.3841	1.0000
Total:			**0.000**	**1.506**		**6.28**	

3 STD3

Sample Name:	**STD3**	*Injection Volume:*	**5.00**
Vial Number:	**GA3**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 14:41**	*Sample Weight:*	**1.0000**

Run Time:



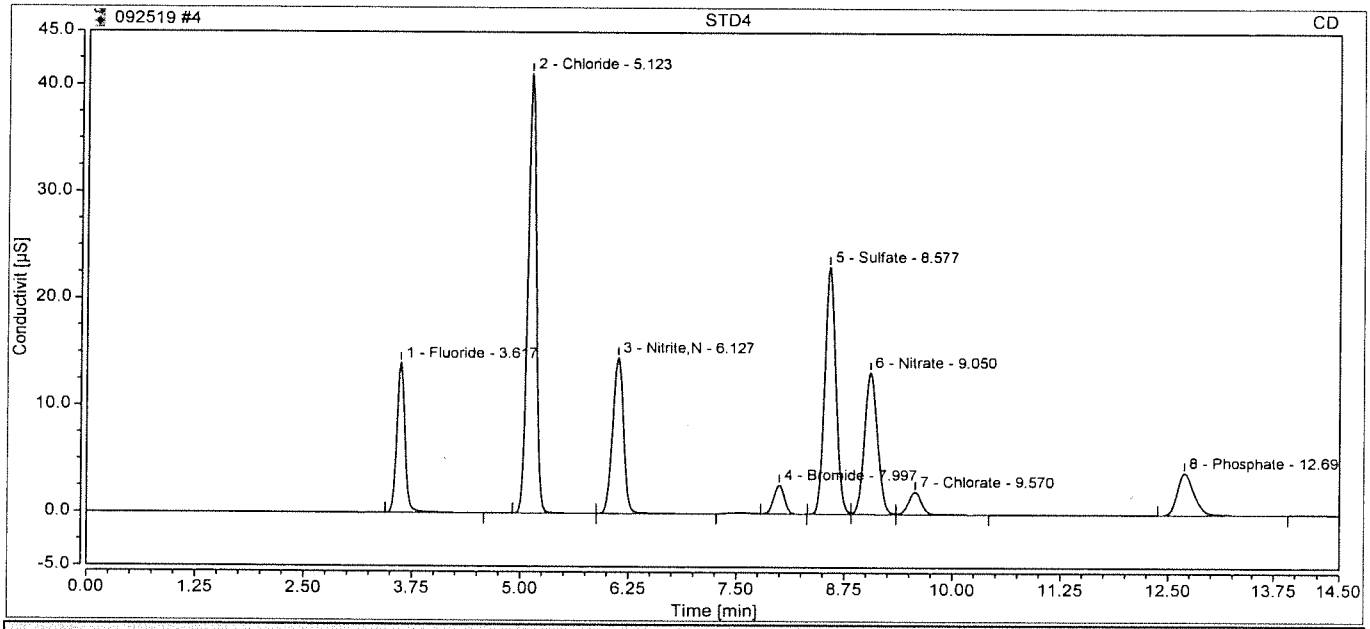
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.61	Fluoride	BMB	0.758	2.0551	2.0551	1.0000
2	5.12	Chloride	BMB	2.339	9.9888	9.9888	1.0000
3	6.12	Nitrite,N	BMB	1.091	2.1305	2.1305	1.0000
4	8.00	Bromide	BMB	0.182	1.8590	1.8590	1.0000
5	8.61	Sulfate	BM	1.715	10.0007	10.0007	1.0000
6	9.07	Nitrate	M	1.153	1.9792	1.9792	1.0000
7	9.57	Chlorate	MB	0.176	1.8940	1.8940	1.0000
8	12.75	Phosphate	BMB	0.436	1.9269	1.9269	1.0000
Total:			**0.000**	**7.851**		**31.83**	

4 STD4

Sample Name:	**STD4**	*Injection Volume:*	**5.00**
Vial Number:	**GA4**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 14:57**	*Sample Weight:*	**1.0000**

Run Time:

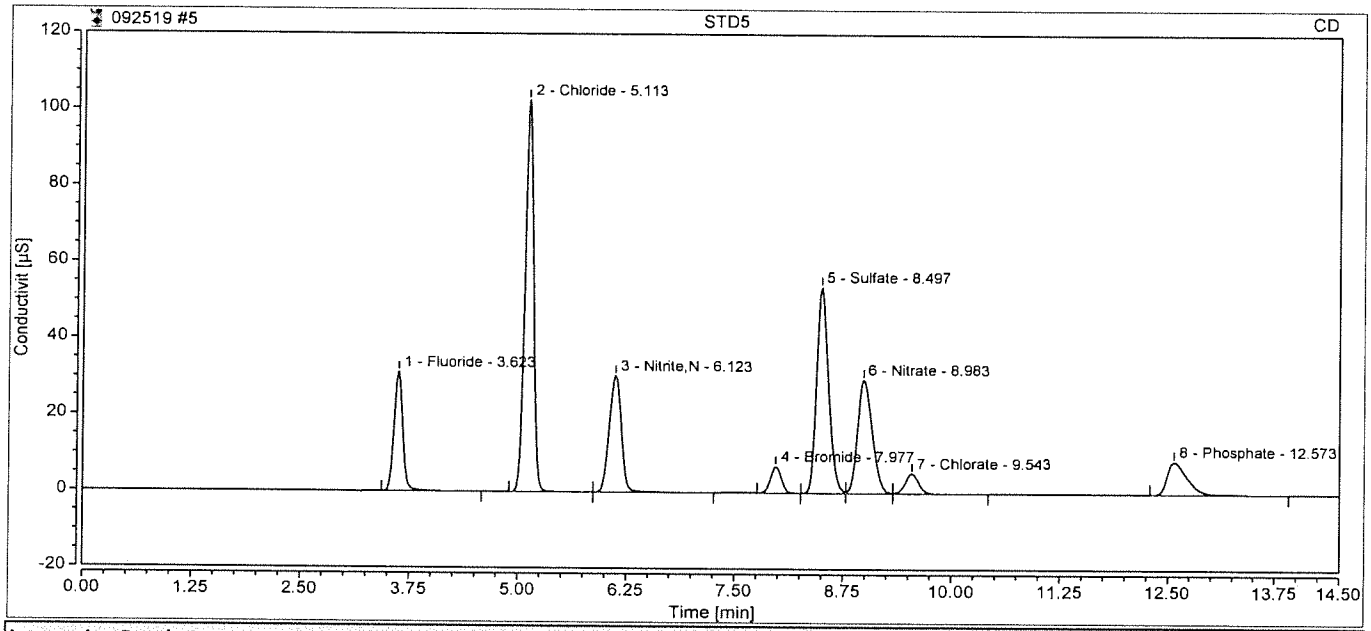


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	1.535	4.1457	4.1457	1.0000
2	5.12	Chloride	BMB	4.695	19.9948	19.9948	1.0000
3	6.13	Nitrite,N	BMB	2.133	4.1659	4.1659	1.0000
4	8.00	Bromide	BMB	0.385	3.8642	3.8642	1.0000
5	8.58	Sulfate	BM	3.451	20.1082	20.1082	1.0000
6	9.05	Nitrate	M	2.330	3.9823	3.9823	1.0000
7	9.57	Chlorate	MB	0.365	3.8956	3.8956	1.0000
8	12.69	Phosphate	BMB	0.903	3.9395	3.9395	1.0000
Total:			**0.000**	**15.798**		**64.10**	

5 STD5

Sample Name:	**STD5**	*Injection Volume:*	**5.00**
Vial Number:	**GA5**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 15:14**	*Sample Weight:*	**1.0000**
Run Time:			

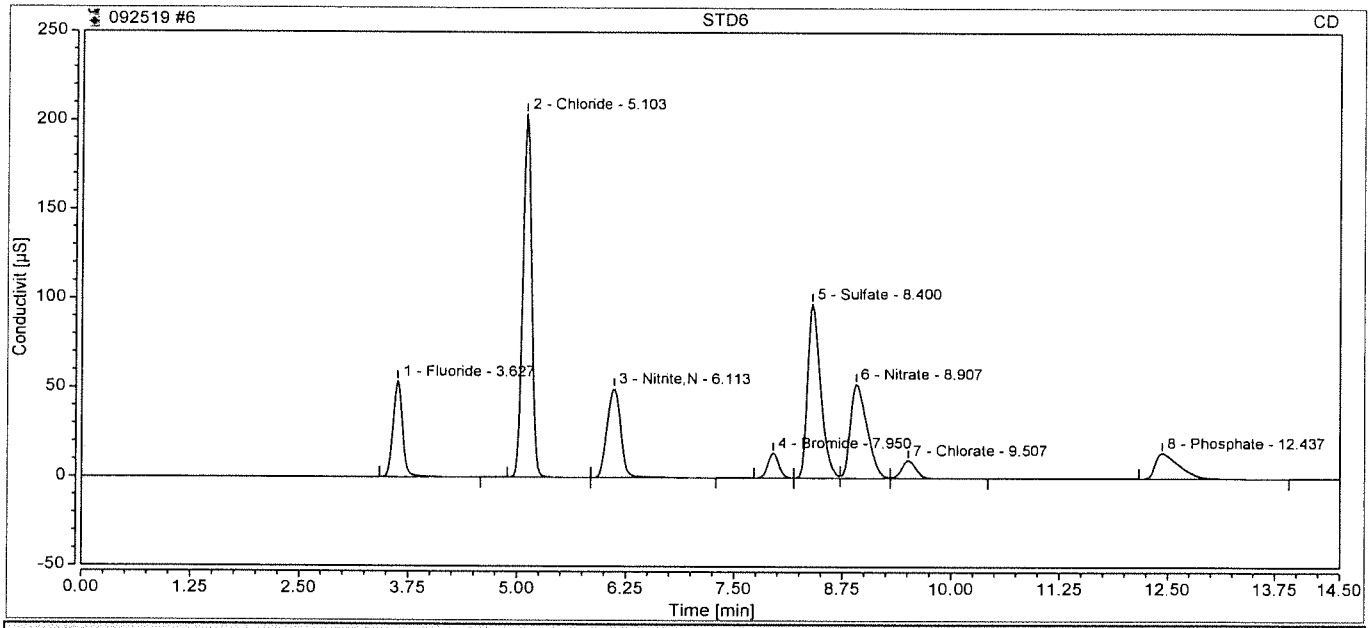


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	3.639	9.8090	9.8090	1.0000
2	5.11	Chloride	BMB	11.762	49.9996	49.9996	1.0000
3	6.12	Nitrite,N	BMB	4.968	9.7023	9.7023	1.0000
4	7.98	Bromide	BMB	1.001	9.9786	9.9786	1.0000
5	8.50	Sulfate	BM	8.590	50.0271	50.0271	1.0000
6	8.98	Nitrate	M	5.854	9.9805	9.9805	1.0000
7	9.54	Chlorate	MB	0.939	9.9670	9.9670	1.0000
8	12.57	Phosphate	BMB	2.305	9.9803	9.9803	1.0000
Total:			**0.000**	**39.057**		**159.44**	

6 STD6

Sample Name:	**STD6**	*Injection Volume:*	**5.00**
Vial Number:	**GB8**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 18:37**	*Sample Weight:*	**1.0000**
Run Time:			

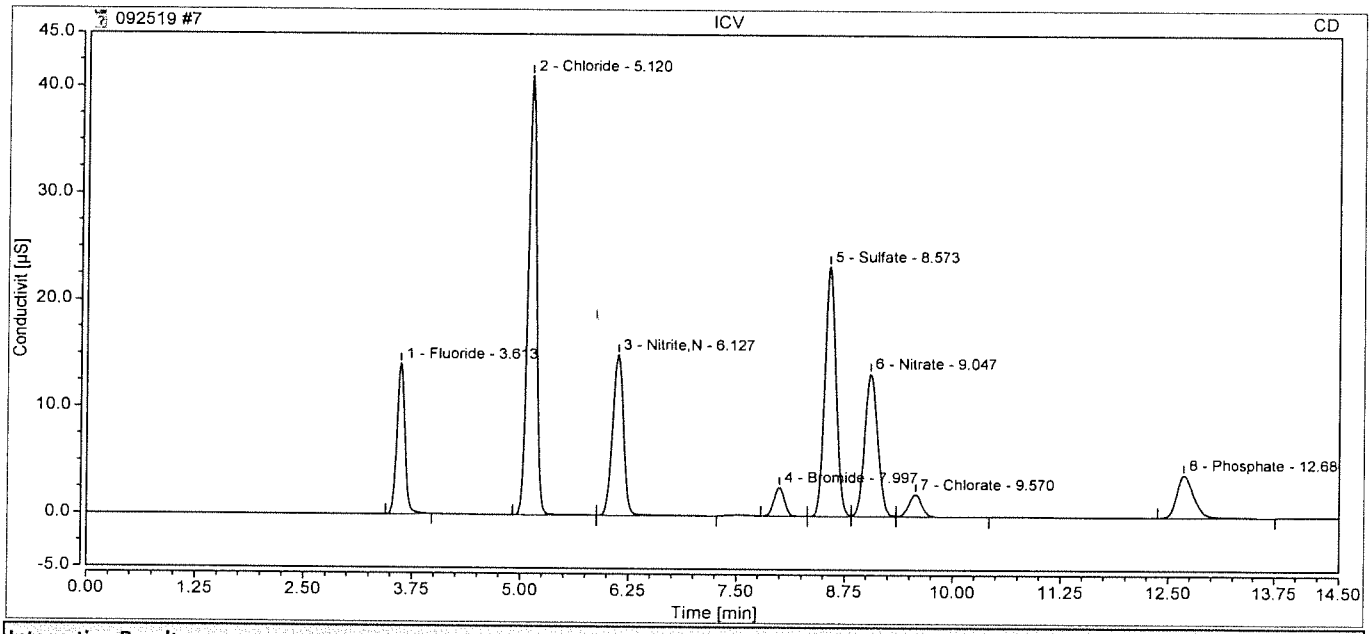


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.63	Fluoride	BMB	6.773	18.2418	18.2418	1.0000
2	5.10	Chloride	BMB	23.542	100.0224	100.0224	1.0000
3	6.11	Nitrite,N	BMB	9.157	17.8850	17.8850	1.0000
4	7.95	Bromide	BM	2.045	20.3197	20.3197	1.0000
5	8.40	Sulfate	M	17.153	99.8863	99.8863	1.0000
6	8.91	Nitrate	M	11.778	20.0629	20.0629	1.0000
7	9.51	Chlorate	MB	1.910	20.2586	20.2586	1.0000
8	12.44	Phosphate	BMB	4.668	20.1606	20.1606	1.0000
Total:			**0.000**	**77.025**		**316.84**	

7 ICV

Sample Name:	**ICV**	*Injection Volume:*	**5.00**
Vial Number:	**GA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 18:54**	*Sample Weight:*	**1.0000**
Run Time:			

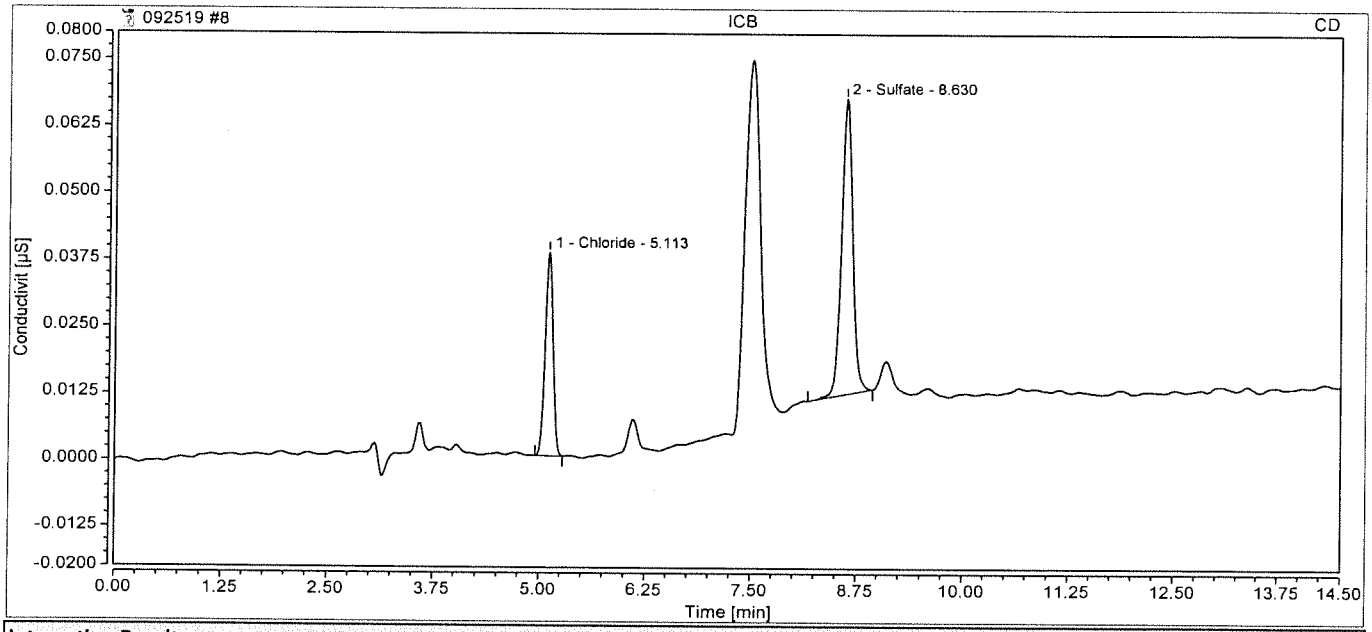


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.61	Fluoride	BMB	1.495	4.0374	4.0374	1.0000
2	5.12	Chloride	BMB	4.681	19.9333	19.9333	1.0000
3	6.13	Nitrite,N	BMB	2.195	4.2858	4.2858	1.0000
4	8.00	Bromide	BMB	0.384	3.8585	3.8585	1.0000
5	8.57	Sulfate	BM	3.469	20.2132	20.2132	1.0000
6	9.05	Nitrate	M	2.340	3.9993	3.9993	1.0000
7	9.57	Chlorate	MB	0.367	3.9104	3.9104	1.0000
8	12.68	Phosphate	BMB	0.911	3.9732	3.9732	1.0000
Total:			**0.000**	**15.841**		**64.21**	

8 ICB

Sample Name:	**ICB**	*Injection Volume:*	**5.00**
Vial Number:	**GB8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 19:29**	*Sample Weight:*	**1.0000**
Run Time:			

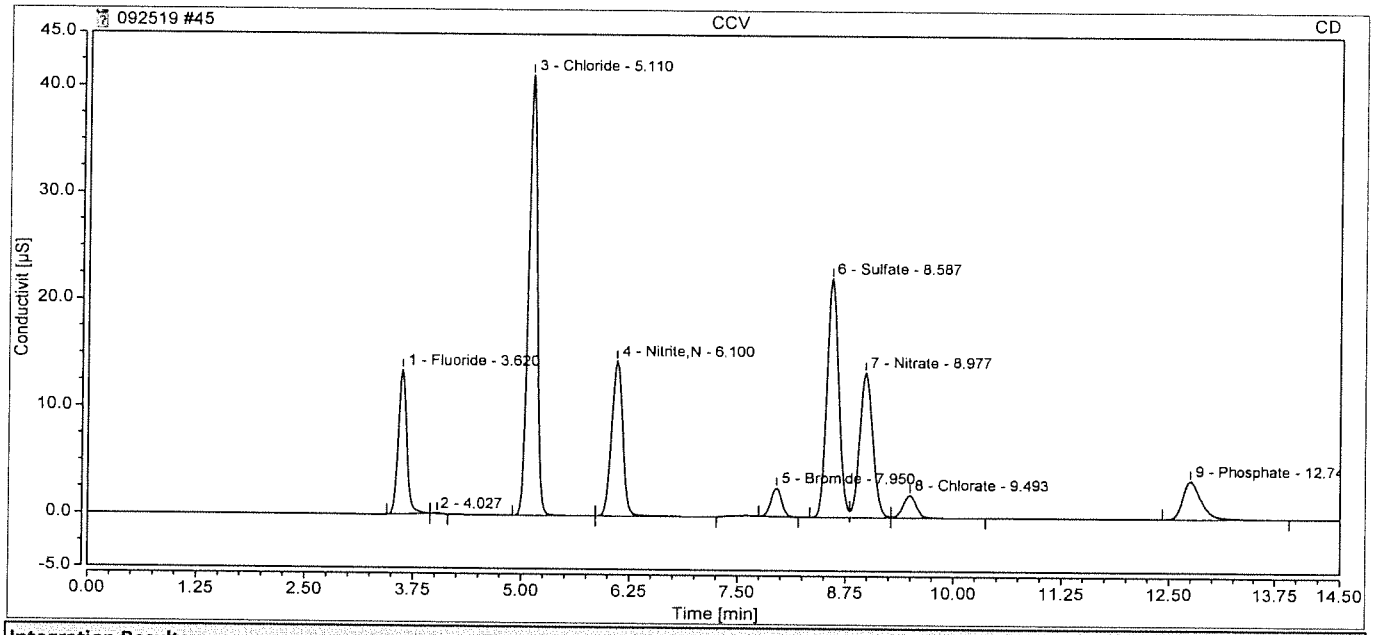


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.11	Chloride	BMB	0.004	0.0748	0.0748	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
2	8.63	Sulfate	BMB	0.008	0.0618	0.0618	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.013**		**0.14**	

45 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/25/2019 23:52**	*Sample Weight:*	**1.0000**
Run Time:			



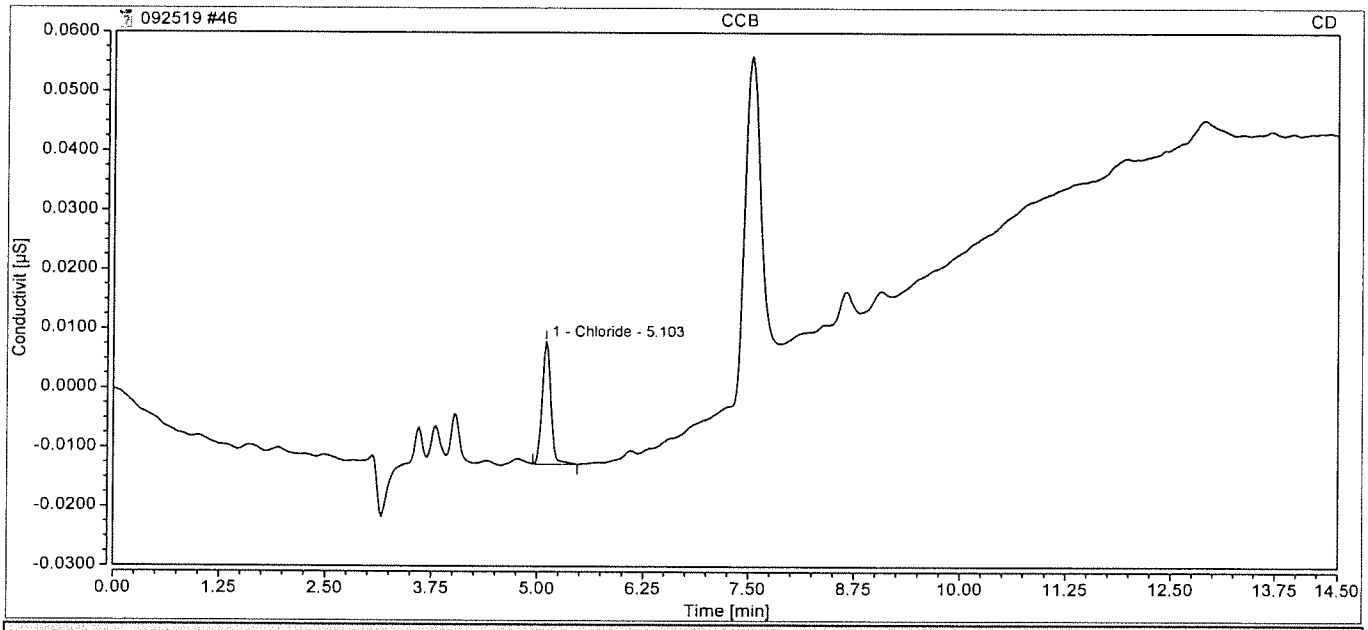
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	1.521	4.1071	4.1071	1.0000
3	5.11	Chloride	BMB	4.796	20.4234	20.4234	1.0000
4	6.10	Nitrite,N	BMB	2.170	4.2379	4.2379	1.0000
5	7.95	Bromide	BMB	0.384	3.8558	3.8558	1.0000
6	8.59	Sulfate	BM	3.526	20.5418	20.5418	1.0000
7	8.98	Nitrate	M	2.387	4.0803	4.0803	1.0000
8	9.49	Chlorate	MB	0.373	3.9800	3.9800	1.0000
9	12.74	Phosphate	BMB	0.884	3.8555	3.8555	1.0000
Total:			**0.000**	**16.041**		**65.08**	

46 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/26/2019 00:08**	*Sample Weight:*	**1.0000**

Run Time:

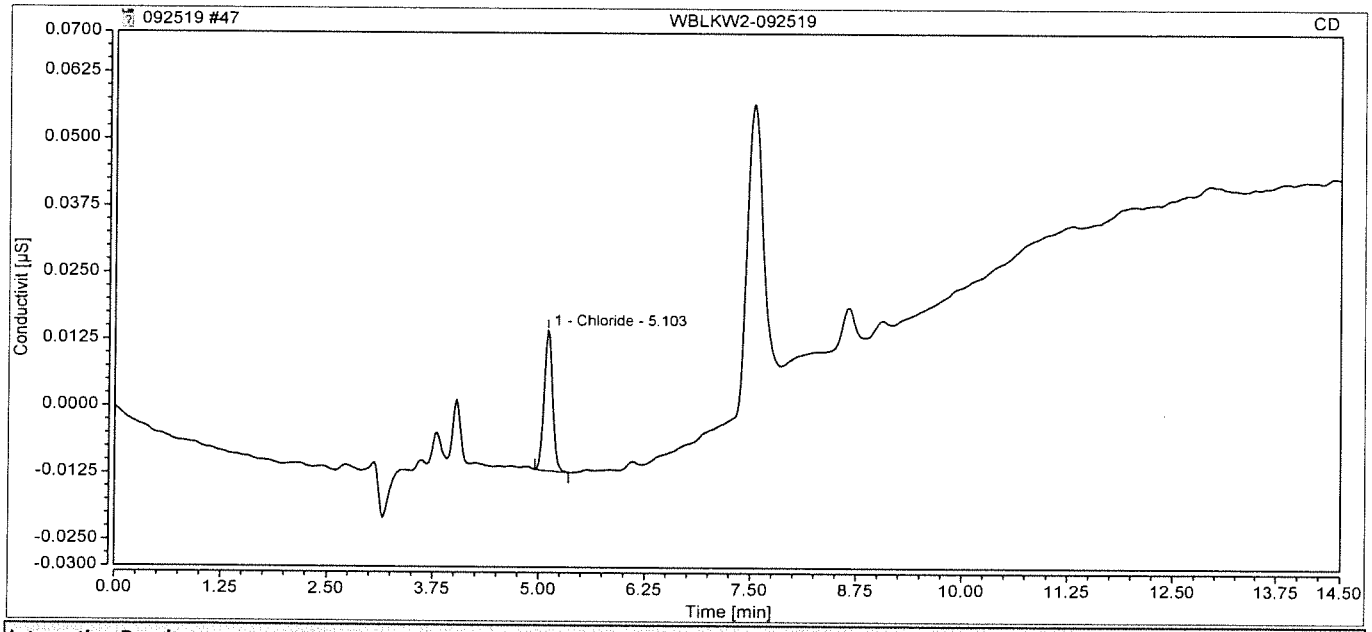


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.10	Chloride	BMB	0.002	0.0677	0.0677	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.002**		**0.07**	

47 WBLKW2-092519

Sample Name:	**WBLKW2-092519**	*Injection Volume:*	**5.00**
Vial Number:	**GA1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/26/2019 00:25**	*Sample Weight:*	**1.0000**
Run Time:			



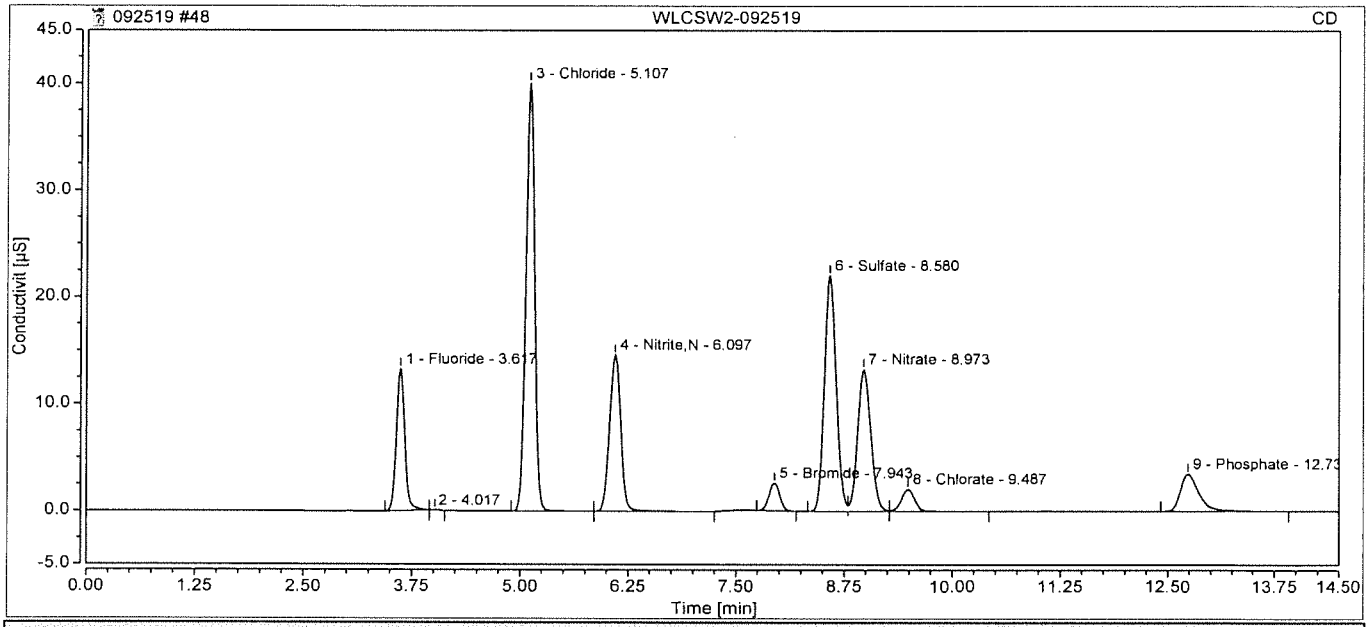
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.10	Chloride	BMB	0.003	0.0702	0.0702	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.003**		**0.07**	

48 WLCSW2-092519

Sample Name:	**WLCSW2-092519**	*Injection Volume:*	**5.00**
Vial Number:	**GA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/26/2019 00:42**	*Sample Weight:*	**1.0000**

Run Time:

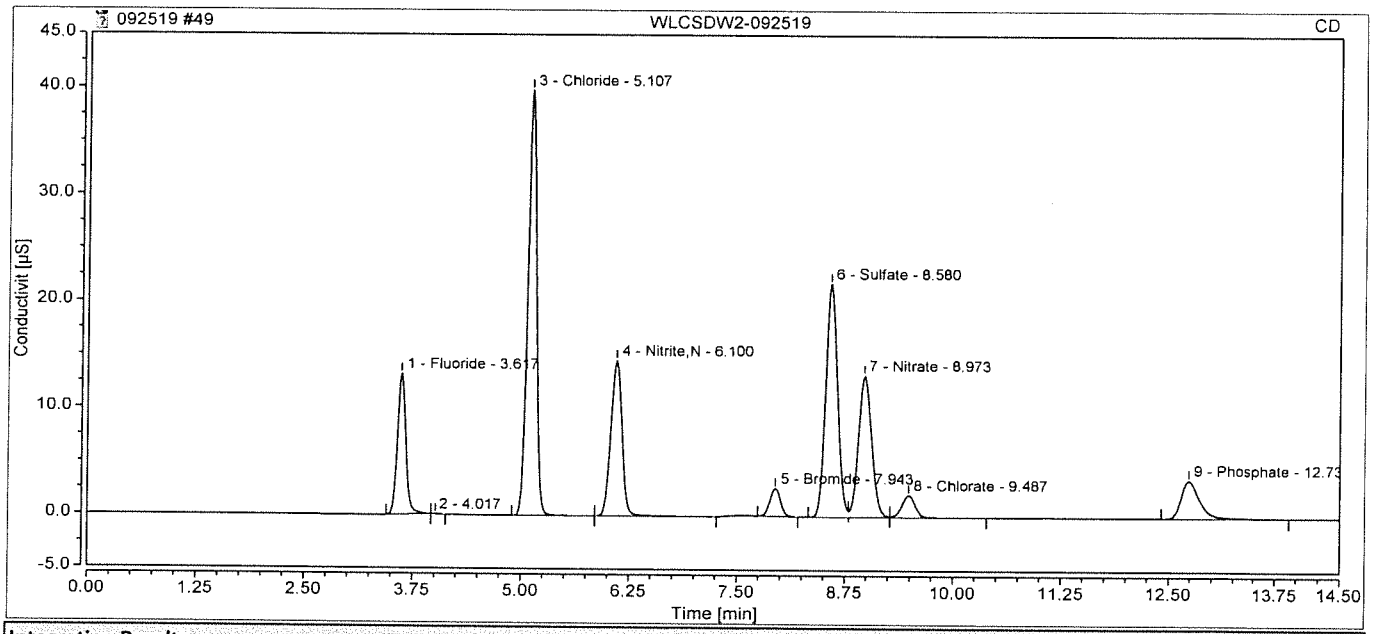


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	1.491	4.0264	4.0264	1.0000
3	5.11	Chloride	BMB	4.665	19.8667	19.8667	1.0000
4	6.10	Nitrite,N	BMB	2.187	4.2705	4.2705	1.0000
5	7.94	Bromide	BMB	0.375	3.7671	3.7671	1.0000
6	8.58	Sulfate	BM	3.476	20.2496	20.2496	1.0000
7	8.97	Nitrate	M	2.343	4.0047	4.0047	1.0000
8	9.49	Chlorate	MB	0.368	3.9225	3.9225	1.0000
9	12.73	Phosphate	BMB	0.873	3.8076	3.8076	1.0000
Total:			**0.000**	**15.776**		**63.92**	

49 WLCSDW2-092519

Sample Name:	**WLCSDW2-092519**	*Injection Volume:*	**5.00**
Vial Number:	**GA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/26/2019 00:58**	*Sample Weight:*	**1.0000**
Run Time:			

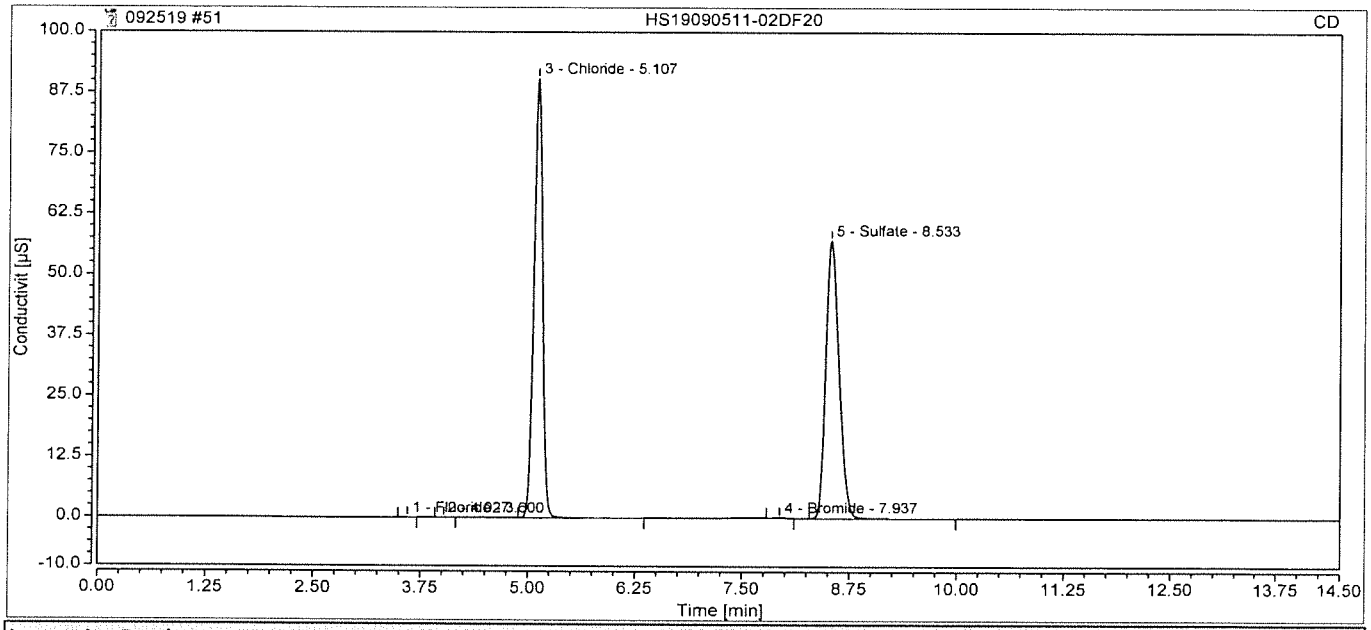


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	1.482	4.0024	4.0024	1.0000
3	5.11	Chloride	BMB	4.639	19.7553	19.7553	1.0000
4	6.10	Nitrite,N	BMB	2.181	4.2588	4.2588	1.0000
5	7.94	Bromide	BMB	0.375	3.7705	3.7705	1.0000
6	8.58	Sulfate	BM	3.447	20.0814	20.0814	1.0000
7	8.97	Nitrate	M	2.329	3.9821	3.9821	1.0000
8	9.49	Chlorate	MB	0.367	3.9176	3.9176	1.0000
9	12.73	Phosphate	BMB	0.879	3.8371	3.8371	1.0000
Total:			**0.000**	**15.700**		**63.61**	

51 HS19090511-02DF20

Sample Name:	**HS19090511-02DF20**	*Injection Volume:*	**5.00**
Vial Number:	**GA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**20.0000**
Recording Time:	**09/26/2019 01:31**	*Sample Weight:*	**1.0000**
Run Time:			



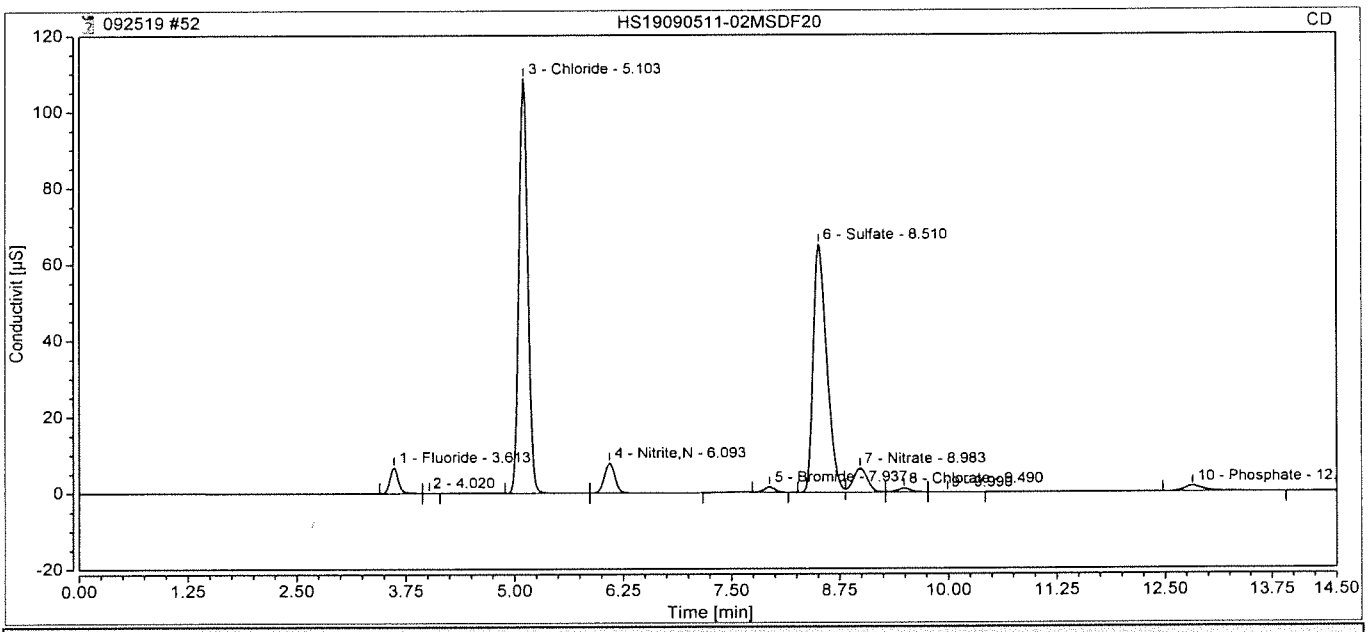
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.60	Fluoride	BMB	0.005	0.0275	0.5491	20.0000
3	5.11	Chloride	BMB	10.605	45.0899	901.7987	20.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	20.0000
4	7.94	Bromide	BMB	0.017	0.2210	4.4193	20.0000
5	8.53	Sulfate	BMB	10.273	59.8285	1196.5704	20.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	20.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	20.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	20.0000
Total:			**0.000**	**20.900**		**2103.34**	

52 HS19090511-02MSDF20

Sample Name:	**HS19090511-02MSDF20**	*Injection Volume:*	**5.00**
Vial Number:	**GA6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**20.0000**
Recording Time:	**09/26/2019 01:48**	*Sample Weight:*	**1.0000**

Run Time:

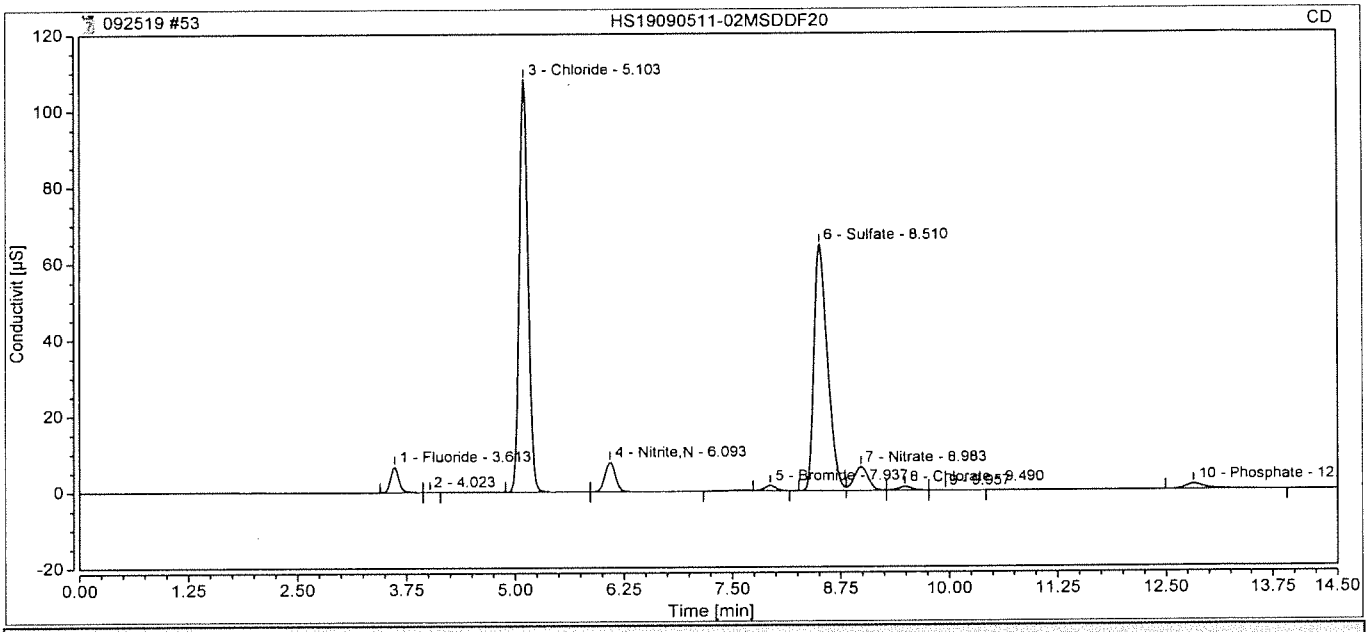


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.61	Fluoride	BMB	0.743	2.0147	40.2932	20.0000
3	5.10	Chloride	BMB	12.759	54.2373	1084.7461	20.0000
4	6.09	Nitrite,N	BMB	1.107	2.1617	43.2342	20.0000
5	7.94	Bromide	BMB	0.196	1.9931	39.8615	20.0000
6	8.51	Sulfate	BM	11.820	68.8346	1376.6921	20.0000
7	8.98	Nitrate	M	1.165	2.0008	40.0162	20.0000
8	9.49	Chlorate	M	0.175	1.8819	37.6389	20.0000
10	12.82	Phosphate	BMB	0.375	1.6640	33.2803	20.0000
Total:			**0.000**	**28.341**		**2695.76**	

53 HS19090511-02MSDDF20

Sample Name:	**HS19090511-02MSDDF20**	*Injection Volume:*	**5.00**
Vial Number:	**GA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**20.0000**
Recording Time:	**09/26/2019 02:05**	*Sample Weight:*	**1.0000**
Run Time:			



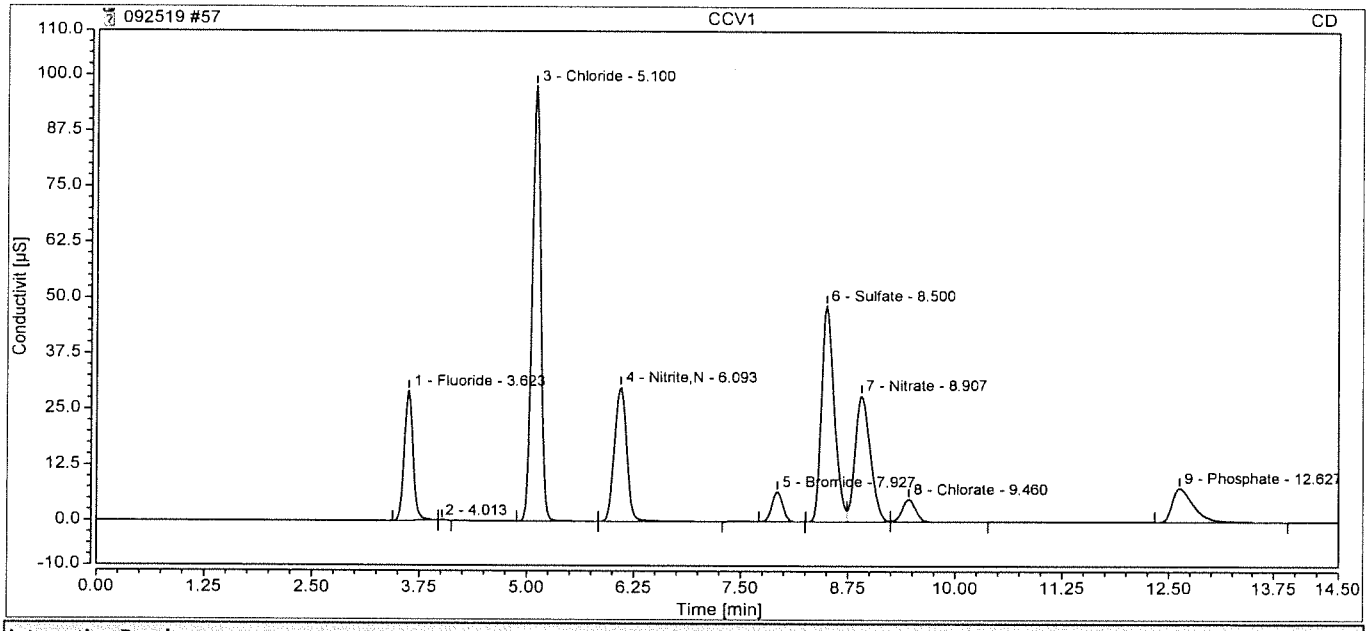
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.61	Fluoride	BMB	0.735	1.9929	39.8576	20.0000
3	5.10	Chloride	BMB	12.677	53.8861	1077.7227	20.0000
4	6.09	Nitrite,N	BMB	1.100	2.1472	42.9448	20.0000
5	7.94	Bromide	BMB	0.194	1.9781	39.5622	20.0000
6	8.51	Sulfate	BM	11.721	68.2581	1365.1626	20.0000
7	8.98	Nitrate	M	1.156	1.9847	39.6934	20.0000
8	9.49	Chlorate	M	0.175	1.8760	37.5200	20.0000
10	12.82	Phosphate	BMB	0.376	1.6659	33.3184	20.0000
Total:			**0.000**	**28.133**		**2675.78**	

57 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/26/2019 03:11**	*Sample Weight:*	**1.0000**

Run Time:

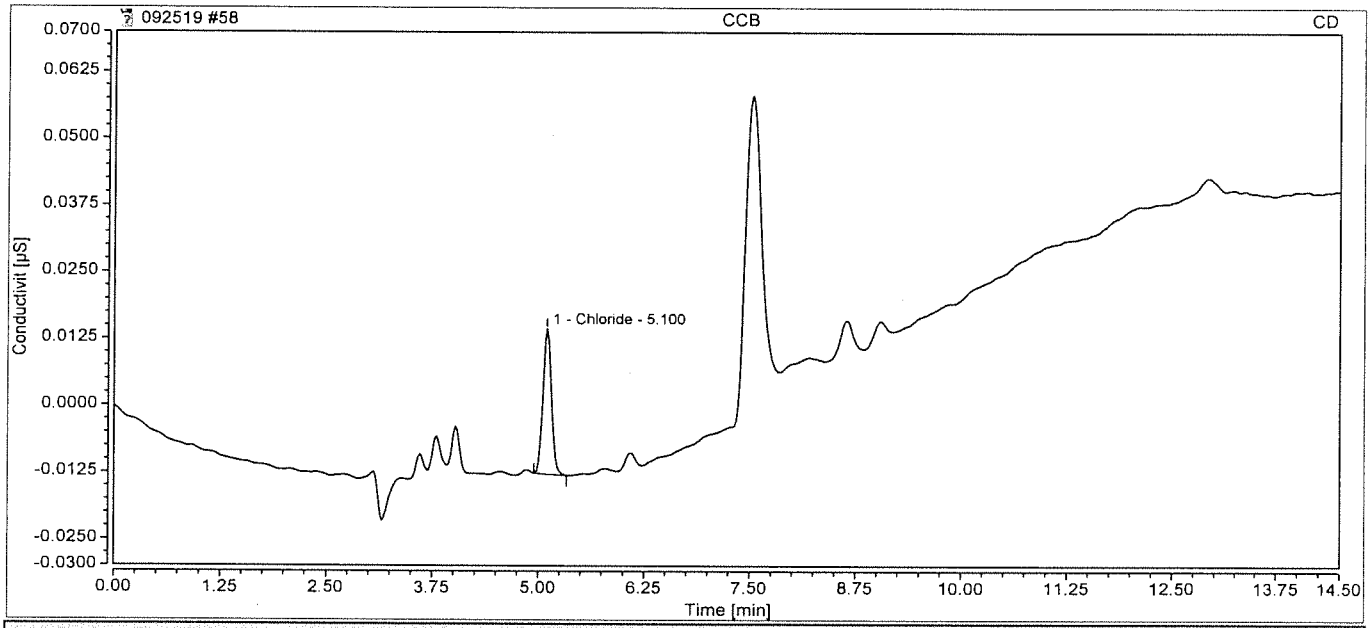


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	3.476	9.3703	9.3703	1.0000
3	5.10	Chloride	BMB	11.463	48.7317	48.7317	1.0000
4	6.09	Nitrite,N	BMB	5.008	9.7799	9.7799	1.0000
5	7.93	Bromide	BMB	0.984	9.8018	9.8018	1.0000
6	8.50	Sulfate	BM	8.401	48.9283	48.9283	1.0000
7	8.91	Nitrate	M	5.801	9.8913	9.8913	1.0000
8	9.46	Chlorate	MB	0.933	9.9095	9.9095	1.0000
9	12.63	Phosphate	BMB	2.225	9.6335	9.6335	1.0000
Total:			**0.000**	**38.291**		**156.05**	

58 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/26/2019 03:28**	*Sample Weight:*	**1.0000**
Run Time:			



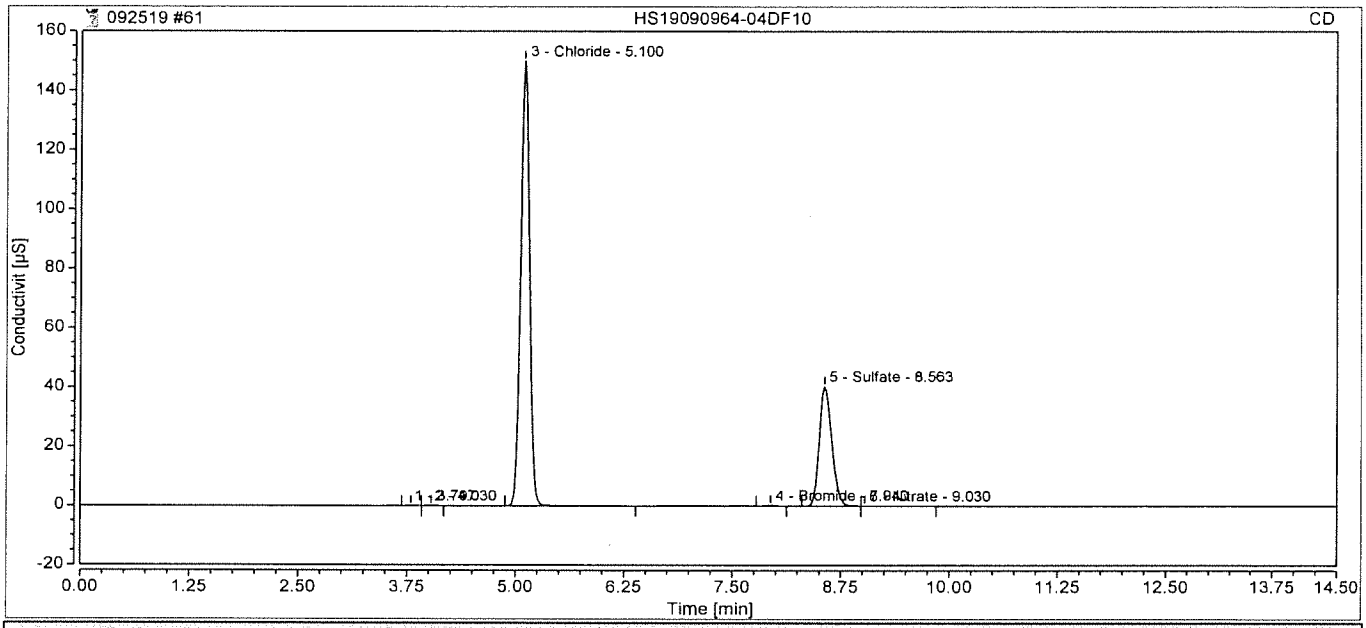
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.10	Chloride	BMB	0.003	0.0707	0.0707	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.003**		**0.07**	

61 HS19090964-04DF10

Sample Name:	**HS19090964-04DF10**	*Injection Volume:*	**5.00**
Vial Number:	**GB5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**10.0000**
Recording Time:	**09/26/2019 04:18**	*Sample Weight:*	**1.0000**

Run Time:



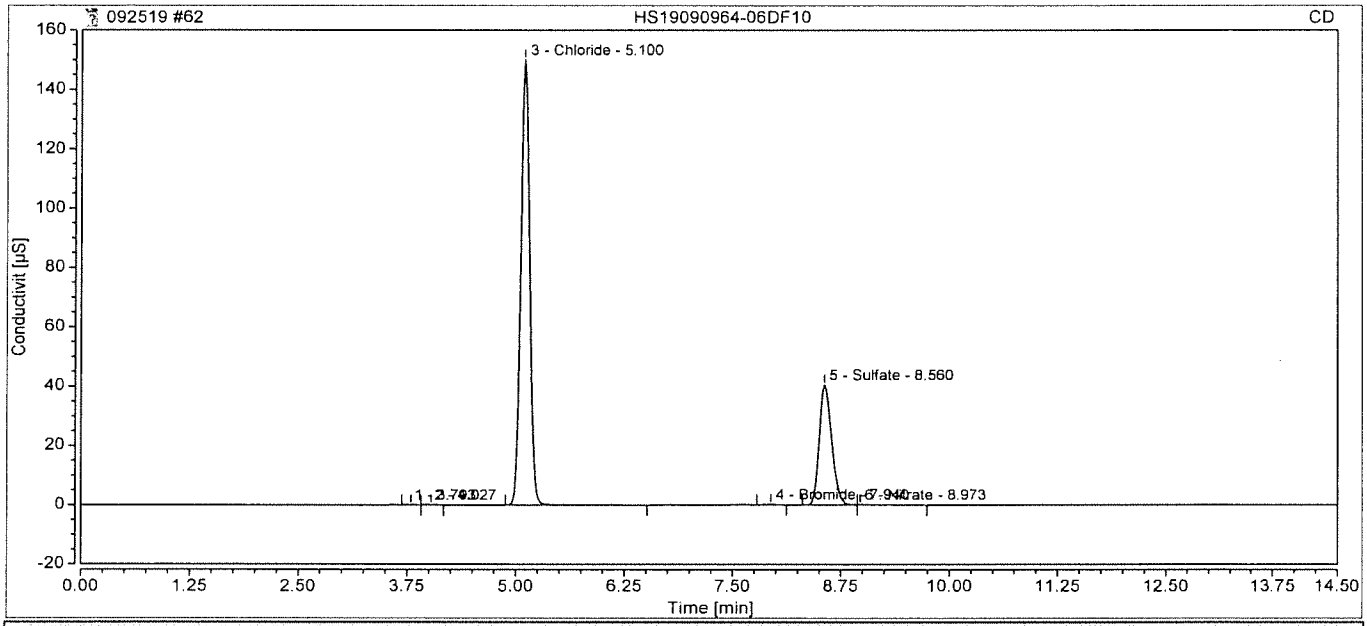
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	10.0000
3	5.10	Chloride	BMB	17.730	75.3441	753.4409	10.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	10.0000
4	7.94	Bromide	BMB	0.027	0.3173	3.1730	10.0000
5	8.56	Sulfate	BM	6.765	39.4008	394.0083	10.0000
6	9.03	Nitrate	MB	0.013	0.0393	0.3933	10.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	10.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	10.0000
Total:			**0.000**	**24.535**		**1151.02**	

62 *HS19090964-06DF10*

Sample Name:	**HS19090964-06DF10**	*Injection Volume:*	**5.00**
Vial Number:	**GB6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**10.0000**
Recording Time:	**09/26/2019 04:34**	*Sample Weight:*	**1.0000**

Run Time:



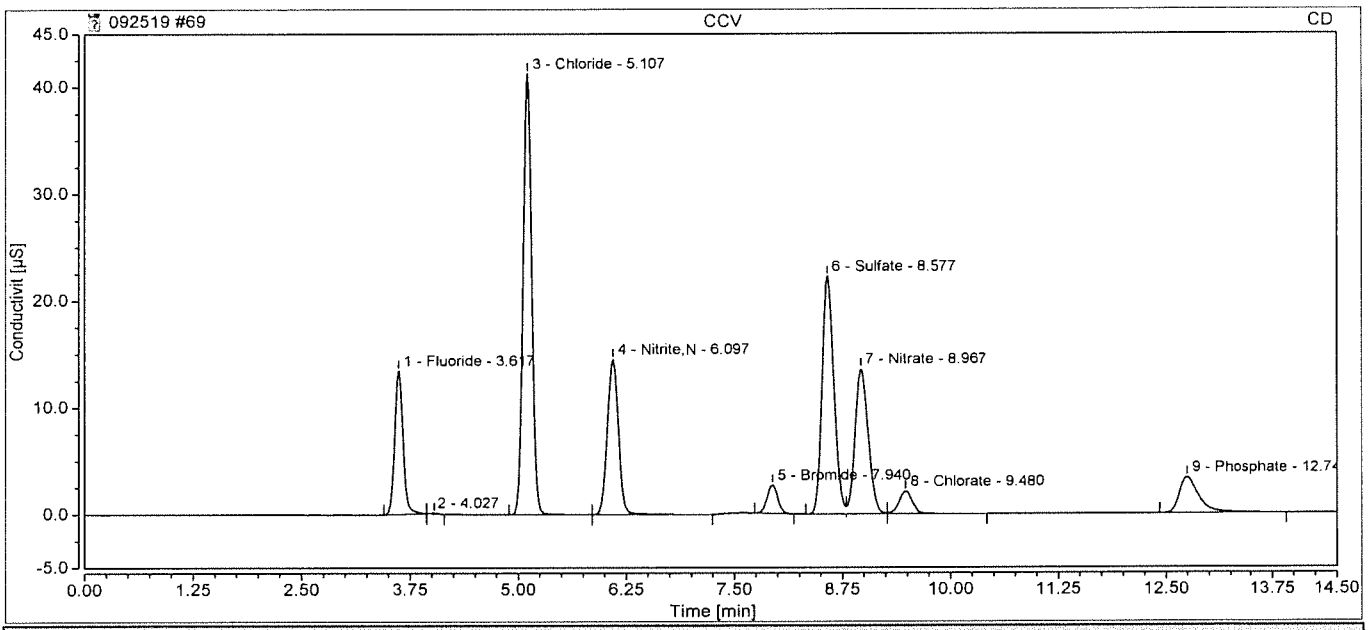
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	10.0000
3	5.10	Chloride	BMB	17.724	75.3174	753.1737	10.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	10.0000
4	7.94	Bromide	BMB	0.027	0.3150	3.1498	10.0000
5	8.56	Sulfate	BM	6.803	39.6219	396.2191	10.0000
6	8.97	Nitrate	MB	0.022	0.0556	0.5555	10.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	10.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	10.0000
Total:			**0.000**	**24.576**		**1153.10**	

69 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/26/2019 06:31**	*Sample Weight:*	**1.0000**

Run Time:



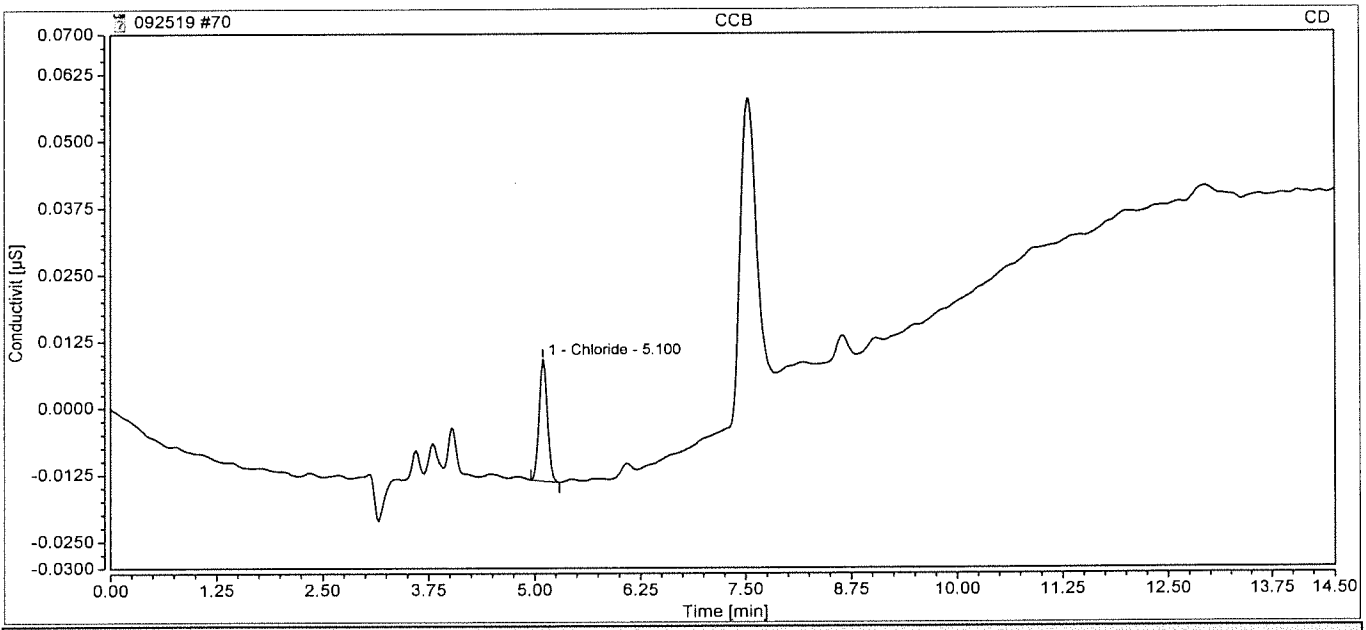
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	1.518	4.0998	4.0998	1.0000
3	5.11	Chloride	BMB	4.800	20.4387	20.4387	1.0000
4	6.10	Nitrite,N	BMB	2.171	4.2396	4.2396	1.0000
5	7.94	Bromide	BMB	0.384	3.8614	3.8614	1.0000
6	8.58	Sulfate	BM	3.533	20.5826	20.5826	1.0000
7	8.97	Nitrate	M	2.396	4.0953	4.0953	1.0000
8	9.48	Chlorate	MB	0.376	4.0086	4.0086	1.0000
9	12.74	Phosphate	BMB	0.878	3.8306	3.8306	1.0000
Total:			**0.000**	**16.056**		**65.16**	

70 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**09/26/2019 06:47**	*Sample Weight:*	**1.0000**

Run Time:



Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.10	Chloride	BMB	0.003	0.0684	0.0684	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.003**		**0.07**	

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WorkOrder: HS19121092

LHAAP-58

Bhate Environmental Associates, Inc.

Marcia Olive
445 Union Blvd Ste 129
Lakewood CO 80228

17-Jan-2020

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HS19121092 Wet Chem Raw Data

HS19121092 LHAAP58 Final

ALS WO# HS19121092

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January 10, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS19121092**

Laboratory Results for: **LHAAP-58**

Dear Marcia,

ALS Environmental received 12 sample(s) on Dec 19, 2019 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: DAYNA.FISHER
RJ Modashia
Project Manager

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Work Order: HS19121092

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS19121092-01	35AWW09_121819	Groundwater		18-Dec-2019 08:00	19-Dec-2019 10:20	☐
HS19121092-02	03WW01_121819	Groundwater		18-Dec-2019 09:00	19-Dec-2019 10:20	☐
HS19121092-03	35AWW08_121819	Groundwater		18-Dec-2019 09:55	19-Dec-2019 10:20	☐
HS19121092-04	35AWW11_121819	Groundwater		18-Dec-2019 10:50	19-Dec-2019 10:20	☐
HS19121092-05	35AWW23_121819	Groundwater		18-Dec-2019 11:45	19-Dec-2019 10:20	☐
HS19121092-06	35AWW19_121819	Groundwater		18-Dec-2019 12:40	19-Dec-2019 10:20	☐
HS19121092-07	35AWW13_121819	Groundwater		18-Dec-2019 13:30	19-Dec-2019 10:20	☐
HS19121092-08	35AWW17_121819	Groundwater		18-Dec-2019 08:45	19-Dec-2019 10:20	☐
HS19121092-09	35AWW18_121819	Groundwater		18-Dec-2019 10:00	19-Dec-2019 10:20	☐
HS19121092-10	35AWW22_121819	Groundwater		18-Dec-2019 11:20	19-Dec-2019 10:20	☐
HS19121092-11	35AWW12_121819	Groundwater		18-Dec-2019 12:30	19-Dec-2019 10:20	☐
HS19121092-12	Trip Blank	Groundwater		18-Dec-2019 00:00	19-Dec-2019 10:20	☐

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: LHAAP-58
Work Order: HS19121092

Work Order Comments

- The analysis for VFA was subcontracted to ALS Rochester, NY. Final report attached.
- The analysis for MEE plus CO2 was subcontracted to ALS Simi Valley, CA. Final report attached.
- The analysis for DHC/DHB were subcontracted to Microbial Insights in Knoxville TN. Final report attached.
- The analysis for TOC was subcontracted to ALS Kelso, WA. Final report attached.

GCMS Volatiles by Method SW8260

Batch ID: R353768

Sample ID: 35AWW23_121819 (HS19121092-05)

- Dilution for sample HS19121092-05 run out of hold.

Sample ID: HS19121497-01MSD

- MSD is for an unrelated sample

Batch ID: R353710

Sample ID: 03WW01_121819 (HS19121092-02)

- Lowest practical dilution for sample HS19121092-02. Sample is foamy.

Sample ID: 35AWW08_121819 (HS19121092-03)

- Lowest practical dilution for sample HS19121092-03. Sample is foamy.

Sample ID: Sample HS19121092-01 through -12

- Samples were analyzed on day zero of hold time on an instrument that did not have a full multipoint calibration for surrogates and internal standards. The designated DOD instrument was inoperable due to a broken syringe."

Sample ID: VSTD050

- Chloromethane exceeded %D limits for CCV. Samples are ND for this compound.

Metals by Method SW6020

Batch ID: 149161

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9056

Batch ID: R353865,R353906

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Batch ID: R353227

Sample ID: 03WW01_121819 (HS19121092-02)

- The reporting limit is elevated due to dilution for high concentrations of non-target analytes. (Nitrogen, Nitrate (As N))

Sample ID: 35AWW08_121819 (HS19121092-03)

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Work Order: HS19121092

CASE NARRATIVE

WetChemistry by Method SW9056

Batch ID: R353227

- The reporting limit is elevated due to dilution for high concentrations of non-target analytes. (Sulfate)

Sample ID: 35AWW09_121819 (HS19121092-01)

- The reporting limit is elevated due to dilution for high concentrations of non-target analytes. (Nitrogen, Nitrate (As N))

Sample ID: 35AWW11_121819 (HS19121092-04)

- The reporting limit is elevated due to dilution for high concentrations of non-target analytes. (Nitrogen, Nitrate (As N))

Sample ID: 35AWW19_121819 (HS19121092-06)

- The reporting limit is elevated due to dilution for high concentrations of non-target analytes. (Nitrogen, Nitrate (As N))

Sample ID: 35AWW23_121819 (HS19121092-05)

- The reporting limit is elevated due to dilution for high concentrations of non-target analytes. (Nitrogen, Nitrate (As N),Sulfate)

Sample ID: HS19121044-01MS

- MS and MSD are for an unrelated sample (Sulfate)

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW09_121819
Collection Date: 18-Dec-2019 08:00

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 17:53
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 17:53
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 17:53
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 17:53
1,1-Dichloroethane	**1.0**		**0.20**	**0.50**	**1.0**	**UG/L**	1	01-Jan-2020 17:53
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 17:53
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 17:53
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 17:53
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 17:53
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 17:53
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 17:53
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 17:53
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 17:53
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 17:53
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 17:53
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 17:53
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 17:53
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 17:53
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 17:53
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 17:53
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 17:53
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	01-Jan-2020 17:53
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 17:53
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	01-Jan-2020 17:53
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 17:53
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 17:53
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	01-Jan-2020 17:53
Acetone	2.0	U	0.40	2.0	2.0	UG/L	1	01-Jan-2020 17:53
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 17:53
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 17:53
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 17:53
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 17:53
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 17:53
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 17:53
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	01-Jan-2020 17:53
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 17:53
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 17:53
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 17:53
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 17:53

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW09_121819
Collection Date: 18-Dec-2019 08:00

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 17:53
cis-1,2-Dichloroethene	**1.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	01-Jan-2020 17:53
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	01-Jan-2020 17:53
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 17:53
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 17:53
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 17:53
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 17:53
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	01-Jan-2020 17:53
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 17:53
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	01-Jan-2020 17:53
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	01-Jan-2020 17:53
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 17:53
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 17:53
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 17:53
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 17:53
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 17:53
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 17:53
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 17:53
Tetrachloroethene	**500**		**7.5**	**12**	**25**	**UG/L**	25	01-Jan-2020 18:17
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 17:53
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 17:53
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 17:53
Trichloroethene	**160**		**0.20**	**0.50**	**1.0**	**UG/L**	1	01-Jan-2020 17:53
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 17:53
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 17:53
Surr: 1,2-Dichloroethane-d4	*92.6*			**0**	*81-118*	*%REC*	*1*	*01-Jan-2020 17:53*
Surr: 1,2-Dichloroethane-d4	*91.9*			**0**	*81-118*	*%REC*	*25*	*01-Jan-2020 18:17*
Surr: 4-Bromofluorobenzene	*96.2*			**0**	*85-114*	*%REC*	*1*	*01-Jan-2020 17:53*
Surr: 4-Bromofluorobenzene	*95.6*			**0**	*85-114*	*%REC*	*25*	*01-Jan-2020 18:17*
Surr: Dibromofluoromethane	*92.1*			**0**	*80-119*	*%REC*	*1*	*01-Jan-2020 17:53*
Surr: Dibromofluoromethane	*93.5*			**0**	*80-119*	*%REC*	*25*	*01-Jan-2020 18:17*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*1*	*01-Jan-2020 17:53*
Surr: Toluene-d8	*100*			**0**	*89-112*	*%REC*	*25*	*01-Jan-2020 18:17*
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 27-Dec-2019		Analyst: JHD
Arsenic	**0.000606**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	03-Jan-2020 12:41
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**1,310**		**10.0**	**25.0**	**25.0**	**mg/L**	50	04-Jan-2020 22:48
Nitrogen, Nitrate (As N)	0.500	U	0.150	0.500	0.500	mg/L	5	20-Dec-2019 03:12
Sulfate	**940**		**10.0**	**25.0**	**25.0**	**mg/L**	50	06-Jan-2020 13:01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW09_121819
Collection Date: 18-Dec-2019 08:00

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUBCA
Subcontract Analysis	See Attached		0	0		NA	1	07-Jan-2020 09:12
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Jan-2020 15:54
SUBCONTRACT ANALYSIS - VOLATILE FATTY ACIDS		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Dec-2019 10:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 03WW01_121819
Collection Date: 18-Dec-2019 09:00

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:04
1,1,1-Trichloroethane	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:04
1,1,2,2-Tetrachloroethane	5.0	U	5.0	5.0	10	UG/L	10	01-Jan-2020 17:04
1,1,2-Trichloroethane	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:04
1,1-Dichloroethane	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:04
1,1-Dichloroethene	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:04
1,1-Dichloropropene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:04
1,2,3-Trichlorobenzene	5.0	U	4.0	5.0	10	UG/L	10	01-Jan-2020 17:04
1,2,3-Trichloropropane	5.0	U	5.0	5.0	10	UG/L	10	01-Jan-2020 17:04
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	10	UG/L	10	01-Jan-2020 17:04
1,2,4-Trimethylbenzene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:04
1,2-Dibromo-3-chloropropane	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:04
1,2-Dibromoethane	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:04
1,2-Dichlorobenzene	5.0	U	5.0	5.0	10	UG/L	10	01-Jan-2020 17:04
1,2-Dichloroethane	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:04
1,2-Dichloropropane	5.0	U	5.0	5.0	10	UG/L	10	01-Jan-2020 17:04
1,3,5-Trimethylbenzene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:04
1,3-Dichlorobenzene	5.0	U	4.0	5.0	10	UG/L	10	01-Jan-2020 17:04
1,3-Dichloropropane	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:04
1,4-Dichlorobenzene	5.0	U	4.0	5.0	10	UG/L	10	01-Jan-2020 17:04
2,2-Dichloropropane	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:04
2-Butanone	10	U	5.0	10	20	UG/L	10	01-Jan-2020 17:04
2-Chlorotoluene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:04
2-Hexanone	10	U	10	10	20	UG/L	10	01-Jan-2020 17:04
4-Chlorotoluene	5.0	U	4.0	5.0	10	UG/L	10	01-Jan-2020 17:04
4-Isopropyltoluene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:04
4-Methyl-2-pentanone	10	U	7.0	10	20	UG/L	10	01-Jan-2020 17:04
Acetone	**41**		**4.0**	**20**	**20**	**UG/L**	10	01-Jan-2020 17:04
Benzene	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:04
Bromobenzene	5.0	U	4.0	5.0	10	UG/L	10	01-Jan-2020 17:04
Bromochloromethane	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:04
Bromodichloromethane	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:04
Bromoform	5.0	U	4.0	5.0	10	UG/L	10	01-Jan-2020 17:04
Bromomethane	5.0	U	4.0	5.0	10	UG/L	10	01-Jan-2020 17:04
Carbon disulfide	10	U	6.0	10	20	UG/L	10	01-Jan-2020 17:04
Carbon tetrachloride	5.0	U	5.0	5.0	10	UG/L	10	01-Jan-2020 17:04
Chlorobenzene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:04
Chloroethane	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:04
Chloroform	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 03WW01_121819
Collection Date: 18-Dec-2019 09:00

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:04
cis-1,2-Dichloroethene	**14**		**2.0**	**5.0**	**10**	**UG/L**	10	01-Jan-2020 17:04
cis-1,3-Dichloropropene	5.0	U	1.0	5.0	10	UG/L	10	01-Jan-2020 17:04
Dibromochloromethane	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:04
Dibromomethane	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:04
Dichlorodifluoromethane	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:04
Ethylbenzene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:04
Hexachlorobutadiene	10	U	10	10	10	UG/L	10	01-Jan-2020 17:04
Isopropylbenzene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:04
m,p-Xylene	10	U	5.0	10	20	UG/L	10	01-Jan-2020 17:04
Methylene chloride	10	U	4.0	10	20	UG/L	10	01-Jan-2020 17:04
n-Butylbenzene	5.0	U	4.0	5.0	10	UG/L	10	01-Jan-2020 17:04
n-Propylbenzene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:04
Naphthalene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:04
o-Xylene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:04
sec-Butylbenzene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:04
Styrene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:04
tert-Butylbenzene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:04
Tetrachloroethene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:04
Toluene	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:04
trans-1,2-Dichloroethene	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:04
trans-1,3-Dichloropropene	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:04
Trichloroethene	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:04
Trichlorofluoromethane	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:04
Vinyl chloride	**5.4**	J	**2.0**	**5.0**	**10**	**UG/L**	10	01-Jan-2020 17:04
Surr: 1,2-Dichloroethane-d4	*92.4*			**0**	*81-118*	*%REC*	*10*	*01-Jan-2020 17:04*
Surr: 4-Bromofluorobenzene	*94.8*			**0**	*85-114*	*%REC*	*10*	*01-Jan-2020 17:04*
Surr: Dibromofluoromethane	*93.1*			**0**	*80-119*	*%REC*	*10*	*01-Jan-2020 17:04*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*10*	*01-Jan-2020 17:04*
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 27-Dec-2019		Analyst: JHD
Arsenic	**0.0158**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	03-Jan-2020 12:43
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**940**		**10.0**	**25.0**	**25.0**	**mg/L**	50	04-Jan-2020 23:04
Nitrogen, Nitrate (As N)	0.500	U	0.150	0.500	0.500	mg/L	5	20-Dec-2019 03:28
Sulfate	**155**		**1.00**	**2.50**	**2.50**	**mg/L**	5	20-Dec-2019 03:28
SUBCONTRACT ANALYSIS - DHC/DHB		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Dec-2019 10:33

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 03WW01_121819
Collection Date: 18-Dec-2019 09:00

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUBCA
Subcontract Analysis	See Attached		0	0		NA	1	07-Jan-2020 09:12
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Jan-2020 15:54
SUBCONTRACT ANALYSIS - VOLATILE FATTY ACIDS		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Dec-2019 10:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW08_121819
Collection Date: 18-Dec-2019 09:55

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:29
1,1,1-Trichloroethane	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:29
1,1,2,2-Tetrachloroethane	5.0	U	5.0	5.0	10	UG/L	10	01-Jan-2020 17:29
1,1,2-Trichloroethane	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:29
1,1-Dichloroethane	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:29
1,1-Dichloroethene	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:29
1,1-Dichloropropene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:29
1,2,3-Trichlorobenzene	5.0	U	4.0	5.0	10	UG/L	10	01-Jan-2020 17:29
1,2,3-Trichloropropane	5.0	U	5.0	5.0	10	UG/L	10	01-Jan-2020 17:29
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	10	UG/L	10	01-Jan-2020 17:29
1,2,4-Trimethylbenzene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:29
1,2-Dibromo-3-chloropropane	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:29
1,2-Dibromoethane	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:29
1,2-Dichlorobenzene	5.0	U	5.0	5.0	10	UG/L	10	01-Jan-2020 17:29
1,2-Dichloroethane	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:29
1,2-Dichloropropane	5.0	U	5.0	5.0	10	UG/L	10	01-Jan-2020 17:29
1,3,5-Trimethylbenzene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:29
1,3-Dichlorobenzene	5.0	U	4.0	5.0	10	UG/L	10	01-Jan-2020 17:29
1,3-Dichloropropane	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:29
1,4-Dichlorobenzene	5.0	U	4.0	5.0	10	UG/L	10	01-Jan-2020 17:29
2,2-Dichloropropane	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:29
2-Butanone	10	U	5.0	10	20	UG/L	10	01-Jan-2020 17:29
2-Chlorotoluene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:29
2-Hexanone	10	U	10	10	20	UG/L	10	01-Jan-2020 17:29
4-Chlorotoluene	5.0	U	4.0	5.0	10	UG/L	10	01-Jan-2020 17:29
4-Isopropyltoluene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:29
4-Methyl-2-pentanone	10	U	7.0	10	20	UG/L	10	01-Jan-2020 17:29
Acetone	**55**		**4.0**	**20**	**20**	**UG/L**	10	01-Jan-2020 17:29
Benzene	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:29
Bromobenzene	5.0	U	4.0	5.0	10	UG/L	10	01-Jan-2020 17:29
Bromochloromethane	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:29
Bromodichloromethane	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:29
Bromoform	5.0	U	4.0	5.0	10	UG/L	10	01-Jan-2020 17:29
Bromomethane	5.0	U	4.0	5.0	10	UG/L	10	01-Jan-2020 17:29
Carbon disulfide	10	U	6.0	10	20	UG/L	10	01-Jan-2020 17:29
Carbon tetrachloride	5.0	U	5.0	5.0	10	UG/L	10	01-Jan-2020 17:29
Chlorobenzene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:29
Chloroethane	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:29
Chloroform	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:29

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW08_121819
Collection Date: 18-Dec-2019 09:55

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:29
cis-1,2-Dichloroethene	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:29
cis-1,3-Dichloropropene	5.0	U	1.0	5.0	10	UG/L	10	01-Jan-2020 17:29
Dibromochloromethane	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:29
Dibromomethane	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:29
Dichlorodifluoromethane	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:29
Ethylbenzene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:29
Hexachlorobutadiene	10	U	10	10	10	UG/L	10	01-Jan-2020 17:29
Isopropylbenzene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:29
m,p-Xylene	10	U	5.0	10	20	UG/L	10	01-Jan-2020 17:29
Methylene chloride	10	U	4.0	10	20	UG/L	10	01-Jan-2020 17:29
n-Butylbenzene	5.0	U	4.0	5.0	10	UG/L	10	01-Jan-2020 17:29
n-Propylbenzene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:29
Naphthalene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:29
o-Xylene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:29
sec-Butylbenzene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:29
Styrene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:29
tert-Butylbenzene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:29
Tetrachloroethene	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:29
Toluene	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:29
trans-1,2-Dichloroethene	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:29
trans-1,3-Dichloropropene	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:29
Trichloroethene	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:29
Trichlorofluoromethane	5.0	U	3.0	5.0	10	UG/L	10	01-Jan-2020 17:29
Vinyl chloride	5.0	U	2.0	5.0	10	UG/L	10	01-Jan-2020 17:29
Surr: 1,2-Dichloroethane-d4	*93.2*			**0**	*81-118*	*%REC*	*10*	*01-Jan-2020 17:29*
Surr: 4-Bromofluorobenzene	*96.0*			**0**	*85-114*	*%REC*	*10*	*01-Jan-2020 17:29*
Surr: Dibromofluoromethane	*92.5*			**0**	*80-119*	*%REC*	*10*	*01-Jan-2020 17:29*
Surr: Toluene-d8	*102*			**0**	*89-112*	*%REC*	*10*	*01-Jan-2020 17:29*
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 27-Dec-2019		Analyst: JHD
Arsenic	**0.0253**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	03-Jan-2020 12:49
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**2,290**		**10.0**	**25.0**	**25.0**	**mg/L**	50	04-Jan-2020 23:21
Nitrogen, Nitrate (As N)	**0.704**		**0.150**	**0.500**	**0.500**	**mg/L**	5	20-Dec-2019 03:45
Sulfate	2.50	U	1.00	2.50	2.50	mg/L	5	20-Dec-2019 03:45
SUBCONTRACT ANALYSIS - DHC/DHB		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Dec-2019 10:33

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW08_121819
Collection Date: 18-Dec-2019 09:55

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUBCA
Subcontract Analysis	See Attached		0	0		NA	1	07-Jan-2020 09:12
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Jan-2020 15:54
SUBCONTRACT ANALYSIS - VOLATILE FATTY ACIDS		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Dec-2019 10:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW11_121819
Collection Date: 18-Dec-2019 10:50

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:14
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:14
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 14:14
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:14
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:14
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:14
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:14
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 14:14
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 14:14
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 14:14
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:14
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:14
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:14
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 14:14
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:14
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 14:14
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:14
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 14:14
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:14
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 14:14
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:14
2-Butanone	**29**		**0.50**	**1.0**	**2.0**	**UG/L**	1	01-Jan-2020 14:14
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:14
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	01-Jan-2020 14:14
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 14:14
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:14
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	01-Jan-2020 14:14
Acetone	**38**		**0.40**	**2.0**	**2.0**	**UG/L**	1	01-Jan-2020 14:14
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:14
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 14:14
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:14
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:14
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 14:14
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 14:14
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	01-Jan-2020 14:14
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 14:14
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:14
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:14
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:14

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW11_121819
Collection Date: 18-Dec-2019 10:50

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:14
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:14
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	01-Jan-2020 14:14
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:14
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:14
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:14
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:14
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	01-Jan-2020 14:14
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:14
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	01-Jan-2020 14:14
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	01-Jan-2020 14:14
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 14:14
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:14
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:14
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:14
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:14
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:14
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:14
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:14
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:14
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:14
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:14
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:14
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:14
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:14
Surr: 1,2-Dichloroethane-d4	*93.5*			**0**	*81-118*	*%REC*	*1*	*01-Jan-2020 14:14*
Surr: 4-Bromofluorobenzene	*95.6*			**0**	*85-114*	*%REC*	*1*	*01-Jan-2020 14:14*
Surr: Dibromofluoromethane	*95.5*			**0**	*80-119*	*%REC*	*1*	*01-Jan-2020 14:14*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*1*	*01-Jan-2020 14:14*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**2,080**		**10.0**	**25.0**	**25.0**	**mg/L**	50	04-Jan-2020 23:38
Nitrogen, Nitrate (As N)	0.500	U	0.150	0.500	0.500	mg/L	5	20-Dec-2019 04:02
Sulfate	**192**		**1.00**	**2.50**	**2.50**	**mg/L**	5	20-Dec-2019 04:02
SUBCONTRACT ANALYSIS - DHC/DHB		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Dec-2019 10:33
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUBCA
Subcontract Analysis	See Attached		0	0		NA	1	07-Jan-2020 09:12

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW11_121819
Collection Date: 18-Dec-2019 10:50

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Jan-2020 15:54
SUBCONTRACT ANALYSIS - VOLATILE FATTY ACIDS		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Dec-2019 10:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW23_121819
Collection Date: 18-Dec-2019 11:45

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:38
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:38
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 14:38
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:38
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:38
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:38
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:38
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 14:38
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 14:38
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 14:38
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:38
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:38
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:38
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 14:38
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:38
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 14:38
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:38
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 14:38
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:38
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 14:38
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:38
2-Butanone	**390**		**0.50**	**1.0**	**2.0**	**UG/L**	1	01-Jan-2020 14:38
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:38
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	01-Jan-2020 14:38
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 14:38
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:38
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	01-Jan-2020 14:38
Acetone	**480**	H	**2.0**	**10**	**10**	**UG/L**	5	02-Jan-2020 14:26
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:38
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 14:38
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:38
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:38
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 14:38
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 14:38
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	01-Jan-2020 14:38
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 14:38
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:38
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:38
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:38

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW23_121819
Collection Date: 18-Dec-2019 11:45

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:38
cis-1,2-Dichloroethene	**7.6**		**0.20**	**0.50**	**1.0**	**UG/L**	1	01-Jan-2020 14:38
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	01-Jan-2020 14:38
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:38
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:38
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:38
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:38
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	01-Jan-2020 14:38
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:38
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	01-Jan-2020 14:38
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	01-Jan-2020 14:38
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 14:38
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:38
Naphthalene	**1.6**		**0.30**	**0.50**	**1.0**	**UG/L**	1	01-Jan-2020 14:38
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:38
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:38
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:38
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:38
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:38
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:38
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:38
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 14:38
Trichloroethene	**2.7**		**0.20**	**0.50**	**1.0**	**UG/L**	1	01-Jan-2020 14:38
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 14:38
Vinyl chloride	**1.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	01-Jan-2020 14:38
Surr: 1,2-Dichloroethane-d4	*91.7*			**0**	*81-118*	*%REC*	*1*	*01-Jan-2020 14:38*
Surr: 1,2-Dichloroethane-d4	*91.0*			**0**	*81-118*	*%REC*	*5*	*02-Jan-2020 14:26*
Surr: 4-Bromofluorobenzene	*98.2*			**0**	*85-114*	*%REC*	*1*	*01-Jan-2020 14:38*
Surr: 4-Bromofluorobenzene	*96.3*			**0**	*85-114*	*%REC*	*5*	*02-Jan-2020 14:26*
Surr: Dibromofluoromethane	*94.8*			**0**	*80-119*	*%REC*	*1*	*01-Jan-2020 14:38*
Surr: Dibromofluoromethane	*92.4*			**0**	*80-119*	*%REC*	*5*	*02-Jan-2020 14:26*
Surr: Toluene-d8	*99.4*			**0**	*89-112*	*%REC*	*1*	*01-Jan-2020 14:38*
Surr: Toluene-d8	*98.6*			**0**	*89-112*	*%REC*	*5*	*02-Jan-2020 14:26*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**868**		**10.0**	**25.0**	**25.0**	**mg/L**	50	04-Jan-2020 23:54
Nitrogen, Nitrate (As N)	0.500	U	0.150	0.500	0.500	mg/L	5	20-Dec-2019 04:18
Sulfate	**1.62**	J	**1.00**	**2.50**	**2.50**	**mg/L**	5	20-Dec-2019 04:18
SUBCONTRACT ANALYSIS - DHC/DHB		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Dec-2019 10:33

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW23_121819
Collection Date: 18-Dec-2019 11:45

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUBCA
Subcontract Analysis	See Attached		0	0		NA	1	07-Jan-2020 09:12
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Jan-2020 15:54
SUBCONTRACT ANALYSIS - VOLATILE FATTY ACIDS		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Dec-2019 10:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW19_121819
Collection Date: 18-Dec-2019 12:40

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:03
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:03
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 15:03
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:03
1,1-Dichloroethane	**0.98**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	01-Jan-2020 15:03
1,1-Dichloroethene	**4.5**		**0.20**	**0.50**	**1.0**	**UG/L**	1	01-Jan-2020 15:03
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:03
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:03
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 15:03
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 15:03
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:03
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:03
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:03
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 15:03
1,2-Dichloroethane	**1.0**		**0.20**	**0.50**	**1.0**	**UG/L**	1	01-Jan-2020 15:03
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 15:03
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:03
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:03
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:03
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:03
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:03
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	01-Jan-2020 15:03
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:03
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	01-Jan-2020 15:03
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:03
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:03
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	01-Jan-2020 15:03
Acetone	2.0	U	0.40	2.0	2.0	UG/L	1	01-Jan-2020 15:03
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:03
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:03
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:03
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:03
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:03
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:03
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	01-Jan-2020 15:03
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 15:03
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:03
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:03
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:03

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW19_121819
Collection Date: 18-Dec-2019 12:40

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:03
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:03
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	01-Jan-2020 15:03
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:03
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:03
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:03
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:03
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	01-Jan-2020 15:03
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:03
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	01-Jan-2020 15:03
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	01-Jan-2020 15:03
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:03
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:03
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:03
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:03
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:03
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:03
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:03
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:03
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:03
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:03
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:03
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:03
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:03
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:03
Surr: 1,2-Dichloroethane-d4	*92.5*			**0**	*81-118*	*%REC*	*1*	*01-Jan-2020 15:03*
Surr: 4-Bromofluorobenzene	*95.3*			**0**	*85-114*	*%REC*	*1*	*01-Jan-2020 15:03*
Surr: Dibromofluoromethane	*92.9*			**0**	*80-119*	*%REC*	*1*	*01-Jan-2020 15:03*
Surr: Toluene-d8	*99.8*			**0**	*89-112*	*%REC*	*1*	*01-Jan-2020 15:03*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**979**		**10.0**	**25.0**	**25.0**	**mg/L**	50	05-Jan-2020 00:11
Nitrogen, Nitrate (As N)	0.500	U	0.150	0.500	0.500	mg/L	5	20-Dec-2019 04:35
Sulfate	**997**		**10.0**	**25.0**	**25.0**	**mg/L**	50	06-Jan-2020 13:18
SUBCONTRACT ANALYSIS - DHC/DHB		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Dec-2019 10:33
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUBCA
Subcontract Analysis	See Attached		0	0		NA	1	07-Jan-2020 09:12

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW19_121819
Collection Date: 18-Dec-2019 12:40

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	09-Jan-2020 15:54
SUBCONTRACT ANALYSIS - VOLATILE FATTY ACIDS		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Dec-2019 10:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW13_121819
Collection Date: 18-Dec-2019 13:30

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:27
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:27
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 15:27
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:27
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:27
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:27
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:27
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:27
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 15:27
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 15:27
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:27
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:27
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:27
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 15:27
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:27
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 15:27
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:27
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:27
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:27
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:27
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:27
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	01-Jan-2020 15:27
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:27
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	01-Jan-2020 15:27
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:27
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:27
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	01-Jan-2020 15:27
Acetone	2.0	U	0.40	2.0	2.0	UG/L	1	01-Jan-2020 15:27
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:27
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:27
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:27
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:27
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:27
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:27
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	01-Jan-2020 15:27
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 15:27
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:27
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:27
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:27

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW13_121819
Collection Date: 18-Dec-2019 13:30

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:27
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:27
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	01-Jan-2020 15:27
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:27
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:27
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:27
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:27
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	01-Jan-2020 15:27
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:27
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	01-Jan-2020 15:27
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	01-Jan-2020 15:27
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:27
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:27
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:27
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:27
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:27
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:27
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:27
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:27
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:27
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:27
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:27
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:27
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:27
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:27
Surr: 1,2-Dichloroethane-d4	*92.1*			**0**	*81-118*	*%REC*	*1*	*01-Jan-2020 15:27*
Surr: 4-Bromofluorobenzene	*96.5*			**0**	*85-114*	*%REC*	*1*	*01-Jan-2020 15:27*
Surr: Dibromofluoromethane	*92.9*			**0**	*80-119*	*%REC*	*1*	*01-Jan-2020 15:27*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*1*	*01-Jan-2020 15:27*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW17_121819
Collection Date: 18-Dec-2019 08:45

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:51
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:51
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 15:51
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:51
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:51
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:51
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:51
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:51
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 15:51
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 15:51
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:51
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:51
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:51
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 15:51
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:51
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 15:51
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:51
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:51
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:51
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:51
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:51
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	01-Jan-2020 15:51
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:51
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	01-Jan-2020 15:51
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:51
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:51
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	01-Jan-2020 15:51
Acetone	2.0	U	0.40	2.0	2.0	UG/L	1	01-Jan-2020 15:51
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:51
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:51
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:51
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:51
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:51
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:51
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	01-Jan-2020 15:51
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 15:51
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:51
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:51
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW17_121819
Collection Date: 18-Dec-2019 08:45

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:51
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:51
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	01-Jan-2020 15:51
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:51
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:51
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:51
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:51
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	01-Jan-2020 15:51
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:51
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	01-Jan-2020 15:51
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	01-Jan-2020 15:51
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 15:51
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:51
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:51
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:51
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:51
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:51
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:51
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:51
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:51
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:51
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:51
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:51
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 15:51
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 15:51
Surr: 1,2-Dichloroethane-d4	*92.2*			**0**	*81-118*	*%REC*	*1*	*01-Jan-2020 15:51*
Surr: 4-Bromofluorobenzene	*96.5*			**0**	*85-114*	*%REC*	*1*	*01-Jan-2020 15:51*
Surr: Dibromofluoromethane	*94.2*			**0**	*80-119*	*%REC*	*1*	*01-Jan-2020 15:51*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*1*	*01-Jan-2020 15:51*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW18_121819
Collection Date: 18-Dec-2019 10:00

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:50
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:50
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 13:50
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:50
1,1-Dichloroethane	**1.2**		**0.20**	**0.50**	**1.0**	**UG/L**	1	01-Jan-2020 13:50
1,1-Dichloroethene	**4.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	01-Jan-2020 13:50
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:50
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 13:50
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 13:50
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 13:50
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:50
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:50
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:50
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 13:50
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:50
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 13:50
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:50
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 13:50
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:50
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 13:50
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:50
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	01-Jan-2020 13:50
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:50
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	01-Jan-2020 13:50
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 13:50
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:50
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	01-Jan-2020 13:50
Acetone	2.0	U	0.40	2.0	2.0	UG/L	1	01-Jan-2020 13:50
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:50
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 13:50
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:50
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:50
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 13:50
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 13:50
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	01-Jan-2020 13:50
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 13:50
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:50
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:50
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:50

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW18_121819
Collection Date: 18-Dec-2019 10:00

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:50
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:50
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	01-Jan-2020 13:50
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:50
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:50
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:50
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:50
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	01-Jan-2020 13:50
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:50
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	01-Jan-2020 13:50
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	01-Jan-2020 13:50
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 13:50
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:50
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:50
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:50
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:50
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:50
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:50
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:50
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:50
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:50
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:50
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:50
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:50
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:50
Surr: 1,2-Dichloroethane-d4	*92.7*			**0**	*81-118*	*%REC*	*1*	*01-Jan-2020 13:50*
Surr: 4-Bromofluorobenzene	*95.6*			**0**	*85-114*	*%REC*	*1*	*01-Jan-2020 13:50*
Surr: Dibromofluoromethane	*94.1*			**0**	*80-119*	*%REC*	*1*	*01-Jan-2020 13:50*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*1*	*01-Jan-2020 13:50*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW22_121819
Collection Date: 18-Dec-2019 11:20

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-10
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:16
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:16
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 16:16
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:16
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:16
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:16
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:16
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 16:16
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 16:16
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 16:16
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:16
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:16
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:16
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 16:16
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:16
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 16:16
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:16
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 16:16
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:16
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 16:16
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:16
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	01-Jan-2020 16:16
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:16
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	01-Jan-2020 16:16
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 16:16
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:16
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	01-Jan-2020 16:16
Acetone	2.0	U	0.40	2.0	2.0	UG/L	1	01-Jan-2020 16:16
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:16
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 16:16
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:16
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:16
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 16:16
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 16:16
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	01-Jan-2020 16:16
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 16:16
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:16
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:16
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW22_121819
Collection Date: 18-Dec-2019 11:20

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-10
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:16
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:16
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	01-Jan-2020 16:16
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:16
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:16
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:16
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:16
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	01-Jan-2020 16:16
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:16
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	01-Jan-2020 16:16
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	01-Jan-2020 16:16
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 16:16
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:16
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:16
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:16
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:16
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:16
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:16
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:16
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:16
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:16
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:16
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:16
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:16
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:16
Surr: 1,2-Dichloroethane-d4	*92.3*			**0**	*81-118*	*%REC*	*1*	*01-Jan-2020 16:16*
Surr: 4-Bromofluorobenzene	*96.6*			**0**	*85-114*	*%REC*	*1*	*01-Jan-2020 16:16*
Surr: Dibromofluoromethane	*93.9*			**0**	*80-119*	*%REC*	*1*	*01-Jan-2020 16:16*
Surr: Toluene-d8	*100*			**0**	*89-112*	*%REC*	*1*	*01-Jan-2020 16:16*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW12_121819
Collection Date: 18-Dec-2019 12:30

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-11
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:40
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:40
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 16:40
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:40
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:40
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:40
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:40
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 16:40
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 16:40
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 16:40
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:40
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:40
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:40
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 16:40
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:40
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 16:40
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:40
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 16:40
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:40
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 16:40
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:40
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	01-Jan-2020 16:40
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:40
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	01-Jan-2020 16:40
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 16:40
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:40
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	01-Jan-2020 16:40
Acetone	2.0	U	0.40	2.0	2.0	UG/L	1	01-Jan-2020 16:40
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:40
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 16:40
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:40
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:40
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 16:40
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 16:40
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	01-Jan-2020 16:40
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 16:40
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:40
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:40
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:40

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW12_121819
Collection Date: 18-Dec-2019 12:30

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-11
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:40
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:40
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	01-Jan-2020 16:40
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:40
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:40
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:40
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:40
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	01-Jan-2020 16:40
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:40
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	01-Jan-2020 16:40
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	01-Jan-2020 16:40
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 16:40
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:40
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:40
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:40
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:40
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:40
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:40
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:40
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:40
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:40
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:40
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:40
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 16:40
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 16:40
Surr: 1,2-Dichloroethane-d4	*92.6*			**0**	*81-118*	*%REC*	*1*	*01-Jan-2020 16:40*
Surr: 4-Bromofluorobenzene	*95.1*			**0**	*85-114*	*%REC*	*1*	*01-Jan-2020 16:40*
Surr: Dibromofluoromethane	*94.3*			**0**	*80-119*	*%REC*	*1*	*01-Jan-2020 16:40*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*1*	*01-Jan-2020 16:40*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: Trip Blank
Collection Date: 18-Dec-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-12
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:25
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:25
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 13:25
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:25
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:25
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:25
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:25
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 13:25
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 13:25
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 13:25
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:25
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:25
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:25
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 13:25
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:25
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 13:25
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:25
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 13:25
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:25
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 13:25
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:25
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	01-Jan-2020 13:25
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:25
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	01-Jan-2020 13:25
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 13:25
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:25
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	01-Jan-2020 13:25
Acetone	2.0	U	0.40	2.0	2.0	UG/L	1	01-Jan-2020 13:25
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:25
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 13:25
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:25
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:25
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 13:25
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 13:25
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	01-Jan-2020 13:25
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	01-Jan-2020 13:25
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:25
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:25
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: Trip Blank
Collection Date: 18-Dec-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19121092
Lab ID:HS19121092-12
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:25
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:25
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	01-Jan-2020 13:25
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:25
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:25
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:25
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:25
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	01-Jan-2020 13:25
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:25
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	01-Jan-2020 13:25
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	01-Jan-2020 13:25
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	01-Jan-2020 13:25
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:25
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:25
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:25
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:25
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:25
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:25
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:25
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:25
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:25
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:25
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:25
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	01-Jan-2020 13:25
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	01-Jan-2020 13:25
Surr: 1,2-Dichloroethane-d4	*92.7*			**0**	*81-118*	*%REC*	*1*	*01-Jan-2020 13:25*
Surr: 4-Bromofluorobenzene	*94.8*			**0**	*85-114*	*%REC*	*1*	*01-Jan-2020 13:25*
Surr: Dibromofluoromethane	*92.0*			**0**	*80-119*	*%REC*	*1*	*01-Jan-2020 13:25*
Surr: Toluene-d8	*99.9*			**0**	*89-112*	*%REC*	*1*	*01-Jan-2020 13:25*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

Batch ID: 149161 **Start Date:** 27 Dec 2019 09:00 **End Date:** 27 Dec 2019 13:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS19121092-01		10 (mL)	10 (mL)	1
HS19121092-02		10 (mL)	10 (mL)	1
HS19121092-03		10 (mL)	10 (mL)	1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 149161 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Groundwater	
HS19121092-01	35AWW09_121819	18 Dec 2019 08:00		27 Dec 2019 13:00	03 Jan 2020 12:41	1
HS19121092-02	03WW01_121819	18 Dec 2019 09:00		27 Dec 2019 13:00	03 Jan 2020 12:43	1
HS19121092-03	35AWW08_121819	18 Dec 2019 09:55		27 Dec 2019 13:00	03 Jan 2020 12:49	1
Batch ID: R353227 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS19121092-01	35AWW09_121819	18 Dec 2019 08:00			20 Dec 2019 03:12	5
HS19121092-02	03WW01_121819	18 Dec 2019 09:00			20 Dec 2019 03:28	5
HS19121092-03	35AWW08_121819	18 Dec 2019 09:55			20 Dec 2019 03:45	5
HS19121092-04	35AWW11_121819	18 Dec 2019 10:50			20 Dec 2019 04:02	5
HS19121092-05	35AWW23_121819	18 Dec 2019 11:45			20 Dec 2019 04:18	5
HS19121092-06	35AWW19_121819	18 Dec 2019 12:40			20 Dec 2019 04:35	5
Batch ID: R353574 (0)	**Test Name :** SUBCONTRACT ANALYSIS - VOLATILE FATTY ACIDS				**Matrix:** Groundwater	
HS19121092-01	35AWW09_121819	18 Dec 2019 08:00			31 Dec 2019 10:18	1
HS19121092-02	03WW01_121819	18 Dec 2019 09:00			31 Dec 2019 10:18	1
HS19121092-03	35AWW08_121819	18 Dec 2019 09:55			31 Dec 2019 10:18	1
HS19121092-04	35AWW11_121819	18 Dec 2019 10:50			31 Dec 2019 10:18	1
HS19121092-05	35AWW23_121819	18 Dec 2019 11:45			31 Dec 2019 10:18	1
HS19121092-06	35AWW19_121819	18 Dec 2019 12:40			31 Dec 2019 10:18	1
Batch ID: R353580 (0)	**Test Name :** SUBCONTRACT ANALYSIS - DHC/DHB				**Matrix:** Groundwater	
HS19121092-02	03WW01_121819	18 Dec 2019 09:00			31 Dec 2019 10:33	1
HS19121092-03	35AWW08_121819	18 Dec 2019 09:55			31 Dec 2019 10:33	1
HS19121092-04	35AWW11_121819	18 Dec 2019 10:50			31 Dec 2019 10:33	1
HS19121092-05	35AWW23_121819	18 Dec 2019 11:45			31 Dec 2019 10:33	1
HS19121092-06	35AWW19_121819	18 Dec 2019 12:40			31 Dec 2019 10:33	1
Batch ID: R353710 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS19121092-01	35AWW09_121819	18 Dec 2019 08:00			01 Jan 2020 18:17	25
HS19121092-01	35AWW09_121819	18 Dec 2019 08:00			01 Jan 2020 17:53	1
HS19121092-02	03WW01_121819	18 Dec 2019 09:00			01 Jan 2020 17:04	10
HS19121092-03	35AWW08_121819	18 Dec 2019 09:55			01 Jan 2020 17:29	10
HS19121092-04	35AWW11_121819	18 Dec 2019 10:50			01 Jan 2020 14:14	1
HS19121092-05	35AWW23_121819	18 Dec 2019 11:45			01 Jan 2020 14:38	1
HS19121092-06	35AWW19_121819	18 Dec 2019 12:40			01 Jan 2020 15:03	1
HS19121092-07	35AWW13_121819	18 Dec 2019 13:30			01 Jan 2020 15:27	1
HS19121092-08	35AWW17_121819	18 Dec 2019 08:45			01 Jan 2020 15:51	1
HS19121092-09	35AWW18_121819	18 Dec 2019 10:00			01 Jan 2020 13:50	1
HS19121092-10	35AWW22_121819	18 Dec 2019 11:20			01 Jan 2020 16:16	1
HS19121092-11	35AWW12_121819	18 Dec 2019 12:30			01 Jan 2020 16:40	1
HS19121092-12	Trip Blank	18 Dec 2019 00:00			01 Jan 2020 13:25	1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R353768 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS19121092-05	35AWW23_121819	18 Dec 2019 11:45			02 Jan 2020 14:26	5
Batch ID: R353865 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS19121092-01	35AWW09_121819	18 Dec 2019 08:00			04 Jan 2020 22:48	50
HS19121092-02	03WW01_121819	18 Dec 2019 09:00			04 Jan 2020 23:04	50
HS19121092-03	35AWW08_121819	18 Dec 2019 09:55			04 Jan 2020 23:21	50
HS19121092-04	35AWW11_121819	18 Dec 2019 10:50			04 Jan 2020 23:38	50
HS19121092-05	35AWW23_121819	18 Dec 2019 11:45			04 Jan 2020 23:54	50
HS19121092-06	35AWW19_121819	18 Dec 2019 12:40			05 Jan 2020 00:11	50
Batch ID: R353906 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS19121092-01	35AWW09_121819	18 Dec 2019 08:00			06 Jan 2020 13:01	50
HS19121092-06	35AWW19_121819	18 Dec 2019 12:40			06 Jan 2020 13:18	50
Batch ID: R353925 (0)	**Test Name :** SUBCONTRACT ANALYSIS - RSK				**Matrix:** Groundwater	
HS19121092-01	35AWW09_121819	18 Dec 2019 08:00			07 Jan 2020 09:12	1
HS19121092-02	03WW01_121819	18 Dec 2019 09:00			07 Jan 2020 09:12	1
HS19121092-03	35AWW08_121819	18 Dec 2019 09:55			07 Jan 2020 09:12	1
HS19121092-04	35AWW11_121819	18 Dec 2019 10:50			07 Jan 2020 09:12	1
HS19121092-05	35AWW23_121819	18 Dec 2019 11:45			07 Jan 2020 09:12	1
HS19121092-06	35AWW19_121819	18 Dec 2019 12:40			07 Jan 2020 09:12	1
Batch ID: R354153 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Groundwater	
HS19121092-01	35AWW09_121819	18 Dec 2019 08:00			09 Jan 2020 15:54	1
HS19121092-02	03WW01_121819	18 Dec 2019 09:00			09 Jan 2020 15:54	1
HS19121092-03	35AWW08_121819	18 Dec 2019 09:55			09 Jan 2020 15:54	1
HS19121092-04	35AWW11_121819	18 Dec 2019 10:50			09 Jan 2020 15:54	1
HS19121092-05	35AWW23_121819	18 Dec 2019 11:45			09 Jan 2020 15:54	1
HS19121092-06	35AWW19_121819	18 Dec 2019 12:40			09 Jan 2020 15:54	1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

QC BATCH REPORT

Batch ID: 149161 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-149161** Units: **mg/L** Analysis Date: **03-Jan-2020 12:00**
Client ID: Run ID: **ICPMS05_353764** SeqNo: **5423038** PrepDate: **27-Dec-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.000500	0.00500								U

LCS Sample ID: **LCS-149161** Units: **mg/L** Analysis Date: **03-Jan-2020 12:03**
Client ID: Run ID: **ICPMS05_353764** SeqNo: **5423039** PrepDate: **27-Dec-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.05072	0.00500	0.05	0	101	84 - 116				

MS Sample ID: **HS19121036-01MS** Units: **mg/L** Analysis Date: **03-Jan-2020 12:14**
Client ID: Run ID: **ICPMS05_353764** SeqNo: **5423044** PrepDate: **27-Dec-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.04954	0.00500	0.05	0	99.1	84 - 116				

MSD Sample ID: **HS19121036-01MSD** Units: **mg/L** Analysis Date: **03-Jan-2020 12:17**
Client ID: Run ID: **ICPMS05_353764** SeqNo: **5423045** PrepDate: **27-Dec-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.04823	0.00500	0.05	0	96.5	84 - 116	0.04954	2.68	20	

PDS Sample ID: **HS19121036-01PDS** Units: **mg/L** Analysis Date: **03-Jan-2020 12:19**
Client ID: Run ID: **ICPMS05_353764** SeqNo: **5423046** PrepDate: **27-Dec-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.09811	0.00500	0.1	0	98.1	80 - 120				

SD Sample ID: **HS19121036-01SD** Units: **mg/L** Analysis Date: **03-Jan-2020 12:12**
Client ID: Run ID: **ICPMS05_353764** SeqNo: **5423043** PrepDate: **27-Dec-2019** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Arsenic	0.00250	0.0250					0.000238	0	10	U

The following samples were analyzed in this batch: HS19121092-01 HS19121092-02 HS19121092-03

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

QC BATCH REPORT

Batch ID: R353710 (0) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-200101** Units: **UG/L** Analysis Date: **01-Jan-2020 13:01**
Client ID: Run ID: **VOA9_353710** SeqNo: **5420564** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	0.50	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	0.50	1.0								U
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	0.50	1.0								U
1,2,3-Trichlorobenzene	0.50	1.0								U
1,2,3-Trichloropropane	0.50	1.0								U
1,2,4-Trichlorobenzene	0.50	1.0								U
1,2,4-Trimethylbenzene	0.50	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	0.50	1.0								U
1,3,5-Trimethylbenzene	0.50	1.0								U
1,3-Dichlorobenzene	0.50	1.0								U
1,3-Dichloropropane	0.50	1.0								U
1,4-Dichlorobenzene	0.50	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	0.50	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	0.50	1.0								U
4-Isopropyltoluene	0.50	1.0								U
4-Methyl-2-pentanone	1.0	2.0								U
Acetone	2.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	0.50	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	0.50	1.0								U
Bromomethane	0.50	1.0								U

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

QC BATCH REPORT

Batch ID: R353710 (0) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-200101** Units: **UG/L** Analysis Date: **01-Jan-2020 13:01**
Client ID: Run ID: **VOA9_353710** SeqNo: **5420564** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	0.50	1.0								U
Chlorobenzene	0.50	1.0								U
Chloroethane	0.50	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	0.50	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	0.50	1.0								U
Ethylbenzene	0.50	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	0.50	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	0.50	1.0								U
n-Butylbenzene	0.50	1.0								U
n-Propylbenzene	0.50	1.0								U
o-Xylene	0.50	1.0								U
sec-Butylbenzene	0.50	1.0								U
Styrene	0.50	1.0								U
tert-Butylbenzene	0.50	1.0								U
Tetrachloroethene	0.50	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*45.98*	*1.0*	*50*	*0*	*92.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*46.96*	*1.0*	*50*	*0*	*93.9*	*85 - 114*				
Surr: Dibromofluoromethane	*47.25*	*1.0*	*50*	*0*	*94.5*	*80 - 119*				
Surr: Toluene-d8	*50.04*	*1.0*	*50*	*0*	*100*	*89 - 112*				

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

QC BATCH REPORT

Batch ID: R353710 (0) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-200101** Units: **UG/L** Analysis Date: **01-Jan-2020 12:12**
Client ID: Run ID: **VOA9_353710** SeqNo: **5420563** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.7	1.0	20	0	103	78 - 124				
1,1,1-Trichloroethane	16.73	1.0	20	0	83.6	74 - 131				
1,1,2,2-Tetrachloroethane	20.51	1.0	20	0	103	71 - 121				
1,1,2-Trichloroethane	19.5	1.0	20	0	97.5	80 - 119				
1,1-Dichloroethane	17.99	1.0	20	0	90.0	77 - 125				
1,1-Dichloroethene	16.4	1.0	20	0	82.0	71 - 131				
1,1-Dichloropropene	16.52	1.0	20	0	82.6	78 - 125				
1,2,3-Trichlorobenzene	17.52	1.0	20	0	87.6	69 - 129				
1,2,3-Trichloropropane	20	1.0	20	0	100	73 - 122				
1,2,4-Trichlorobenzene	17.48	1.0	20	0	87.4	69 - 130				
1,2,4-Trimethylbenzene	17.36	1.0	20	0	86.8	76 - 124				
1,2-Dibromo-3-chloropropane	18.63	1.0	20	0	93.1	62 - 128				
1,2-Dibromoethane	21.14	1.0	20	0	106	77 - 121				
1,2-Dichlorobenzene	19.19	1.0	20	0	95.9	80 - 119				
1,2-Dichloroethane	17.56	1.0	20	0	87.8	73 - 128				
1,2-Dichloropropane	19.48	1.0	20	0	97.4	78 - 122				
1,3,5-Trimethylbenzene	17.32	1.0	20	0	86.6	75 - 124				
1,3-Dichlorobenzene	18.52	1.0	20	0	92.6	80 - 119				
1,3-Dichloropropane	20.2	1.0	20	0	101	80 - 119				
1,4-Dichlorobenzene	19.11	1.0	20	0	95.5	79 - 118				
2,2-Dichloropropane	18.41	1.0	20	0	92.0	60 - 139				
2-Butanone	37.31	2.0	40	0	93.3	56 - 143				
2-Chlorotoluene	18.22	1.0	20	0	91.1	79 - 122				
2-Hexanone	41.55	2.0	40	0	104	57 - 139				
4-Chlorotoluene	18.25	1.0	20	0	91.2	78 - 122				
4-Isopropyltoluene	16.07	1.0	20	0	80.3	77 - 127				
4-Methyl-2-pentanone	41.06	2.0	40	0	103	67 - 130				
Acetone	43.74	2.0	40	0	109	39 - 160				
Benzene	18.66	1.0	20	0	93.3	79 - 120				
Bromobenzene	19.79	1.0	20	0	98.9	80 - 120				
Bromochloromethane	19.71	1.0	20	0	98.6	78 - 123				
Bromodichloromethane	18.91	1.0	20	0	94.6	79 - 125				
Bromoform	17.57	1.0	20	0	87.9	66 - 130				
Bromomethane	22.19	1.0	20	0	111	53 - 141				

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

QC BATCH REPORT

Batch ID: R353710 (0) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-200101** Units: **UG/L** Analysis Date: **01-Jan-2020 12:12**
Client ID: Run ID: **VOA9_353710** SeqNo: **5420563** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	33.27	2.0	40	0	83.2	64 - 133				
Carbon tetrachloride	15.92	1.0	20	0	79.6	72 - 136				
Chlorobenzene	19.35	1.0	20	0	96.8	82 - 118				
Chloroethane	16.5	1.0	20	0	82.5	60 - 138				
Chloroform	17.99	1.0	20	0	90.0	79 - 124				
Chloromethane	23.44	1.0	20	0	117	50 - 139				
cis-1,2-Dichloroethene	18.34	1.0	20	0	91.7	78 - 123				
cis-1,3-Dichloropropene	17.9	1.0	20	0	89.5	75 - 124				
Dibromochloromethane	18.39	1.0	20	0	91.9	74 - 126				
Dibromomethane	19.45	1.0	20	0	97.2	79 - 123				
Dichlorodifluoromethane	15	1.0	20	0	75.0	32 - 152				
Ethylbenzene	18.35	1.0	20	0	91.7	79 - 121				
Hexachlorobutadiene	16.96	1.0	20	0	84.8	66 - 134				
Isopropylbenzene	17.56	1.0	20	0	87.8	72 - 131				
m,p-Xylene	37.91	2.0	40	0	94.8	80 - 121				
Methylene chloride	18.45	2.0	20	0	92.3	74 - 124				
Naphthalene	18.04	1.0	20	0	90.2	61 - 128				
n-Butylbenzene	16.14	1.0	20	0	80.7	75 - 128				
n-Propylbenzene	16.79	1.0	20	0	84.0	76 - 126				
o-Xylene	19.2	1.0	20	0	96.0	78 - 122				
sec-Butylbenzene	15.78	1.0	20	0	78.9	77 - 126				
Styrene	19.2	1.0	20	0	96.0	78 - 123				
tert-Butylbenzene	16.17	1.0	20	0	80.8	78 - 124				
Tetrachloroethene	18.63	1.0	20	0	93.2	74 - 129				
Toluene	19.27	1.0	20	0	96.3	80 - 121				
trans-1,2-Dichloroethene	17.9	1.0	20	0	89.5	75 - 124				
trans-1,3-Dichloropropene	17.6	1.0	20	0	88.0	73 - 127				
Trichloroethene	17.73	1.0	20	0	88.7	79 - 123				
Trichlorofluoromethane	15.05	1.0	20	0	75.3	65 - 141				
Vinyl chloride	15.83	1.0	20	0	79.2	58 - 137				
Surr: 1,2-Dichloroethane-d4	*44.74*	*1.0*	*50*	*0*	*89.5*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.46*	*1.0*	*50*	*0*	*98.9*	*85 - 114*				
Surr: Dibromofluoromethane	*47.85*	*1.0*	*50*	*0*	*95.7*	*80 - 119*				
Surr: Toluene-d8	*50.77*	*1.0*	*50*	*0*	*102*	*89 - 112*				

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

QC BATCH REPORT

Batch ID: R353710 (0) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS19121092-09MS** Units: **UG/L** Analysis Date: **01-Jan-2020 18:42**
Client ID: **35AWW18_121819** Run ID: **VOA9_353710** SeqNo: **5420578** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
1,1,1,2-Tetrachloroethane	24	1.0	20	0	120	78 - 124			
1,1,1-Trichloroethane	20.72	1.0	20	0	104	74 - 131			
1,1,2,2-Tetrachloroethane	23.28	1.0	20	0	116	71 - 121			
1,1,2-Trichloroethane	23.17	1.0	20	0	116	80 - 119			
1,1-Dichloroethane	22.32	1.0	20	1.151	106	77 - 125			
1,1-Dichloroethene	24.17	1.0	20	4.078	100	71 - 131			
1,1-Dichloropropene	20.59	1.0	20	0	103	78 - 125			
1,2,3-Trichlorobenzene	20.68	1.0	20	0	103	69 - 129			
1,2,3-Trichloropropane	22.22	1.0	20	0	111	73 - 122			
1,2,4-Trichlorobenzene	19.99	1.0	20	0	100.0	69 - 130			
1,2,4-Trimethylbenzene	19.42	1.0	20	0	97.1	76 - 124			
1,2-Dibromo-3-chloropropane	21.16	1.0	20	0	106	62 - 128			
1,2-Dibromoethane	23.77	1.0	20	0	119	77 - 121			
1,2-Dichlorobenzene	22.18	1.0	20	0	111	80 - 119			
1,2-Dichloroethane	20.42	1.0	20	0	102	73 - 128			
1,2-Dichloropropane	22.03	1.0	20	0	110	78 - 122			
1,3,5-Trimethylbenzene	20.72	1.0	20	0	104	75 - 124			
1,3-Dichlorobenzene	21.65	1.0	20	0	108	80 - 119			
1,3-Dichloropropane	23.25	1.0	20	0	116	80 - 119			
1,4-Dichlorobenzene	21.69	1.0	20	0	108	79 - 118			
2,2-Dichloropropane	17.88	1.0	20	0	89.4	60 - 139			
2-Butanone	42.06	2.0	40	0	105	56 - 143			
2-Chlorotoluene	21.45	1.0	20	0	107	79 - 122			
2-Hexanone	48.12	2.0	40	0	120	57 - 139			
4-Chlorotoluene	21.24	1.0	20	0	106	78 - 122			
4-Isopropyltoluene	19.38	1.0	20	0	96.9	77 - 127			
4-Methyl-2-pentanone	48.51	2.0	40	0	121	67 - 130			
Acetone	42.63	2.0	40	0	107	39 - 160			
Benzene	22.09	1.0	20	0	110	79 - 120			
Bromobenzene	22.56	1.0	20	0	113	80 - 120			
Bromochloromethane	23.12	1.0	20	0	116	78 - 123			
Bromodichloromethane	21.8	1.0	20	0	109	79 - 125			
Bromoform	19.48	1.0	20	0	97.4	66 - 130			
Bromomethane	23.96	1.0	20	0	120	53 - 141			

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

QC BATCH REPORT

Batch ID: R353710 (0) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS19121092-09MS** Units: **UG/L** Analysis Date: **01-Jan-2020 18:42**
Client ID: **35AWW18_121819** Run ID: **VOA9_353710** SeqNo: **5420578** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	38.62	2.0	40	0	96.6	64 - 133				
Carbon tetrachloride	20.69	1.0	20	0	103	72 - 136				
Chlorobenzene	22.47	1.0	20	0	112	82 - 118				
Chloroethane	20.17	1.0	20	0	101	60 - 138				
Chloroform	20.8	1.0	20	0	104	79 - 124				
Chloromethane	24.94	1.0	20	0	125	50 - 139				
cis-1,2-Dichloroethene	21.59	1.0	20	0	108	78 - 123				
cis-1,3-Dichloropropene	19.52	1.0	20	0	97.6	75 - 124				
Dibromochloromethane	20.58	1.0	20	0	103	74 - 126				
Dibromomethane	21.25	1.0	20	0	106	79 - 123				
Dichlorodifluoromethane	16.38	1.0	20	0	81.9	32 - 152				
Ethylbenzene	21.94	1.0	20	0	110	79 - 121				
Hexachlorobutadiene	17.92	1.0	20	0	89.6	66 - 134				
Isopropylbenzene	21.71	1.0	20	0	109	72 - 131				
m,p-Xylene	44.46	2.0	40	0	111	80 - 121				
Methylene chloride	22.04	2.0	20	0	110	74 - 124				
Naphthalene	21.04	1.0	20	0	105	61 - 128				
n-Butylbenzene	18.41	1.0	20	0	92.0	75 - 128				
n-Propylbenzene	20.32	1.0	20	0	102	76 - 126				
o-Xylene	22.31	1.0	20	0	112	78 - 122				
sec-Butylbenzene	19.52	1.0	20	0	97.6	77 - 126				
Styrene	22.12	1.0	20	0	111	78 - 123				
tert-Butylbenzene	20.83	1.0	20	0	104	78 - 124				
Tetrachloroethene	23.61	1.0	20	0	118	74 - 129				
Toluene	22.48	1.0	20	0	112	80 - 121				
trans-1,2-Dichloroethene	21.07	1.0	20	0	105	75 - 124				
trans-1,3-Dichloropropene	18.86	1.0	20	0	94.3	73 - 127				
Trichloroethene	21.13	1.0	20	0	106	79 - 123				
Trichlorofluoromethane	18.41	1.0	20	0	92.0	65 - 141				
Vinyl chloride	19.13	1.0	20	0	95.6	58 - 137				
Surr: 1,2-Dichloroethane-d4	*45.09*	*1.0*	*50*	*0*	*90.2*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.17*	*1.0*	*50*	*0*	*98.3*	*85 - 114*				
Surr: Dibromofluoromethane	*48.15*	*1.0*	*50*	*0*	*96.3*	*80 - 119*				
Surr: Toluene-d8	*50.15*	*1.0*	*50*	*0*	*100*	*89 - 112*				

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

QC BATCH REPORT

Batch ID: R353710 (0) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS19121092-09MSD** Units: **UG/L** Analysis Date: **01-Jan-2020 19:06**
Client ID: **35AWW18_121819** Run ID: **VOA9_353710** SeqNo: **5420579** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	22.65	1.0	20	0	113	78 - 124	24	5.82	20	
1,1,1-Trichloroethane	20.25	1.0	20	0	101	74 - 131	20.72	2.3	20	
1,1,2,2-Tetrachloroethane	22.9	1.0	20	0	115	71 - 121	23.28	1.6	20	
1,1,2-Trichloroethane	22.16	1.0	20	0	111	80 - 119	23.17	4.47	20	
1,1-Dichloroethane	21.37	1.0	20	1.151	101	77 - 125	22.32	4.37	20	
1,1-Dichloroethene	23.2	1.0	20	4.078	95.6	71 - 131	24.17	4.1	20	
1,1-Dichloropropene	20.16	1.0	20	0	101	78 - 125	20.59	2.12	20	
1,2,3-Trichlorobenzene	20.94	1.0	20	0	105	69 - 129	20.68	1.3	20	
1,2,3-Trichloropropane	21.77	1.0	20	0	109	73 - 122	22.22	2.03	20	
1,2,4-Trichlorobenzene	20.33	1.0	20	0	102	69 - 130	19.99	1.67	20	
1,2,4-Trimethylbenzene	19.33	1.0	20	0	96.7	76 - 124	19.42	0.486	20	
1,2-Dibromo-3-chloropropane	21.06	1.0	20	0	105	62 - 128	21.16	0.488	20	
1,2-Dibromoethane	23.39	1.0	20	0	117	77 - 121	23.77	1.64	20	
1,2-Dichlorobenzene	21.82	1.0	20	0	109	80 - 119	22.18	1.63	20	
1,2-Dichloroethane	19.49	1.0	20	0	97.4	73 - 128	20.42	4.68	20	
1,2-Dichloropropane	21.38	1.0	20	0	107	78 - 122	22.03	3	20	
1,3,5-Trimethylbenzene	20.28	1.0	20	0	101	75 - 124	20.72	2.15	20	
1,3-Dichlorobenzene	21.23	1.0	20	0	106	80 - 119	21.65	1.94	20	
1,3-Dichloropropane	22.39	1.0	20	0	112	80 - 119	23.25	3.74	20	
1,4-Dichlorobenzene	21.77	1.0	20	0	109	79 - 118	21.69	0.395	20	
2,2-Dichloropropane	16.84	1.0	20	0	84.2	60 - 139	17.88	5.99	20	
2-Butanone	40.73	2.0	40	0	102	56 - 143	42.06	3.22	20	
2-Chlorotoluene	20.91	1.0	20	0	105	79 - 122	21.45	2.54	20	
2-Hexanone	48.26	2.0	40	0	121	57 - 139	48.12	0.292	20	
4-Chlorotoluene	20.63	1.0	20	0	103	78 - 122	21.24	2.93	20	
4-Isopropyltoluene	19.29	1.0	20	0	96.4	77 - 127	19.38	0.464	20	
4-Methyl-2-pentanone	47.51	2.0	40	0	119	67 - 130	48.51	2.08	20	
Acetone	42.51	2.0	40	0	106	39 - 160	42.63	0.279	20	
Benzene	21.06	1.0	20	0	105	79 - 120	22.09	4.76	20	
Bromobenzene	22.1	1.0	20	0	111	80 - 120	22.56	2.03	20	
Bromochloromethane	22.47	1.0	20	0	112	78 - 123	23.12	2.87	20	
Bromodichloromethane	21.19	1.0	20	0	106	79 - 125	21.8	2.88	20	
Bromoform	19.29	1.0	20	0	96.4	66 - 130	19.48	1.03	20	
Bromomethane	23.88	1.0	20	0	119	53 - 141	23.96	0.369	20	

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

QC BATCH REPORT

Batch ID: R353710 (0) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS19121092-09MSD** Units: **UG/L** Analysis Date: **01-Jan-2020 19:06**
Client ID: **35AWW18_121819** Run ID: **VOA9_353710** SeqNo: **5420579** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	38.41	2.0	40	0	96.0	64 - 133	38.62	0.559	20	
Carbon tetrachloride	20.33	1.0	20	0	102	72 - 136	20.69	1.77	20	
Chlorobenzene	21.67	1.0	20	0	108	82 - 118	22.47	3.64	20	
Chloroethane	19.42	1.0	20	0	97.1	60 - 138	20.17	3.75	20	
Chloroform	20.12	1.0	20	0	101	79 - 124	20.8	3.35	20	
Chloromethane	24.34	1.0	20	0	122	50 - 139	24.94	2.46	20	
cis-1,2-Dichloroethene	20.09	1.0	20	0	100	78 - 123	21.59	7.22	20	
cis-1,3-Dichloropropene	19.1	1.0	20	0	95.5	75 - 124	19.52	2.18	20	
Dibromochloromethane	20.14	1.0	20	0	101	74 - 126	20.58	2.15	20	
Dibromomethane	20.64	1.0	20	0	103	79 - 123	21.25	2.92	20	
Dichlorodifluoromethane	16.14	1.0	20	0	80.7	32 - 152	16.38	1.5	20	
Ethylbenzene	21.16	1.0	20	0	106	79 - 121	21.94	3.63	20	
Hexachlorobutadiene	18.66	1.0	20	0	93.3	66 - 134	17.92	4.04	20	
Isopropylbenzene	21.22	1.0	20	0	106	72 - 131	21.71	2.26	20	
m,p-Xylene	43.19	2.0	40	0	108	80 - 121	44.46	2.9	20	
Methylene chloride	20.79	2.0	20	0	104	74 - 124	22.04	5.84	20	
Naphthalene	21.28	1.0	20	0	106	61 - 128	21.04	1.13	20	
n-Butylbenzene	18.78	1.0	20	0	93.9	75 - 128	18.41	2.02	20	
n-Propylbenzene	20.1	1.0	20	0	100	76 - 126	20.32	1.12	20	
o-Xylene	21.83	1.0	20	0	109	78 - 122	22.31	2.15	20	
sec-Butylbenzene	19.59	1.0	20	0	97.9	77 - 126	19.52	0.343	20	
Styrene	21.64	1.0	20	0	108	78 - 123	22.12	2.16	20	
tert-Butylbenzene	20.3	1.0	20	0	102	78 - 124	20.83	2.58	20	
Tetrachloroethene	22.51	1.0	20	0	113	74 - 129	23.61	4.77	20	
Toluene	21.75	1.0	20	0	109	80 - 121	22.48	3.26	20	
trans-1,2-Dichloroethene	20.55	1.0	20	0	103	75 - 124	21.07	2.52	20	
trans-1,3-Dichloropropene	18.62	1.0	20	0	93.1	73 - 127	18.86	1.26	20	
Trichloroethene	20.74	1.0	20	0	104	79 - 123	21.13	1.87	20	
Trichlorofluoromethane	17.98	1.0	20	0	89.9	65 - 141	18.41	2.34	20	
Vinyl chloride	18.7	1.0	20	0	93.5	58 - 137	19.13	2.28	20	
Surr: 1,2-Dichloroethane-d4	*44.95*	*1.0*	*50*	*0*	*89.9*	*81 - 118*	*45.09*	*0.3*	*20*	
Surr: 4-Bromofluorobenzene	*48.7*	*1.0*	*50*	*0*	*97.4*	*85 - 114*	*49.17*	*0.974*	*20*	
Surr: Dibromofluoromethane	*47.82*	*1.0*	*50*	*0*	*95.6*	*80 - 119*	*48.15*	*0.675*	*20*	
Surr: Toluene-d8	*50.17*	*1.0*	*50*	*0*	*100*	*89 - 112*	*50.15*	*0.0327*	*20*	

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

QC BATCH REPORT

Batch ID: R353710 (0)	Instrument: VOA9	Method: VOLATILES ORGANICS BY METHOD 8260C

The following samples were analyzed in this batch:

HS19121092-01	HS19121092-02	HS19121092-03	HS19121092-04
HS19121092-05	HS19121092-06	HS19121092-07	HS19121092-08
HS19121092-09	HS19121092-10	HS19121092-11	HS19121092-12

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

QC BATCH REPORT

Batch ID: R353768 (0) **Instrument: VOA9** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200102** Units: **UG/L** Analysis Date: **02-Jan-2020 12:59**
Client ID: Run ID: **VOA9_353768** SeqNo: **5422454** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acetone	2.0	2.0								U
Surr: 1,2-Dichloroethane-d4	*45.45*	*1.0*	*50*	*0*	*90.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*47.69*	*1.0*	*50*	*0*	*95.4*	*85 - 114*				
Surr: Dibromofluoromethane	*46.14*	*1.0*	*50*	*0*	*92.3*	*80 - 119*				
Surr: Toluene-d8	*49.92*	*1.0*	*50*	*0*	*99.8*	*89 - 112*				

LCS Sample ID: **VLCSW-200102** Units: **UG/L** Analysis Date: **02-Jan-2020 12:35**
Client ID: Run ID: **VOA9_353768** SeqNo: **5422453** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acetone	41.21	2.0	40	0	103	39 - 160				
Surr: 1,2-Dichloroethane-d4	*44.6*	*1.0*	*50*	*0*	*89.2*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.07*	*1.0*	*50*	*0*	*98.1*	*85 - 114*				
Surr: Dibromofluoromethane	*48*	*1.0*	*50*	*0*	*96.0*	*80 - 119*				
Surr: Toluene-d8	*50.03*	*1.0*	*50*	*0*	*100*	*89 - 112*				

MS Sample ID: **HS19121497-01MS** Units: **UG/L** Analysis Date: **02-Jan-2020 15:39**
Client ID: Run ID: **VOA9_353768** SeqNo: **5422457** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acetone	60.66	2.0	40	3.817	142	39 - 160				
Surr: 1,2-Dichloroethane-d4	*43.48*	*1.0*	*50*	*0*	*87.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.9*	*1.0*	*50*	*0*	*97.8*	*85 - 114*				
Surr: Dibromofluoromethane	*46.88*	*1.0*	*50*	*0*	*93.8*	*80 - 119*				
Surr: Toluene-d8	*50.43*	*1.0*	*50*	*0*	*101*	*89 - 112*				

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

QC BATCH REPORT

Batch ID: R353768 (0) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS19121497-01MSD** Units: **UG/L** Analysis Date: **02-Jan-2020 16:04**
Client ID: Run ID: **VOA9_353768** SeqNo: **5422458** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Acetone	45.42	2.0	40	3.817	104	39 - 160	60.66	28.7	20	R
Surr: 1,2-Dichloroethane-d4	*44.32*	*1.0*	*50*	*0*	*88.6*	*81 - 118*	*43.48*	*1.91*	*20*	
Surr: 4-Bromofluorobenzene	*48.77*	*1.0*	*50*	*0*	*97.5*	*85 - 114*	*48.9*	*0.262*	*20*	
Surr: Dibromofluoromethane	*47.34*	*1.0*	*50*	*0*	*94.7*	*80 - 119*	*46.88*	*0.969*	*20*	
Surr: Toluene-d8	*50.55*	*1.0*	*50*	*0*	*101*	*89 - 112*	*50.43*	*0.232*	*20*	

The following samples were analyzed in this batch: HS19121092-05

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

QC BATCH REPORT

Batch ID: R353227 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **WBLKW1-121919** Units: **mg/L** Analysis Date: **19-Dec-2019 22:46**
Client ID: Run ID: **ICS-Integrion_353227** SeqNo: **5407931** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	0.100	0.100								U
Sulfate	0.500	0.500								U

LCS Sample ID: **WLCSW1-121919** Units: **mg/L** Analysis Date: **19-Dec-2019 23:03**
Client ID: Run ID: **ICS-Integrion_353227** SeqNo: **5407932** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	4.062	0.100	4	0	102	80 - 120				
Sulfate	19.25	0.500	20	0	96.3	80 - 120				

LCSD Sample ID: **WLCSDW1-121919** Units: **mg/L** Analysis Date: **19-Dec-2019 23:19**
Client ID: Run ID: **ICS-Integrion_353227** SeqNo: **5407933** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	4.034	0.100	4	0	101	80 - 120	4.062	0.689	20	
Sulfate	19.16	0.500	20	0	95.8	80 - 120	19.25	0.496	20	

MS Sample ID: **HS19121044-01MS** Units: **mg/L** Analysis Date: **19-Dec-2019 23:52**
Client ID: Run ID: **ICS-Integrion_353227** SeqNo: **5407935** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	1.989	0.100	2	0	99.5	80 - 120				
Sulfate	337.8	0.500	10	336.3	14.7	80 - 120				SEO

MSD Sample ID: **HS19121044-01MSD** Units: **mg/L** Analysis Date: **20-Dec-2019 00:09**
Client ID: Run ID: **ICS-Integrion_353227** SeqNo: **5407936** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	1.966	0.100	2	0	98.3	80 - 120	1.989	1.17	20	
Sulfate	339.9	0.500	10	336.3	36.1	80 - 120	337.8	0.631	20	SEO

The following samples were analyzed in this batch: HS19121092-01 HS19121092-02 HS19121092-03 HS19121092-04 HS19121092-05 HS19121092-06

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

QC BATCH REPORT

Batch ID: R353865 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **WBLKW3-010320** Units: **mg/L** Analysis Date: **04-Jan-2020 18:39**
Client ID: Run ID: **ICS-Integrion_353865** SeqNo: **5424754** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	0.500	0.500								U

LCS Sample ID: **WLCSW3-010320** Units: **mg/L** Analysis Date: **04-Jan-2020 18:55**
Client ID: Run ID: **ICS-Integrion_353865** SeqNo: **5424755** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.76	0.500	20	0	98.8	80 - 120				

LCSD Sample ID: **WLCSDW3-010320** Units: **mg/L** Analysis Date: **04-Jan-2020 19:12**
Client ID: Run ID: **ICS-Integrion_353865** SeqNo: **5424756** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.54	0.500	20	0	97.7	80 - 120	19.76	1.08	20	

MS Sample ID: **HS19121121-01MS** Units: **mg/L** Analysis Date: **04-Jan-2020 19:45**
Client ID: Run ID: **ICS-Integrion_353865** SeqNo: **5424758** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	35.1	0.500	10	25.83	92.7	80 - 120				

MSD Sample ID: **HS19121121-01MSD** Units: **mg/L** Analysis Date: **04-Jan-2020 20:02**
Client ID: Run ID: **ICS-Integrion_353865** SeqNo: **5424759** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	35.26	0.500	10	25.83	94.3	80 - 120	35.1	0.475	20	

The following samples were analyzed in this batch: HS19121092-01 HS19121092-02 HS19121092-03 HS19121092-04 HS19121092-05 HS19121092-06

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

QC BATCH REPORT

Batch ID: R353906 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **WBLKW3-010320** Units: **mg/L** Analysis Date: **06-Jan-2020 11:22**
Client ID: Run ID: **ICS-Integrion_353906** SeqNo: **5425528** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	0.500	0.500								U

LCS Sample ID: **WLCSW3-010320** Units: **mg/L** Analysis Date: **06-Jan-2020 11:38**
Client ID: Run ID: **ICS-Integrion_353906** SeqNo: **5425529** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	19.3	0.500	20	0	96.5	80 - 120				

LCSD Sample ID: **WLCSDW3-010320** Units: **mg/L** Analysis Date: **06-Jan-2020 11:55**
Client ID: Run ID: **ICS-Integrion_353906** SeqNo: **5425530** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	19.03	0.500	20	0	95.2	80 - 120	19.3	1.39	20	

MS Sample ID: **HS19121121-01MS** Units: **mg/L** Analysis Date: **06-Jan-2020 12:28**
Client ID: Run ID: **ICS-Integrion_353906** SeqNo: **5425532** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	36.04	0.500	10	27.17	88.7	80 - 120				

MSD Sample ID: **HS19121121-01MSD** Units: **mg/L** Analysis Date: **06-Jan-2020 12:45**
Client ID: Run ID: **ICS-Integrion_353906** SeqNo: **5425533** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	36.27	0.500	10	27.17	91.0	80 - 120	36.04	0.634	20	

The following samples were analyzed in this batch: HS19121092-01 HS19121092-06

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: **HS19121092**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	19-028-0	27-Mar-2020
California	2919, 2019-2020	30-Apr-2020
Dept of Defense	ANAB L2231	20-Dec-2021
Florida	E87611-28	30-Jun-2020
Illinois	2000322019-2	09-May-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Kentucky	123043, 2019-2020	30-Apr-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Dakota	R-193 2019-2020	30-Apr-2020
Oklahoma	2019-067	31-Aug-2020
Texas	TX104704231-19-23	30-Apr-2020

ALS Houston, US Date: 10-Jan-20

Sample Receipt Checklist

Client Name: Bhate Environmental
Work Order: HS19121092
Date/Time Received: **19-Dec-2019 10:20**
Received by: **NDR**

Checklist completed by: *Paresh M. Giga* eSignature 19-Dec-2019 Date
Reviewed by: *Corey Grandits* eSignature 20-Dec-2019 Date

Matrices: **GW/Water**
Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	2 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:None
Samplers name present on COC?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	

Temperature(s)/Thermometer(s):	0.2c U/C	IR25
Cooler(s)/Kit(s):	44488	
Date/Time sample(s) sent to storage:	12/19/19 18:30	

Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☑	N/A ☐
pH adjusted?	Yes ☑	No ☐	N/A ☐
pH adjusted by:	Si Ma		

Login Notes: 03WW01_121819 & 35AWW08_121819
Metals pH >2 (7) Preserved with 0.5ml HNO3
12/19/19 @ 14:15. Final pH (1)
.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

bhate

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Page: _____ of _____

Project/Phase No: NWO1312.0150

COC Number(1): _____

LIMS Number: _____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 58

Client Name:

Collected by: Scott Beesinger

Sample Analysis Requested (5) | Quality Assurance Samples (6)

Field Sample ID (30 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code (2)	Sample Number (3)	Sample Matrix (4)	Number of containers	VOC	MEE	TOC	Carbon Dioxide	Anions	Arsenic	Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
35AWW09_121819	18 Dec 2019	0800	-	N		WG	12	X	X	X	X	X	X				
03WW01_121819	18 Dec 2019	0900	-	N		WG	12	X	X	X	X	X	X				
35AWW08_121819	18 Dec 2019	0955	-	N		WG	12	X	X	X	X	X	X				
35AWW11_121819	18 Dec 2019	1050		N		WG	11	X	X	X	X	X					
35AWW23_121819	18 Dec 2019	1145		N		WG	11	X	X	X	X	X					
35AWW19_121819	18 Dec 2019	1240	-	N		WG	11	X	X	X	X	X					
35AWW13_121819	18 Dec 2019	1330	-	N		WG	3	X									
35AWW17_121819	18 Dec 2019	0845	-	N		WG	3	X									
35AWW18_121819	18 Dec 2019	1000	-	N		WG	3	X									
35AWW18_121819_MS	18 Dec 2019	1000	-	MS		WG	3	X									
35AWW18_121819_MSD	18 Dec 2019	1000	-	SD		WG	3	X									

HS19121092
Bhate Environmental Associates, Inc.
LHAAP-58

COMMENTS:

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	12/18/19	1430	1. NU	12/19/19	10-20
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped No.:

Method of Shipment: _____

Fed _____ Ex _____ Airbill Number:

Analytical Lab: ALS 10450 Stancliff Rd. Suite 210 Houston, TX 77099 (281) 530-5656

ATTN: SONIA WEST Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)
2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)
3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)
4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks
5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.
6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control

4UCW 88 Temp 0.2

1x XX 75

bhate

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Page: _____ of _____

Project/Phase No: NWO1312.0150

COC Number(1): _____

LIMS Number: _____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 58

Client Name:

Collected by: Scott Beesinger

Sample Analysis Requested (5) | Quality Assurance Samples (6)

Field Sample ID (30 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code (2)	Sample Number (3)	Sample Matrix (4)	Number of containers	VOC	MEE	TOC	Carbon Dioxide	Anions						Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
35AWW22_121819	18 Dec 2019	1120	-	N	-	WG	3	X													
35AWW12_121819	18 Dec 2019	1230	-	N		WG	3	X													
TRip Blank	18 Dec 2019		-	TB		WG	3	X													
			-																		
			-																		
			-																		
			-																		
			-																		
			-																		
			-																		

HS19121092
Bhate Environmental Associates, Inc.
LHAAP-58

COMMENTS:

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	12/18/19	1430	1. NU	12/19/19	10:20
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped No.:

_____ Method of Shipment: _____

_____ Fed Ex _____ Airbill Number:

_____ Analytical Lab: ALS 10450 Stancliff Rd, Suite 210 Houston, TX 77099 (281) 530-5656

ATTN: SONIA WEST Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)
2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)
3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)
4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks
5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.
6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control

44488

Tim O. 2

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

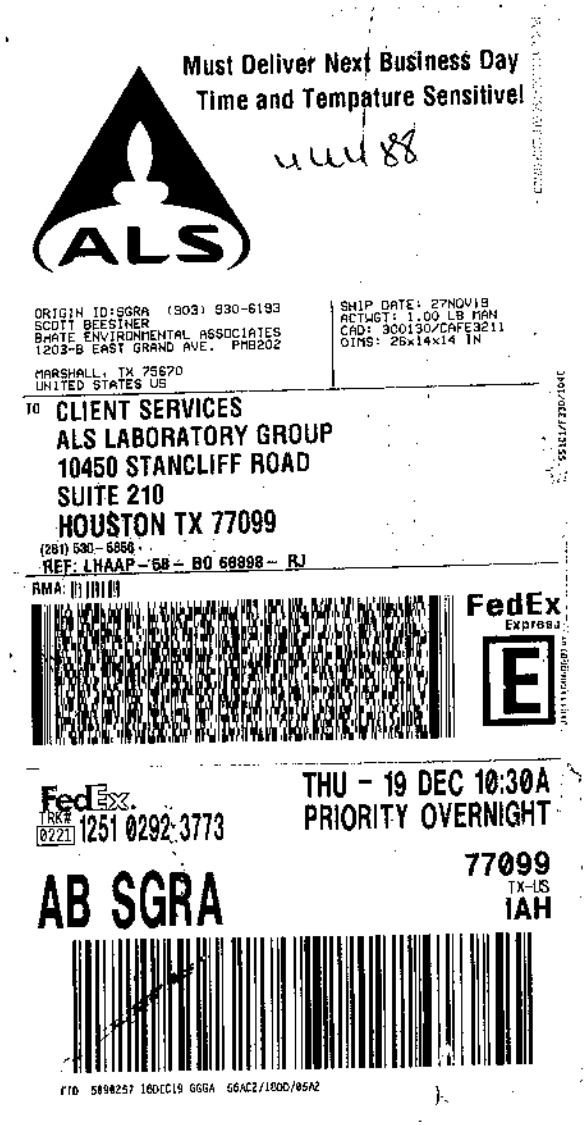
44488

CUSTODY SEAL

Date: 12/18/19 Time: 1430
Name: Scott Beesinger
Company: BHATE

Seal Broken By: SM
Date: 12/19/19

44488 DEC 19 2019



January 10, 2020 Service Request No:R1912433

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: LHAAP / Site 58

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory December 19, 2019
For your reference, these analyses have been assigned our service request number **R1912433.**

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Janice Jaeger
Project Manager

CC: Joni Blankfield

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

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ALS Environmental

Client: ALS Environmental - US
Project: LHAAP / Site 58
Sample Matrix: Water

Service Request: R1912433
Date Received: 12/19/2019

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Six water samples were received for analysis at ALS Environmental on 12/19/2019. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivoa GC:

Method Organic Acids, 12/24/2019: The upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate. Analyte affected: Pyruvic Acid.
Method Organic Acids, 12/24/2019: Due to shifting retention times, Propionic Acid could not be reported on the first run. All samples and QC were run again on another column with more stable retention times for only Propionic Acid. The results of the two runs were merged.

Please note: This report has been revised to add the LOD and MDL.

Approved by _____ Date 12/30/2019

ALS Environmental

SAMPLE DETECTION SUMMARY

CLIENT ID: 03WW01_121819			Lab ID: R1912433-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Acetic Acid	3.1	J	0.56	4.0	mg/L	Organic Acids
Lactic Acid	1.8	J	0.14	2.0	mg/L	Organic Acids

CLIENT ID: 35AWW08_121819			Lab ID: R1912433-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Acetic Acid	29		0.56	4.0	mg/L	Organic Acids
Lactic Acid	7.7		0.14	2.0	mg/L	Organic Acids

CLIENT ID: 35AWW11_121819			Lab ID: R1912433-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Acetic Acid	26		0.56	4.0	mg/L	Organic Acids
Propionic Acid	4.1		0.19	2.0	mg/L	Organic Acids

CLIENT ID: 35AWW23_121819			Lab ID: R1912433-005			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Acetic Acid	140		0.56	4.0	mg/L	Organic Acids

Sample Receipt Information

ALS Environmental—Rochester Laboratory
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Phone (585) 288-5380 Fax (585) 288-8475
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Client: ALS Environmental - US
Project: LHAAP / Site 58

Service Request:R1912433

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R1912433-001	35AWW09_121819	12/18/2019	0800
R1912433-002	03WW01_121819	12/18/2019	0900
R1912433-003	35AWW08_121819	12/18/2019	0955
R1912433-004	35AWW11_121819	12/18/2019	1050
R1912433-005	35AWW23_121819	12/18/2019	1145
R1912433-006	35AWW19_121819	12/18/2019	1240

bhate ENVIRONMENTAL CONSTRUCTION ENERGY
1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Page: ____ of ____

Project/Phase No: NWO1312.0150

COC Number(1): ____

LIMS Number: ____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 58

Client Name:

Collected by: Scott Beesinger

Field Sample ID (30 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code (2)	Sample Number (3)	Sample Matrix (4)	Sample Analysis Requested (5): Number of containers	Volatile Fatty Acids	Quality Assurance Samples (6): Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
35AWW09_121819	18 DEC 2019	0800	-	N		WG	1	X				
03WW01_121819	18 DEC 2019	0900	-	N		WG	1	X				
35AWW08_121819	18 DEC 2019	0955	-	N		WG	1	X				
35AWW11_121819	18 DEC 2019	1050		N		WG	1	X				
35AWW23_121819	18 DEC 2019	1145		N		WG	1	X				
35AWW19_121819	18 DEC 2019	1240	-	N		WG	1	X				

COMMENTS: ____

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received By (Signed)	Date	Time
1. Scott Beesinger	12/18/19	1730	1.	12-19-19	
2.			2.		11:15
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: ____ Shipped ____ No.:

Method of Shipment: ____

Fed Ex ____ Airbill Number: ____

Analytical Lab: ALS 10450 Stancliff Rd. Suite 210 Houston, TX 77099 (281) 530-5656

ATTN: SONIA WEST Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)

2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Bla

R1912433 5
ALS Laboratory Group
LHAAP / Site 58

Cooler Receipt and Preservation Check Form

R1912433 5
ALS Laboratory Group
LHAAP / Site 68

Project/Client Bhate Folder Number

Cooler received on 12-19-19 by: KE

COURIER: ALS UPS (FEDEX) VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	(Y) N	5a	**Perchlorate** samples have required headspace?	Y N (NA)
2	**Custody papers** properly completed (ink, signed)?	(Y) N	5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	Y N (NA)
3	Did all bottles arrive in good **condition** (unbroken)?	(Y) N	6	Where did the bottles originate?	(ALS/ROC) CLIENT
4	Circle: (**Wet Ice**) **Dry Ice** **Gel packs** present?	(Y) N	7	Soil VOA received as: Bulk Encore 5035set	(NA)

3. Temperature Readings Date: 12-19-19 Time: 11:46 ID: IR#7 (IR#10) From (Temp Blank) Sample Bottle

Observed Temp (°C)	2.3						
Within 0-6°C?	(Y) N	Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed (described below) Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-002 by KE on 12-19-19 at 11:50
5035 samples placed in storage location: _____ by _____ on _____ at _____

Cooler Breakdown/Preservation Check**: Date: 12/19/19 Time: 1755 by: DW

9. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? (YES) NO
10. Did all bottle labels and tags agree with custody papers? (YES) NO
11. Were correct containers used for the tests indicated? (YES) NO
12. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO (N/A)
13. Air Samples: Cassettes / Tubes Intact with MS? Canisters Pressurized Tedlar® Bags Inflated (N/A)

pH	Lot of test paper	Reagent	Preserved? Yes	Preserved? No	Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
≥12		NaOH								
≤2		HNO_3								
≤2		H_2SO_4								
<4		$NaHSO_4$								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522			If +, contact PM to add $Na_2S_2O_3$ (625, 608, CN), ascorbic (phenol).					
		$Na_2S_2O_3$								
		ZnAcetate	-	-						
		HCl	**	**						

**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).

Bottle lot numbers: Client label
Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: DW
PC Secondary Review: M

*significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

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ALS Environmental

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the ñNotesò column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an ñimmediateò hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (Ó100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

ACCREDITED IN ACCORDANCE WITH nelac

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

[1] Analyses were performed according to our laboratoryôs NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: ALS Environmental - US
Project: LHAAP / Site 58/
Service Request: R1912433

Sample Name: 35AWW09_121819
Lab Code: R1912433-001
Sample Matrix: Water
Date Collected: 12/18/19
Date Received: 12/19/19

Analysis Method	Extracted/Digested By	Analyzed By
Organic Acids		AFELSER

Sample Name: 03WW01_121819
Lab Code: R1912433-002
Sample Matrix: Water
Date Collected: 12/18/19
Date Received: 12/19/19

Analysis Method	Extracted/Digested By	Analyzed By
Organic Acids		AFELSER

Sample Name: 35AWW08_121819
Lab Code: R1912433-003
Sample Matrix: Water
Date Collected: 12/18/19
Date Received: 12/19/19

Analysis Method	Extracted/Digested By	Analyzed By
Organic Acids		AFELSER

Sample Name: 35AWW11_121819
Lab Code: R1912433-004
Sample Matrix: Water
Date Collected: 12/18/19
Date Received: 12/19/19

Analysis Method	Extracted/Digested By	Analyzed By
Organic Acids		AFELSER

Sample Name: 35AWW23_121819
Lab Code: R1912433-005
Sample Matrix: Water
Date Collected: 12/18/19
Date Received: 12/19/19

Analysis Method	Extracted/Digested By	Analyzed By
Organic Acids		AFELSER

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client:	ALS Environmental - US	**Service Request:**	R1912433
Project:	LHAAP / Site 58/		

Sample Name:	35AWW19_121819	**Date Collected:**	12/18/19
Lab Code:	R1912433-006	**Date Received:**	12/19/19
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
Organic Acids		AFELSER

INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction
For analytical methods not listed, the preparation method is the same as the analytical method reference.	

Sample Results

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Semivolatile Organic Compounds by GC

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	R1912433
Project:	LHAAP / Site 58	**Date Collected:**	12/18/19 08:00
Sample Matrix:	Water	**Date Received:**	12/19/19 11:15
Sample Name:	35AWW09_121819	**Units:**	mg/L
Lab Code:	R1912433-001	**Basis:**	NA

Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Analysis Method: Organic Acids

Analyte Name	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
Pyruvic Acid	ND U	0.20	0.10	0.016	1	12/24/19 23:34	
Acetic Acid	ND U	4.0	2.0	0.56	1	12/24/19 23:34	
Butanoic Acid (Butyric Acid)	ND U	2.0	1.0	0.32	1	12/24/19 23:34	
Lactic Acid	ND U	2.0	1.0	0.14	1	12/24/19 23:34	
Propionic Acid	ND U	2.0	1.0	0.19	1	12/26/19 23:43	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	R1912433
Project:	LHAAP / Site 58	**Date Collected:**	12/18/19 09:00
Sample Matrix:	Water	**Date Received:**	12/19/19 11:15
Sample Name:	03WW01_121819	**Units:**	mg/L
Lab Code:	R1912433-002	**Basis:**	NA

Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Analysis Method: Organic Acids

Analyte Name	Result		LOQ	LOD	MDL	Dil.	Date Analyzed	Q
Pyruvic Acid	ND	U	0.20	0.10	0.016	1	12/25/19 00:14	
Acetic Acid	**3.1**	**J**	4.0	2.0	0.56	1	12/25/19 00:14	
Butanoic Acid (Butyric Acid)	ND	U	2.0	1.0	0.32	1	12/25/19 00:14	
Lactic Acid	**1.8**	**J**	2.0	1.0	0.14	1	12/25/19 00:14	
Propionic Acid	ND	U	2.0	1.0	0.19	1	12/27/19 00:26	

ALS Group USA, Corp.
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Analytical Report

Client:	ALS Environmental - US	**Service Request:**	R1912433
Project:	LHAAP / Site 58	**Date Collected:**	12/18/19 09:55
Sample Matrix:	Water	**Date Received:**	12/19/19 11:15
Sample Name:	35AWW08_121819	**Units:**	mg/L
Lab Code:	R1912433-003	**Basis:**	NA

Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Analysis Method: Organic Acids

Analyte Name	Result		LOQ	LOD	MDL	Dil.	Date Analyzed	Q
Pyruvic Acid	ND	U	0.20	0.10	0.016	1	12/25/19 01:00	
Acetic Acid	**29**		4.0	2.0	0.56	1	12/25/19 01:00	
Butanoic Acid (Butyric Acid)	ND	U	2.0	1.0	0.32	1	12/25/19 01:00	
Lactic Acid	**7.7**		2.0	1.0	0.14	1	12/25/19 01:00	
Propionic Acid	ND	U	2.0	1.0	0.19	1	12/27/19 01:09	

ALS Group USA, Corp.
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Analytical Report

Client:	ALS Environmental - US	**Service Request:**	R1912433
Project:	LHAAP / Site 58	**Date Collected:**	12/18/19 10:50
Sample Matrix:	Water	**Date Received:**	12/19/19 11:15
Sample Name:	35AWW11_121819	**Units:**	mg/L
Lab Code:	R1912433-004	**Basis:**	NA

Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Analysis Method: Organic Acids

Analyte Name	Result		LOQ	LOD	MDL	Dil.	Date Analyzed	Q
Pyruvic Acid	ND	U	0.20	0.10	0.016	1	12/25/19 01:42	
Acetic Acid	**26**		4.0	2.0	0.56	1	12/25/19 01:42	
Butanoic Acid (Butyric Acid)	ND	U	2.0	1.0	0.32	1	12/25/19 01:42	
Lactic Acid	ND	U	2.0	1.0	0.14	1	12/25/19 01:42	
Propionic Acid	**4.1**		2.0	1.0	0.19	1	12/27/19 01:51	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	R1912433
Project:	LHAAP / Site 58	**Date Collected:**	12/18/19 11:45
Sample Matrix:	Water	**Date Received:**	12/19/19 11:15
Sample Name:	35AWW23_121819	**Units:**	mg/L
Lab Code:	R1912433-005	**Basis:**	NA

Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Analysis Method: Organic Acids

Analyte Name	Result		LOQ	LOD	MDL	Dil.	Date Analyzed	Q
Pyruvic Acid	ND	U	0.20	0.10	0.016	1	12/25/19 03:51	
Acetic Acid	**140**		4.0	2.0	0.56	1	12/25/19 03:51	
Butanoic Acid (Butyric Acid)	ND	U	2.0	1.0	0.32	1	12/25/19 03:51	
Lactic Acid	ND	U	2.0	1.0	0.14	1	12/25/19 03:51	
Propionic Acid	ND	U	2.0	1.0	0.19	1	12/27/19 03:57	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	R1912433
Project:	LHAAP / Site 58	**Date Collected:**	12/18/19 12:40
Sample Matrix:	Water	**Date Received:**	12/19/19 11:15
Sample Name:	35AWW19_121819	**Units:**	mg/L
Lab Code:	R1912433-006	**Basis:**	NA

Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Analysis Method: Organic Acids

Analyte Name	Result		LOQ	LOD	MDL	Dil.	Date Analyzed	Q
Pyruvic Acid	ND	U	0.20	0.10	0.016	1	12/30/00 03:48	
Acetic Acid	ND	U	4.0	2.0	0.56	1	12/30/00 03:48	
Butanoic Acid (Butyric Acid)	ND	U	2.0	1.0	0.32	1	12/30/00 03:48	
Lactic Acid	ND	U	2.0	1.0	0.14	1	12/30/00 03:48	
Propionic Acid	ND	U	2.0	1.0	0.19	1	12/31/00 03:48	

QC Summary Forms

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Semivolatile Organic Compounds by GC

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	R1912433
Project:	LHAAP / Site 58	**Date Collected:**	12/18/19
Sample Matrix:	Water	**Date Received:**	12/19/19
		Date Analyzed:	12/25/19 - 12/27/19

Duplicate Matrix Spike Summary
Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Sample Name:	35AWW11_121819	**Units:**	mg/L
Lab Code:	R1912433-004	**Basis:**	NA
Analysis Method:	Organic Acids		

		Matrix Spike RQ1915097-08			Duplicate Matrix Spike RQ1915097-09					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Pyruvic Acid	ND U	1.86	2.02	92	1.89	2.02	93	73-122	1	30
Acetic Acid	26	42.4	20.1	83	42.6	20.1	84	80-130	<1	30
Butanoic Acid (Butyric Acid)	ND U	20.7	19.9	104	25.8	19.9	129 *	86-128	22	30
Lactic Acid	ND U	19.7	19.9	99	20.0	19.9	100	81-114	1	30
Propionic Acid	4.1	23.4	20.3	95	23.1	20.3	94	63-153	1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	R1912433
Project:	LHAAP / Site 58	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	mg/L
Lab Code:	RQ1915097-02	**Basis:**	NA

Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Analysis Method: Organic Acids

Analyte Name	Result		LOQ	LOD	MDL	Dil.	Date Analyzed	Q
Pyruvic Acid	ND	U	0.20	0.10	0.016	1	12/24/19 13:32	
Acetic Acid	ND	U	4.0	2.0	0.56	1	12/24/19 13:32	
Butanoic Acid (Butyric Acid)	ND	U	2.0	1.0	0.32	1	12/24/19 13:32	
Lactic Acid	ND	U	2.0	1.0	0.14	1	12/24/19 13:32	
Propionic Acid	ND	U	2.0	1.0	0.19	1	12/26/19 13:41	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: LHAAP / Site 58
Sample Matrix: Water

Service Request: R1912433
Date Analyzed: 12/24/19 - 12/26/19

Duplicate Lab Control Sample Summary
Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Units:mg/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ1915097-03			RQ1915097-04					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Pyruvic Acid	Organic Acids	2.49	2.02	123 *	2.31	2.02	114	73-122	7	30
Acetic Acid	Organic Acids	21.9	20.1	109	19.7	20.1	98	80-130	10	30
Butanoic Acid (Butyric Acid)	Organic Acids	19.8	19.9	99	18.8	19.9	94	86-128	5	30
Lactic Acid	Organic Acids	23.2	19.9	117 *	21.3	19.9	107	81-114	9	30
Propionic Acid	Organic Acids	21.1	20.3	104	20.3	20.3	100	63-153	4	30

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LABORATORY REPORT

January 6, 2020

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road Suite 210
Houston, TX 77099-4338

RE: HS19121092

Dear RJ:

Enclosed are the results of the samples submitted to our laboratory on December 21, 2019. For your reference, these analyses have been assigned our service request number P1907801.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Hayden Akers at 3:04 pm, Jan 06, 2020

Hayden Akers
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

Client: ALS Laboratory Group
Project: HS19121092

Service Request No: P1907801

CASE NARRATIVE

The samples were received intact under chain of custody on December 21, 2019 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Carbon Dioxide Analysis

The samples were analyzed for carbon dioxide using a gas chromatograph equipped with a thermal conductivity detector (TCD). A known amount of liquid was displaced by injecting 8.0 milliliters of helium creating a headspace in the sample vial. Each sample vial was agitated using a sonic disrupter for fifteen minutes and then allowed to equilibrate for at least four hours. A volume of the headspace was withdrawn using a gas-tight syringe and analyzed using a manual injection technique. The amount of dissolved gases (carbon dioxide) in the original sample was calculated using Henry's Law. This method was performed with guidance from RSK 175 as described in laboratory SOP VOA-DISGAS. This analyte is included on the laboratory's NELAP and DoD-ELAP scope of accreditation.

Methane, Ethene and Ethane Analysis

The samples were also analyzed for methane, ethene, and ethane using a gas chromatograph equipped with a flame ionization detector (FID). A known amount of liquid was displaced by injecting 8.0 milliliters of helium creating a headspace in the sample vial. Each sample vial was agitated using a sonic disrupter for fifteen minutes and then allowed to equilibrate for at least two hours. A volume of the headspace was withdrawn using a gas-tight syringe and analyzed using a manual injection technique. The amount of dissolved gases (methane, ethene and ethane) in the original sample was calculated using Henry's Law. This method was performed with guidance from RSK 175. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the laboratory's NELAP or DoD-ELAP accreditation.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1776326
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-006
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413-19-10
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272019-10
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: ALS Laboratory Group
Project ID: HS19121092

Service Request: P1907801

Date Received: 12/21/2019
Time Received: 10:30

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	RSK 175 - Gases	RSK 175 - CO2
35AWW09_121819	P1907801-001	Water	12/18/2019	08:00	X	X
03AWW01_121819	P1907801-002	Water	12/18/2019	09:00	X	X
35AWW08_121819	P1907801-003	Water	12/18/2019	09:55	X	X
35AWW11_121819	P1907801-004	Water	12/18/2019	10:50	X	X
35AWW23_121819	P1907801-005	Water	12/18/2019	11:45	X	X
35AWW19_121819	P1907801-006	Water	12/18/2019	12:40	X	X

00999817

P1907801

10450 Stancliff Rd, Ste 210
Houston, TX 77099
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F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID:** **12919**

SUBCONTRACT TO:

ALS Environmental
2655 Park Center Drive, Suite A
Simi Valley, CA 93065

Phone: +1 805 526 7161

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS19121092
TSR:	Danielle Winnings

	LAB SAMPLE ID / ANALYSIS REQUESTED	CLIENT SAMPLE ID	MATRIX	COLLECT DATE / DUE DATE
1.	**HS19121092-01**	**35AWW09_121819**	**Groundwater**	**18 Dec 2019 08:00**
	MEE plus CO2 Sub to ALS SimiValley			30 Dec 2019
2.	**HS19121092-02**	**03WW01_121819**	**Groundwater**	**18 Dec 2019 09:00**
	MEE plus CO2 Sub to ALS SimiValley			30 Dec 2019
3.	**HS19121092-03**	**35AWW08_121819**	**Groundwater**	**18 Dec 2019 09:55**
	MEE plus CO2 Sub to ALS SimiValley			30 Dec 2019
4.	**HS19121092-04**	**35AWW11_121819**	**Groundwater**	**18 Dec 2019 10:50**
	MEE plus CO2 Sub to ALS SimiValley			30 Dec 2019
5.	**HS19121092-05**	**35AWW23_121819**	**Groundwater**	**18 Dec 2019 11:45**
	MEE plus CO2 Sub to ALS SimiValley			30 Dec 2019
6.	**HS19121092-06**	**35AWW19_121819**	**Groundwater**	**18 Dec 2019 12:40**
	MEE plus CO2 Sub to ALS SimiValley			30 Dec 2019

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

RIGHT SOLUTIONS | RIGHT PARTNER

P1907801

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID:** **12919**

Relinquished By: _____ Date/Time: 12/20/12 1800.

Received By: _____ Date/Time: 12-21-19 1030

Cooler ID(s): _____ Temperature(s): 2° NOT 1 ice

ALS Environmental
Sample Acceptance Check Form

Client: ALS Laboratory Group Work order: P1907801
Project: HS19121092
Sample(s) received on: 12/21/19 Date opened: 12/21/19 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☒	☐	☐
	Cooler Temperature: 2° C Blank Temperature: ° C Thermometer ID T-111 Wet Ic			
8	Were **custody seals** on outside of cooler/Box/Container?	☒	☐	☐
	Location of seal(s)? Cooler lid. Sealing Lid?	☒	☐	☐
	Were signature and date included?	☒	☐	☐
	Were seals intact?	☒	☐	☐
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☒	☐	☐
	Is there a client indication that the submitted samples are **pH** preserved?	☒	☐	☐
	Were **VOA vials** checked for presence/absence of air bubbles?	☒	☐	☐
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☒	☐
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1907801-001.01	40ml VOA HCL		1		A	LD 12/27/2019
P1907801-001.02	40ml VOA HCL				A	
P1907801-001.03	40ml VOA HCL				A	
P1907801-001.04	40mL VOA NP		7		A	LD 12/26/2019
P1907801-001.05	40mL VOA NP				A	
P1907801-002.01	40ml VOA HCL		1		A	LD 12/27/2019
P1907801-002.02	40ml VOA HCL				A	
P1907801-002.03	40ml VOA HCL				A	
P1907801-002.04	40mL VOA NP		7		A	LD 12/26/2019
P1907801-002.05	40mL VOA NP				A	
P1907801-003.01	40ml VOA HCL		1		A	LD 12/27/2019
P1907801-003.02	40ml VOA HCL				A	
P1907801-003.03	40ml VOA HCL				A	
P1907801-003.04	40mL VOA NP		7		A	LD 12/26/2019
P1907801-003.05	40mL VOA NP				A	

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS Environmental
Sample Acceptance Check Form

Client: ALS Laboratory Group Work order: P1907801

Project: HS19121092

Sample(s) received on: 12/21/19 Date opened: 12/21/19 by: ADAVID

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1907801-004.01	40ml VOA HCL		1		A	LD 12/27/2019
P1907801-004.02	40ml VOA HCL				A	
P1907801-004.03	40ml VOA HCL				A	
P1907801-004.04	40mL VOA NP		6		A	LD 12/26/2019
P1907801-004.05	40mL VOA NP				A	
P1907801-005.01	40ml VOA HCL		1		A	LD 12/27/2019
P1907801-005.02	40ml VOA HCL				A	
P1907801-005.03	40ml VOA HCL				A	
P1907801-005.04	40mL VOA NP		7		A	LD 12/26/2019
P1907801-005.05	40mL VOA NP				A	
P1907801-006.01	40ml VOA HCL		1		A	LD 12/27/2019
P1907801-006.02	40ml VOA HCL				A	
P1907801-006.03	40ml VOA HCL				A	
P1907801-006.04	40mL VOA NP		6		A	LD 12/26/2019
P1907801-006.05	40mL VOA NP				A	

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Project ID: **HS19121092** ALS Project ID: P1907801

Carbon Dioxide

Test Code: RSK 175
Instrument ID: HP5890A/GC10/TCD
Analyst: Li Donghao
Matrix: Water
Test Notes:

Date(s) Collected: 12/18/19
Date Received: 12/21/19
Date Analyzed: 12/26/19

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	Result µg/L	MRL µg/L	MDL µg/L	Data Qualifier
35AWW09_121819	P1907801-001	0.10	**120,000**	1,000	370	
03AWW01_121819	P1907801-002	0.10	**340,000**	1,000	370	
35AWW08_121819	P1907801-003	0.10	**240,000**	1,000	370	
35AWW11_121819	P1907801-004	0.10	**330,000**	1,000	370	
35AWW23_121819	P1907801-005	0.10	**360,000**	1,000	370	
35AWW19_121819	P1907801-006	0.10	**160,000**	1,000	370	
Method Control Sample	P191226-MB	0.10	ND	1,000	370	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **ALS Laboratory Group**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **HS19121092**

ALS Project ID: P1907801
ALS Sample ID: P191226-DLCS

Test Code: RSK 175
Instrument ID: HP5890A/GC10/TCD
Analyst: Li Donghao
Matrix: Water
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 12/26/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Spike Amount LCS / DLCS ug/L	Result[1] LCS ug/L	Result[1] DLCS ug/L	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
124-38-9	Carbon Dioxide	22,900	20,000	19,400	**87**	**85**	56-105	2	12	

[1] = The concentration shown includes a subtraction of the Method Control Sample value, even if the result is less than the MRL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **35AWW09_121819**
Client Project ID: **HS19121092**

ALS Project ID: P1907801
ALS Sample ID: P1907801-001

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Li Donghao
Sample Type: Water
Test Notes:

Date Collected: 12/18/19
Date Received: 12/21/19
Date Analyzed: 12/27/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	MRL µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	**2.6**	1.3	0.51	
74-85-1	Ethene	ND	1.0	0.24	
74-84-0	Ethane	ND	0.60	0.16	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **03AWW01_121819**
Client Project ID: **HS19121092**

ALS Project ID: P1907801
ALS Sample ID: P1907801-002

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Li Donghao
Sample Type: Water
Test Notes:

Date Collected: 12/18/19
Date Received: 12/21/19
Date Analyzed: 12/27/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	MRL µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	**540**	1.3	0.51	
74-85-1	Ethene	**0.61**	1.0	0.24	**J**
74-84-0	Ethane	ND	0.60	0.16	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **35AWW08_121819**
Client Project ID: **HS19121092**

ALS Project ID: P1907801
ALS Sample ID: P1907801-003

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Li Donghao
Sample Type: Water
Test Notes:

Date Collected: 12/18/19
Date Received: 12/21/19
Date Analyzed: 12/27/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	MRL µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	**760**	1.3	0.51	
74-85-1	Ethene	**6.2**	1.0	0.24	
74-84-0	Ethane	ND	0.60	0.16	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **35AWW11_121819**
Client Project ID: **HS19121092**

ALS Project ID: P1907801
ALS Sample ID: P1907801-004

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Li Donghao
Sample Type: Water
Test Notes:

Date Collected: 12/18/19
Date Received: 12/21/19
Date Analyzed: 12/27/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	MRL µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	**750**	1.3	0.51	
74-85-1	Ethene	ND	1.0	0.24	
74-84-0	Ethane	ND	0.60	0.16	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **35AWW23_121819**
Client Project ID: **HS19121092**

ALS Project ID: P1907801
ALS Sample ID: P1907801-005

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Li Donghao
Sample Type: Water
Test Notes:

Date Collected: 12/18/19
Date Received: 12/21/19
Date Analyzed: 12/27/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	MRL µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	**1,400**	1.3	0.51	
74-85-1	Ethene	ND	1.0	0.24	
74-84-0	Ethane	ND	0.60	0.16	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **35AWW19_121819**
Client Project ID: **HS19121092**

ALS Project ID: P1907801
ALS Sample ID: P1907801-006

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Li Donghao
Sample Type: Water
Test Notes:

Date Collected: 12/18/19
Date Received: 12/21/19
Date Analyzed: 12/27/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	MRL µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	**2.0**	1.3	0.51	
74-85-1	Ethene	ND	1.0	0.24	
74-84-0	Ethane	ND	0.60	0.16	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **Method Control Sample**
Client Project ID: **HS19121092**

ALS Project ID: P1907801
ALS Sample ID: P191227-MB

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Li Donghao
Sample Type: Water
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 12/27/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	MRL µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	ND	1.3	0.51	
74-85-1	Ethene	ND	1.0	0.24	
74-84-0	Ethane	ND	0.60	0.16	

The Method Control Sample is laboratory water carried through the entire analytical process.
ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **ALS Laboratory Group**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **HS19121092**

ALS Project ID: P1907801
ALS Sample ID: P191227-LCS
P191227-DLCS

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Li Donghao
Sample Type: Water
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 12/27/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Spike Amount LCS / DLCS µg/L	Result$_1$ LCS µg/L	Result$_1$ DLCS µg/L	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
74-82-8	Methane	2.52	2.40	2.44	**95**	**97**	65-129	2	26	
74-85-1	Ethene	4.40	4.49	4.46	**102**	**101**	80-122	1	11	
74-84-0	Ethane	4.72	4.73	4.75	**100**	**101**	78-119	1	10	

$_1$ = The concentration shown includes a subtraction of the Method Control Sample value, even if the result is less than the MRL.

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261908.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 12:36:53
Operator : LD
Sample : P1907801-001 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:18:35 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

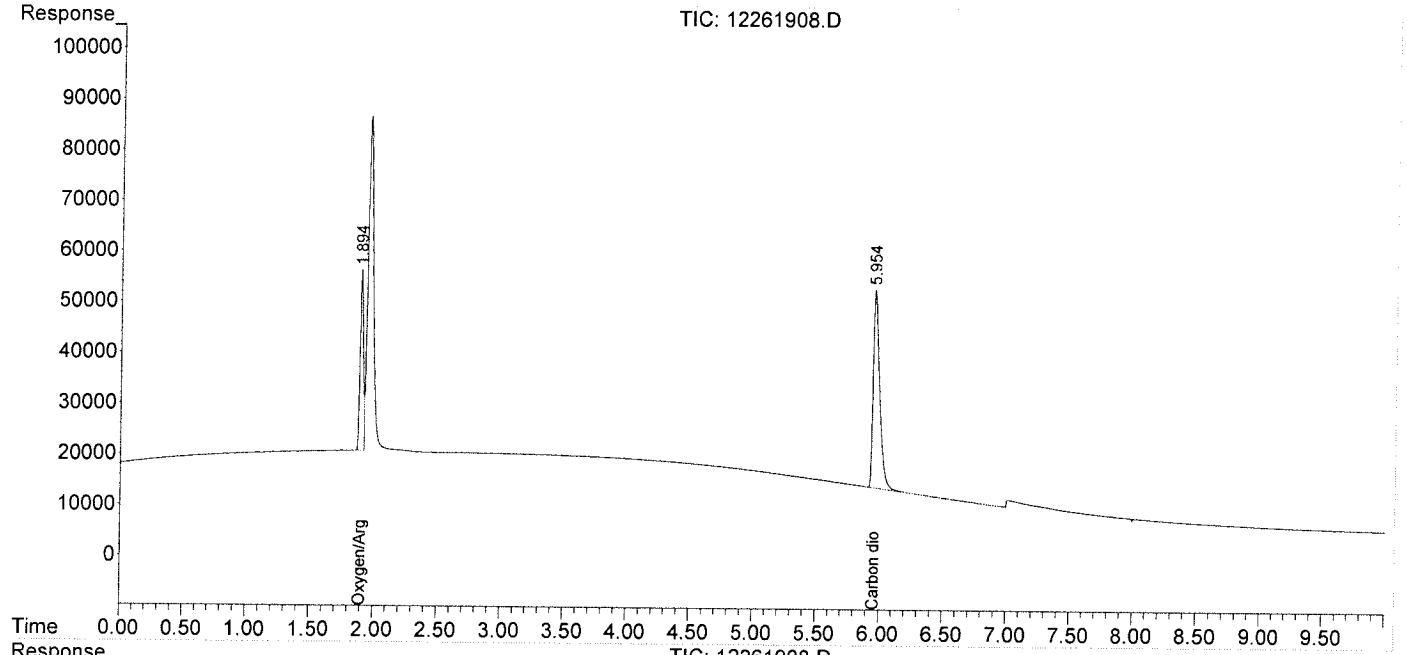
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.895	607428	0.128	ppm
2)	Carbon monoxide	1.895	607428	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	5.954	1340607	5711.293	ppm
6)	Methane (FID)	0.000	0	N.D.	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

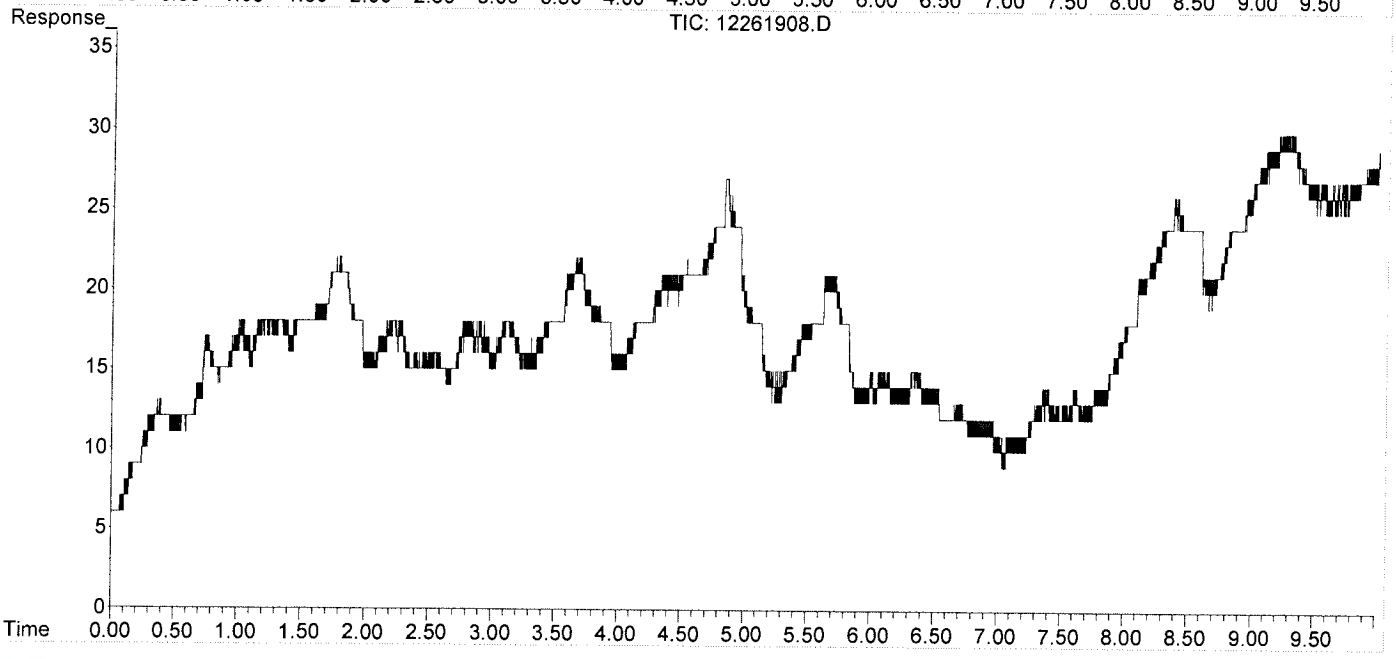
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261908.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 12:36:53
Operator : LD
Sample : P1907801-001 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:18:35 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase :
Signal #1 Info :
Signal #2 Phase:
Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261909.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 12:50:07
Operator : LD
Sample : P1907801-002 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:18:48 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

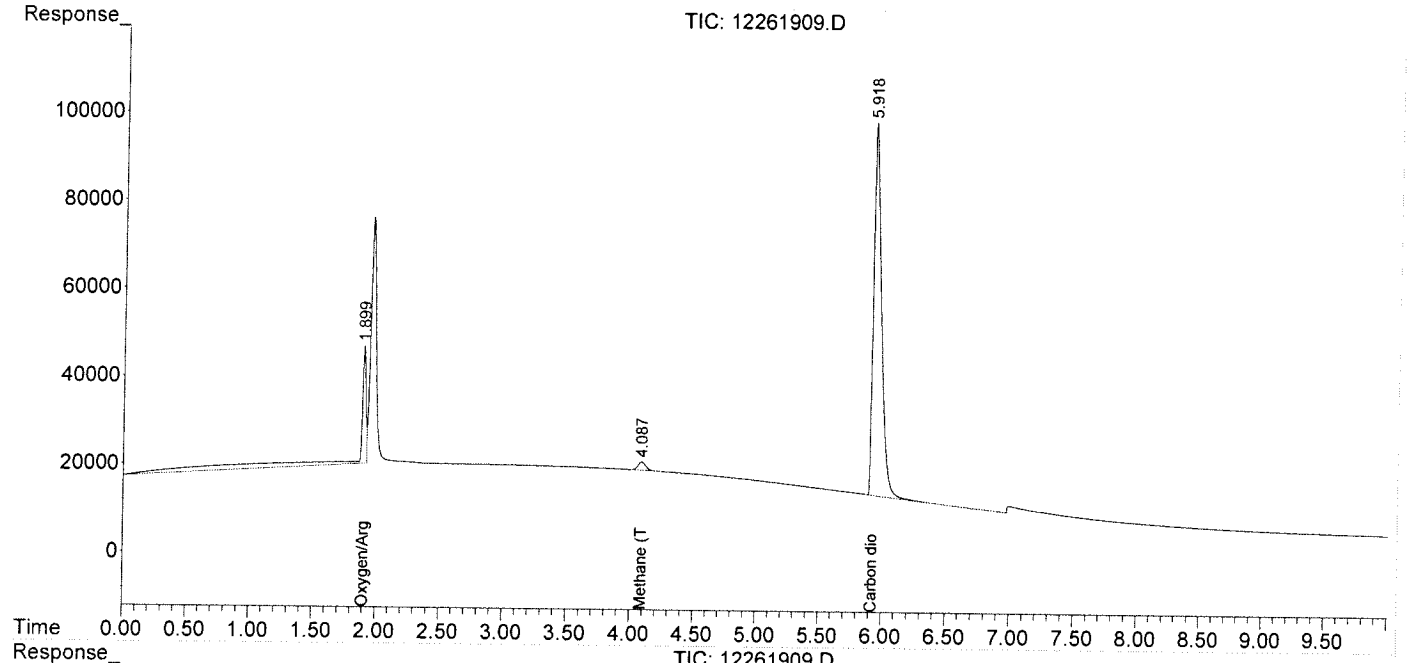
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.900	1330112	0.279	ppm
2)	Carbon monoxide	1.900	1330112	N.D.	ppm
3)	Methane (TCD)	4.087f	82124	8683.610	ppm
4)	Carbon dioxide	5.920	3661120	15597.206	ppm
6)	Methane (FID)	0.000	0	N.D.	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

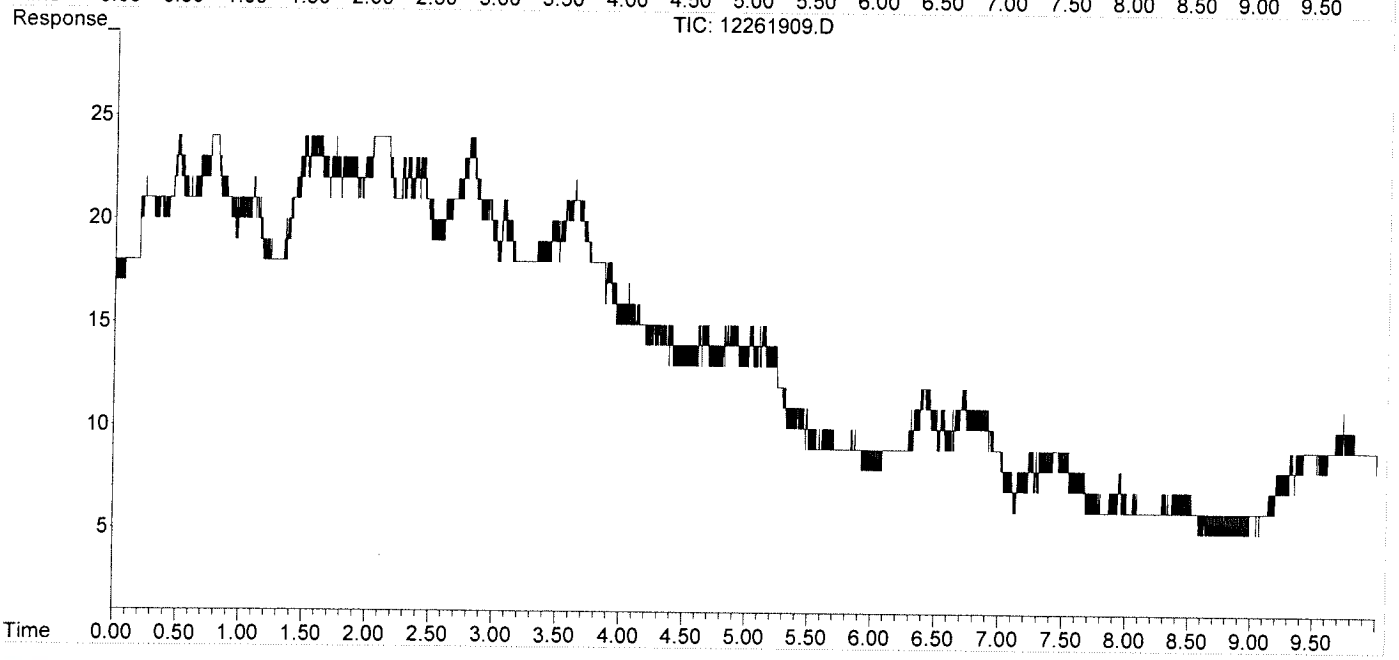
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261909.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 12:50:07
Operator : LD
Sample : P1907801-002 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:18:48 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261910.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 13:03:25
Operator : LD
Sample : P1907801-003 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:18:58 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

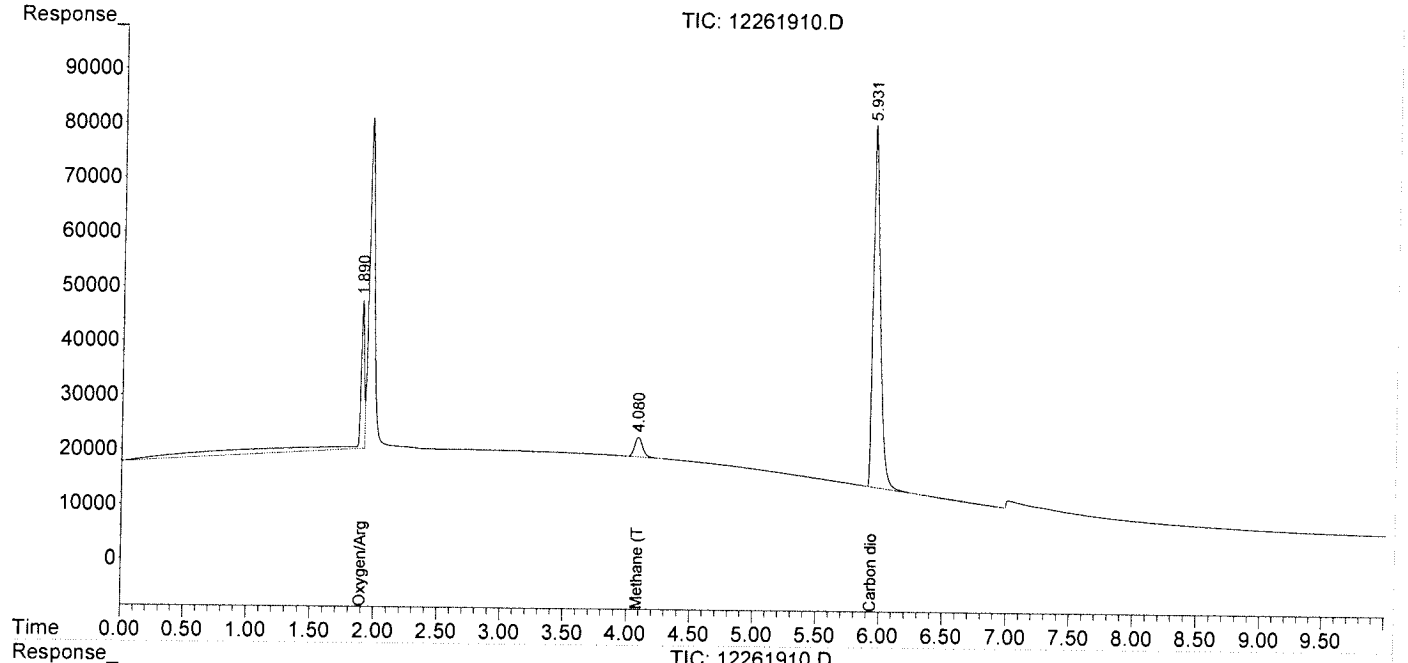
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.891	1184594	0.249	ppm
2)	Carbon monoxide	1.891	1184594	N.D.	ppm
3)	Methane (TCD)	4.081f	161163	17040.981	ppm
4)	Carbon dioxide	5.933	2623716	11177.631	ppm
6)	Methane (FID)	0.000	0	N.D.	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

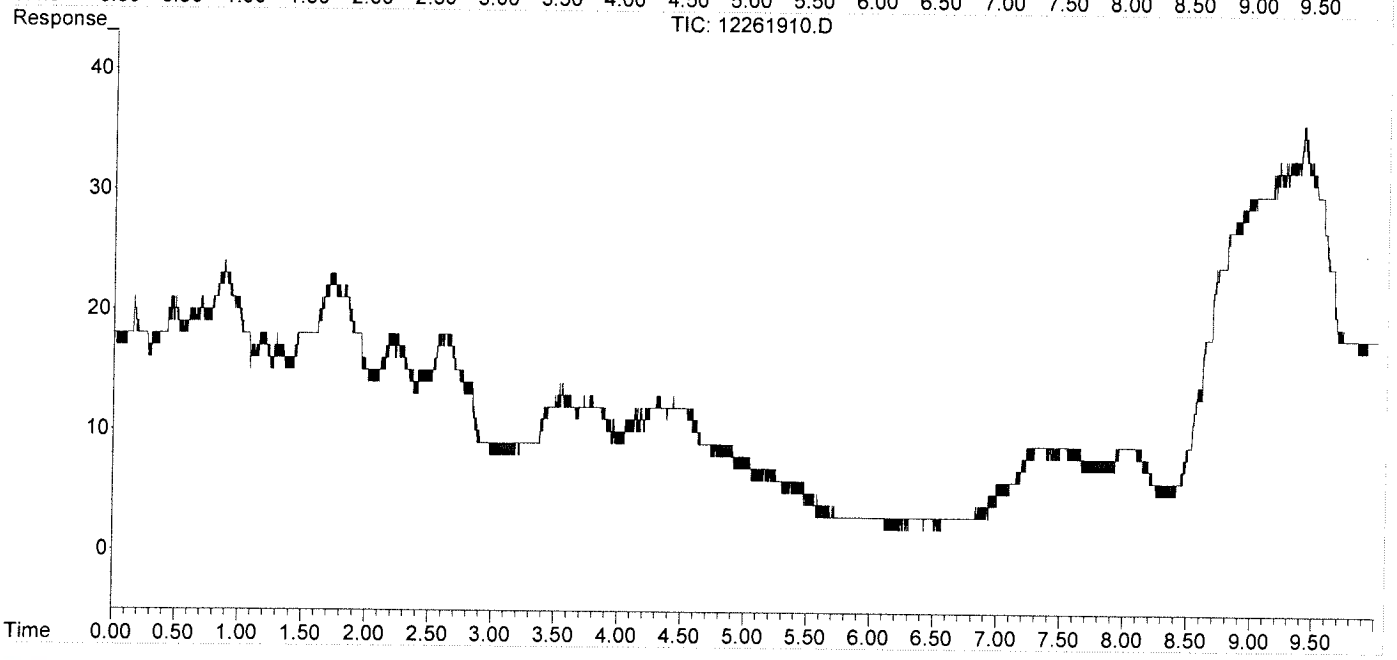
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261910.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 13:03:25
Operator : LD
Sample : P1907801-003 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:18:58 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261911.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 13:17:04
Operator : LD
Sample : P1907801-004 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:19:08 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc Units
Target Compounds				
1)	Oxygen/Argon	1.898	469736	0.099 ppm
2)	Carbon monoxide	1.898	469736	N.D. ppm
3)	Methane (TCD)	4.087f	109180	11544.468 ppm
4)	Carbon dioxide	5.922	3590766	15297.483 ppm
6)	Methane (FID)	0.000	0	N.D. ppm
7)	Ethylene	0.000	0	N.D. ppm
8)	Ethane	0.000	0	N.D. ppm
9)	Propylene	0.000	0	N.D. ppm
10)	Propane	0.000	0	N.D. ppm
11)	Isobutylene	0.000	0	N.D. ppm
12)	Isobutane	0.000	0	N.D. ppm
13)	n-Butane	0.000	0	N.D. ppm

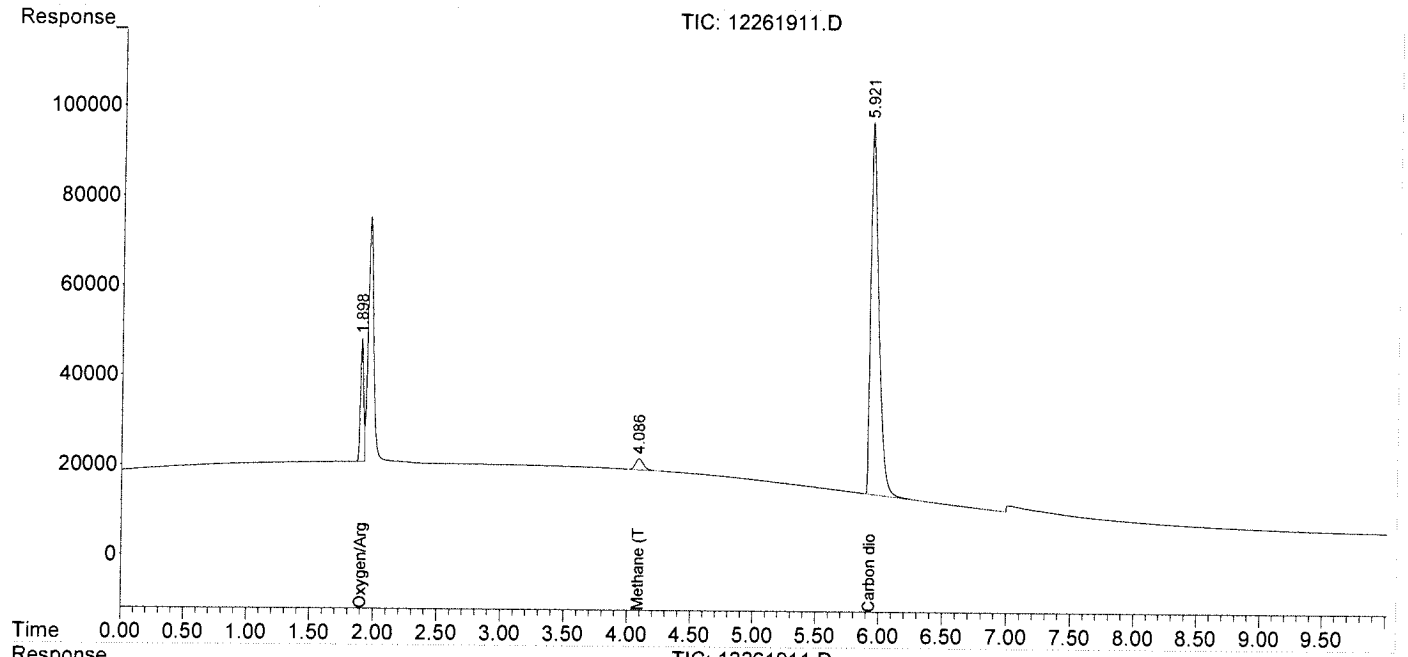
(f)=RT Delta > 1/2 Window (m)=manual int.

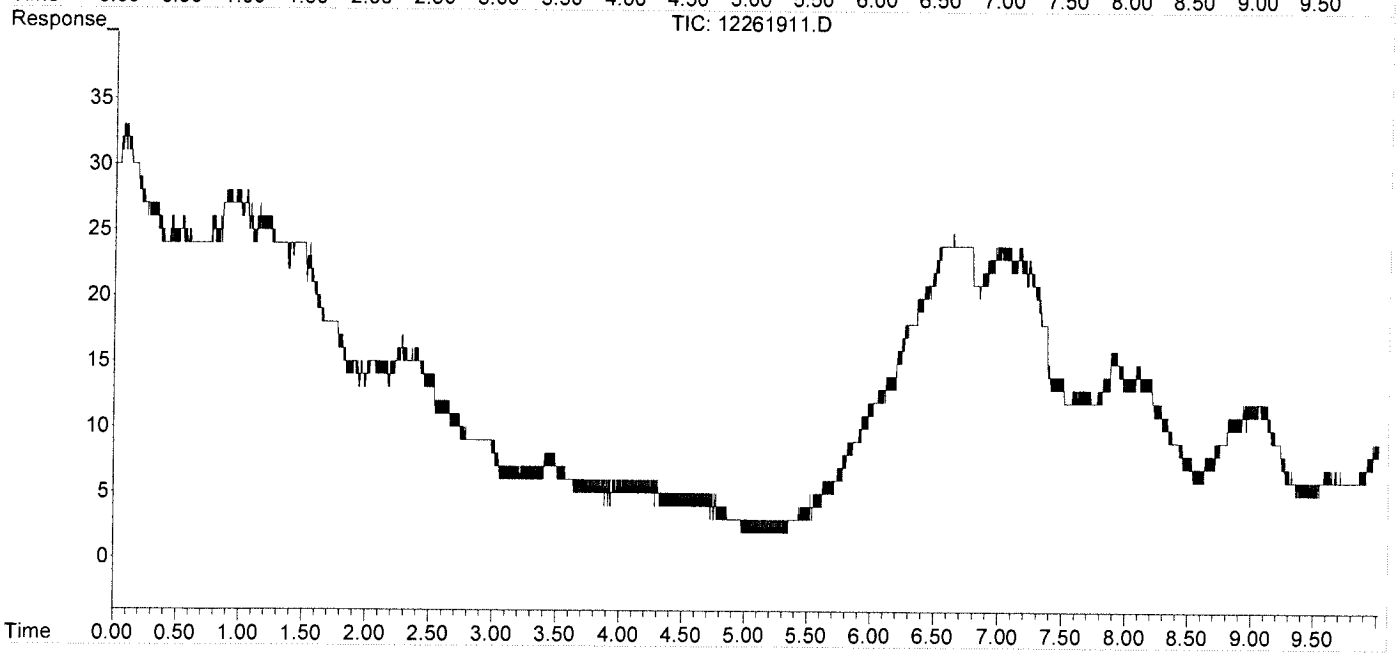
Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261911.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 13:17:04
Operator : LD
Sample : P1907801-004 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:19:08 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase :
Signal #1 Info :
Signal #2 Phase:
Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261912.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 13:30:29
Operator : LD
Sample : P1907801-005 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:19:17 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

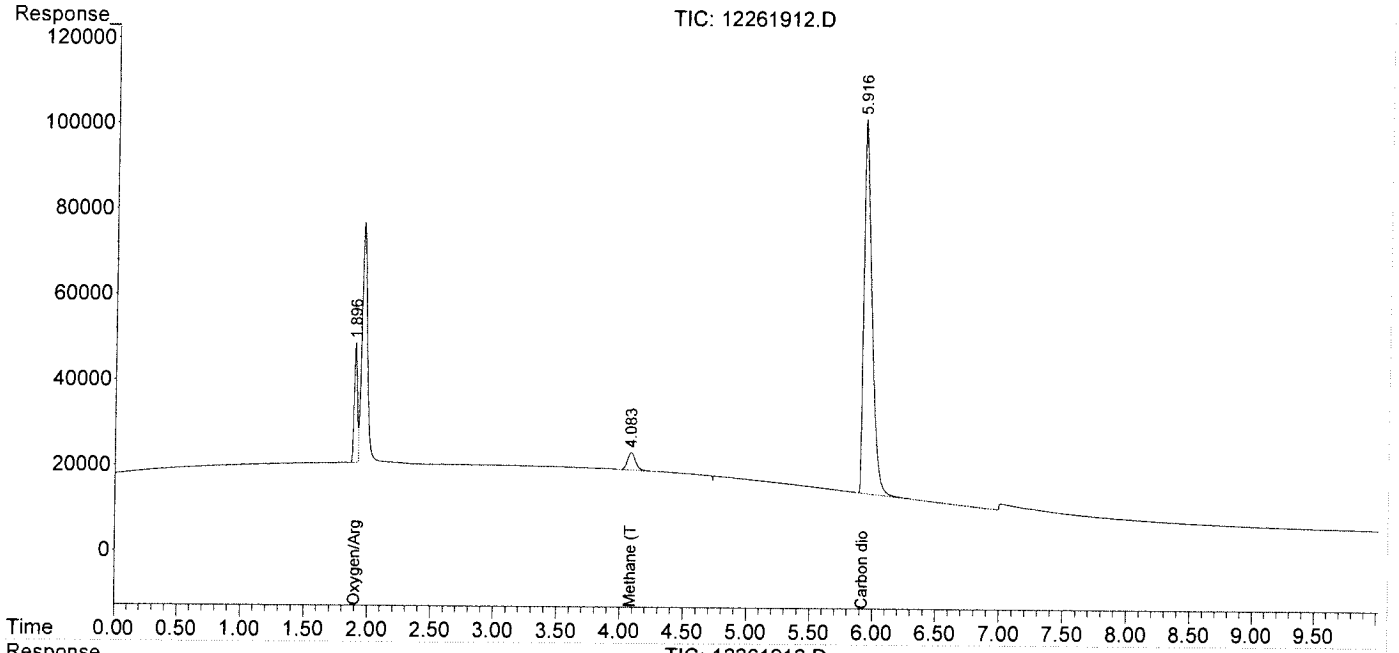
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.896	475788	0.100	ppm
2)	Carbon monoxide	1.896	475788	N.D.	ppm
3)	Methane (TCD)	4.084f	182293	19275.314	ppm
4)	Carbon dioxide	5.917	3876719	16515.710	ppm
6)	Methane (FID)	0.000	0	N.D.	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

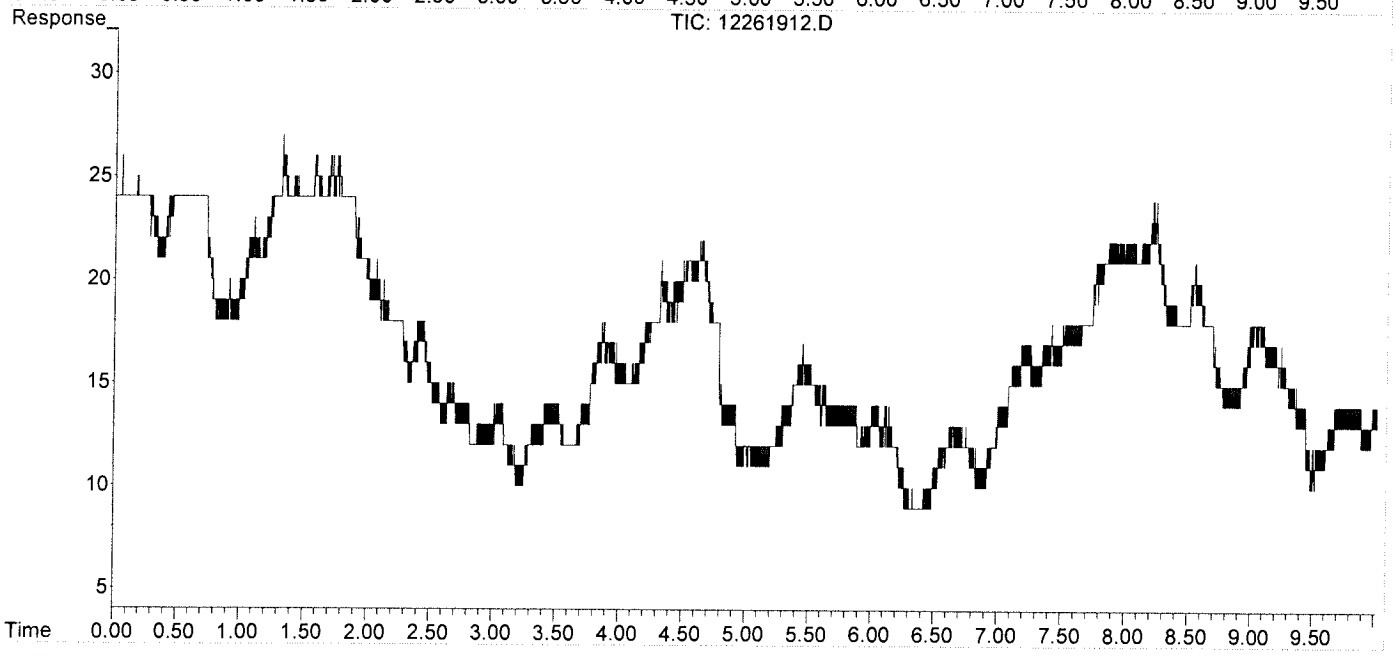
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261912.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 13:30:29
Operator : LD
Sample : P1907801-005 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:19:17 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261913.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 13:43:47
Operator : LD
Sample : P1907801-006 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:19:27 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

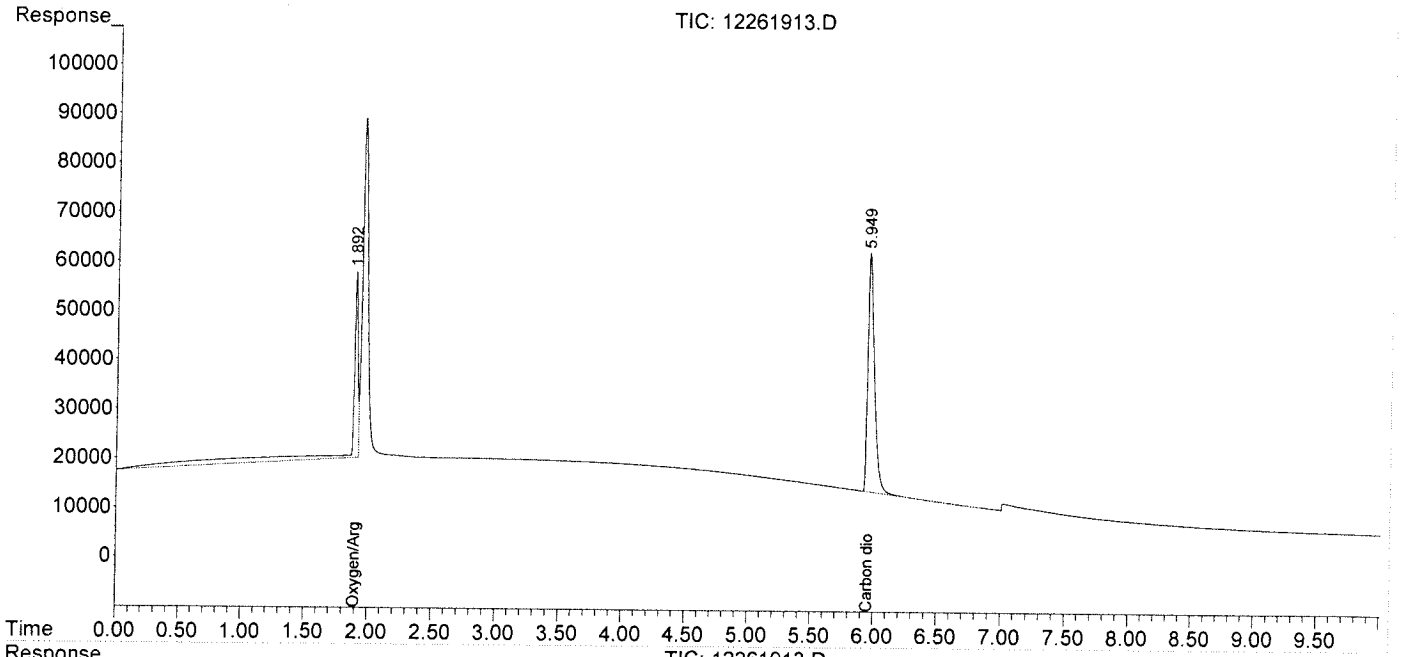
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.893	1425236	0.299	ppm
2)	Carbon monoxide	1.893	1425236	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	5.950	1755473	7478.716	ppm
6)	Methane (FID)	0.000	0	N.D.	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

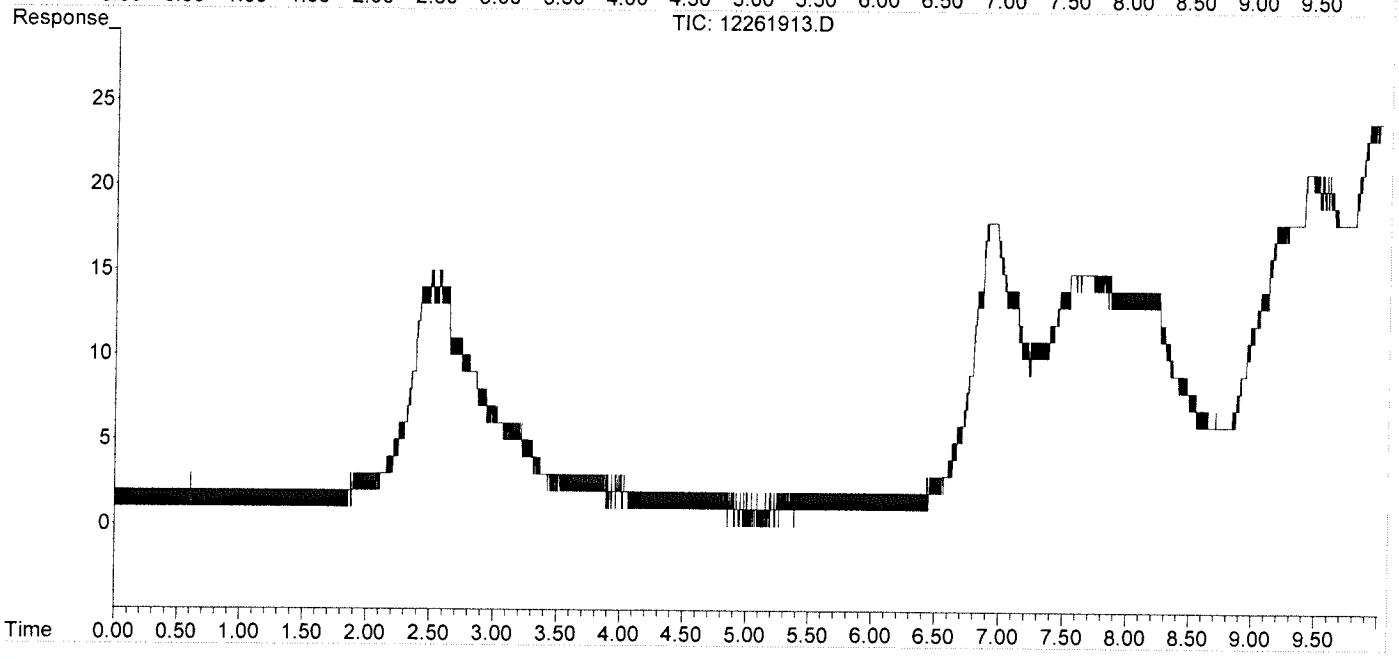
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261913.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 13:43:47
Operator : LD
Sample : P1907801-006 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:19:27 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase :
Signal #1 Info :
Signal #2 Phase:
Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261903.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 11:27:12
Operator : LD
Sample : MCS 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 11:40:19 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

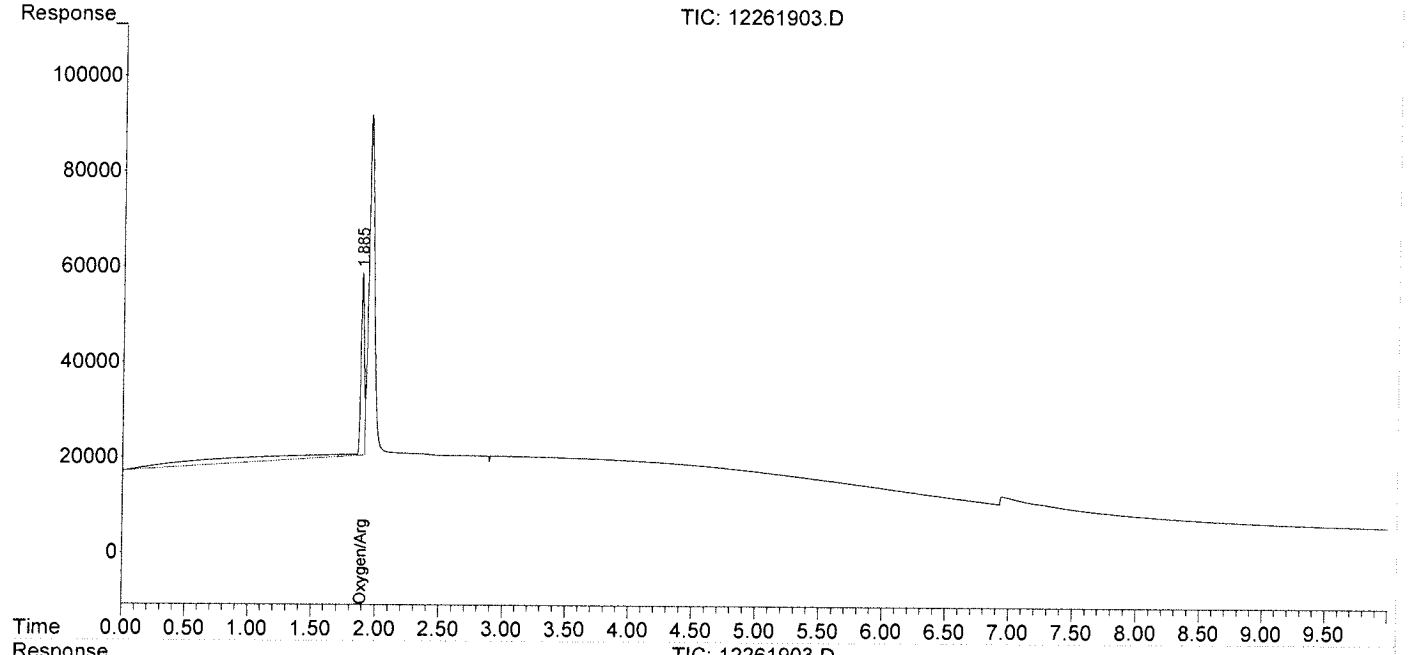
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.885	1447047	0.304	ppm
2)	Carbon monoxide	1.885	1447047	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	0.000	0	N.D.	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

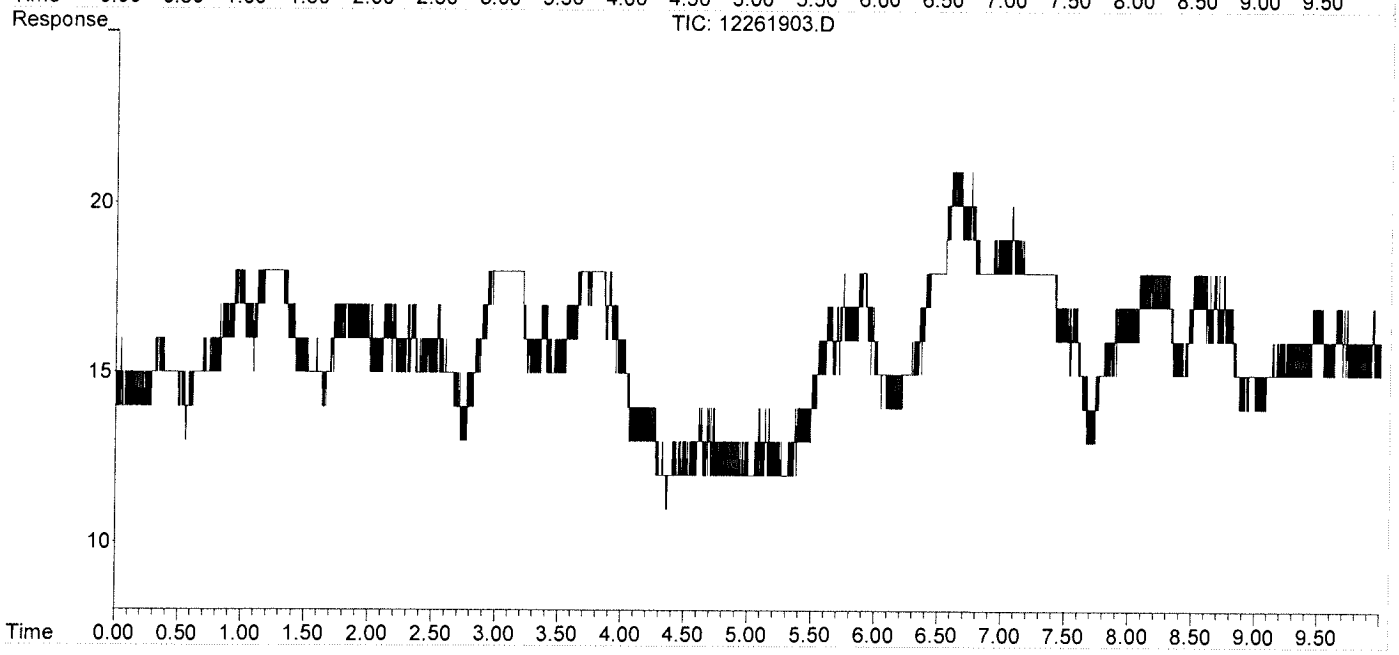
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261903.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 11:27:12
Operator : LD
Sample : MCS 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 11:40:19 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261920.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 15:58:59
Operator : LD
Sample : LCS S32-08141901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 16:09:53 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.872	2342022	0.492	ppm	
2)	Carbon monoxide	1.872	2342022	N.D.	ppm	
3)	Methane (TCD)	4.092f	614956	65024.173	ppm	
4)	Carbon dioxide	5.995	215418	917.730	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

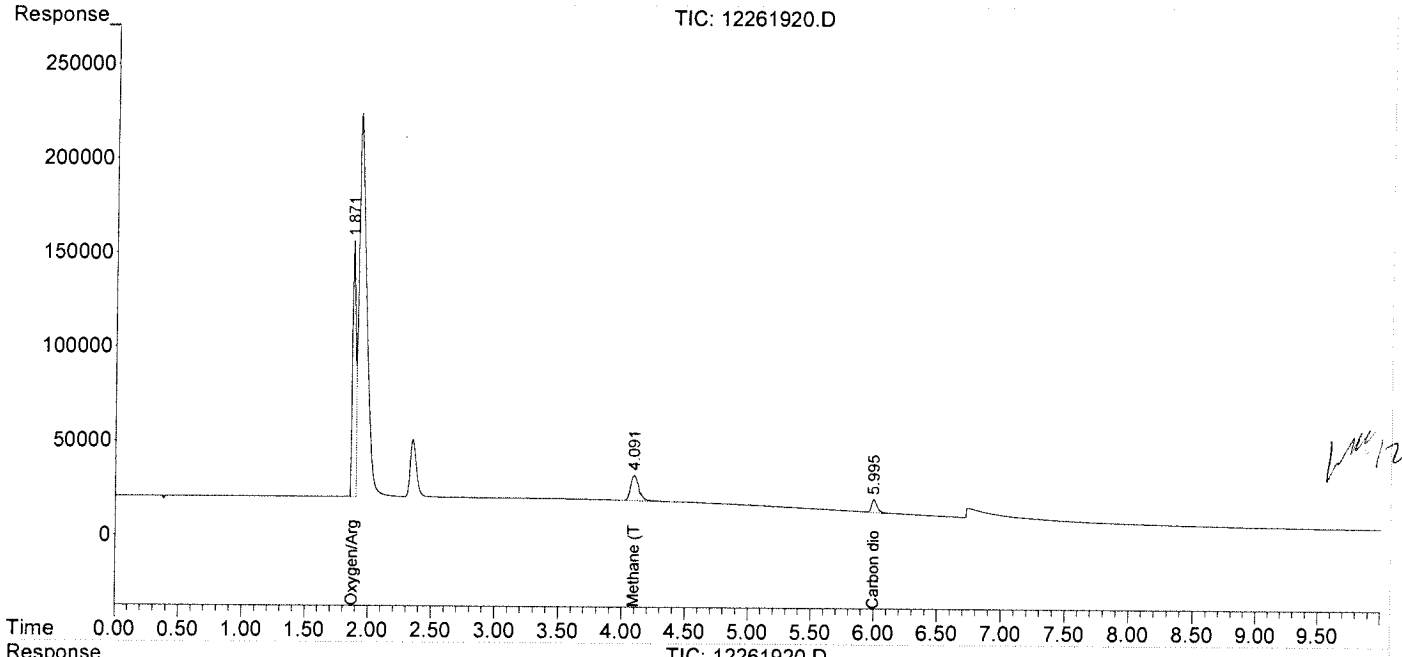
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261920.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 15:58:59
Operator : LD
Sample : LCS S32-08141901
Misc :
ALS Vial : 1 Sample Multiplier: 1

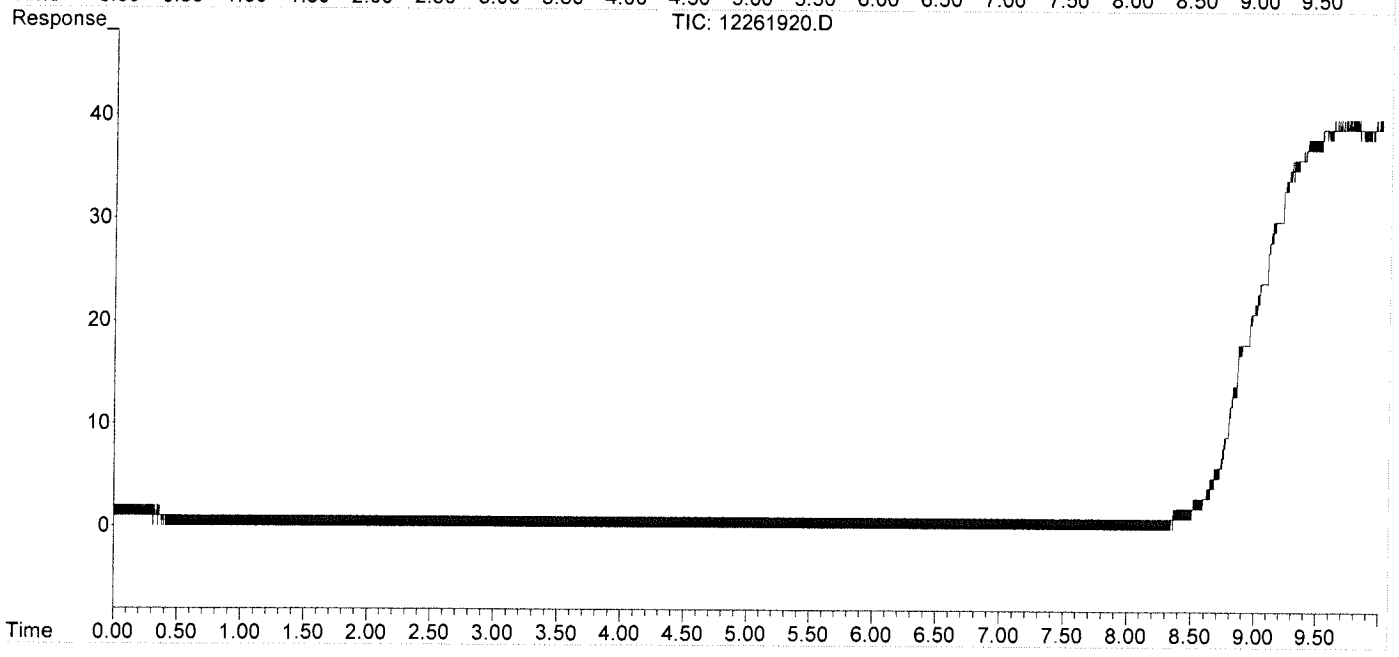
Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 16:09:53 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

LP
BLC
no previous
12/27

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



12/27/19



Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261921.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 16:11:50
Operator : LD
Sample : LCSD S32-08141901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 16:20:39 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.871	4178770	0.878	ppm	
2)	Carbon monoxide	1.871	4178770	N.D.	ppm	
3)	Methane (TCD)	4.095f	598607	63295.457	ppm	
4)	Carbon dioxide	5.996	208562	888.523	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

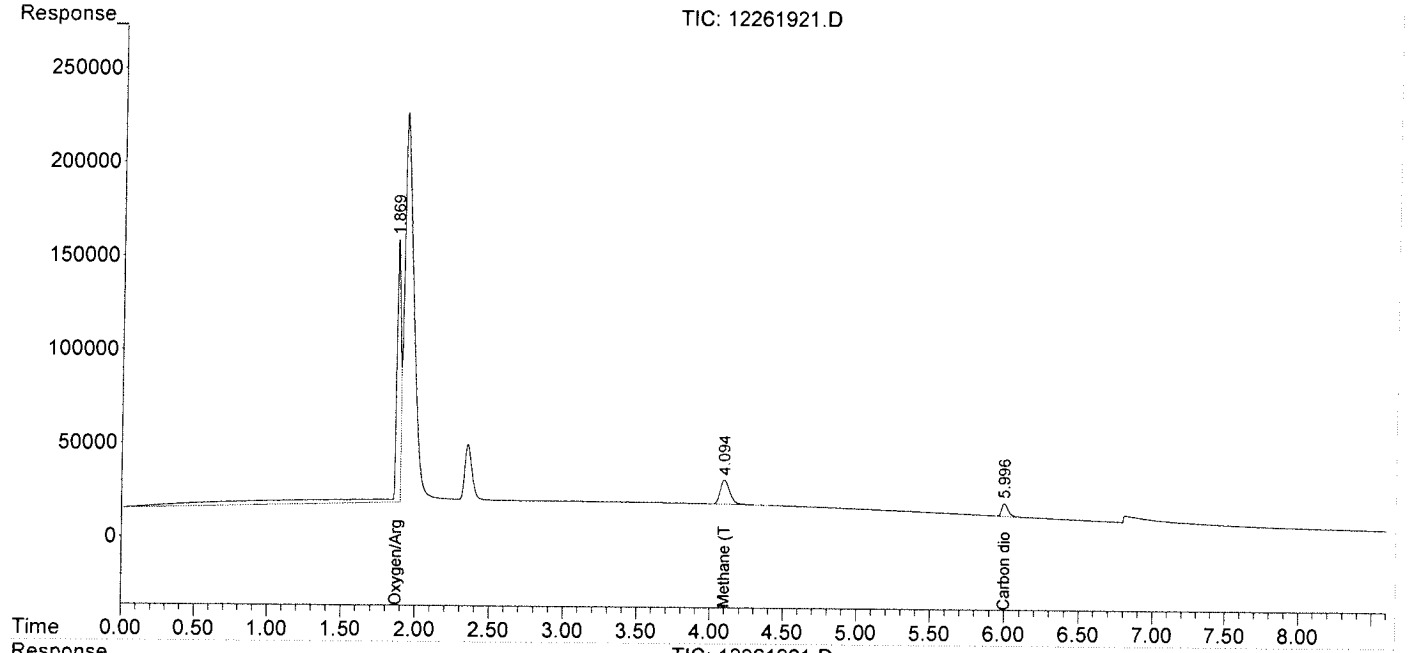
(f)=RT Delta > 1/2 Window (m)=manual int.

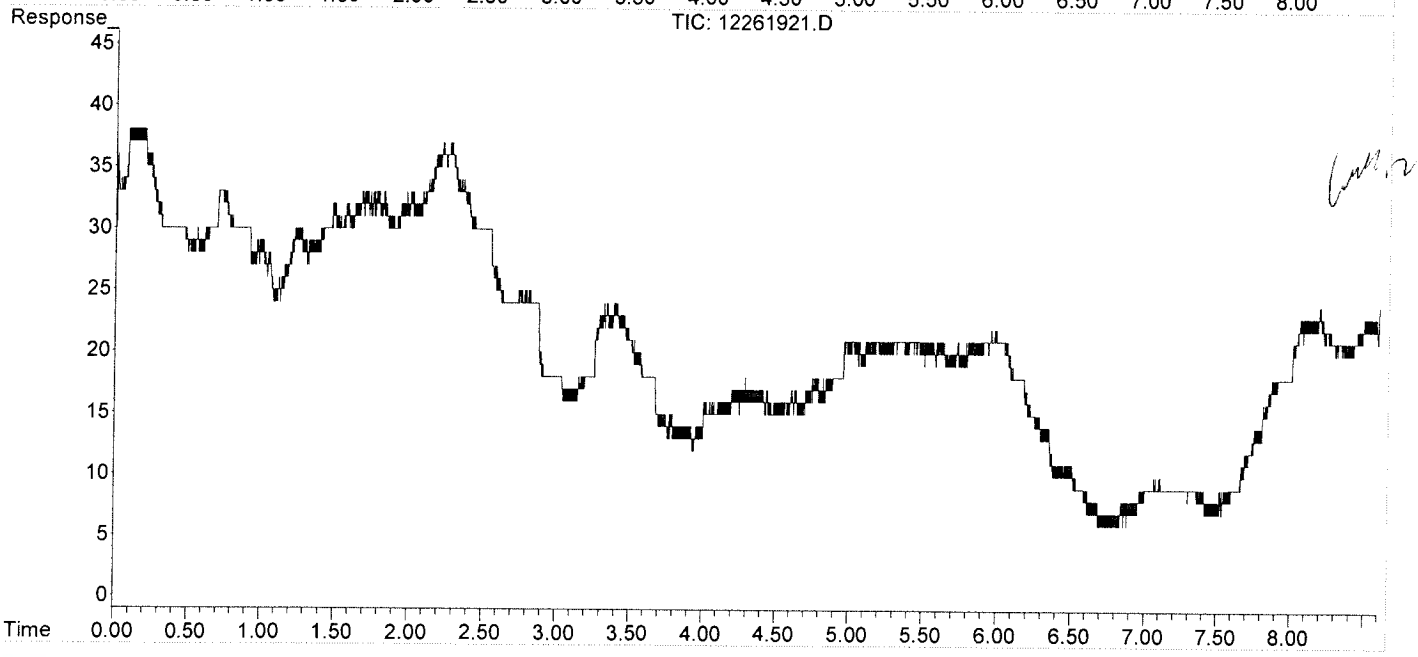
Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261921.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 16:11:50
Operator : LD
Sample : LCSD S32-08141901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 16:20:39 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

LD
BLC
NO previous
12/27

Volume Inj. :
Signal #1 Phase :
Signal #1 Info :
Signal #2 Phase:
Signal #2 Info :





Can't read

Method Path : I:\GC10\METHODS\
Method File : RS082817_CO2.M
Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
Last Update : Tue Aug 29 16:13:13 2017
Response Via : Initial Calibration

Calibration Files

1	=08291715.D	2	=08291716.D	3	=08291717.D
4	=08291719.D	5	=08291720.D	6	=08291721.D

	Compound	1	2	3	4	5	6	Avg		%RSD
1)	Oxygen/Argon	4.760						4.760	E6	0.00
2)	Carbon monoxide	2.775		1.066	0.043	0.033	0.027	0.657	E6	170.12
3)	Methane (TCD)							9.457		0.00
4)	Carbon dioxide	2.717	2.193	2.338	2.272	2.265	2.298	2.347	E2	7.99

Signal #2 Calibration Files

1	=08291715.D	2	=08291716.D	3	=08291717.D
4	=08291719.D	5	=08291720.D	6	=08291721.D

	Compound	1	2	3	4	5	6	Avg		%RSD
6)	Methane (FID)	1.253	1.160	1.005	0.927	0.848	0.848	0.945	E4	15.85
7)	Ethylene	1.677	1.605	1.900	1.749	1.597	1.579	1.684	E4	7.30
8)	Ethane	1.769	1.631	1.866	1.767	1.639	1.667	1.723	E4	5.40
9)	Propylene	2.402	2.309	2.767	2.551	2.331	2.333	2.449	E4	7.32
10)	Propane	2.906	2.737	2.817	2.639	2.410	2.420	2.655	E4	7.75
11)	Isobutylene							0.000		-1.00
12)	Isobutane							0.000		-1.00
13)	n-Butane							0.000		-1.00

(#) = Out of Range ### Number of calibration levels exceeded format ###

RS082817_CO2.M Wed Aug 30 13:24:19 2017

dit Compounds -- Compound #4 -- Carbon dioxide

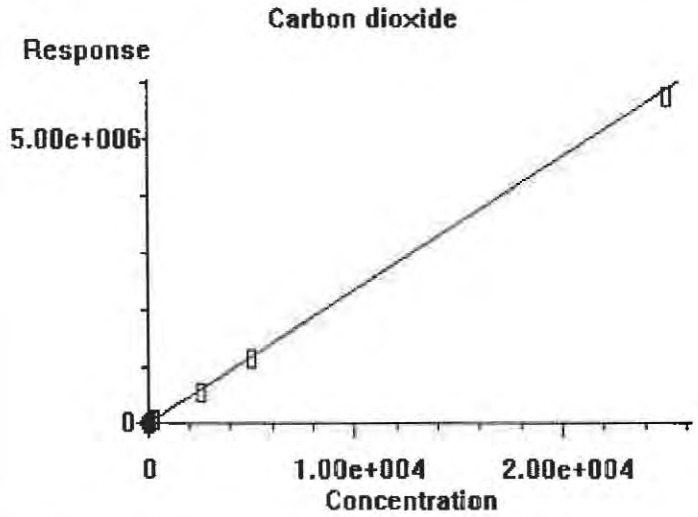
Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compoun
  - Oxygen/Argon
  - Carbon monoxide
  - Methane (TCD)
  - Carbon dioxide
  - Signal #2
  - Methane (FID)
  - Ethylene
  - Ethane
  - Propylene
  - Propane
  - Isobutylene
  - Isobutane
  - n-Butane

Identification | Calibration | User-Defined | Advanced | Reporting

Lvl ID	Concentration	Response
1	25.000000	6793.665186
2	100.000000	21932.418000
3	250.000000	58460.642510
4	2500.000000	568043.388750
5	5000.000000	1132363.215937
6	25000.000000	5744294.891563
7	25000.000000	
8	25000.000000	
9	2000.000000	
10	30000.000000	

Lvl ID	Concentration	Response



0.000e+000	Quadratic term
2.347e+002	Linear term
0.000e+000	Constant term
7.987%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

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Calibration Status Report HP5890

Method Path : I:\GC10\METHODS\
Method File : RS082817_CO2.M
Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
Last Update : Tue Aug 29 16:13:13 2017
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	0	0	J:\GC10\DATA\RSK_FID\2017_08\29\08291715.D
2	2	0	0	J:\GC10\DATA\RSK_FID\2017_08\29\08291716.D
3	3	3	0	J:\GC10\DATA\RSK_FID\2017_08\29\08291717.D
4	4	10	0	J:\GC10\DATA\RSK_FID\2017_08\29\08291719.D
5	5	25	0	J:\GC10\DATA\RSK_FID\2017_08\29\08291720.D
6	6	125	0	J:\GC10\DATA\RSK_FID\2017_08\29\08291721.D
7	7	5000	0	J:\GC10\DATA\RSK_FID\2017_08\24\08241708.D
8	8	25000	0	J:\GC10\DATA\RSK_FID\2017_08\24\08241709.D
9	9	2000	0	J:\GC10\DATA\RSK_FID\2017_08\24\08241710.D
10	10	30000	0	J:\GC10\DATA\RSK_FID\2017_08\24\08241711.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	Aug 29 14:21 2017	Aug 29 14:20 2017	29-Aug-2017, 14:07
2	2	Aug 29 14:52 2017	Aug 29 14:51 2017	29-Aug-2017, 14:22
3	3	Aug 29 15:04 2017	Aug 29 15:04 2017	29-Aug-2017, 14:53
4	4	Aug 29 15:36 2017	Aug 29 15:36 2017	29-Aug-2017, 15:23
5	5	Aug 29 15:57 2017	Aug 29 15:57 2017	29-Aug-2017, 15:44
6	6	Aug 29 16:13 2017	Aug 29 16:13 2017	29-Aug-2017, 16:00
7	7	Aug 25 09:05 2017	Aug 24 16:00 2017	24-Aug-2017, 15:44
8	8	Aug 25 09:06 2017	Aug 24 16:13 2017	24-Aug-2017, 16:02
9	9	Aug 25 09:06 2017	Aug 24 16:31 2017	24-Aug-2017, 16:16
10	10	Aug 25 09:07 2017	Aug 24 16:42 2017	24-Aug-2017, 16:33

RS082817_CO2.M Wed Aug 30 13:24:30 2017

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291715.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:07
Operator : MC
Sample : 25ppm s32-08291701 0.25ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 14:20:06 2017
Quant Method : I:\GC10\METHODS\RS082417.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Fri Aug 25 09:19:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

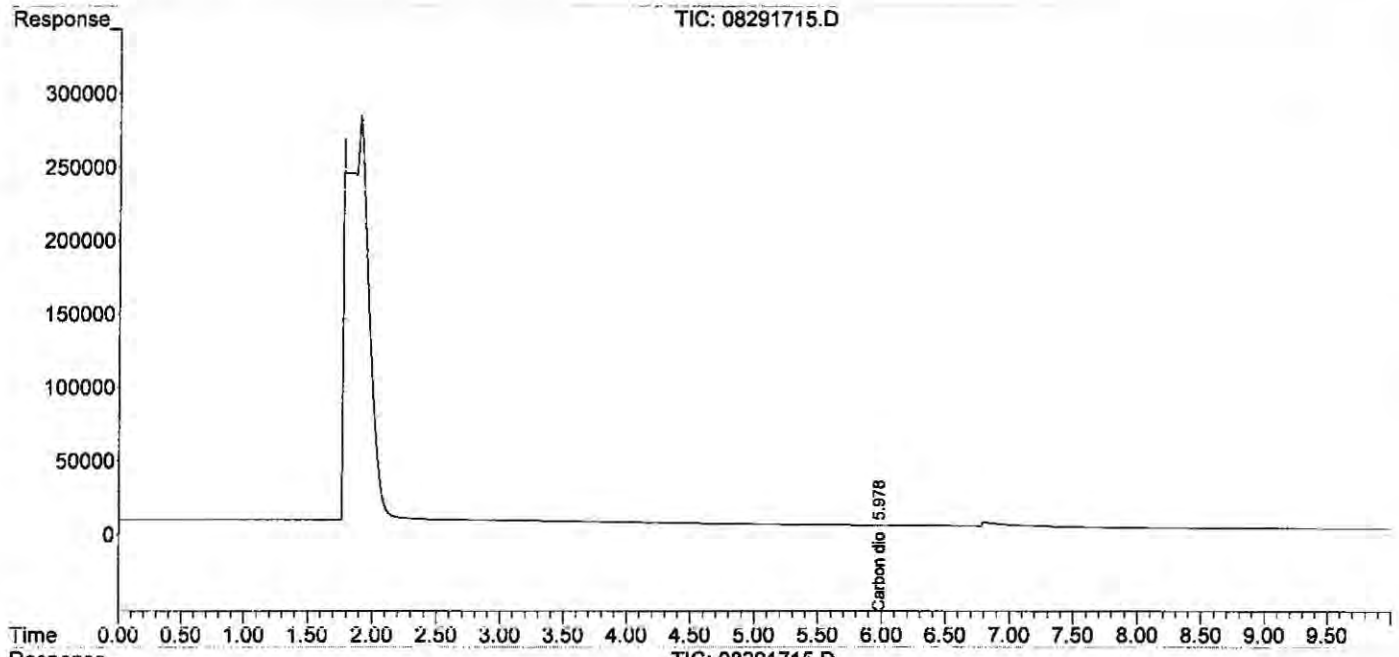
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	0.000	0	N.D.	ppm	d
2)	Carbon monoxide	1.776	277465	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	
4)	Carbon dioxide	5.978	6794	27.870	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	d
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

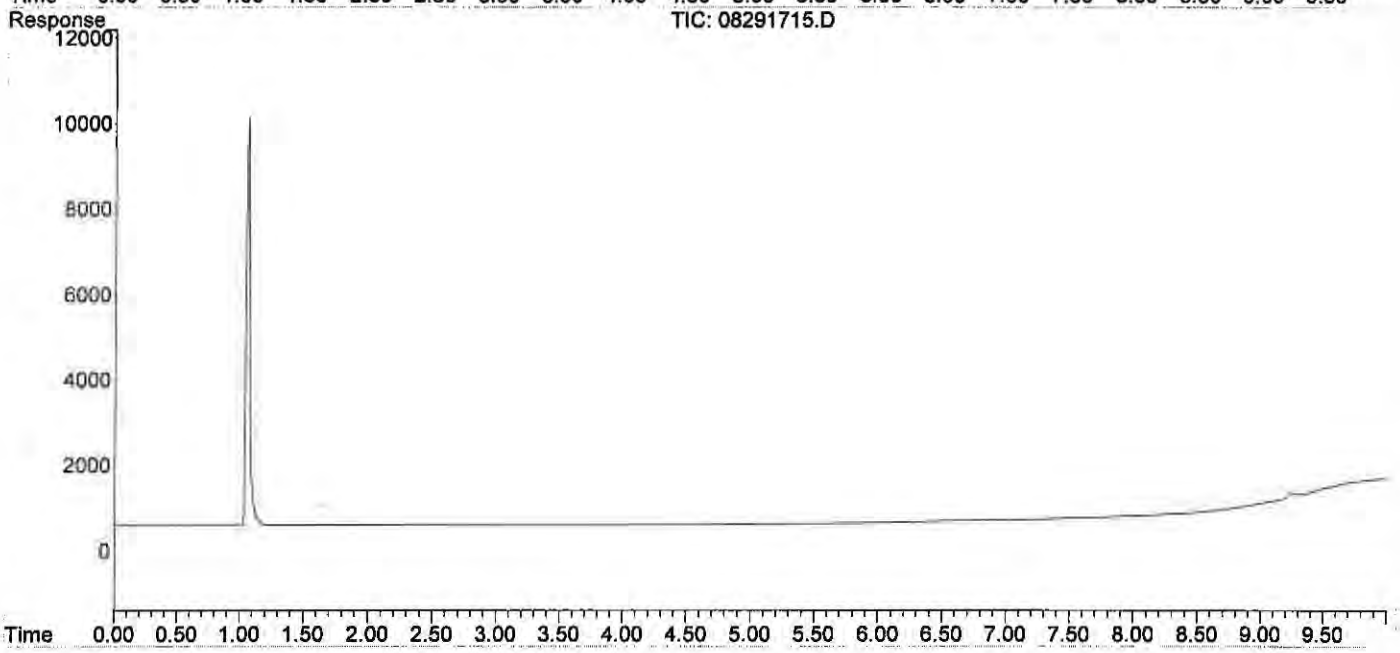
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291715.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:07
Operator : MC
Sample : 25ppm s32-08291701 0.25ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 14:20:06 2017
Quant Method : I:\GC10\METHODS\RS082417.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Fri Aug 25 09:19:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



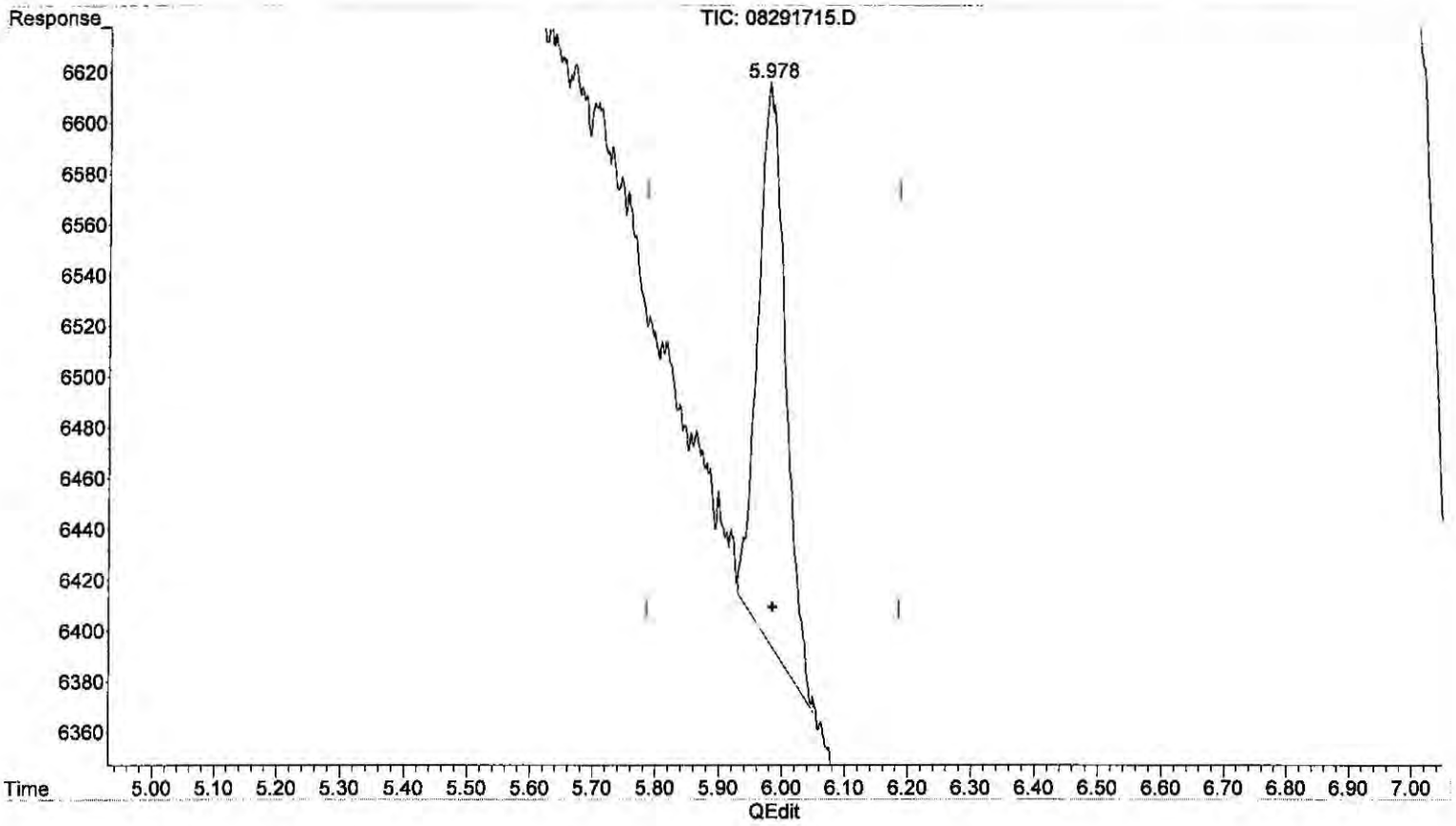


Quantitation Report (Qedit)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291715.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:07
Operator : MC
Sample : 25ppm s32-08291701 0.25ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 14:20:06 2017
Quant Method : I:\GC10\METHODS\RS082417.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Fri Aug 25 09:19:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(4) Carbon dioxide
5.978min 27.870 ppm m
response 6794

(+) = Expected Retention Time

RS082817_CO2.M Wed Aug 30 13:17:47 2017 Page: 1

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291716.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:22
Operator : MC
Sample : 100ppm s32-08291702 0.2ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 14:51:38 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 14:21:08 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

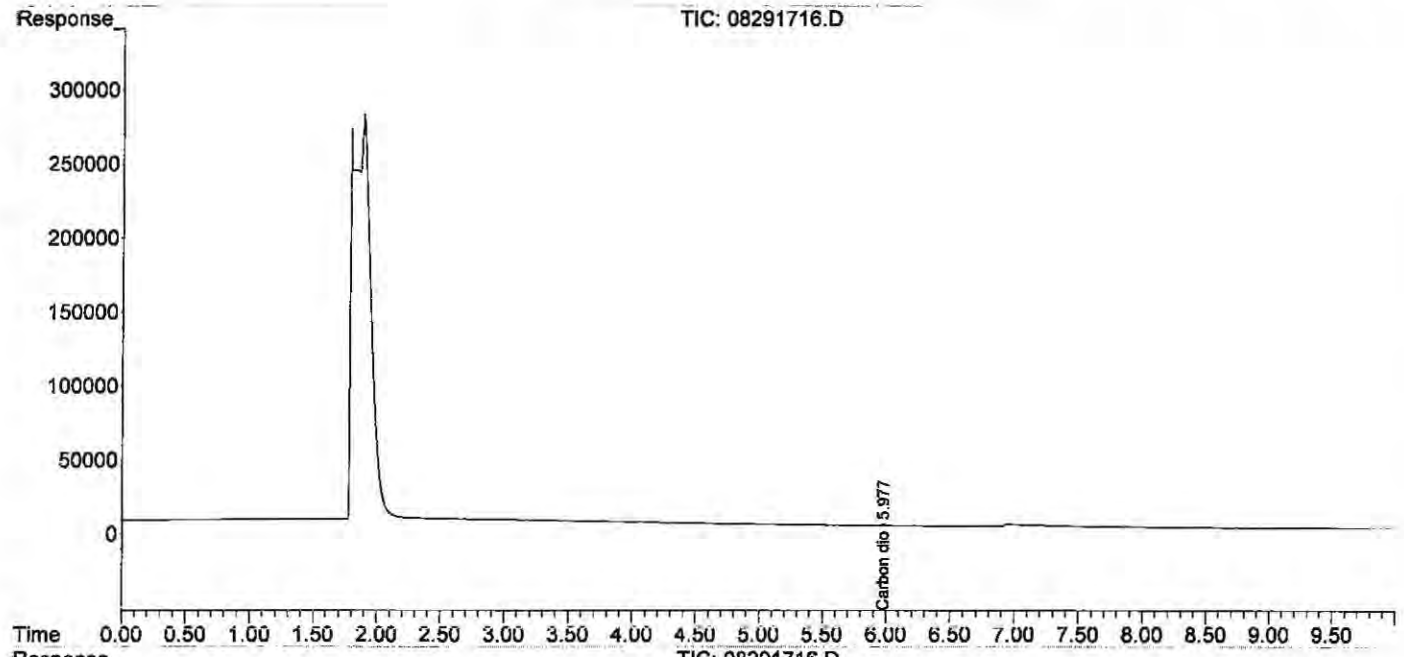
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.790	-598962	N.D.	ppm	
2)	Carbon monoxide	0.000	0	N.D.	ppm	d
3)	Methane (TCD)	0.000	0	N.D.	ppm	
4)	Carbon dioxide	5.978	21932	87.858	ppm	
6)	Methane (FID)	0.000	0	N.D.	ppm	d
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

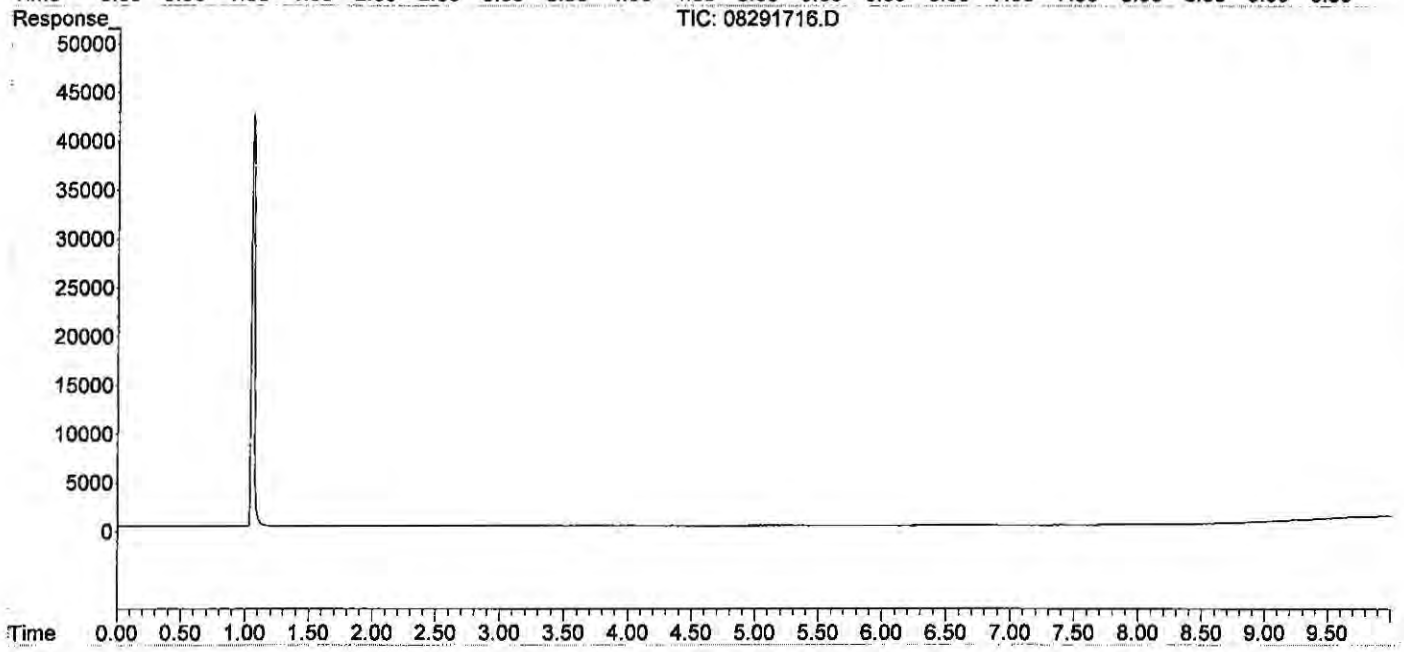
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291716.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:22
Operator : MC
Sample : 100ppm s32-08291702 0.2ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 14:51:38 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 14:21:08 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291717.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:53
Operator : MC
Sample : 250ppm s32-08291702 0.5ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 15:03:42 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 14:52:06 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

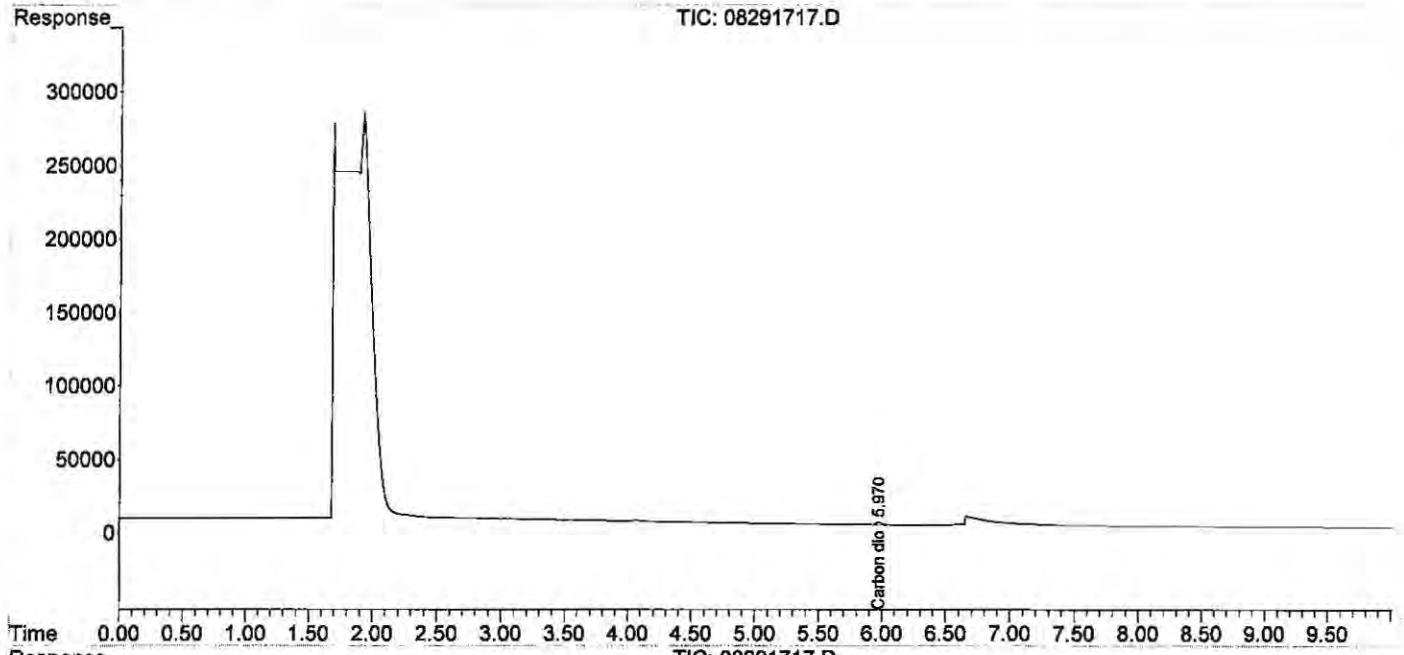
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.920f	-30716454	N.D.	ppm	
2)	Carbon monoxide	0.000	0	N.D.	ppm	d
3)	Methane (TCD)	0.000	0	N.D.	ppm	d
4)	Carbon dioxide	5.970	58461	240.204	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	d
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

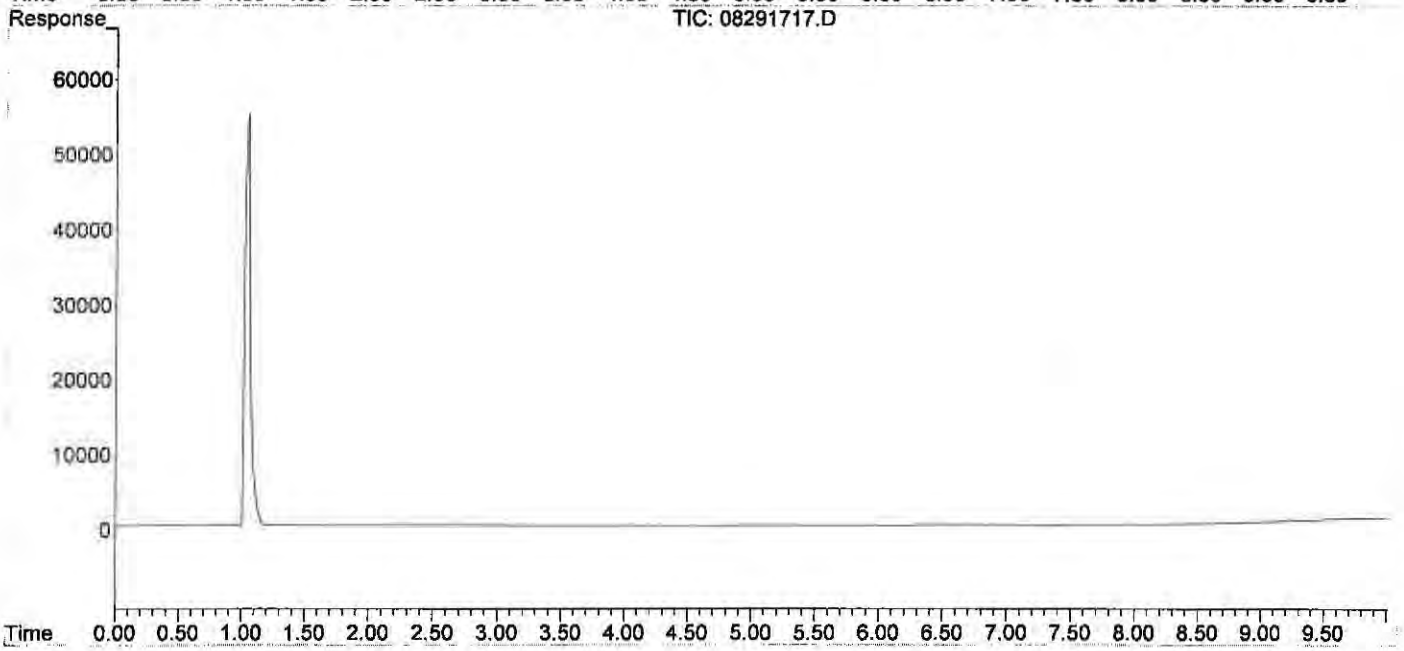
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291717.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:53
Operator : MC
Sample : 250ppm s32-08291702 0.5ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 15:03:42 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 14:52:06 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



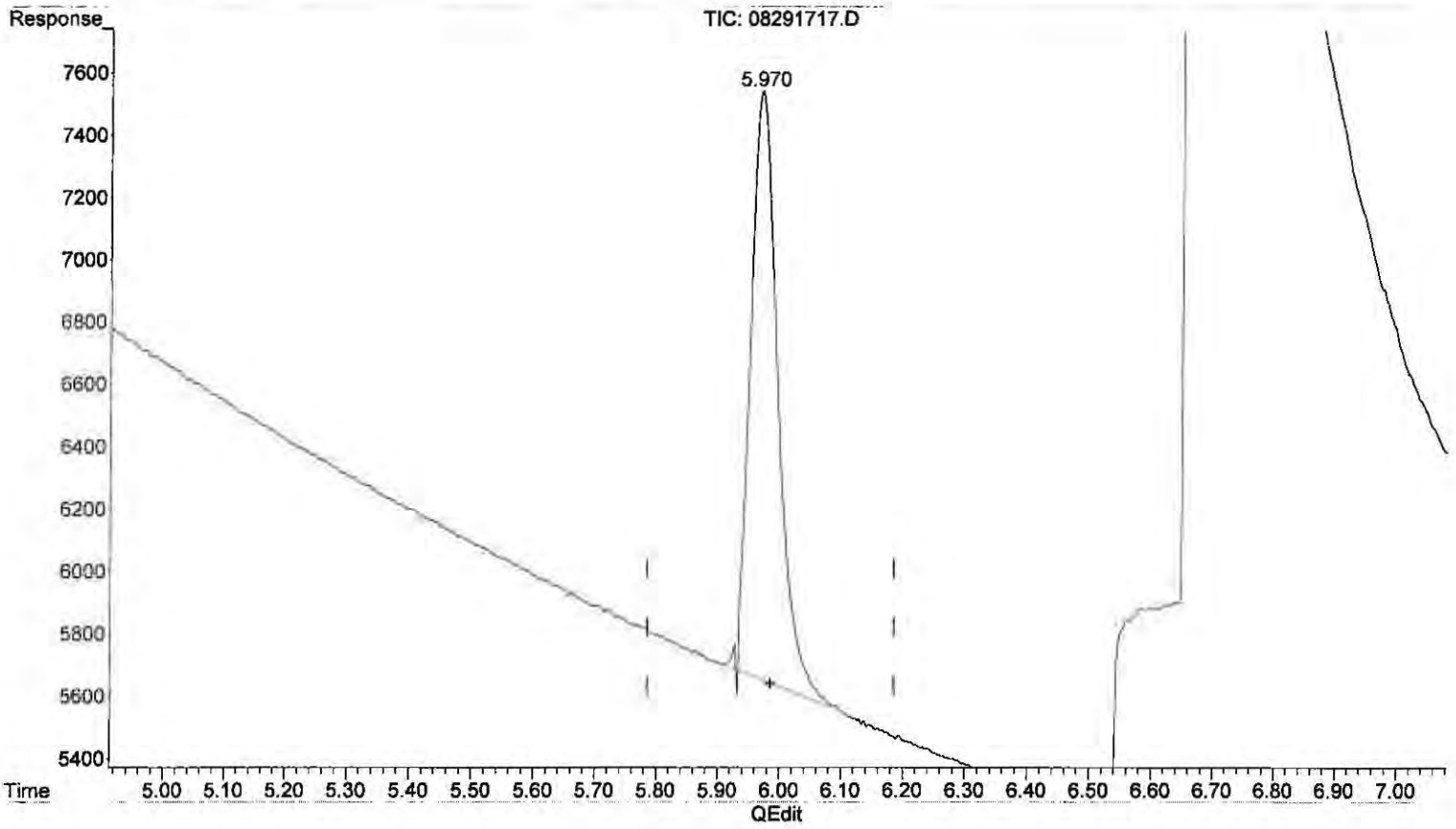


Quantitation Report (Qedit)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291717.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:53
Operator : MC
Sample : 250ppm s32-08291702 0.5ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 15:03:42 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 14:52:06 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(4) Carbon dioxide

5.970min 240.204 ppm m

response 58461

(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291719.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 15:23
Operator : MC
Sample : 2500ppm s32-08231701 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 15:35:50 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 15:04:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

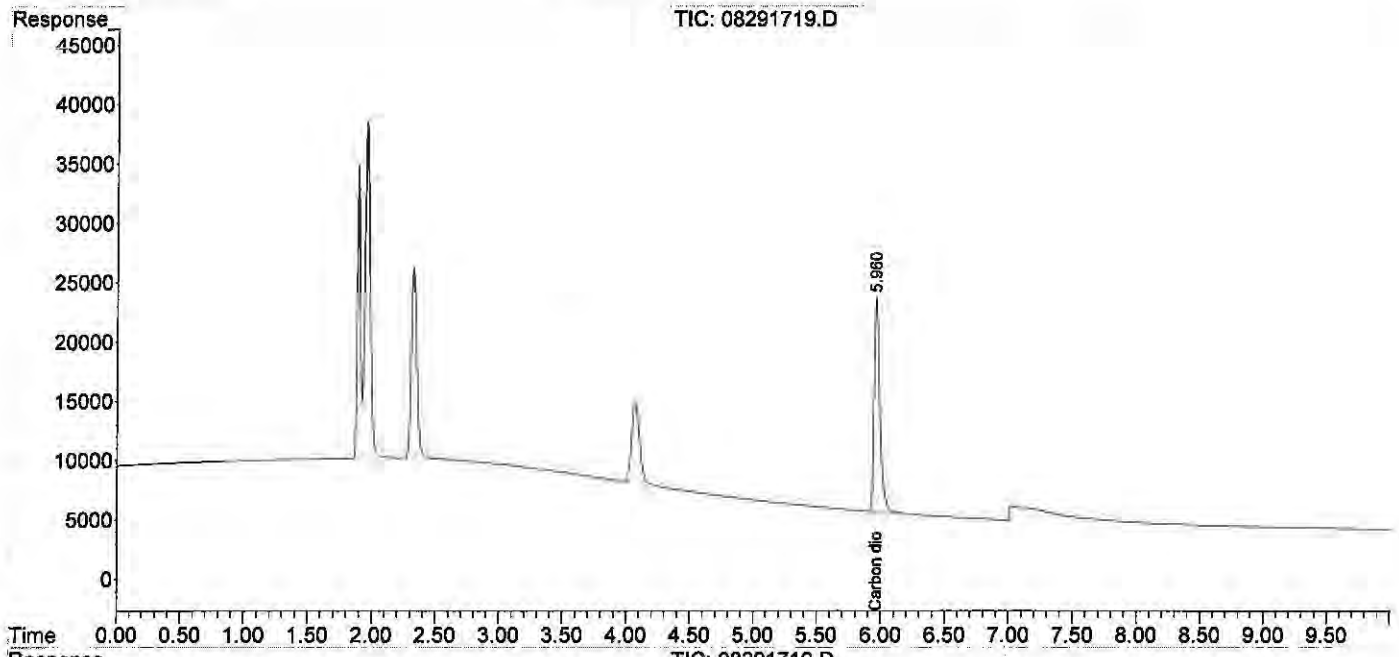
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	0.000	0	N.D.	ppm	d
2)	Carbon monoxide	1.891	425113	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	d
4)	Carbon dioxide	5.962	568043	2369.673	ppm	
6)	Methane (FID)	0.000	0	N.D.	ppm	d
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

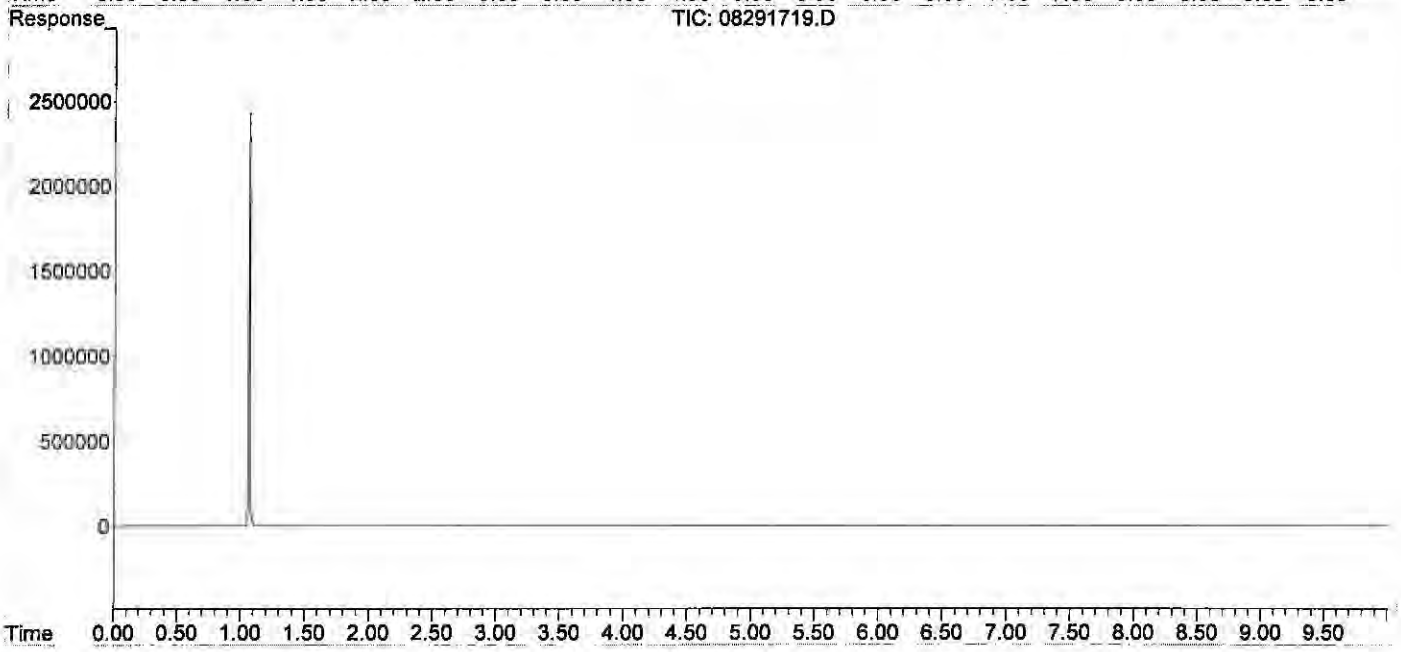
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291719.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 15:23
Operator : MC
Sample : 2500ppm s32-08231701 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 15:35:50 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 15:04:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291720.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 15:44
Operator : MC
Sample : 5000ppm s32-08231701 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 15:57:17 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 15:36:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

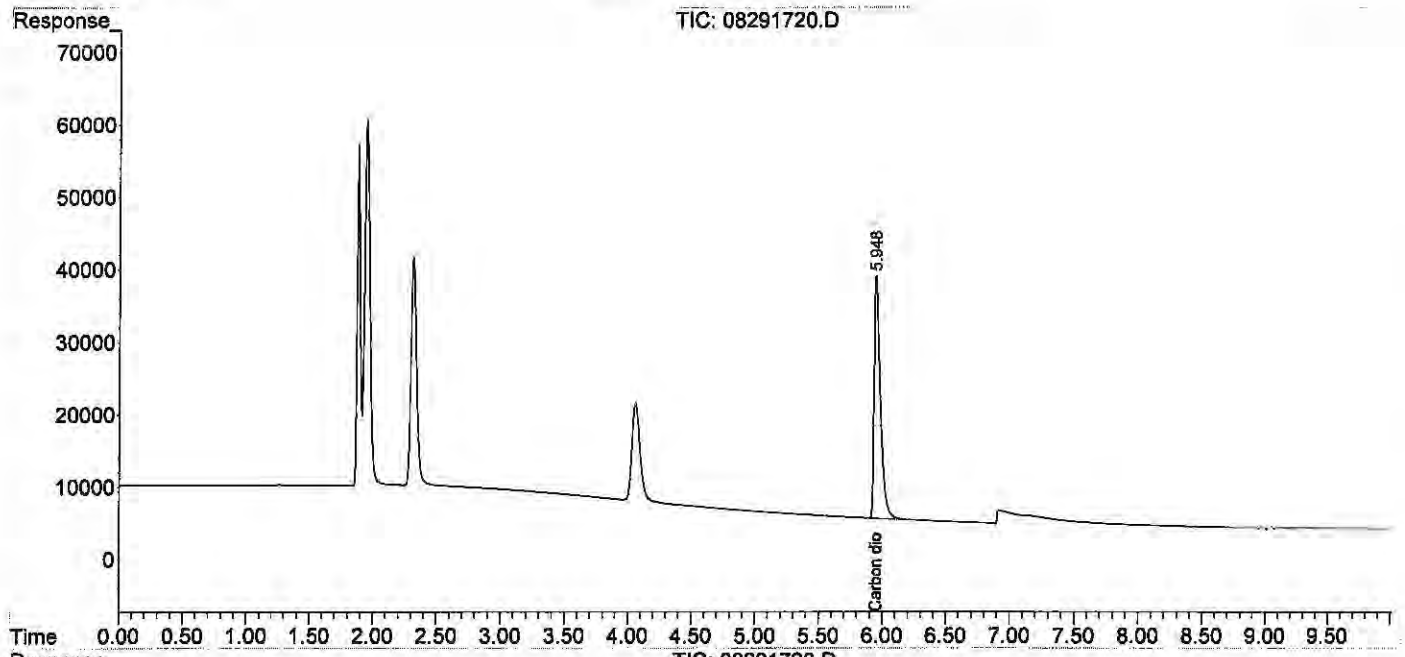
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	0.000	0	N.D.	ppm	d
2)	Carbon monoxide	1.880	819221	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	d
4)	Carbon dioxide	5.948	1132363	4753.126	ppm	
6)	Methane (FID)	0.000	0	N.D.	ppm	d
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

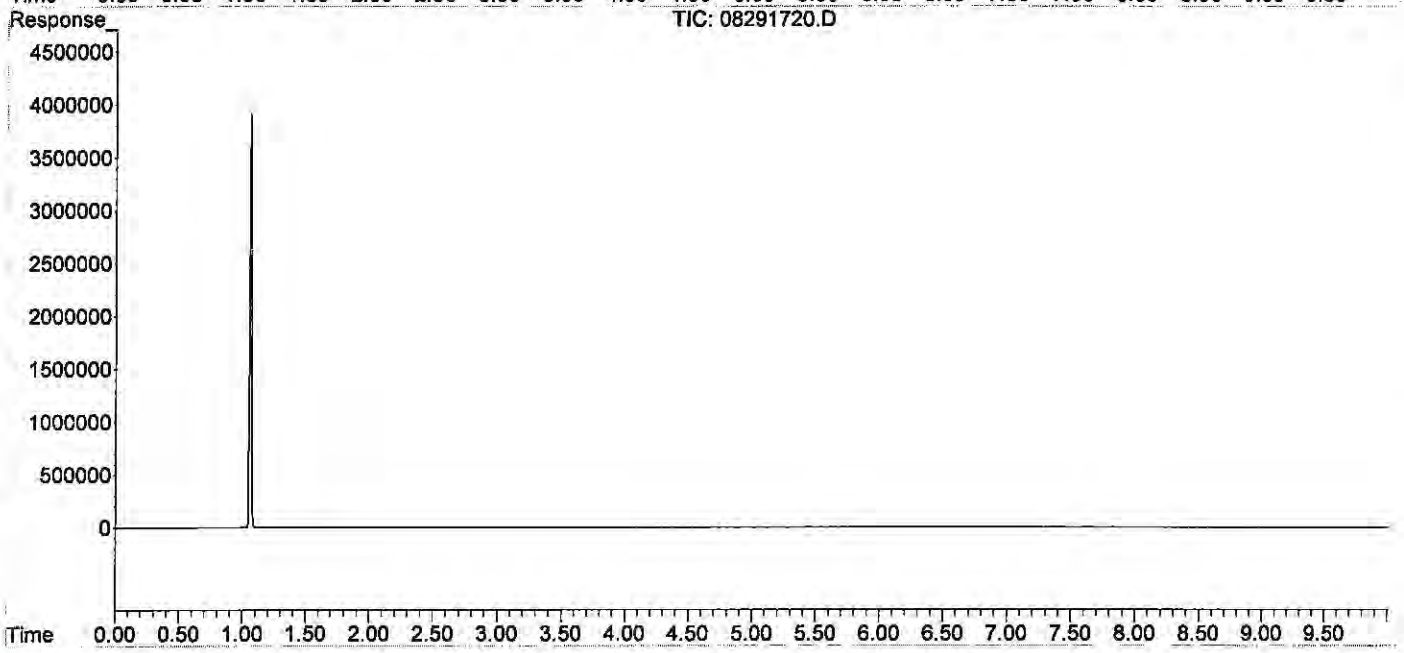
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291720.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 15:44
Operator : MC
Sample : 5000ppm s32-08231701 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 15:57:17 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 15:36:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291721.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 16:00
Operator : MC
Sample : 25000ppm s32-08231701 0.5ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 16:12:53 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 15:57:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

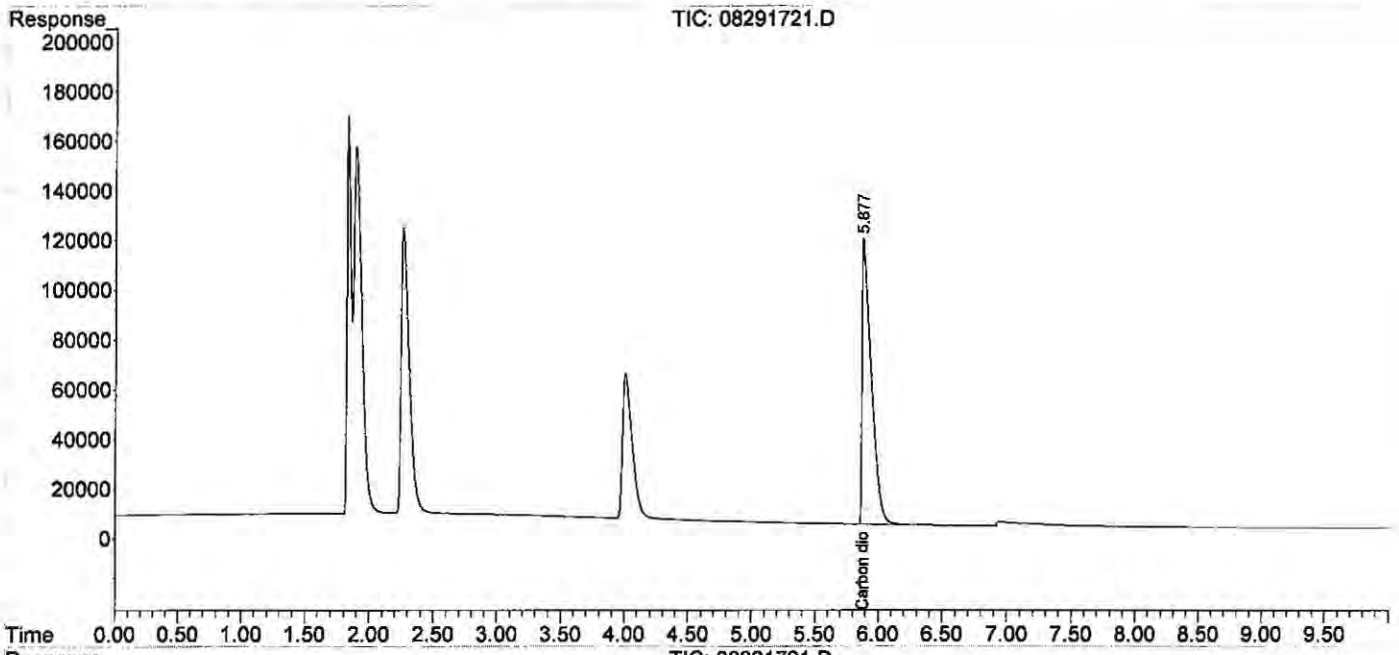
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	0.000	0	N.D.	ppm	d
2)	Carbon monoxide	1.827	3325463	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	d
4)	Carbon dioxide	5.879f	5744295	24443.288	ppm	
6)	Methane (FID)	0.000	0	N.D.	ppm	d
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

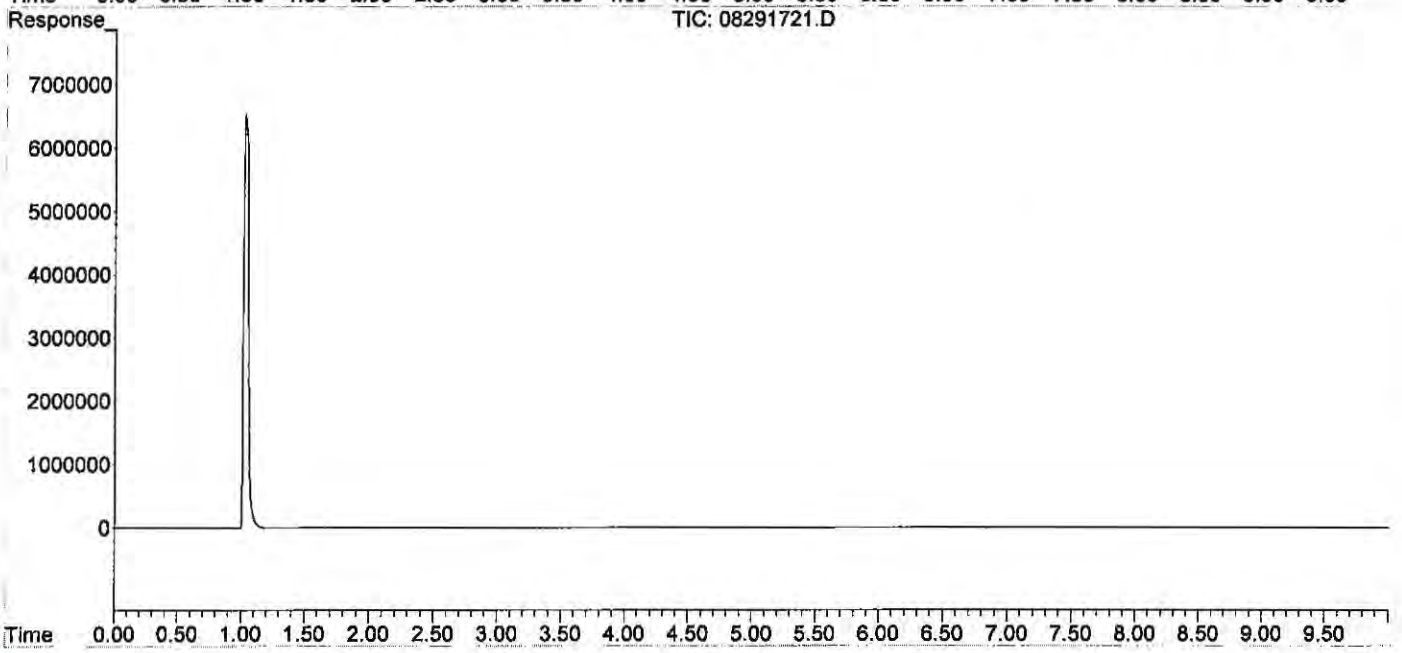
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291721.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 16:00
Operator : MC
Sample : 25000ppm s32-08231701 0.5ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 16:12:53 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 15:57:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291723.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 16:35
Operator : MC
Sample : icv s30-07071701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 16:54:07 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.886	536422	0.113	ppm
2)	Carbon monoxide	1.886	536422	N.D.	ppm
3)	Methane (TCD)	4.059f	626500	66244.710	ppm
4)	Carbon dioxide	5.947	1163775	4957.948	ppm
6)	Methane (FID)	1.062	37290742	3947.023	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

Actual %D
5000 99.16

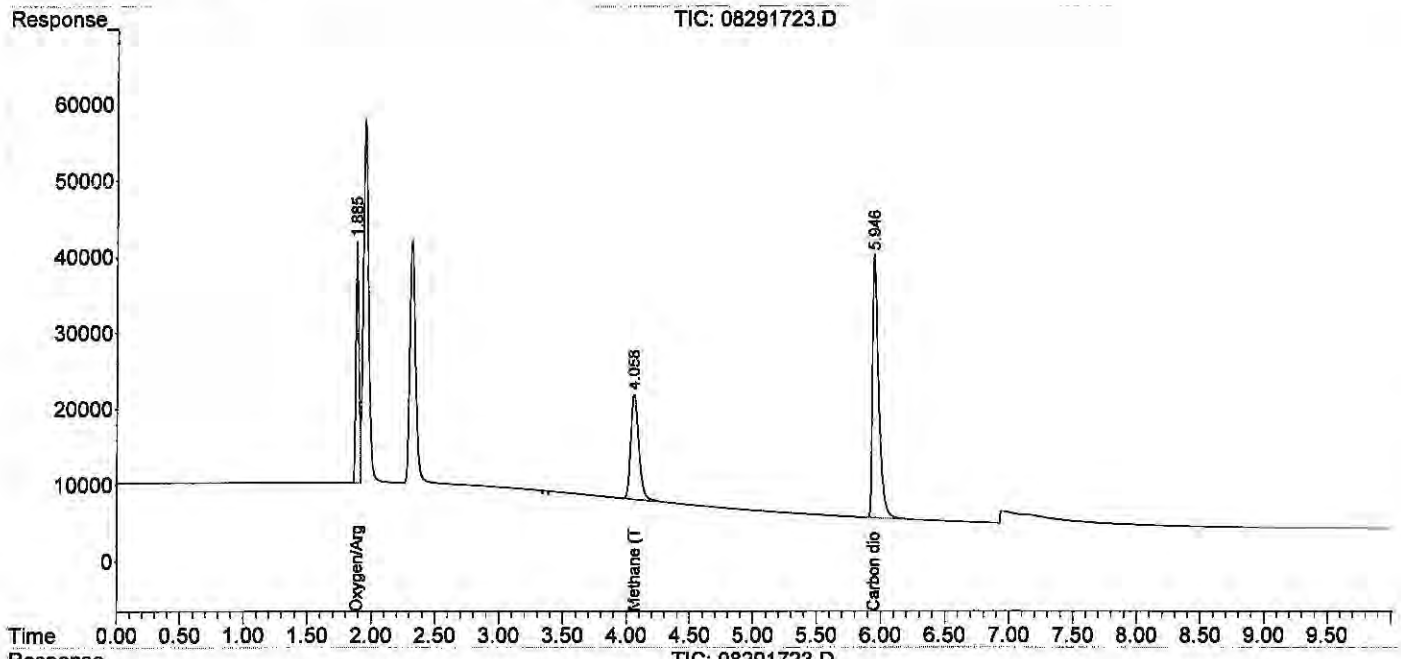
(f)=RT Delta > 1/2 Window (m)=manual int.

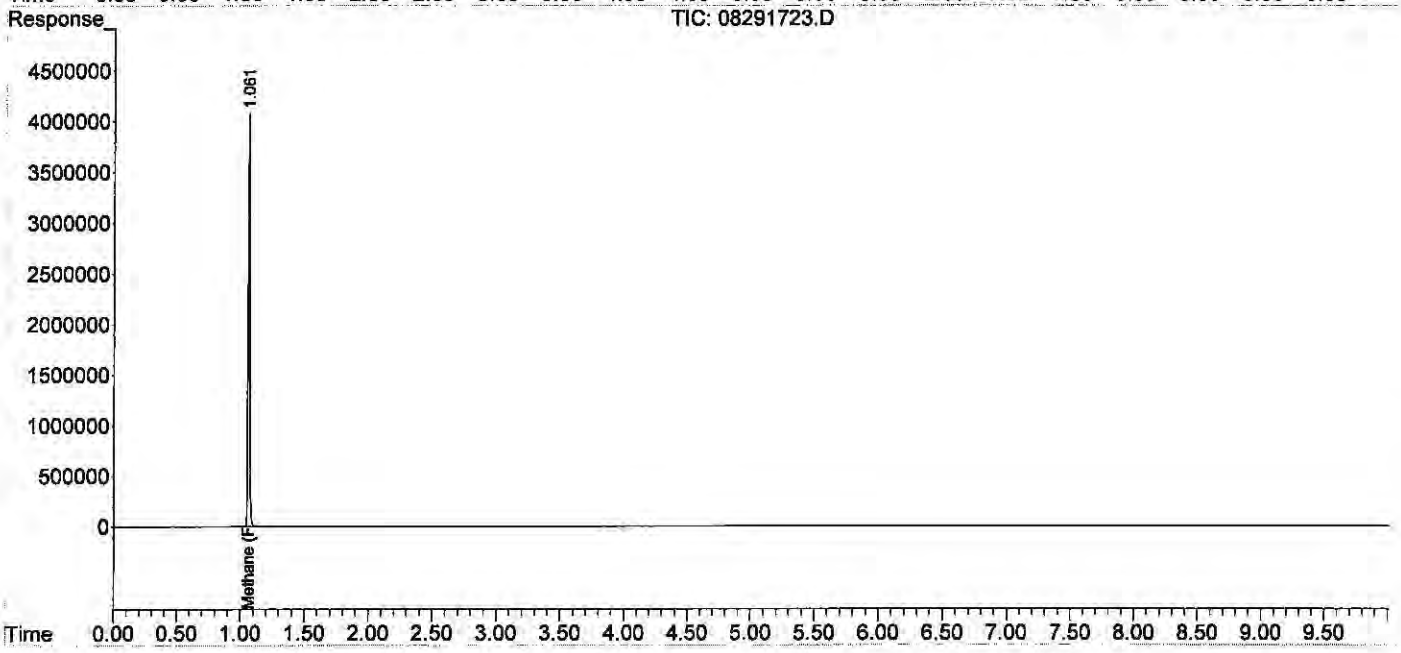
W 9/4/17

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291723.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 16:35
Operator : MC
Sample : icv s30-07071701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 16:54:07 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Dissolved Gases by RSK175

ALS Environmental

Method : RSK175 Headspace Method for Dissolved Hydrocarbon in Water by FID/TCD
Client : ALS Laboratory Group
Service Request: P1907801
Sample Vol. (ml) : 32.00 ml

Analyst : LD
Date Analysis : 12/26/19
Head Space Vol.(ml) : 8.00 ml

Instrument : GC#10
Detector : FID#10, TCD#10
Gas Constant : 24.05684 (20°C)

HEAD SPACE RESULT (ppm)

Sample ID	Carbon Dioxide
STD S32-10291901	4967.457
ACTUAL	5000.00
%Difference	0.7%
MCS 0.1ml	0.000
RB 0.1ml	0.000
LCS S32-08141901	917.730
LCSD S32-08141901	888.523
P1907801-001 0.1ml	5711.293
P1907801-002 0.1ml	15597.21
P1907801-003 0.1ml	11177.63
P1907801-004 0.1ml	15297.48
P1907801-005 0.1ml	16515.71
P1907801-006 0.1ml	7478.716
STD S32-10291901	5239.520

FINAL HEAD SPACE RESULT (ppm)

	Carbon Dioxide
WWt.	44.10
HENRY'S CONSTANT	1.42E+03
RL	100.00
MCS 0.1ml	0.000
LCS S32-08141901	9177.300
LCSD S32-08141901	8885.230
P1907801-001 0.1ml	57112.930
P1907801-002 0.1ml	155972.06
P1907801-003 0.1ml	111776.31
P1907801-004 0.1ml	152974.83
P1907801-005 0.1ml	165157.10
P1907801-006 0.1ml	74787.160
STD S32-10291901	52395.200

STD S32-10291901	5071.627	13:43:47
ACTUAL	5000.00	
%Difference	1.4%	

LD
12/27

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261901.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 09:10:35
Operator : LD
Sample : STD S32-10291901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 09:22:21 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

LD
12/27

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

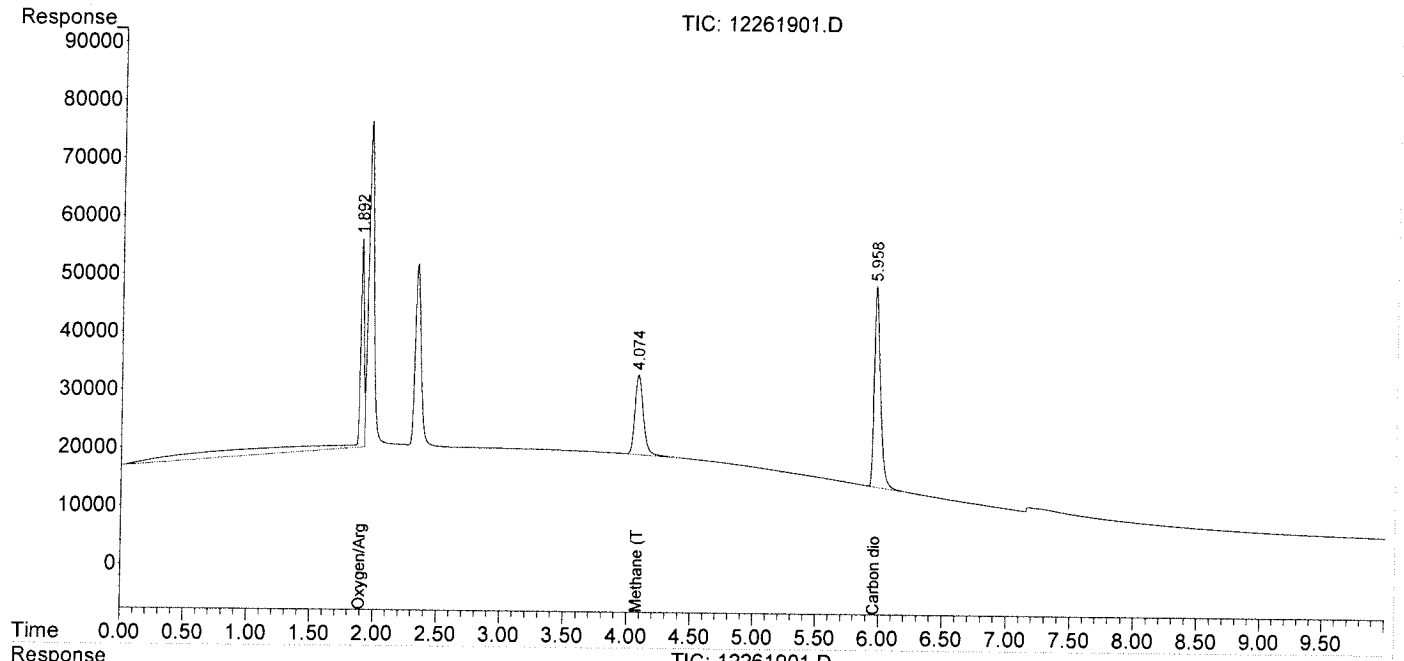
	Compound	R.T.	Response	Conc Units
Target Compounds				
1)	Oxygen/Argon	1.893	1510660	0.317 ppm
2)	Carbon monoxide	1.893	1510660	N.D. ppm
3)	Methane (TCD)	4.074f	633311	66964.949 ppm
4)	Carbon dioxide	5.958	1166007	4967.457 ppm m
6)	Methane (FID)	0.000	0	N.D. ppm
7)	Ethylene	0.000	0	N.D. ppm
8)	Ethane	0.000	0	N.D. ppm
9)	Propylene	0.000	0	N.D. ppm
10)	Propane	0.000	0	N.D. ppm
11)	Isobutylene	0.000	0	N.D. ppm
12)	Isobutane	0.000	0	N.D. ppm
13)	n-Butane	0.000	0	N.D. ppm

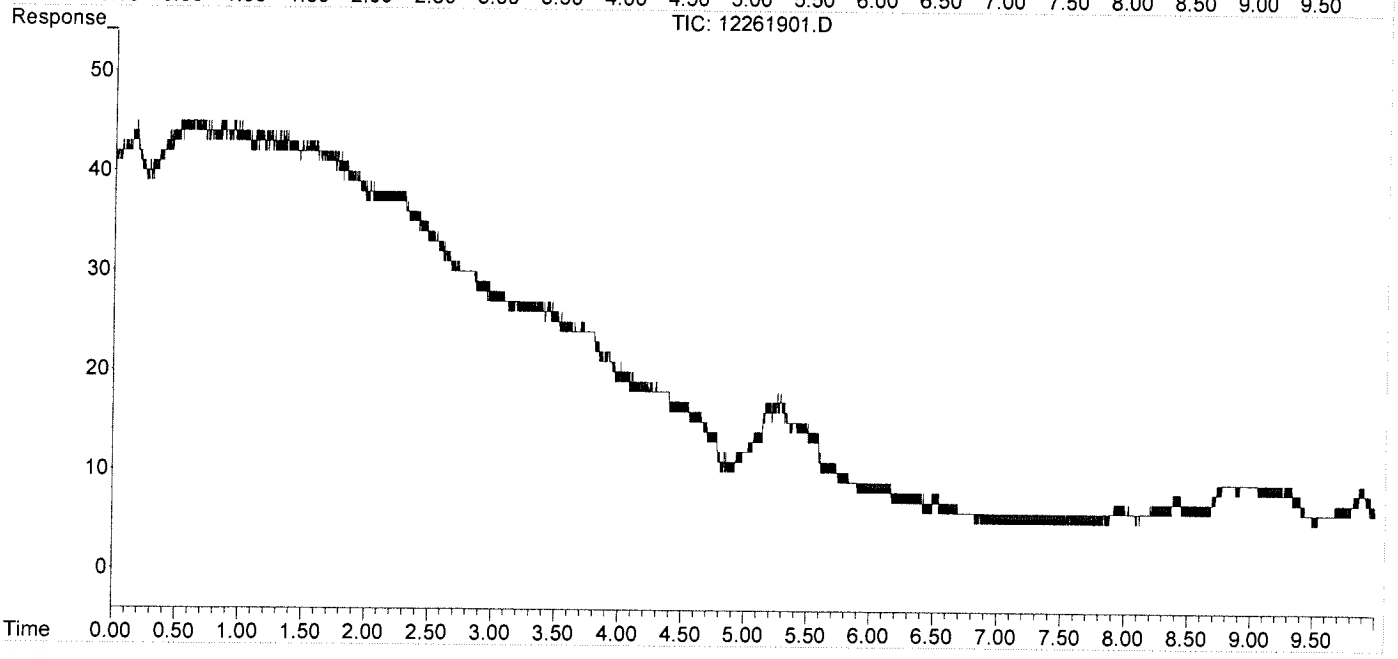
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261901.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 09:10:35
Operator : LD
Sample : STD S32-10291901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 09:22:21 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

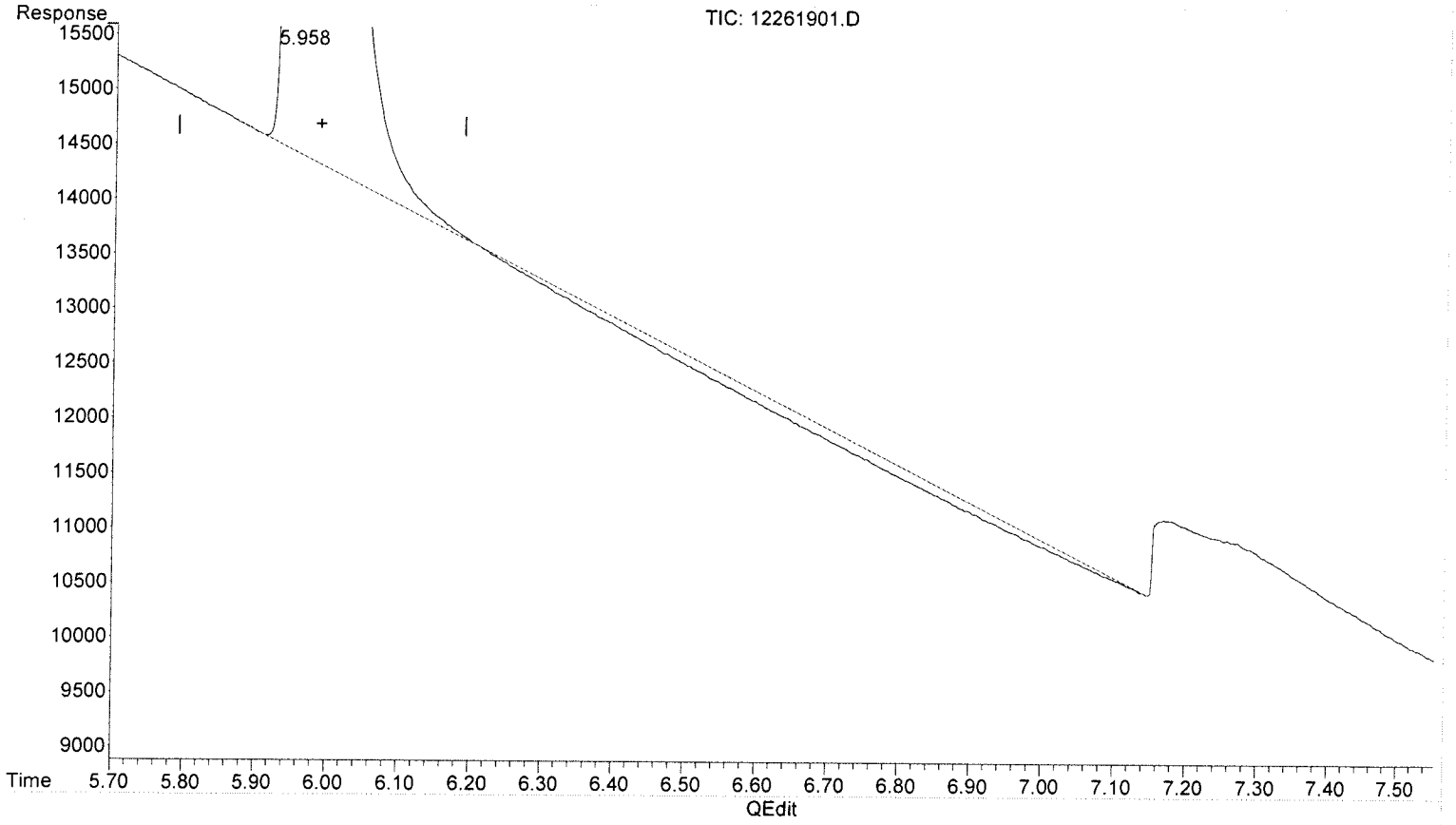




Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261901.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 09:10:35
Operator : LD
Sample : STD S32-10291901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 09:22:21 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(4) Carbon dioxide

5.959min 4796.457 ppm

response 1125868

(+) = Expected Retention Time

RS082817_CO2.M Fri Dec 27 10:12:19 2019 Page: 1

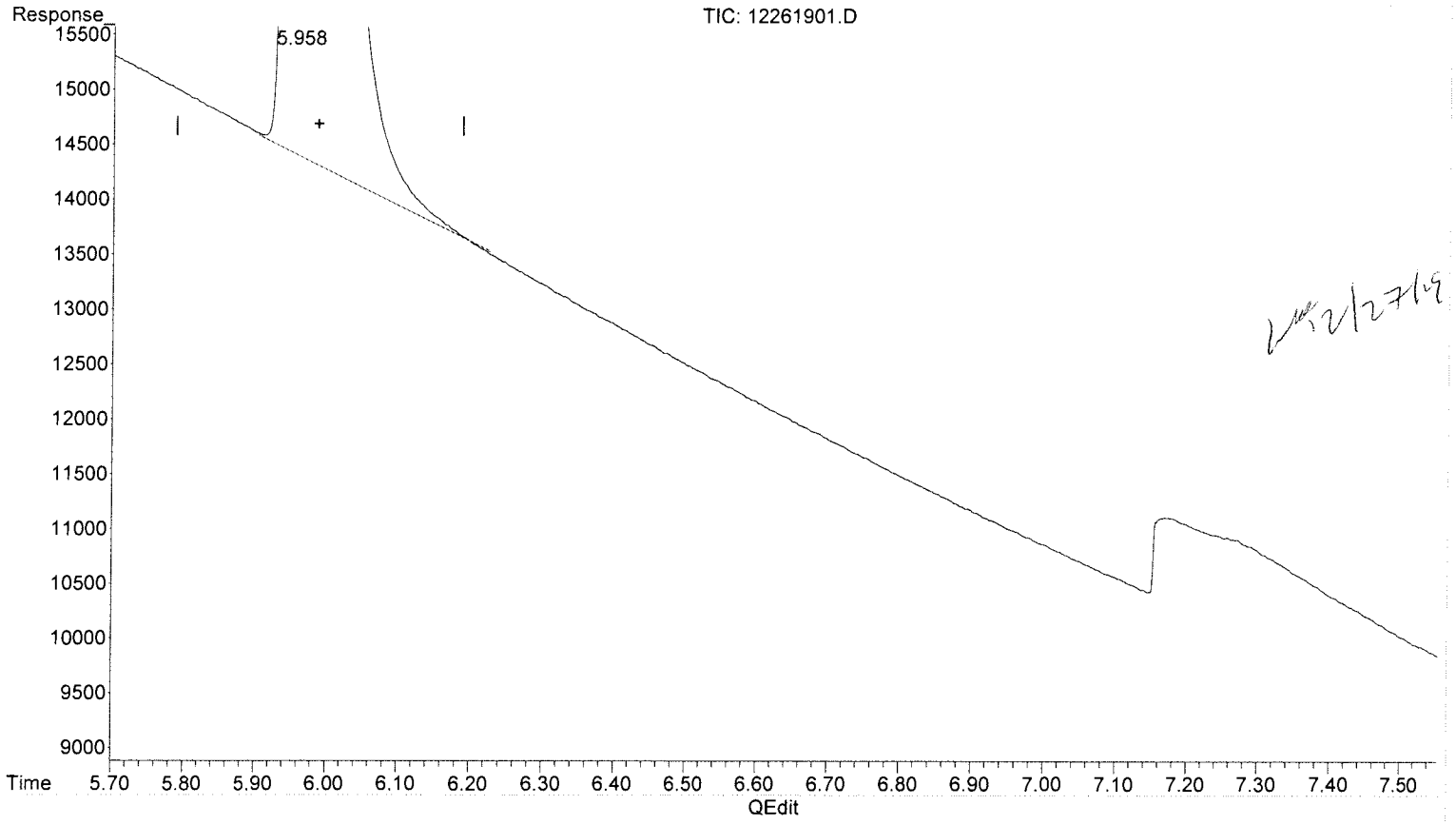
00999872

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261901.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 09:10:35
Operator : LD
Sample : STD S32-10291901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 09:22:21 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

LD
BLC
12/27

Volume Inj. :
Signal #1 Phase :
Signal #1 Info :
Signal #2 Phase:
Signal #2 Info :



12/27/19

(4) Carbon dioxide

5.958min 4967.457 ppm m

response 1166007

(+) = Expected Retention Time

RS082817_CO2.M Fri Dec 27 10:12:25 2019

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261918.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 14:51:43
Operator : LD
Sample : STD S32-10291901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:08:44 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

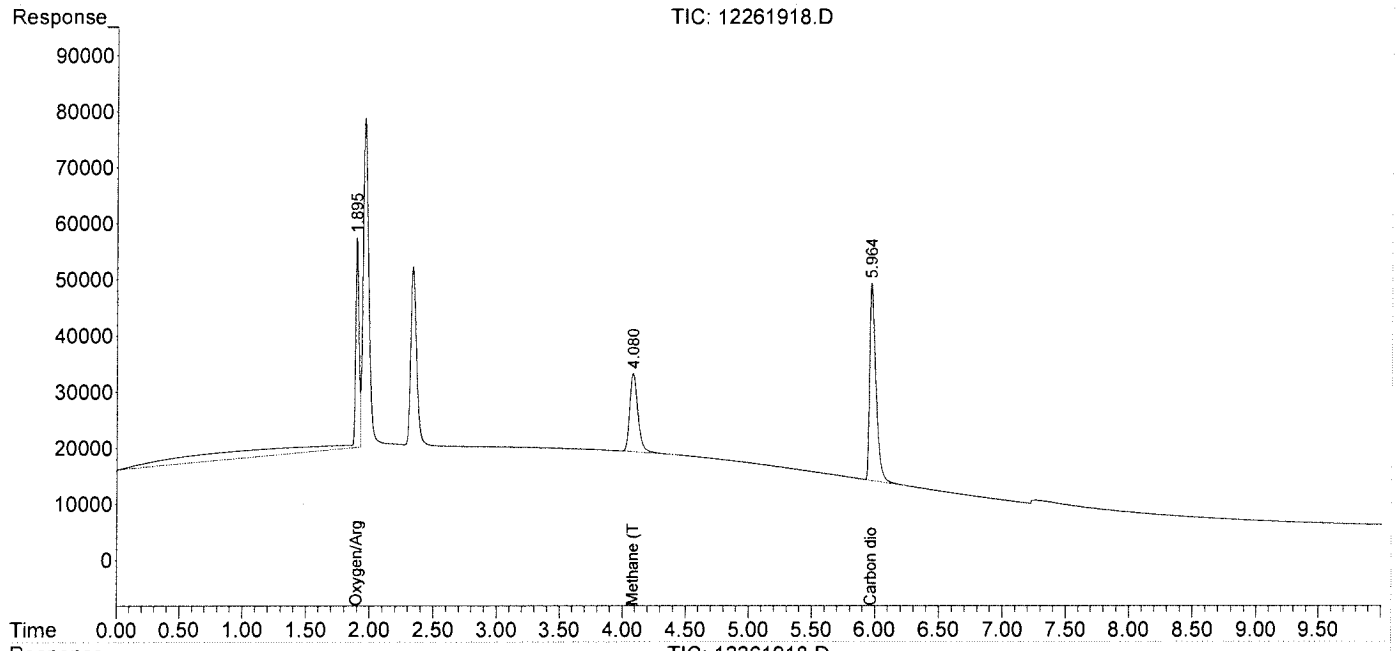
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.896	1726658	0.363	ppm	
2)	Carbon monoxide	1.896	1726658	N.D.	ppm	
3)	Methane (TCD)	4.080f	643404	68032.103	ppm	
4)	Carbon dioxide	5.964	1190459	5071.627	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

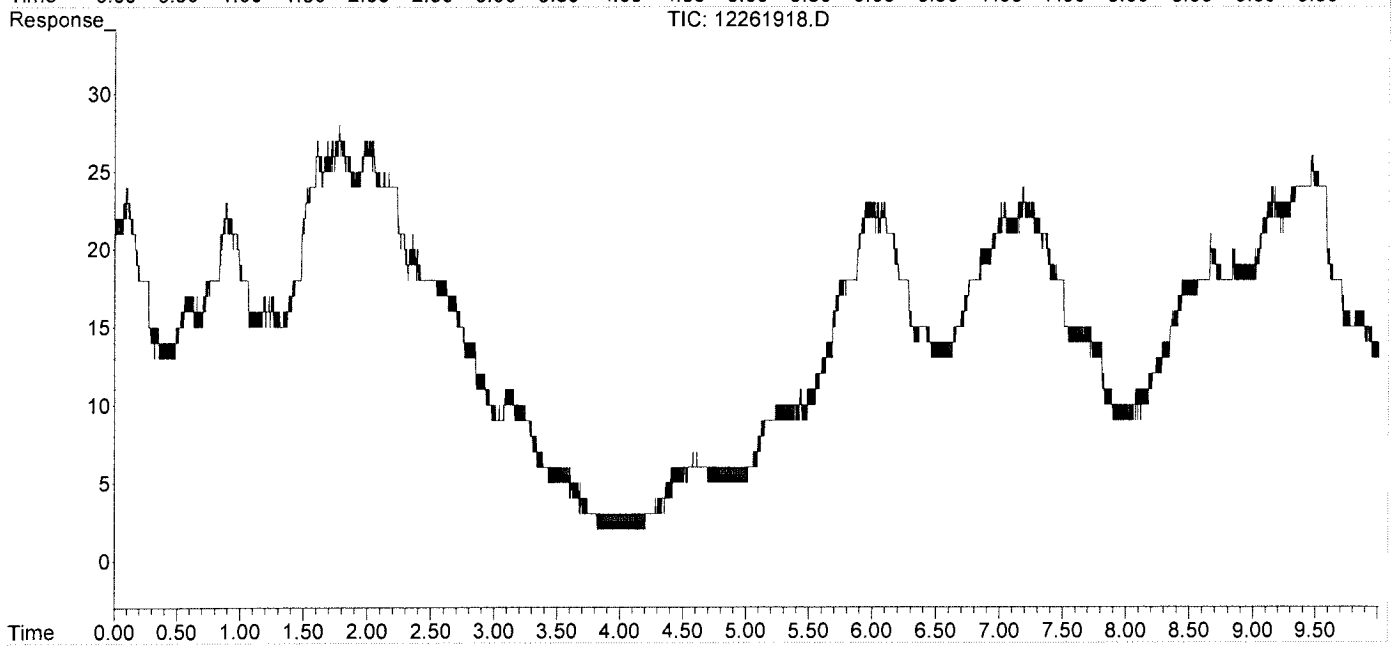
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261918.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 14:51:43
Operator : LD
Sample : STD S32-10291901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:08:44 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

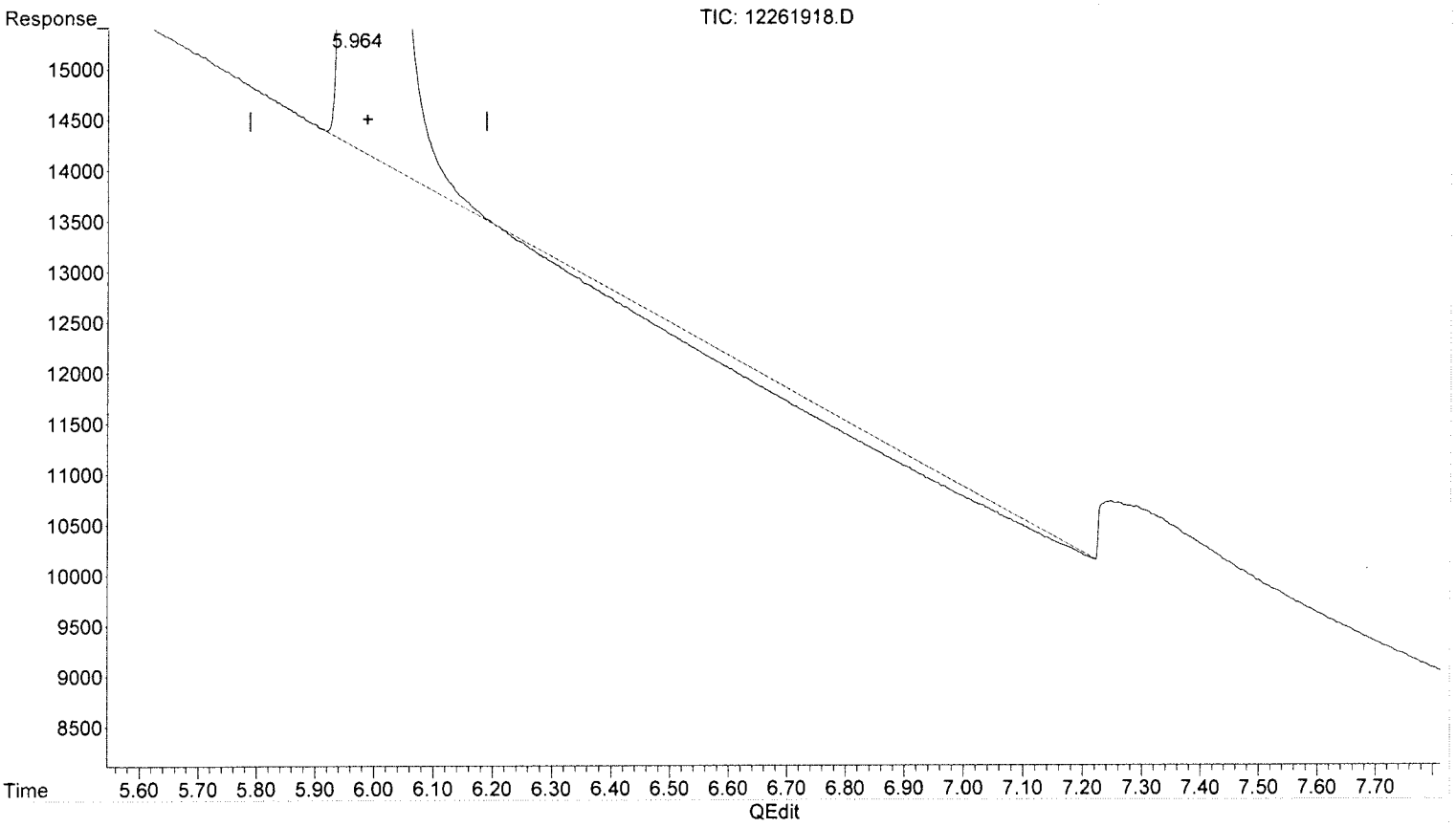




Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261918.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 14:51:43
Operator : LD
Sample : STD S32-10291901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:08:44 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(4) Carbon dioxide

5.965min 4826.613 ppm

response 1132947

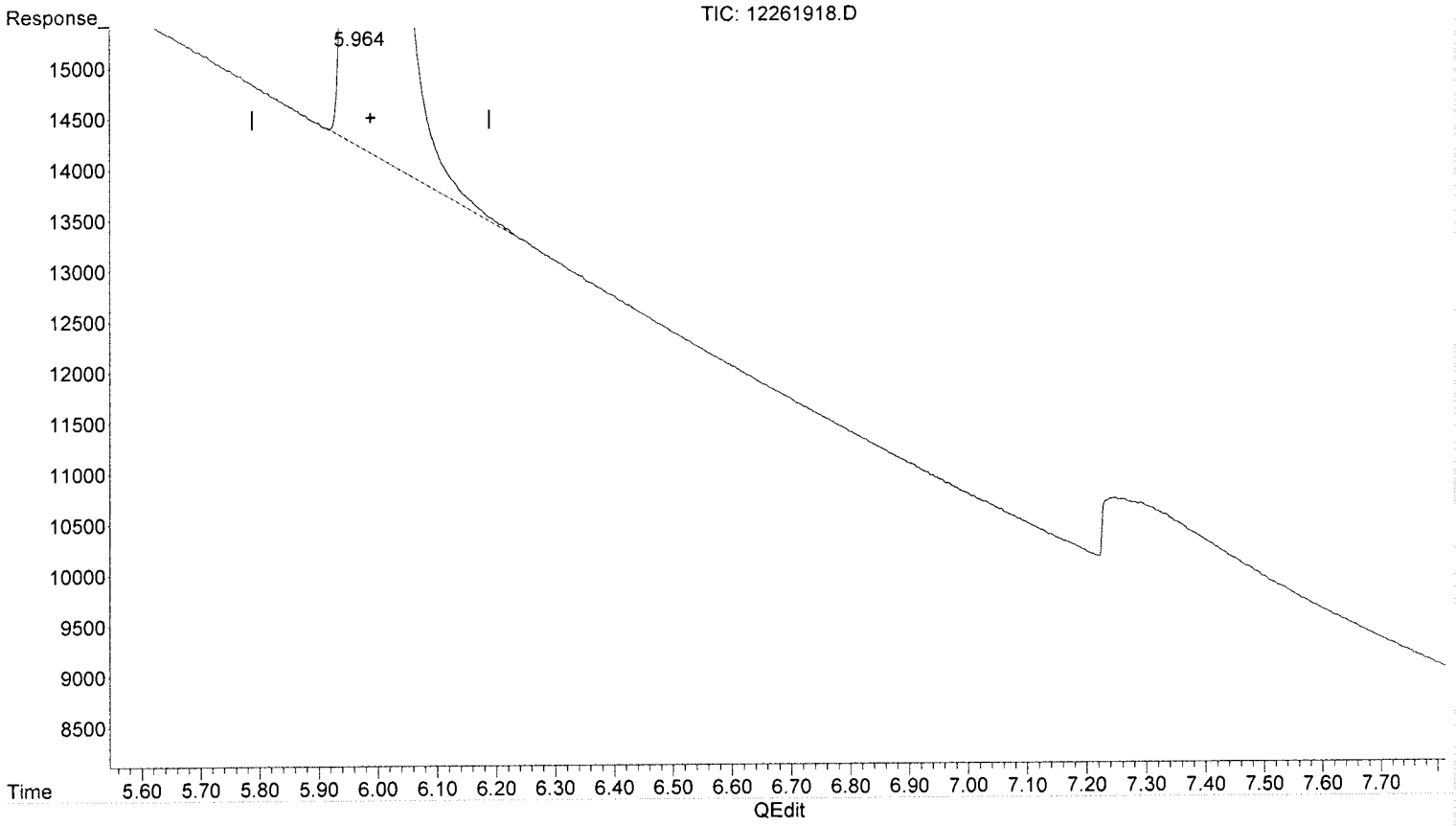
(+) = Expected Retention Time

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261918.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 14:51:43
Operator : LD
Sample : STD S32-10291901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:08:44 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

LD
BLC
12/27

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(4) Carbon dioxide

5.964min 5071.627 ppm m

response 1190459

(+) = Expected Retention Time

RS082817_CO2.M Fri Dec 27 10:13:02 2019

Page: 1

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261922.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 16:27:10
Operator : LD
Sample : STD S32-10291901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 16:42:43 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.919f	563019	0.118	ppm	
2)	Carbon monoxide	1.919f	563019	N.D.	ppm	
3)	Methane (TCD)	4.092f	678747	71769.206	ppm	
4)	Carbon dioxide	5.973	1229868	5239.520	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

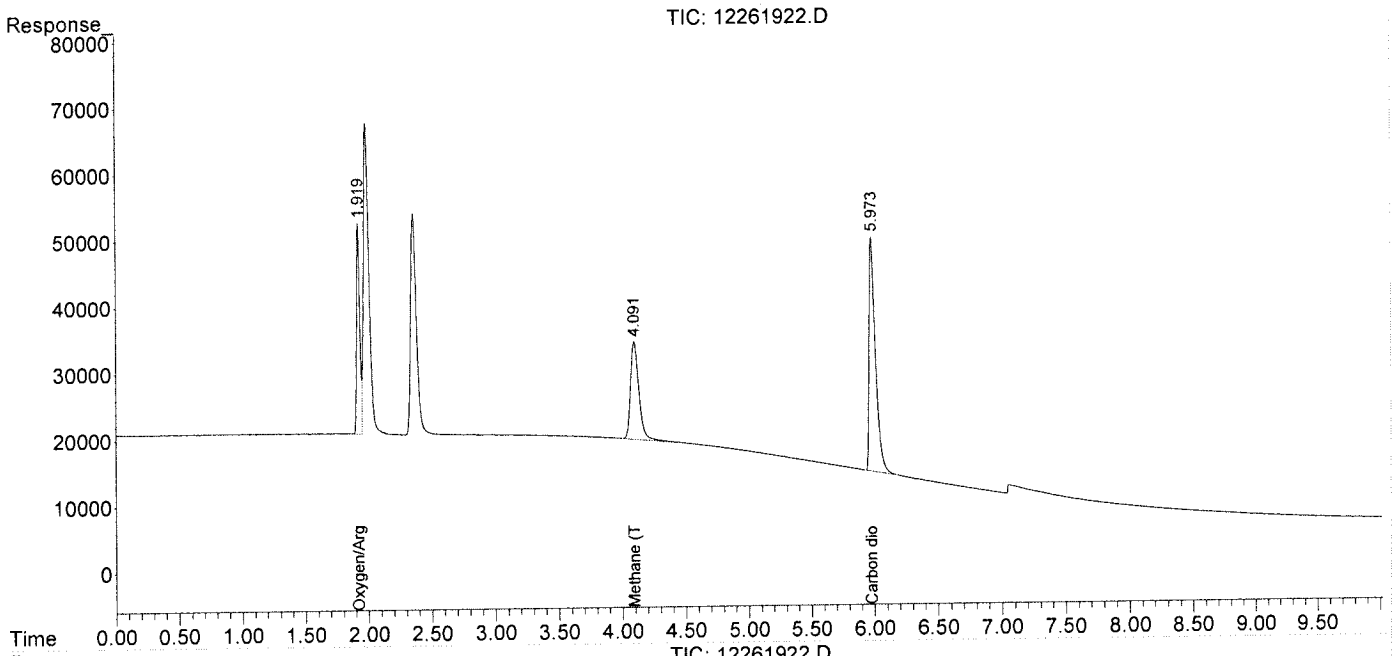
(f)=RT Delta > 1/2 Window (m)=manual int.

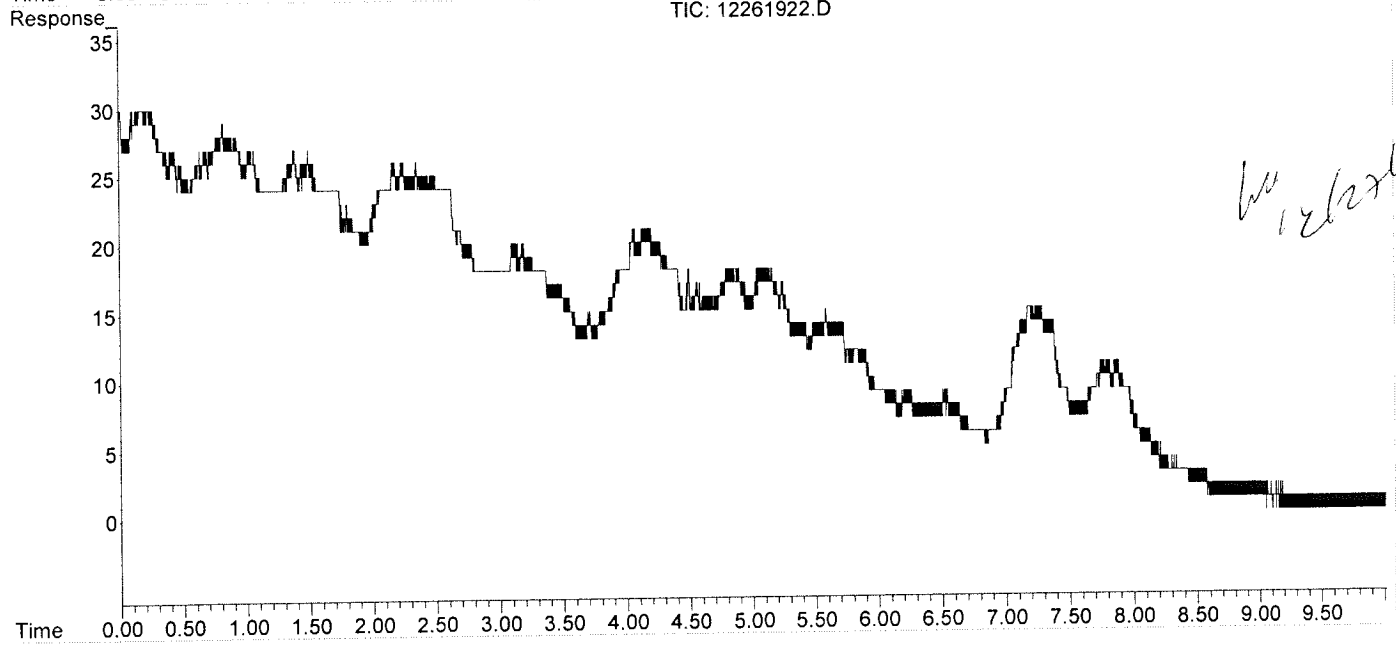
Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261922.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 16:27:10
Operator : LD
Sample : STD S32-10291901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 16:42:43 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

LD
BLC
NO previous
12127

Volume Inj. :
Signal #1 Phase :
Signal #1 Info :
Signal #2 Phase:
Signal #2 Info :





W, 12/27/19

Injection Log

Directory: I:\GC10\DATA\RSK_FID\2017_08\29\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	29-Aug-17, 07:58:00	08291701.D	std s30-06161601		MC	RSKBOTH.M	Pass
2	29-Aug-17, 08:11:02	08291702.D	mb 0.5ml		MC	RSKBOTH.M	Pass
3	29-Aug-17, 08:24:13	08291703.D	4089-001 0.5ml		MC	RSKBOTH.M	
4	29-Aug-17, 08:39:29	08291704.D	4089-002 0.5ml		MC	RSKBOTH.M	
5	29-Aug-17, 08:53:38	08291705.D	4089-003 0.5ml		MC	RSKBOTH.M	
6	29-Aug-17, 09:33:52	08291706.D	4089-004 0.5ml		MC	RSKBOTH.M	
7	29-Aug-17, 09:50:51	08291707.D	4089-005 0.5ml		MC	RSKBOTH.M	
8	29-Aug-17, 10:07:54	08291708.D	4089-006 0.5ml		MC	RSKBOTH.M	
9	29-Aug-17, 10:42:34	08291709.D	4089-007 0.5ml		MC	RSKBOTH.M	
10	29-Aug-17, 11:06:01	08291710.D	4089-008 0.5ml		MC	RSKBOTH.M	
11	29-Aug-17, 11:23:53	08291711.D	4089-009 0.5ml		MC	RSKBOTH.M	
12	29-Aug-17, 11:37:17	08291712.D	lcs s30-05241604		MC	RSKBOTH.M	Pass
13	29-Aug-17, 11:50:31	08291713.D	lcs s30-05241604		MC	RSKBOTH.M	Pass
14	29-Aug-17, 12:29:45	08291714.D	std s30-06161601		MC	RSKBOTH.M	Pass
15	29-Aug-17, 14:07:01	08291715.D	25ppm s32-08291701 0.25ml		MC	RSKBOTH.M	Curve
16	29-Aug-17, 14:22:12	08291716.D	100ppm s32-08291702 0.2ml		MC	RSKBOTH.M	Curve
17	29-Aug-17, 14:53:00	08291717.D	250ppm s32-08291702 0.5ml		MC	RSKBOTH.M	Curve
18	29-Aug-17, 15:07:43	08291718.D	mls inject		MC	RSKBOTH.M	
19	29-Aug-17, 15:23:21	08291719.D	2500ppm s32-08231701 50ul		MC	RSKBOTH.M	Curve
20	29-Aug-17, 15:44:54	08291720.D	5000ppm s32-08231701 0.1ml		MC	RSKBOTH.M	Curve
21	29-Aug-17, 16:00:09	08291721.D	25000ppm s32-08231701 0.5ml		MC	RSKBOTH.M	Curve
22	29-Aug-17, 16:15:43	08291722.D	mb 0.1ml		MC	RSKBOTH.M	Pass
23	29-Aug-17, 16:35:37	08291723.D	lcv s30-07071701		MC	RSKBOTH.M	Pass

00999880

Injection Log

12/31/19

Directory: I:\GC10\DATA\RSK_TCD\2019_12\26\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	26-Dec-19, 09:10:35	12261901.D	STD S32-10291901		LD	RSKBOTH.M	PASS
2	26-Dec-19, 09:24:53	12261902.D	RB 0.1ml		LD	RSKBOTH.M	PASS
3	26-Dec-19, 11:27:12	12261903.D	MCS 0.1ml		LD	RSKBOTH.M	PASS
4	26-Dec-19, 11:41:15	12261904.D	xxxxLCS S32-08141901		LD	RSKBOTH.M	FAIL
5	26-Dec-19, 11:55:02	12261905.D	xxxxLCS S32-08141901		LD	RSKBOTH.M	FAIL
6	26-Dec-19, 12:08:56	12261906.D	xxxxxLCS S32-08141901		LD	RSKBOTH.M	FAIL
7	26-Dec-19, 12:23:26	12261907.D	xxxxxLCS S32-08141901		LD	RSKBOTH.M	FAIL
8	26-Dec-19, 12:36:53	12261908.D	P1907801-001 0.1ml		LD	RSKBOTH.M	
9	26-Dec-19, 12:50:07	12261909.D	P1907801-002 0.1ml		LD	RSKBOTH.M	
10	26-Dec-19, 13:03:25	12261910.D	P1907801-003 0.1ml		LD	RSKBOTH.M	
11	26-Dec-19, 13:17:04	12261911.D	P1907801-004 0.1ml		LD	RSKBOTH.M	
12	26-Dec-19, 13:30:29	12261912.D	P1907801-005 0.1ml		LD	RSKBOTH.M	
13	26-Dec-19, 13:43:47	12261913.D	P1907801-006 0.1ml		LD	RSKBOTH.M	
14	26-Dec-19, 13:56:40	12261914.D	P1907802-001 0.1ml		LD	RSKBOTH.M	
15	26-Dec-19, 14:09:49	12261915.D	P1907802-002 0.1ml		LD	RSKBOTH.M	
16	26-Dec-19, 14:25:42	12261916.D	P1907802-003 0.1ml		LD	RSKBOTH.M	
17	26-Dec-19, 14:38:40	12261917.D	P1907802-004 0.1ml		LD	RSKBOTH.M	
18	26-Dec-19, 14:51:43	12261918.D	STD S32-10291901		LD	RSKBOTH.M	PASS
19	26-Dec-19, 15:09:48	12261919.D	P1907802-005 0.1ml		LD	RSKBOTH.M	
20	26-Dec-19, 15:58:59	12261920.D	LCS S32-08141901		LD	RSKBOTH.M	PASS
21	26-Dec-19, 16:11:50	12261921.D	LCSD S32-08141901		LD	RSKBOTH.M	PASS
22	26-Dec-19, 16:27:10	12261922.D	STD S32-10291901		LD	RSKBOTH.M	PASS

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271906.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 12:00:50
Operator : LD
Sample : P1907801-001 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:36:03 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

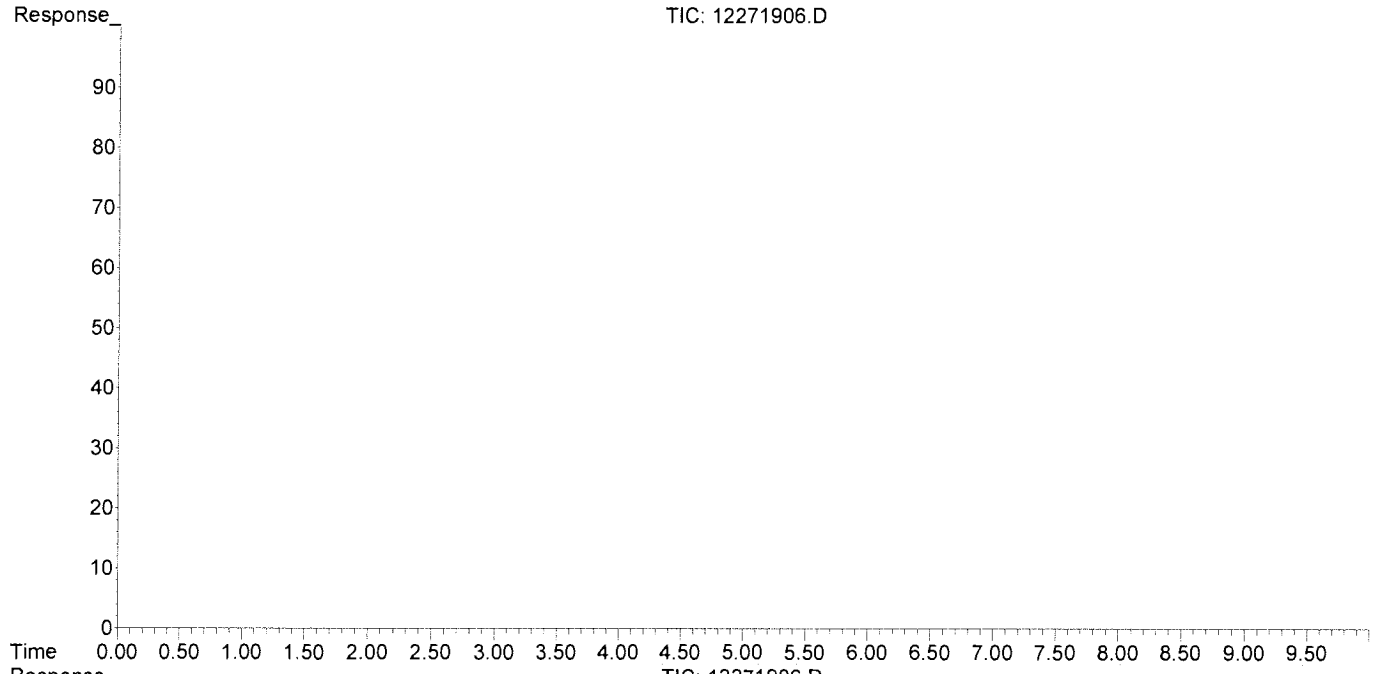
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.114	12313	1.357	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

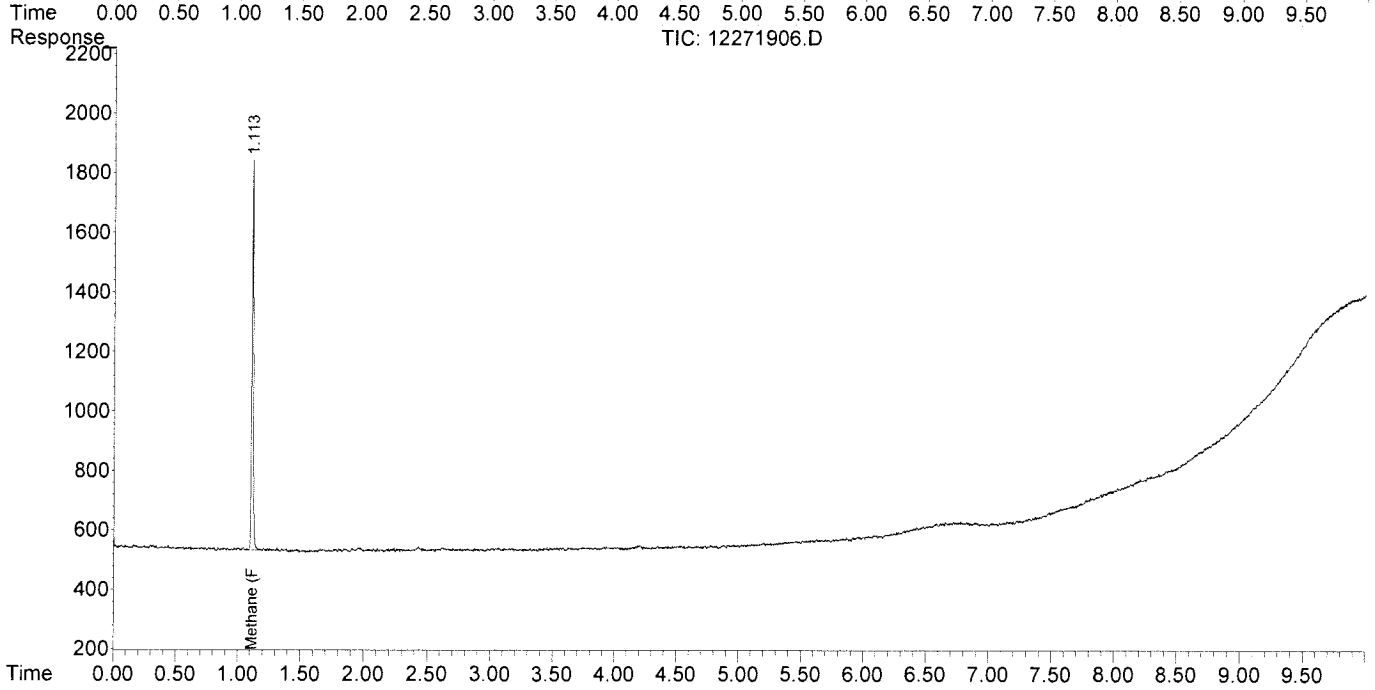
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271906.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 12:00:50
Operator : LD
Sample : P1907801-001 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:36:03 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271907.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 12:15:29
Operator : LD
Sample : P1907801-002 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:36:13 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

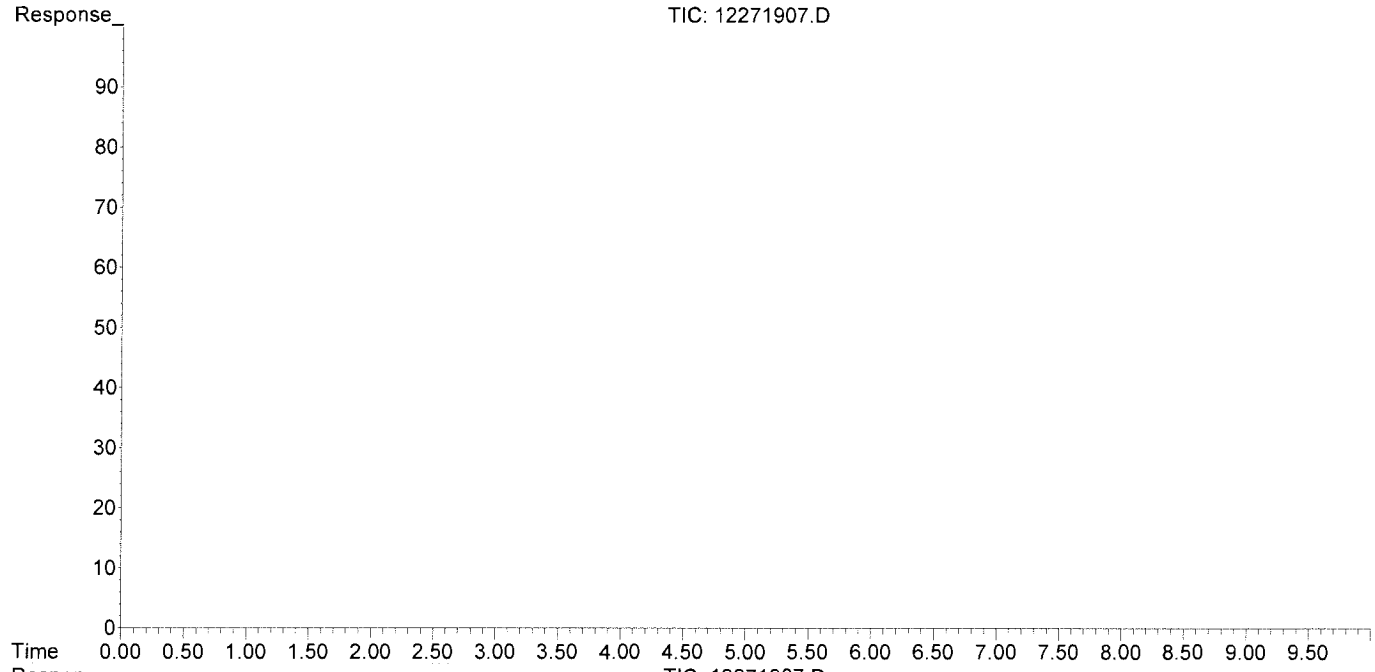
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.115	2581675	284.619	ppm
7)	Ethylene	1.691	2299	0.137	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

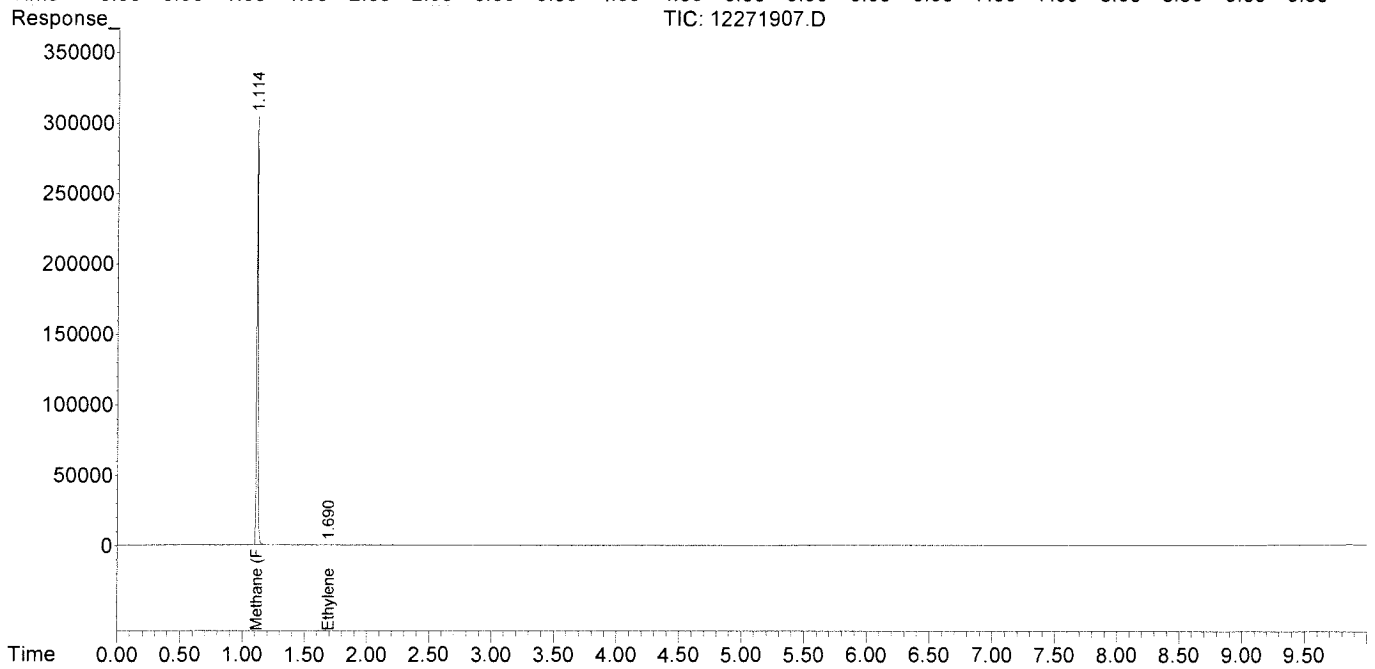
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271907.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 12:15:29
Operator : LD
Sample : P1907801-002 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:36:13 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271908.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 12:29:32
Operator : LD
Sample : P1907801-003 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:36:26 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

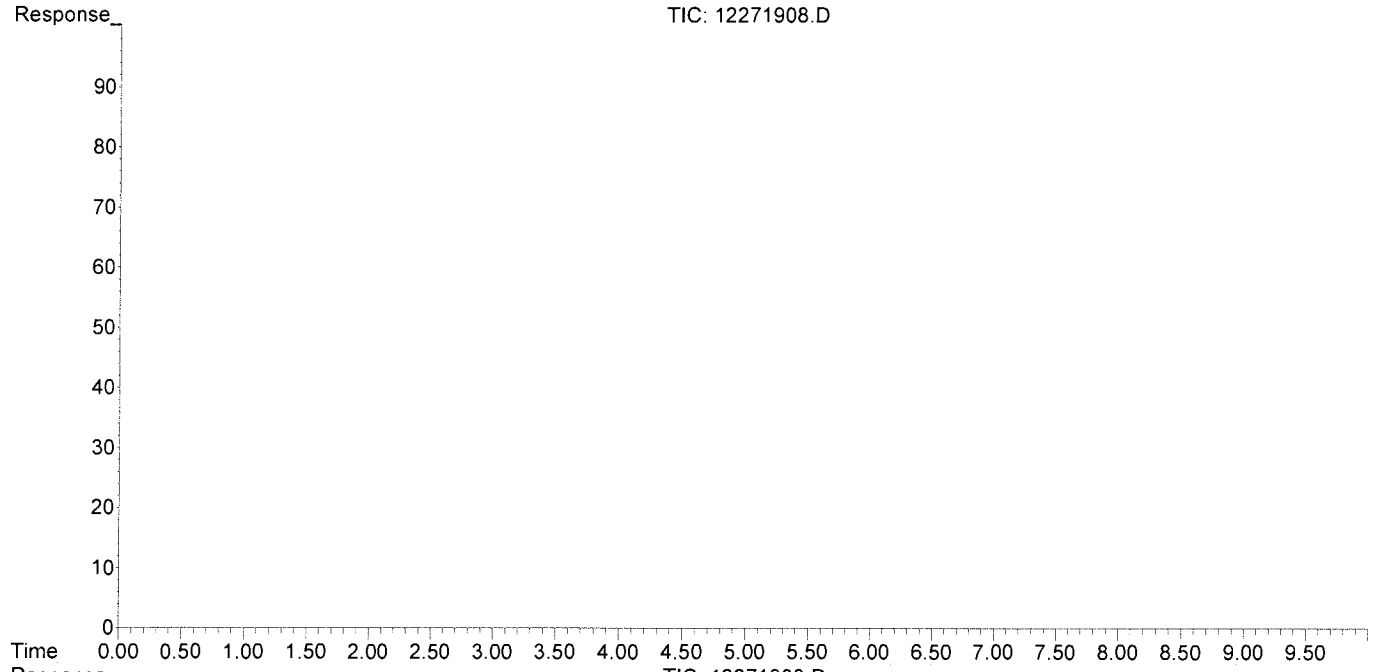
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.115	3605206	397.459	ppm
7)	Ethylene	1.690	23412	1.399	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

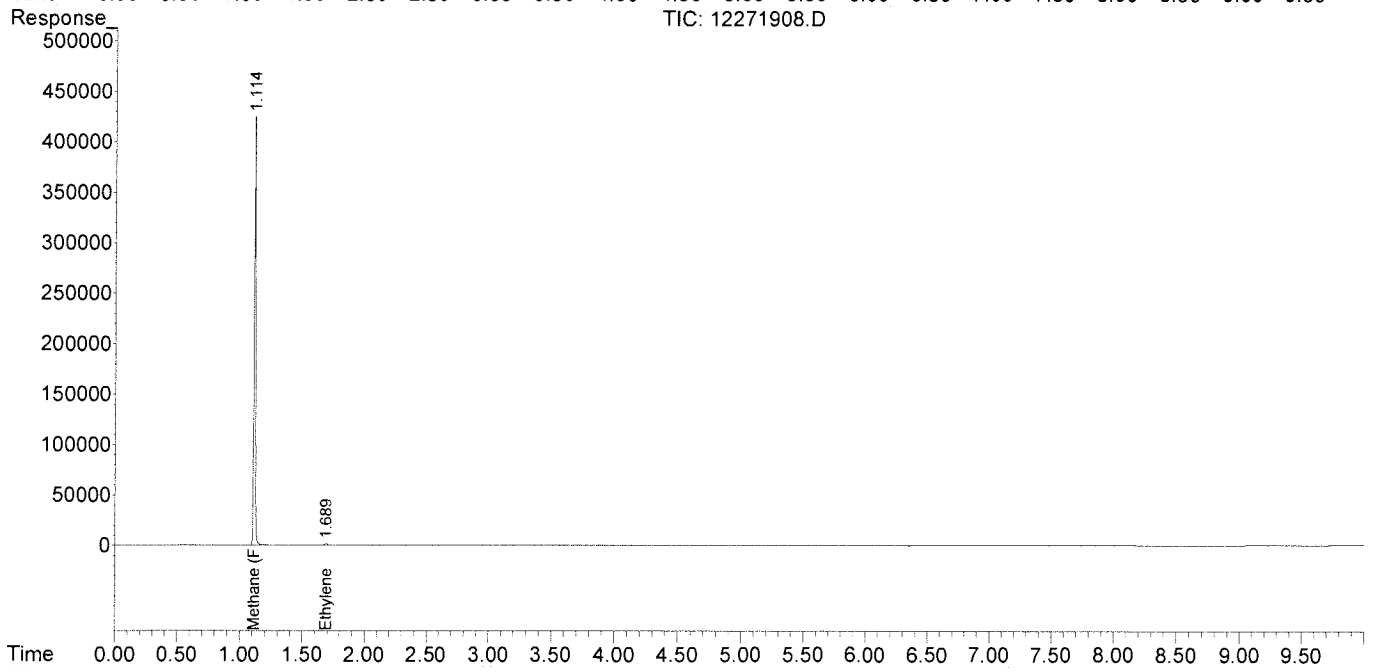
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271908.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 12:29:32
Operator : LD
Sample : P1907801-003 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:36:26 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271909.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 12:42:33
Operator : LD
Sample : P1907801-004 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:36:36 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

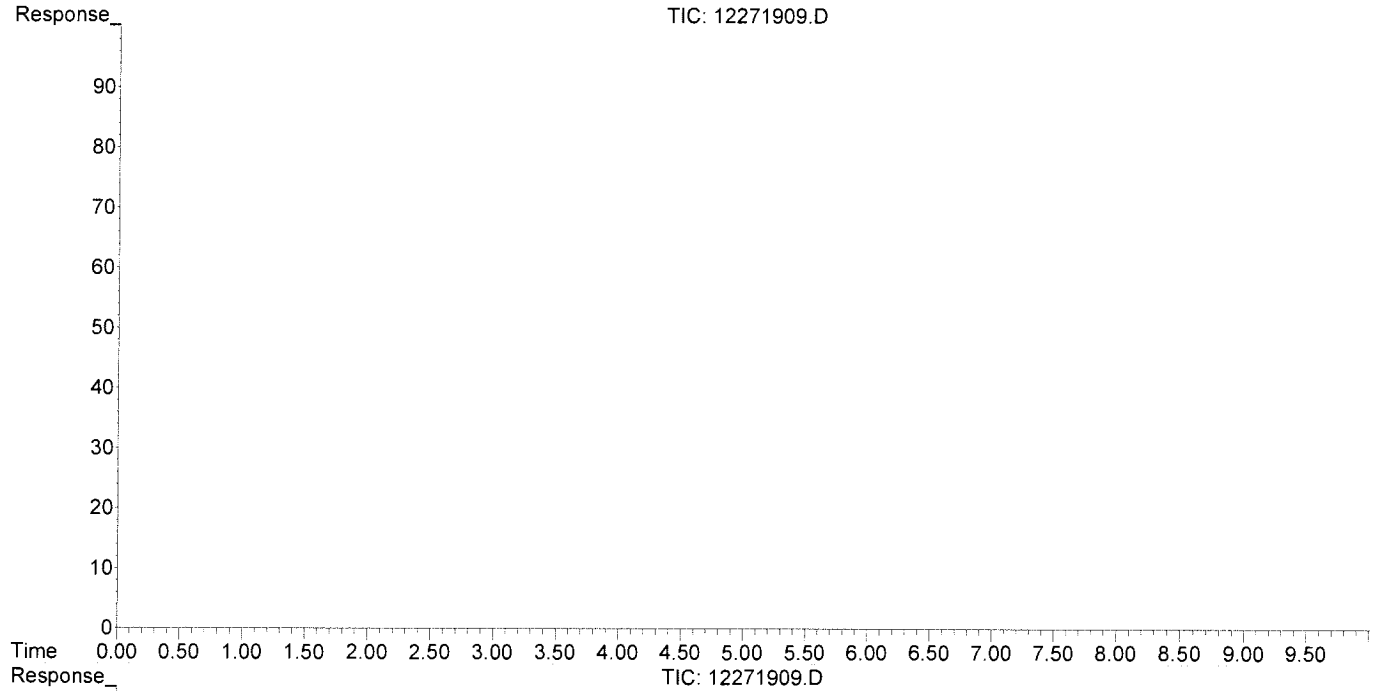
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.111	3584870	395.217	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

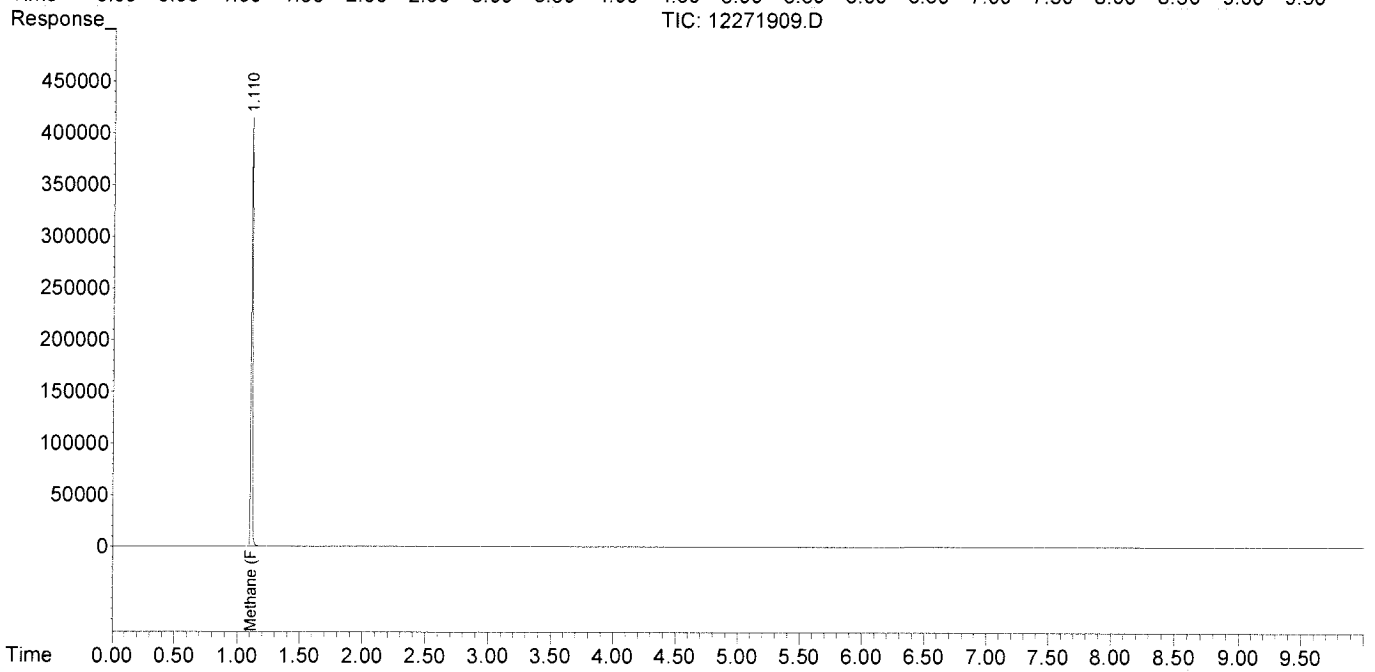
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271909.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 12:42:33
Operator : LD
Sample : P1907801-004 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:36:36 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271910.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 12:56:28
Operator : LD
Sample : P1907801-005 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:36:46 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

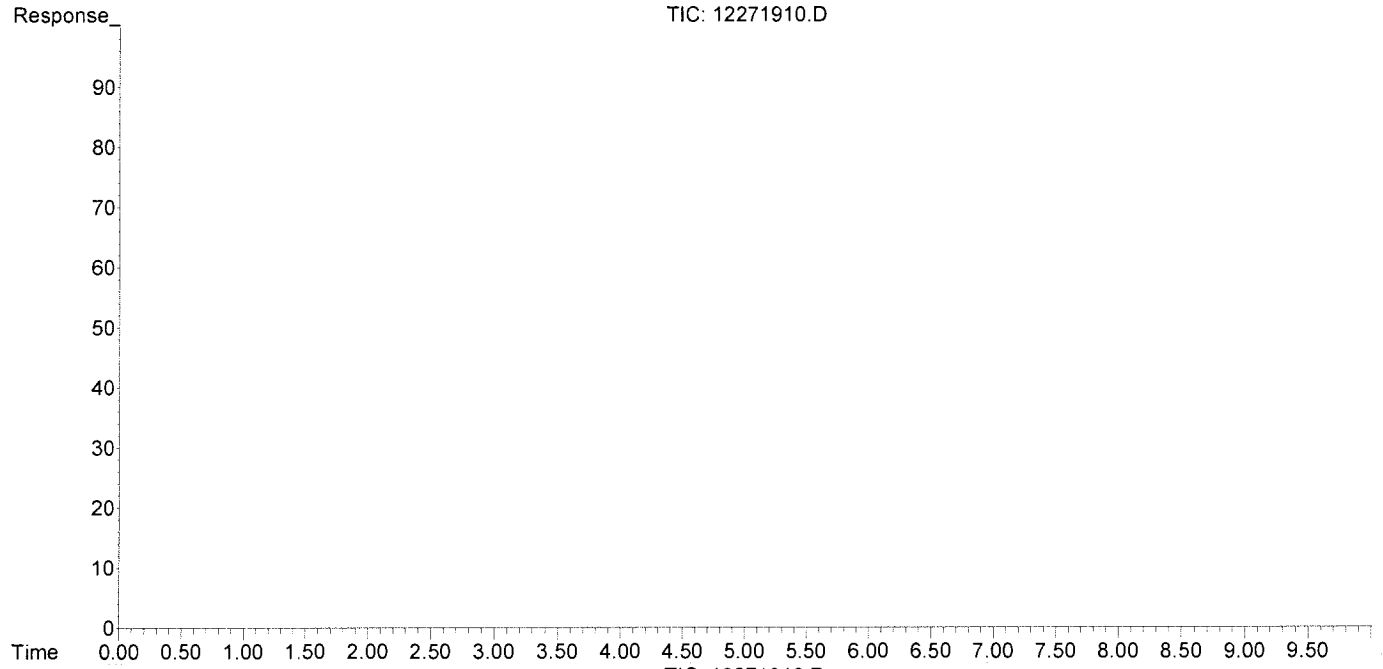
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.114	6432493	709.155	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

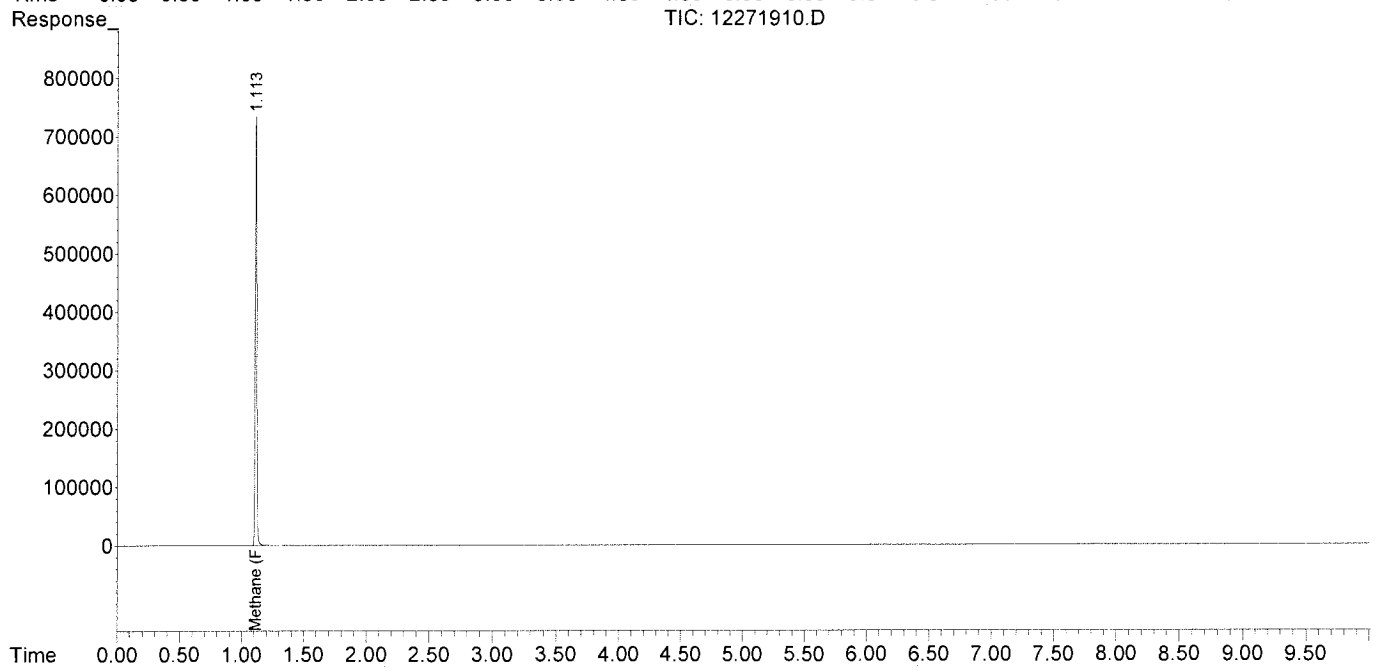
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271910.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 12:56:28
Operator : LD
Sample : P1907801-005 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:36:46 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271911.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 13:09:49
Operator : LD
Sample : P1907801-006 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:36:57 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

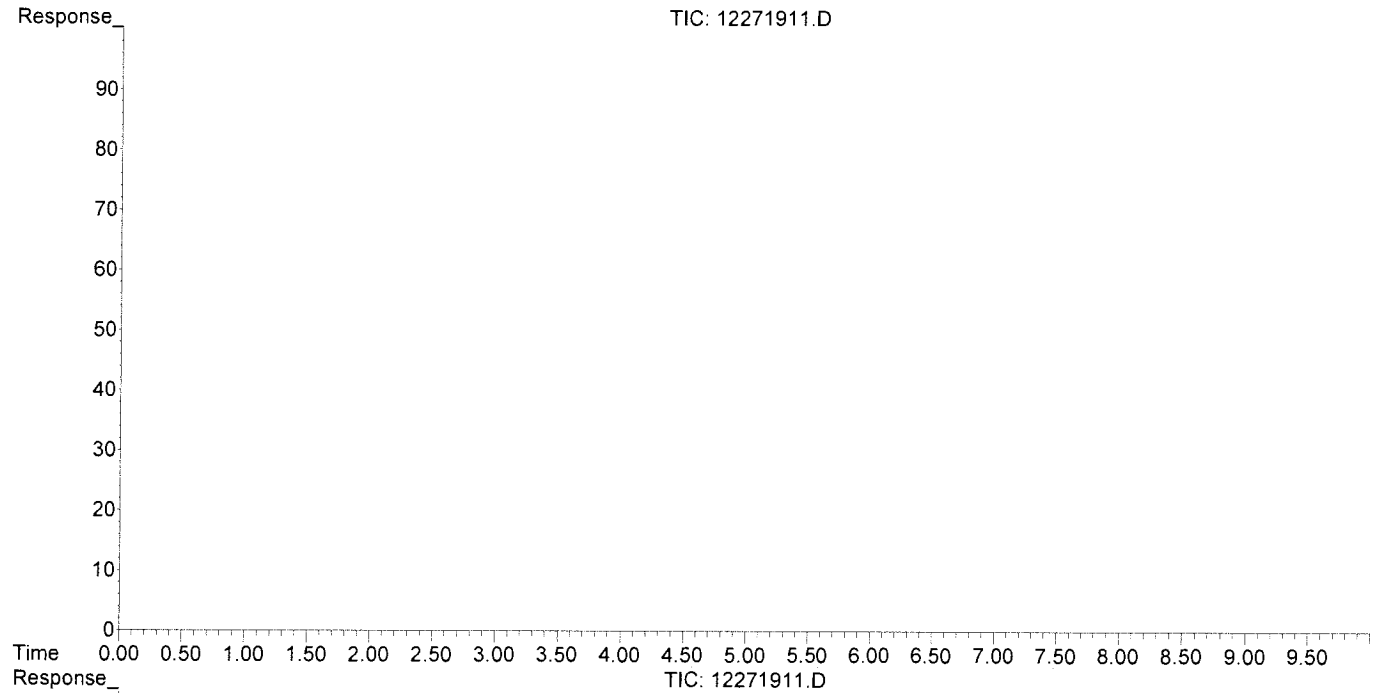
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.114	9488	1.046	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

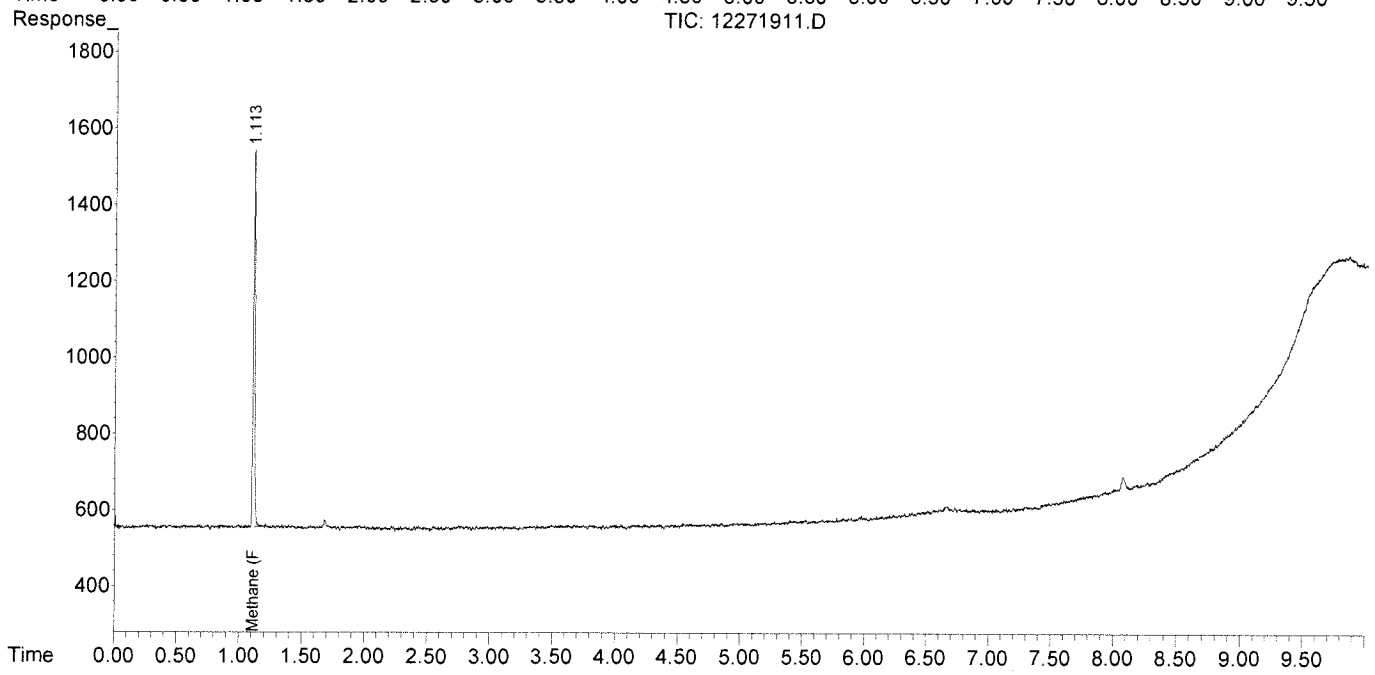
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271911.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 13:09:49
Operator : LD
Sample : P1907801-006 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:36:57 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271903.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 11:17:39
Operator : LD
Sample : MCS 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 11:35:58 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

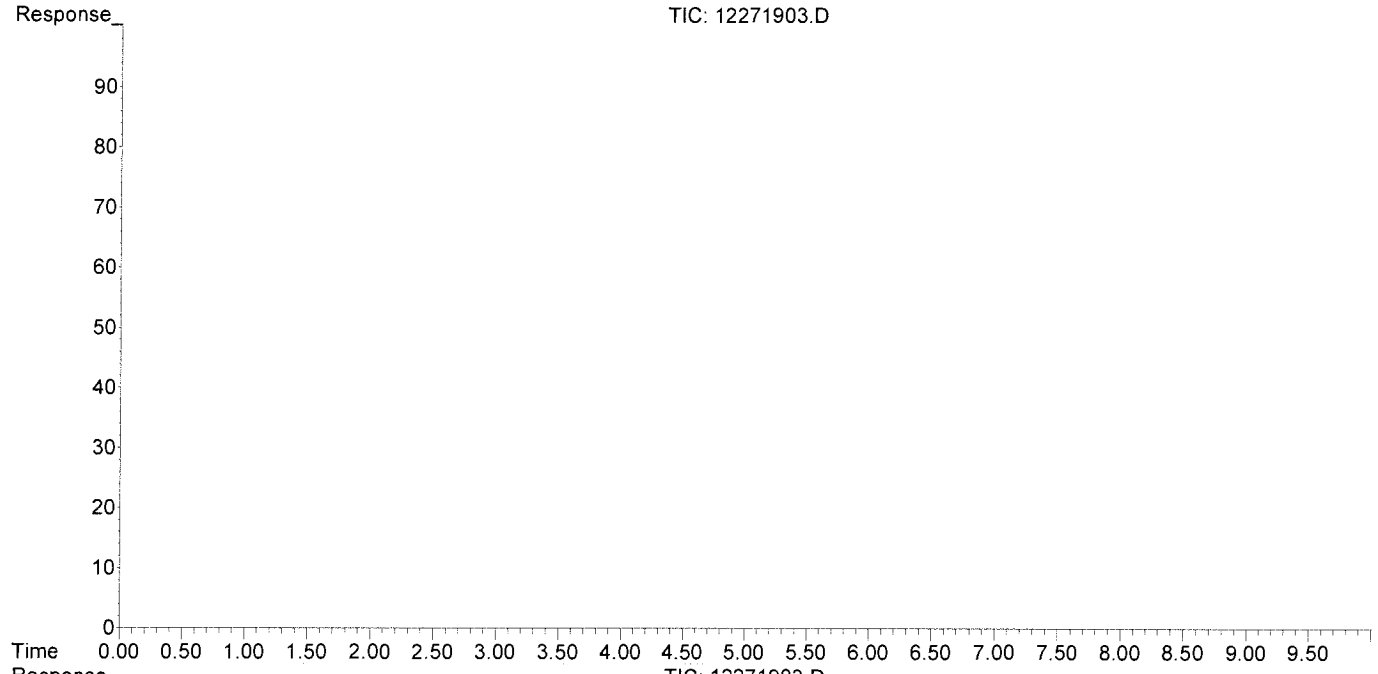
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.120	1191	0.131	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	6.713	7250	0.272	ppm
13)	n-Butane	6.713	7250	0.272	ppm

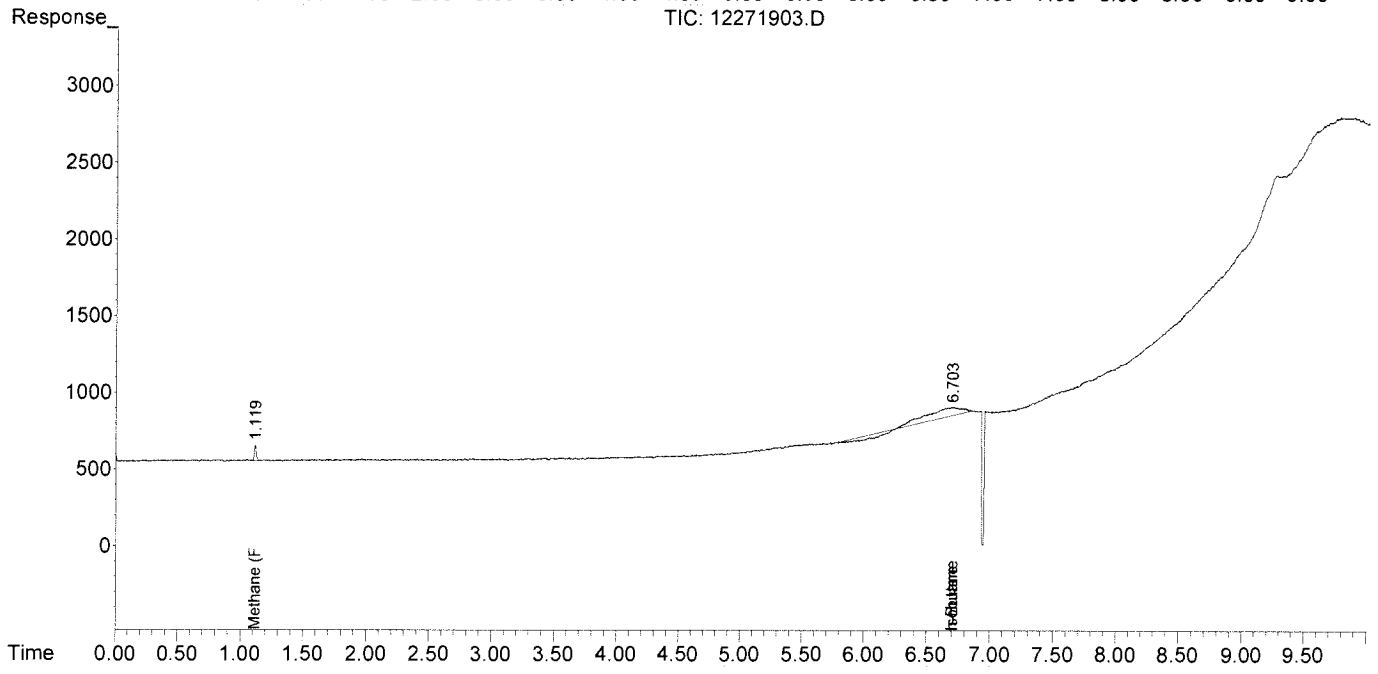
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271903.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 11:17:39
Operator : LD
Sample : MCS 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 11:35:58 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271904.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 11:32:18
Operator : LD
Sample : LCS S32-07231801
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 12:26:59 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

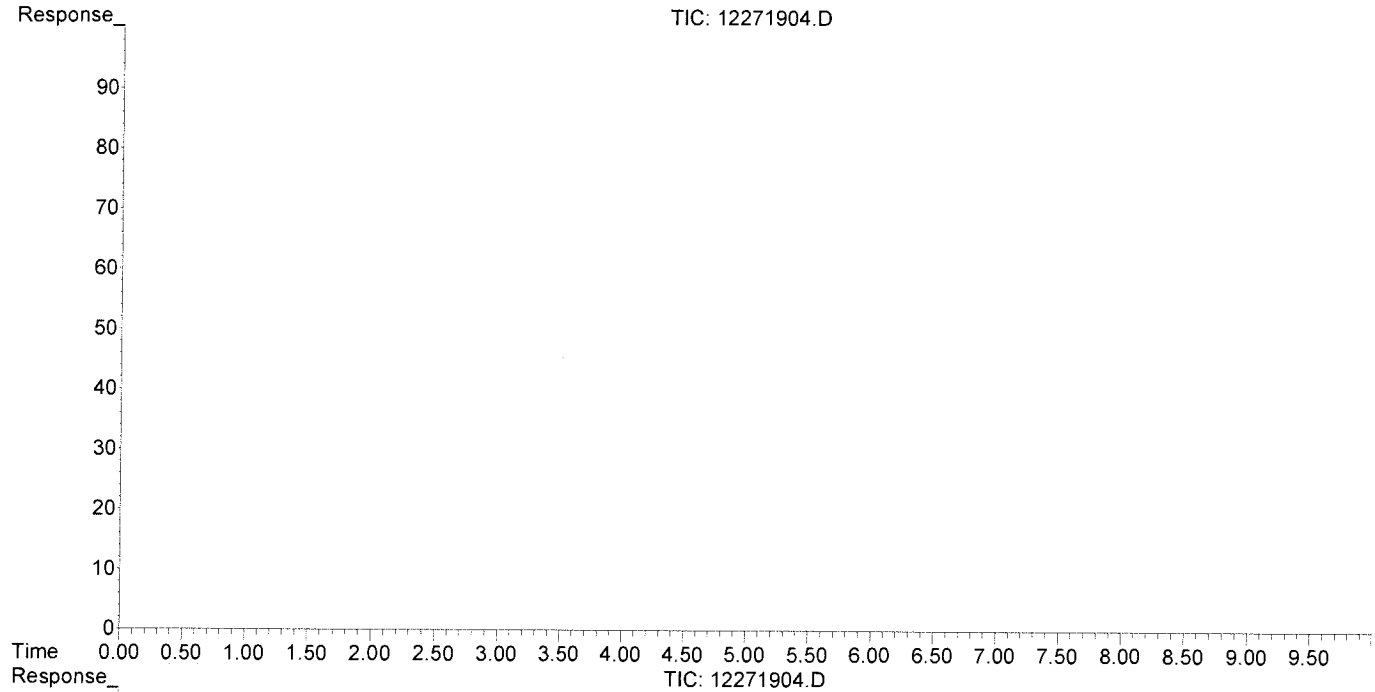
	Compound	R.T.	Response	Conc Units
Target Compounds				
1)	Oxygen/Argon	0.000	0	N.D. ppm
2)	Carbon monoxide	0.000	0	N.D. ppm
3)	Methane (TCD)	0.000	0	N.D. ppm
4)	Carbon dioxide	0.000	0	N.D. ppm
6)	Methane (FID)	1.118	12636	1.393 ppm
7)	Ethylene	1.695	16931	1.012 ppm
8)	Ethane	1.964	21308	1.257 ppm
9)	Propylene	4.347	22646	0.966 ppm
10)	Propane	4.469	32754	1.316 ppm
11)	Isobutylene	0.000	0	N.D. ppm
12)	Isobutane	6.668	263402	9.896 ppm
13)	n-Butane	6.668	263402	9.896 ppm

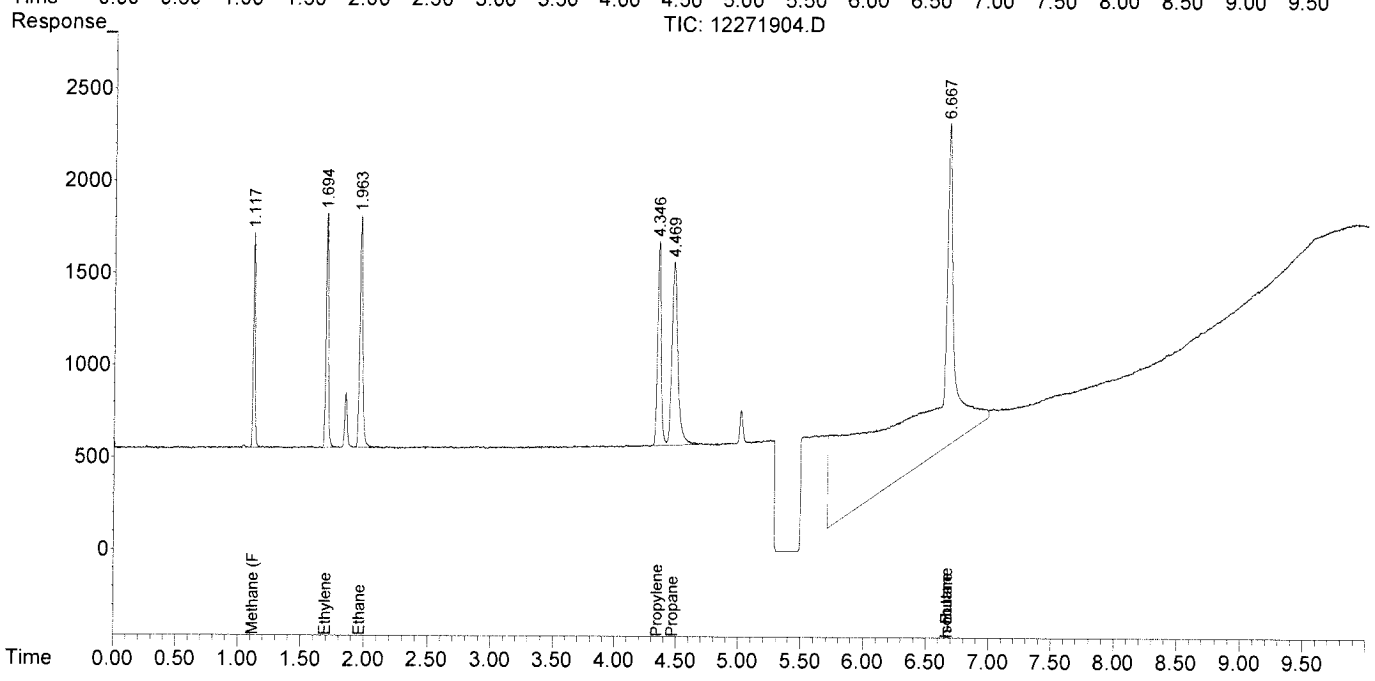
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271904.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 11:32:18
Operator : LD
Sample : LCS S32-07231801
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 12:26:59 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271905.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 11:45:51
Operator : LD
Sample : LCSD S32-07231801
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 12:27:32 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

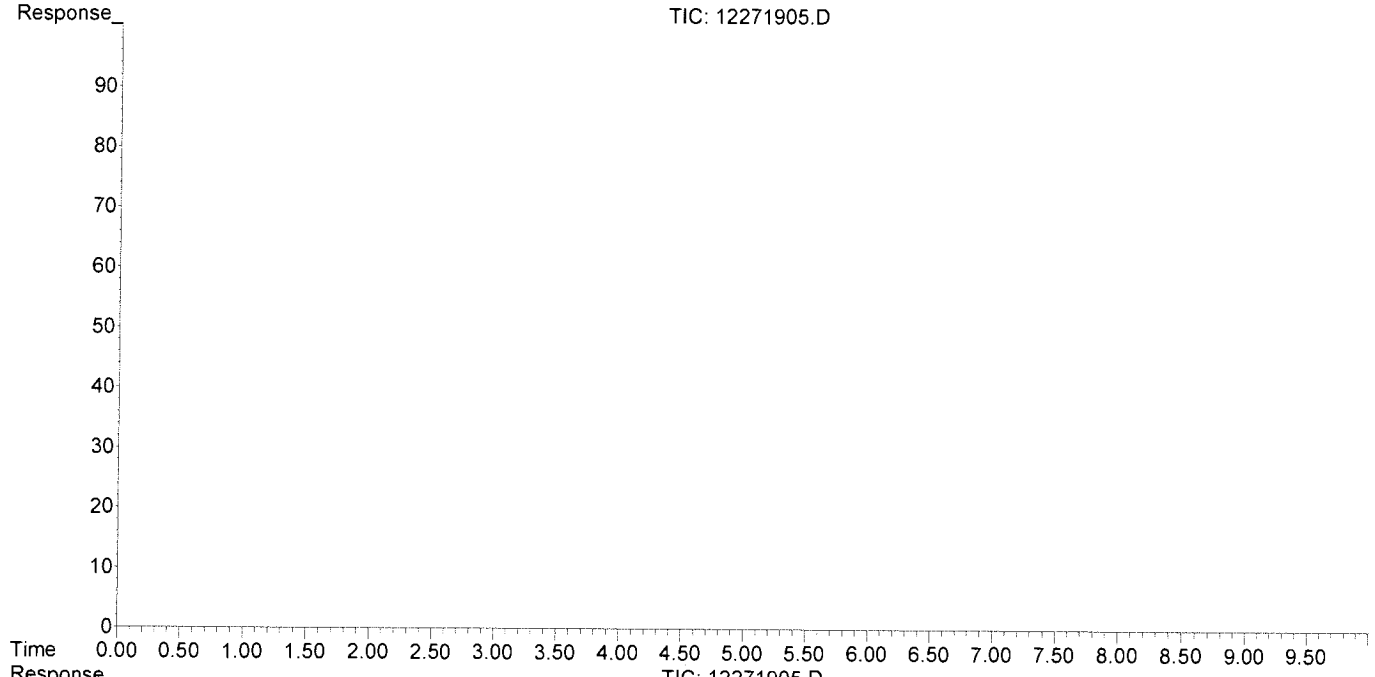
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.115	12814	1.413	ppm
7)	Ethylene	1.690	16812	1.005	ppm
8)	Ethane	1.958	21419	1.264	ppm
9)	Propylene	4.344	22887	0.977	ppm
10)	Propane	4.467	32984	1.326	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	6.668	44613	1.676	ppm
13)	n-Butane	6.668	44613	1.676	ppm

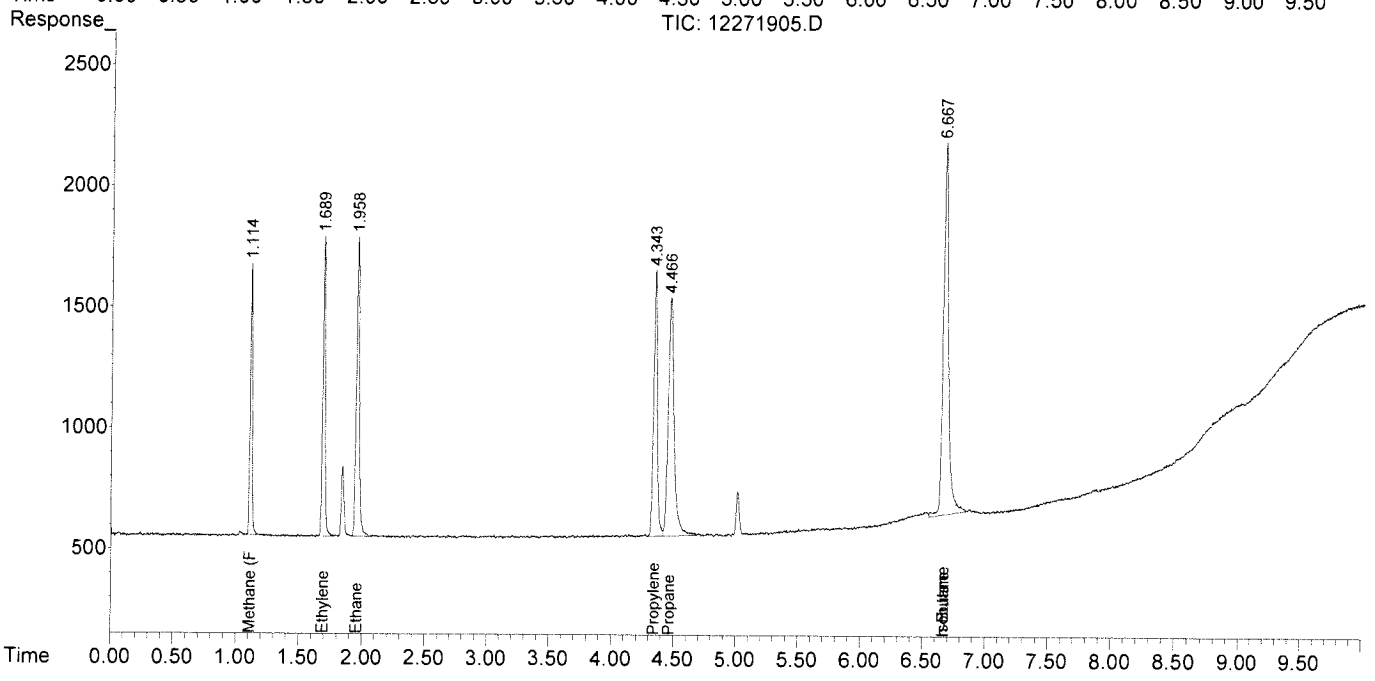
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271905.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 11:45:51
Operator : LD
Sample : LCSD S32-07231801
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 12:27:32 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Response Factor Report HP5890

Method Path : J:\GC10\METHODS\
Method File : RS091217_R.M
Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
Last Update : Wed Sep 13 11:14:47 2017
Response Via : Initial Calibration

Calibration Files
1 =09121702.D 2 =09121703.D 3 =09121704.D
4 =09121705.D 5 =09121706.D 6 =09121707.D

	Compound	1	2	3	4	5	6	Avg		%RSD
1)	Oxygen/Argon	3.739		1.014			0.001	0.793	E6	189.17
2)	Carbon monoxide	3.739		1.014			0.001	0.594	E6	221.92
3)	Methane (TCD)						2.161	0.951	E2	106.37
4)	Carbon dioxide	2.365	2.569	2.558	2.361	2.459	2.314	2.438	E2	4.44

Signal #2 Calibration Files
1 =09121702.D 2 =09121703.D 3 =09121704.D
4 =09121705.D 5 =09121706.D 6 =09121707.D

	Compound	1	2	3	4	5	6	Avg		%RSD
6)	Methane (FID)		1.180	0.975	0.908	0.870	0.868	0.907	E4	11.66
7)	Ethylene	1.736	1.638	1.780	1.720	1.628	1.670	1.673	E4	3.90
8)	Ethane	1.781	1.676	1.784	1.730	1.692	1.675	1.695	E4	3.83
9)	Propylene	2.505	2.296	2.592	2.480	2.346	2.252	2.343	E4	6.56
10)	Propane	2.439	2.283	2.645	2.555	2.433	2.522	2.488	E4	4.20
11)	Isobutylene							0.652	E1	138.46
12)	Isobutane	6.058	4.793	2.214	1.553	1.353		2.662	E4	86.17
13)	n-Butane	6.058	4.793	2.214	1.553	1.353		2.662	E4	86.17

(#) = Out of Range ### Number of calibration levels exceeded format ###

RS091217_R.M Wed Sep 13 15:11:48 2017

Edit Compounds -- Compound #6 -- Methane (FID)

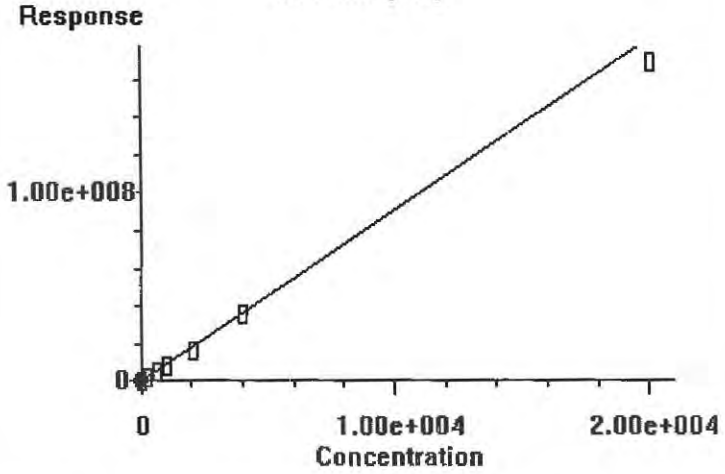
Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compoun
  - Oxygen/Argon
  - Carbon monoxide
  - Methane (TCD)
  - Carbon dioxide
  - Signal #2
  - Methane (FID)
  - Ethylene
  - Ethane
  - Propylene
  - Propane
  - Isobutylene
  - Isobutane
  - n-Butane

Identification | Calibration | User-Defined | Advanced | Reporting

Lvl ID	Concentration	Response
1	0.151000	
2	0.302000	3564.400000
3	1.510000	14725.268625
4	4.530000	41128.575000
5	10.570000	91966.784531
6	200.000000	1735997.497500
7	600.000000	5189848.900000
8	1000.000000	8598533.570000
9	2000.000000	16098209.390000
10	4000.000000	35776839.311362
11	20000.000000	169009160.49199

Methane (FID)



0.000e+000	Quadratic term
9.071e+003	Linear term
0.000e+000	Constant term
11.657%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

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Edit Compounds -- Compound #7 -- Ethylene

Search by: Ret Time | Name | Index | Find Compound

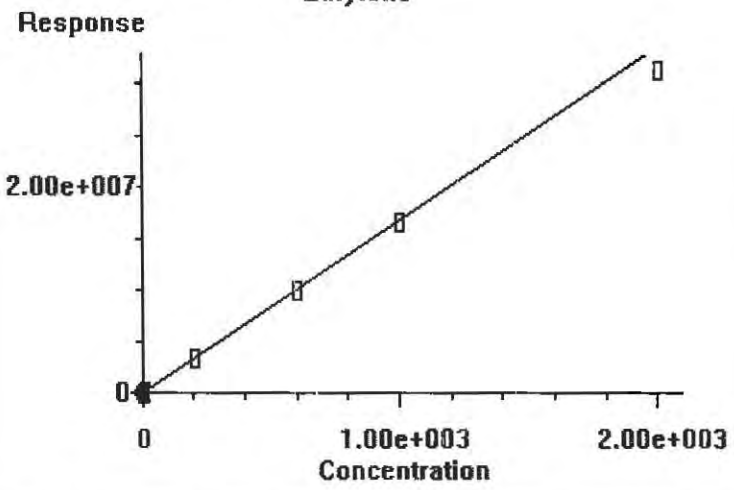
Compound Database
External Standard Compoun
- Oxygen/Argon
- Carbon monoxide
- Methane (TCD)
- Carbon dioxide
- Signal #2
- Methane (FID)
- Ethylene
- Ethane
- Propylene
- Propane
- Isobutylene
- Isobutane
- n-Butane

Identification | Calibration | User-Defined | Advanced | Reporting

Lvl ID	Concentration	Response
1	0.151000	2621.970000
2	0.302000	4946.731301
3	1.510000	26884.746847
4	4.530000	77902.721497
5	10.570000	172085.529560
6	200.000000	3339702.313219
7	600.000000	10007758.776971
8	1000.000000	16608503.805988
9	2000.000000	31192443.898600
10	4000.000000	

Lvl ID	Concentration	Response
11	20000.000000	

Ethylene



0.000e+000	Quadratic term
1.673e+004	Linear term
0.000e+000	Constant term
3.897%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

Page 678 of 703

Edit Compounds -- Compound #8 -- Ethane

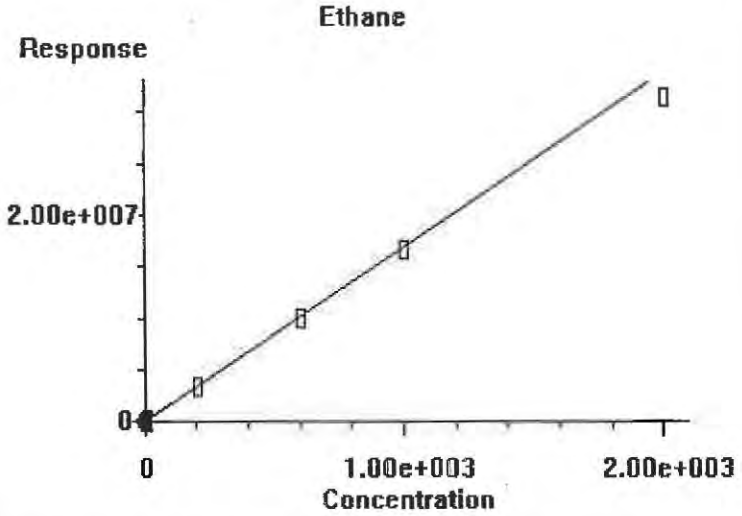
Search by: Ret Time | Name | Index — Find Compound

- Compound Database
- External Standard Compoun
  - Oxygen/Argon
  - Carbon monoxide
  - Methane (TCD)
  - Carbon dioxide
  - Signal #2
  - Methane (FID)
  - Ethylene
  - Ethane
  - Propylene
  - Propane
  - Isobutylene
  - Isobutane
  - n-Butane

Identification | Calibration | User-Defined | Advanced | Reporting

Lvl ID	Concentration	Response
1	0.151000	2689.928008
2	0.302000	5060.331943
3	1.510000	26943.667500
4	4.530000	78353.525045
5	10.570000	178840.731148
6	200.000000	3350442.319129
7	600.000000	10048964.218029
8	1000.000000	16703164.879012
9	2000.000000	31424217.938900
10	4000.000000	

Lvl ID	Concentration	Response
11	20000.000000	



0.000e+000	Quadratic term
1.695e+004	Linear term
0.000e+000	Constant term
3.831%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

Edit Compounds -- Compound #9 -- Propylene

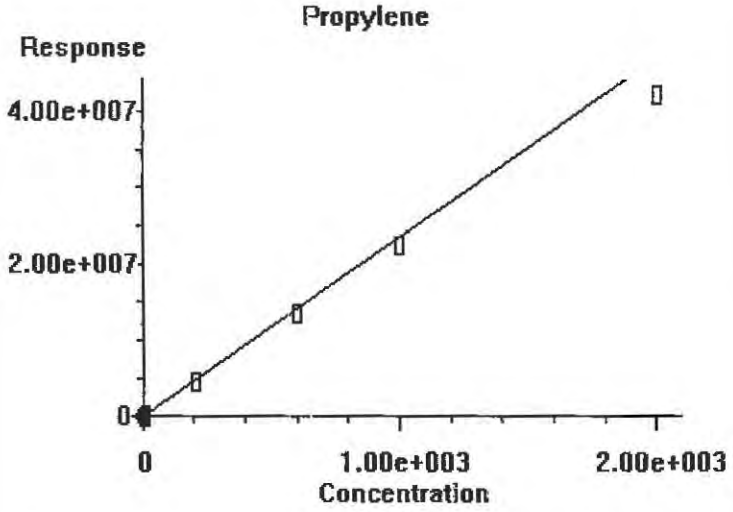
Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compoun
  - Oxygen/Argon
  - Carbon monoxide
  - Methane (TCD)
  - Carbon dioxide
  - Signal #2
  - Methane (FID)
  - Ethylene
  - Ethane
  - Propylene
  - Propane
  - Isobutylene
  - Isobutane
  - n-Butane

Identification | Calibration | User-Defined | Advanced | Reporting

Lvl ID	Concentration	Response
1	0.151000	3782.537646
2	0.302000	6933.285530
3	1.510000	39139.518208
4	4.530000	112341.896872
5	10.570000	248003.903623
6	200.000000	4504060.086084
7	600.000000	13569342.761419
8	1000.000000	22494887.720990
9	2000.000000	42124689.656800
10	4000.000000	

Lvl ID	Concentration	Response
11	20000.000000	



0.000e+000	Quadratic term
2.343e+004	Linear term
0.000e+000	Constant term
6.559%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

Page 69 of 203

Edit Compounds -- Compound #10 -- Propane

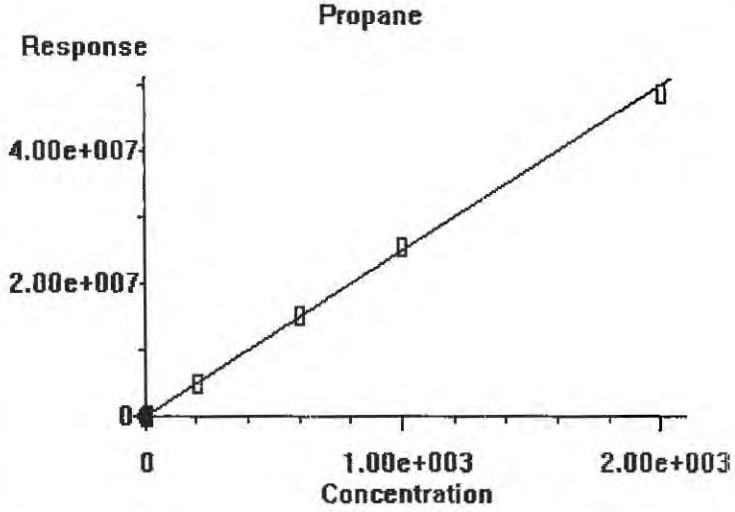
Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compoun
  - Oxygen/Argon
  - Carbon monoxide
  - Methane (TCD)
  - Carbon dioxide
  - Signal #2
  - Methane (FID)
  - Ethylene
  - Ethane
  - Propylene
  - Propane
  - Isobutylene
  - Isobutane
  - n-Butane

Identification | Calibration | User-Defined | Advanced | Reporting

Lvl ID	Concentration	Response
1	0.151000	3682.897354
2	0.302000	6894.237803
3	1.510000	39934.166792
4	4.530000	115723.428128
5	10.570000	257124.432806
6	200.000000	5043035.663916
7	600.000000	15251325.797404
8	1000.000000	25459410.657938
9	2000.000000	48583085.287451
10	4000.000000	

Lvl ID	Concentration	Response
11	20000.000000	



0.000e+000	Quadratic term
2.488e+004	Linear term
0.000e+000	Constant term
4.200%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

Calibration Status Report HP5890

Method Path : J:\GC10\METHODS\
Method File : RS091217_R.M
Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
Last Update : Wed Sep 13 11:14:47 2017
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	0	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121702.D
2	2	0	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121703.D
3	3	3	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121704.D
4	4	10	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121705.D
5	5	25	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121706.D
6	6	125	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121707.D
7	7	5000	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121708.D
8	8	25000	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121709.D
9	9	2000	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121710.D
10	10	30000	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121711.D
11	11	20000	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121712.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	Sep 13 11:04 2017	Sep 12 15:03 2017	12-Sep-2017, 10:52
2	2	Sep 13 11:05 2017	Sep 13 11:05 2017	12-Sep-2017, 11:05
3	3	Sep 13 11:06 2017	Sep 13 11:05 2017	12-Sep-2017, 11:45
4	4	Sep 13 11:09 2017	Sep 13 11:06 2017	12-Sep-2017, 12:09
5	5	Sep 13 11:09 2017	Sep 13 11:09 2017	12-Sep-2017, 12:30
6	6	Sep 13 11:10 2017	Sep 13 11:10 2017	12-Sep-2017, 12:47
7	7	Sep 13 11:11 2017	Sep 13 11:10 2017	12-Sep-2017, 13:00
8	8	Sep 13 11:12 2017	Sep 13 11:11 2017	12-Sep-2017, 13:47
9	9	Sep 13 11:12 2017	Sep 13 11:12 2017	12-Sep-2017, 14:07
10	10	Sep 13 11:14 2017	Sep 13 11:13 2017	12-Sep-2017, 14:48
11	11	Sep 13 11:14 2017	Sep 13 11:14 2017	12-Sep-2017, 15:21

RS091217_R.M Wed Sep 13 15:11:22 2017

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121702.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 10:52
Operator : MC
Sample : 0.151ppm 0.250ml s32-09121702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 12 11:03:15 2017
Quant Method : I:\GC10\METHODS\RS082417.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Fri Aug 25 09:19:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.767	373920	0.128	ppm	
2)	Carbon monoxide	1.767	373920	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	
4)	Carbon dioxide	0.000	0	N.D.	ppm	
6)	Methane (FID)	0.000	0	N.D.	ppm	d
7)	Ethylene	1.595	2622	0.156	ppm	
8)	Ethane	1.848	2690	0.156	ppm	
9)	Propylene	4.222	3783	0.154	ppm	
10)	Propane	4.348	3683	0.139	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	6.582f	6058	NoCal	ppm	
13)	n-Butane	6.582f	6058	NoCal	ppm	

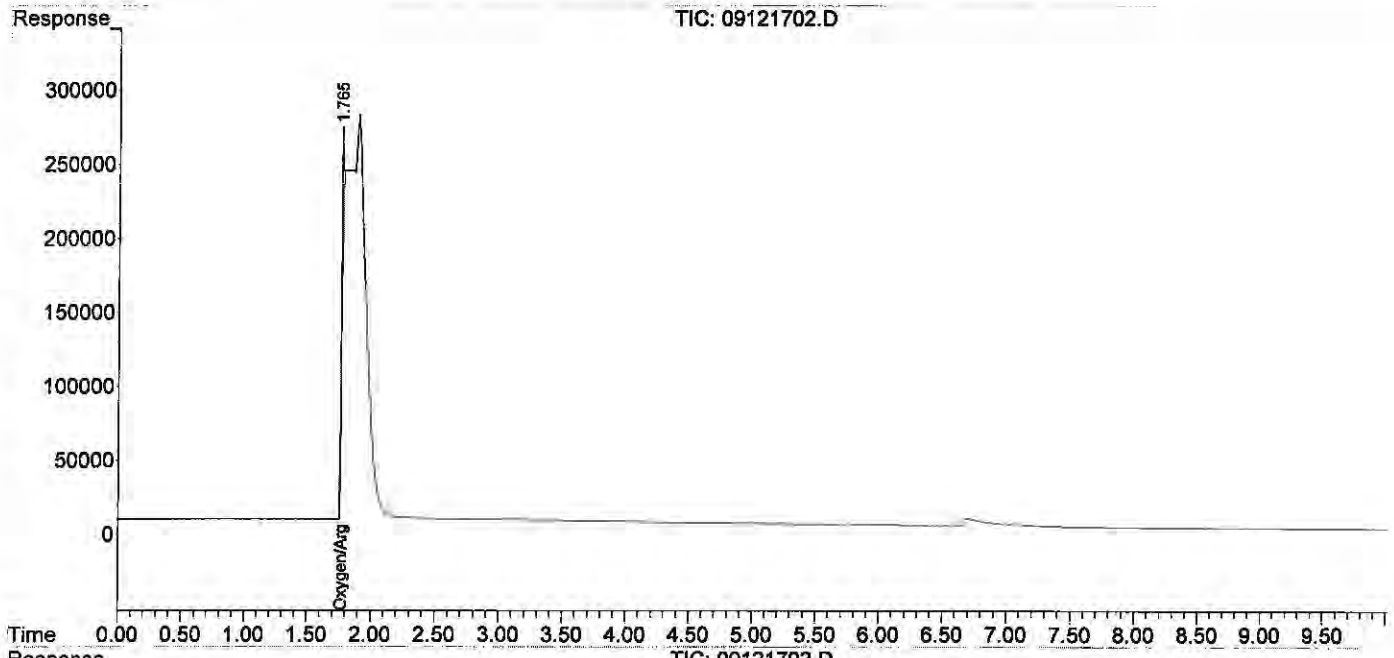
(f)=RT Delta > 1/2 Window (m)=manual int.

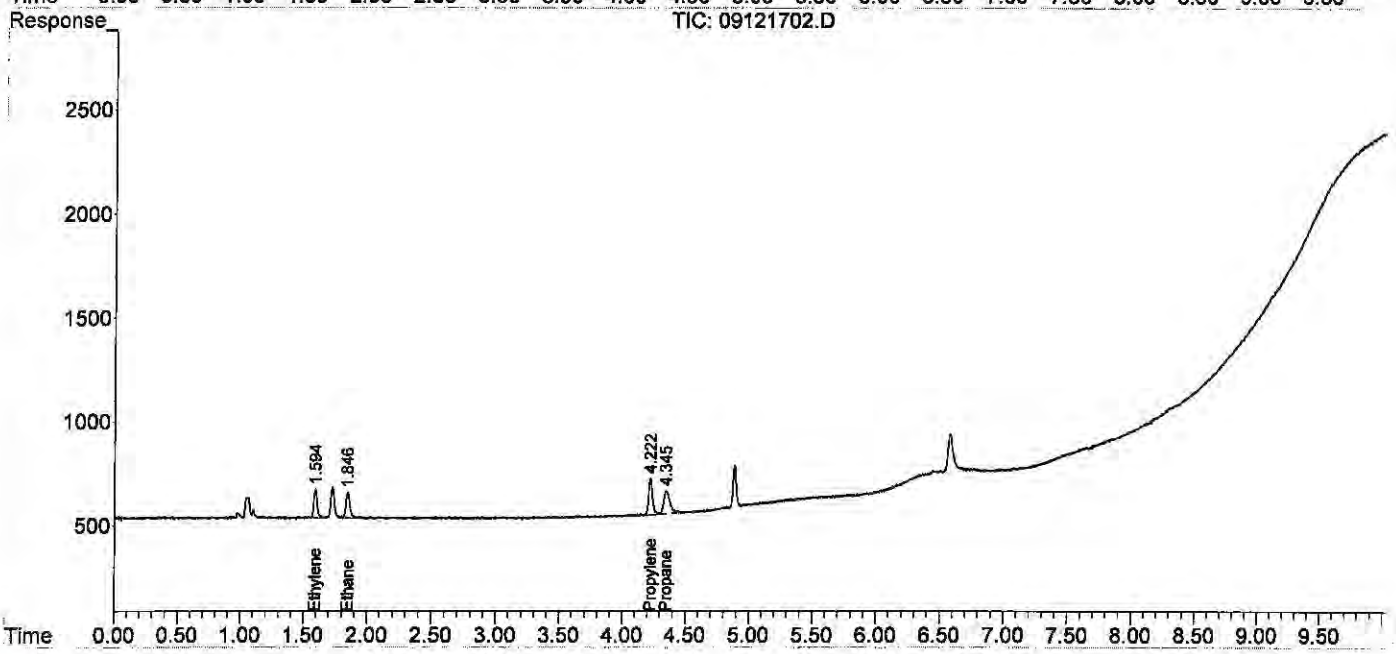
ple 9/13/2

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121702.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 10:52
Operator : MC
Sample : 0.151ppm 0.250ml s32-09121702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 12 11:03:15 2017
Quant Method : I:\GC10\METHODS\RS082417.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Fri Aug 25 09:19:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121703.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 11:05
Operator : MC
Sample : 0.302ppm 0.5ml s32-09121702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:05:03 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

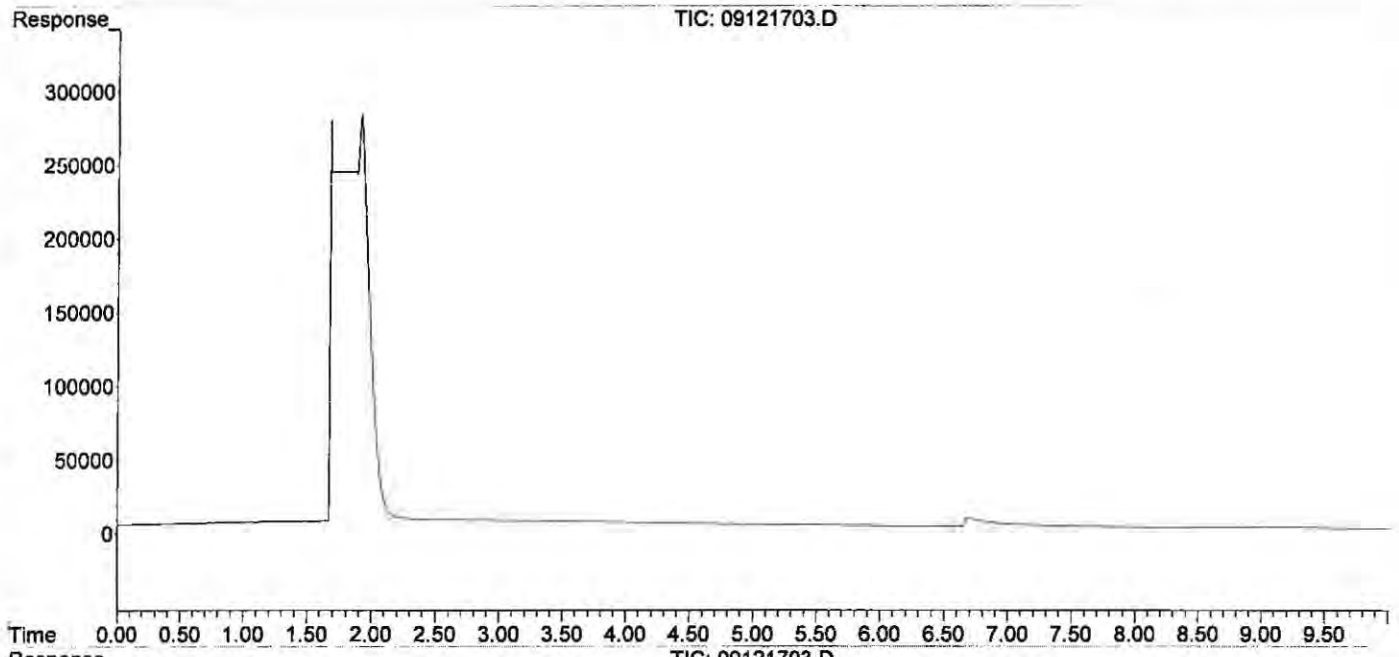
	Compound	R.T.	Response	Conc Units	
Target Compounds					
1)	Oxygen/Argon	1.913f	-25181981	N.D. ppm	
2)	Carbon monoxide	1.913f	-25181981	1.089 ppm	
3)	Methane (TCD)	0.000	0	N.D. ppm	
4)	Carbon dioxide	0.000	0	N.D. ppm	
6)	Methane (FID)	1.049	3564	0.391 ppm	m
7)	Ethylene	1.577	4947	0.292 ppm	
8)	Ethane	1.828	5060	0.293 ppm	
9)	Propylene	4.207	6933	0.281 ppm	
10)	Propane	4.337	6894	0.268 ppm	
11)	Isobutylene	0.000	0	N.D. ppm	
12)	Isobutane	6.579f	9587	0.158 ppm	
13)	n-Butane	6.579f	9587	0.158 ppm	

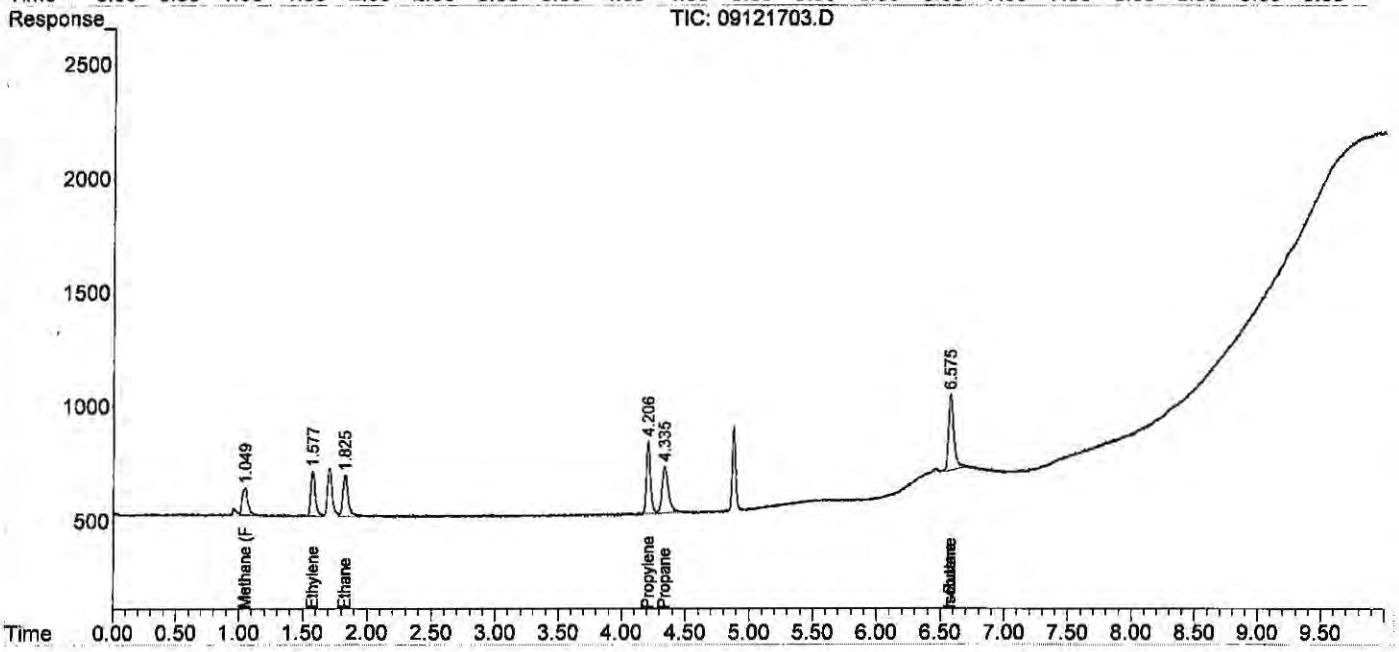
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121703.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 11:05
Operator : MC
Sample : 0.302ppm 0.5ml s32-09121702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:05:03 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



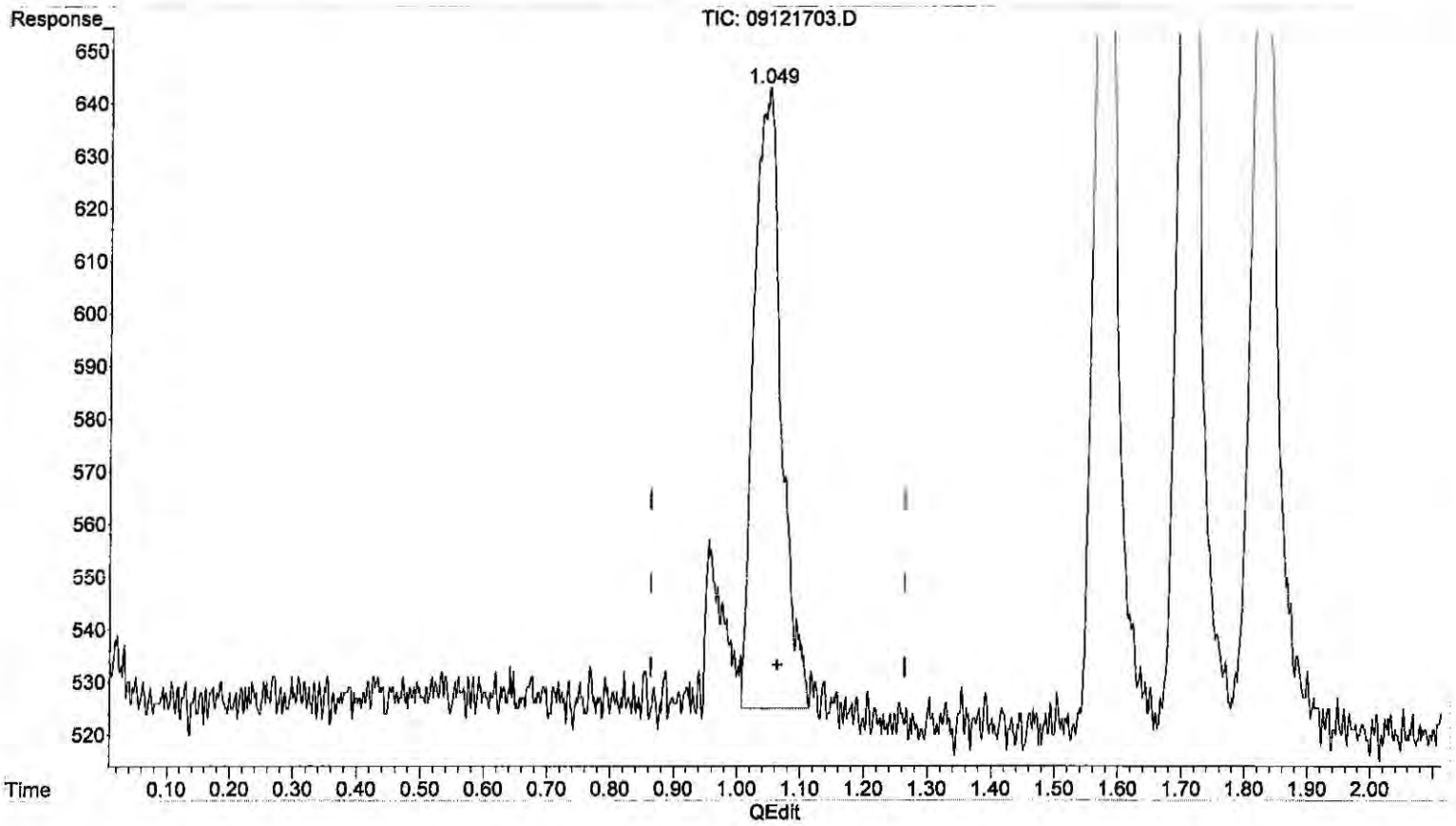


Quantitation Report (Qedit)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121703.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 11:05
Operator : MC
Sample : 0.302ppm 0.5ml s32-09121702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:05:03 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(6) Methane (FID)

1.049min 0.391 ppm m

response 3564

(+) = Expected Retention Time

RS091217_R.M Wed Sep 13 15:00:03 2017

Page: 1

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121704.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 11:45
Operator : MC
Sample : 1.51ppm 0.1ml s32-09051701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:05:55 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

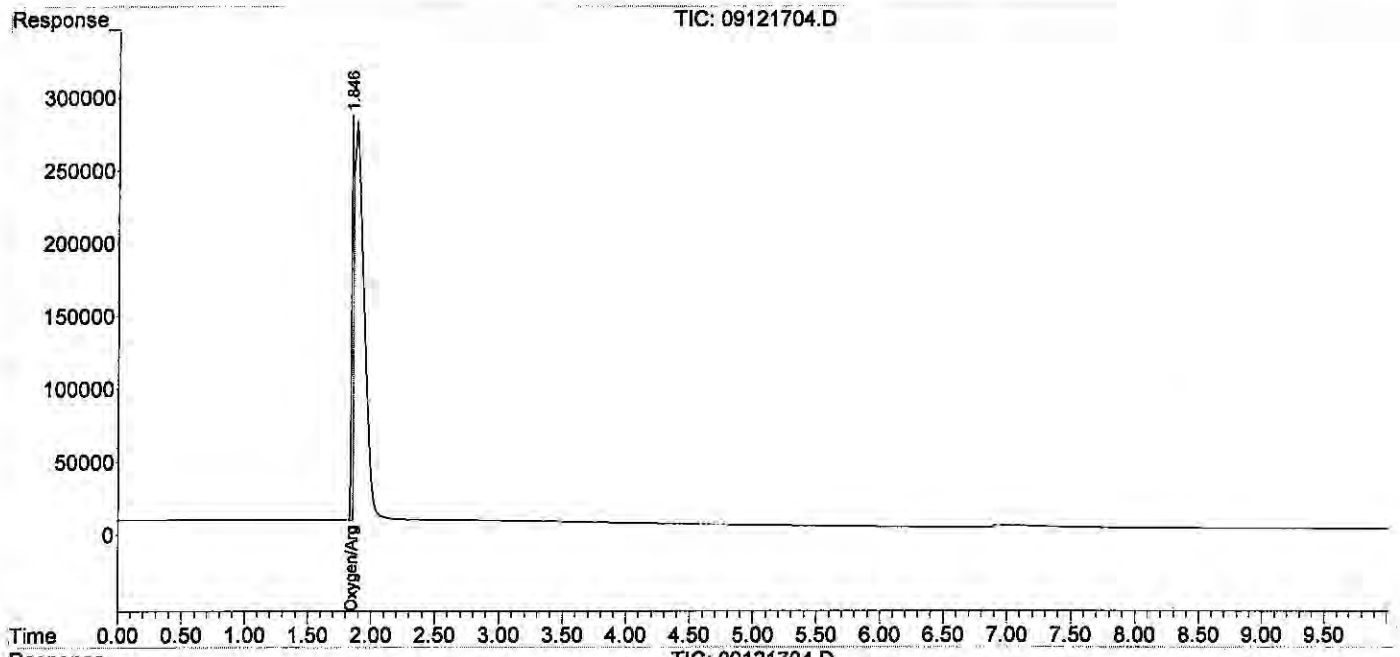
	Compound	R.T.	Response	Conc Units
Target Compounds				
1)	Oxygen/Argon	1.847	2536230	1.056 ppm
2)	Carbon monoxide	1.847	2536230	N.D. ppm
3)	Methane (TCD)	0.000	0	N.D. ppm
4)	Carbon dioxide	0.000	0	N.D. ppm
6)	Methane (FID)	1.064	14725	1.613 ppm
7)	Ethylene	1.598	26885	1.582 ppm
8)	Ethane	1.851	26944	1.555 ppm
9)	Propylene	4.220	39140	1.589 ppm
10)	Propane	4.349	39934	1.596 ppm
11)	Isobutylene	0.000	0	N.D. ppm
12)	Isobutane	6.578f	55348	1.020 ppm
13)	n-Butane	6.578f	55348	1.020 ppm

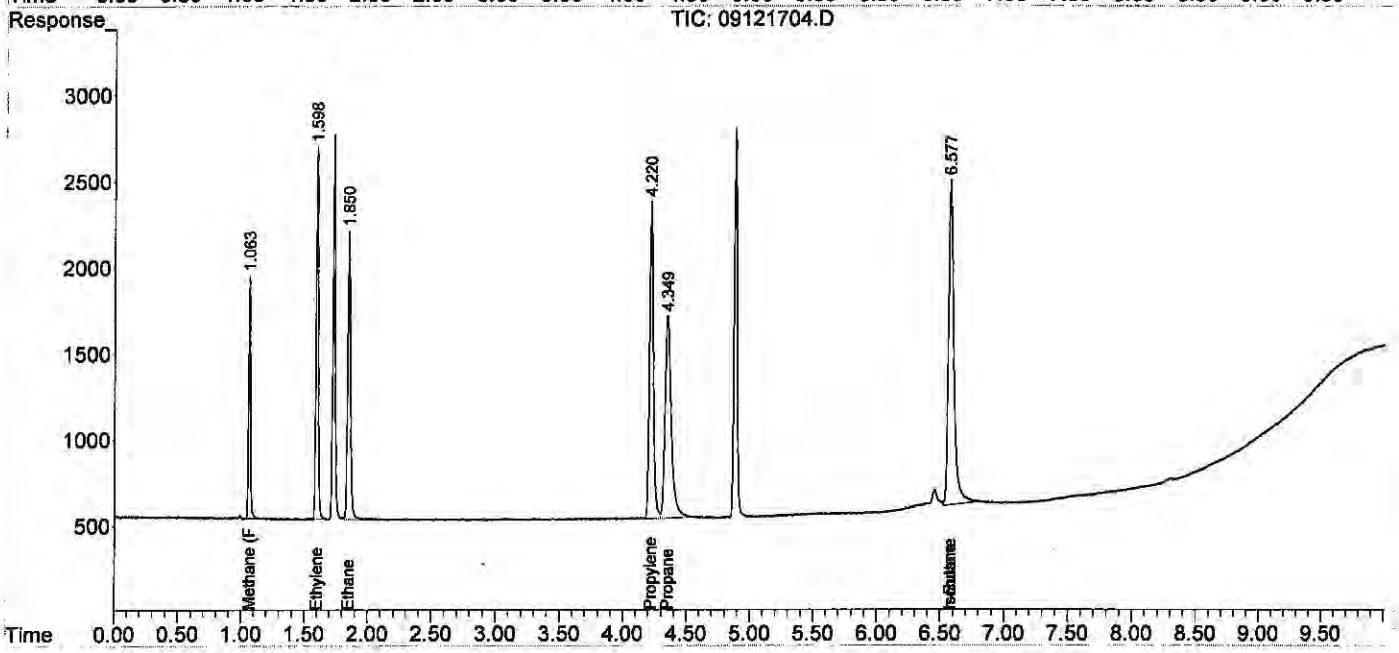
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121704.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 11:45
Operator : MC
Sample : 1.51ppm 0.1ml s32-09051701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:05:55 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121705.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 12:09
Operator : MC
Sample : 4.53ppm 0.3ml s32-09051701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:06:32 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.738	-331216	N.D.	ppm
2)	Carbon monoxide	1.738	-331216	0.019	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.052	41129	4.522	ppm
7)	Ethylene	1.586	77903	4.637	ppm
8)	Ethane	1.838	78354	4.558	ppm
9)	Propylene	4.218	112342	4.614	ppm
10)	Propane	4.347	115723	4.680	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	6.580f	155256	3.565	ppm
13)	n-Butane	6.580f	155256	3.565	ppm

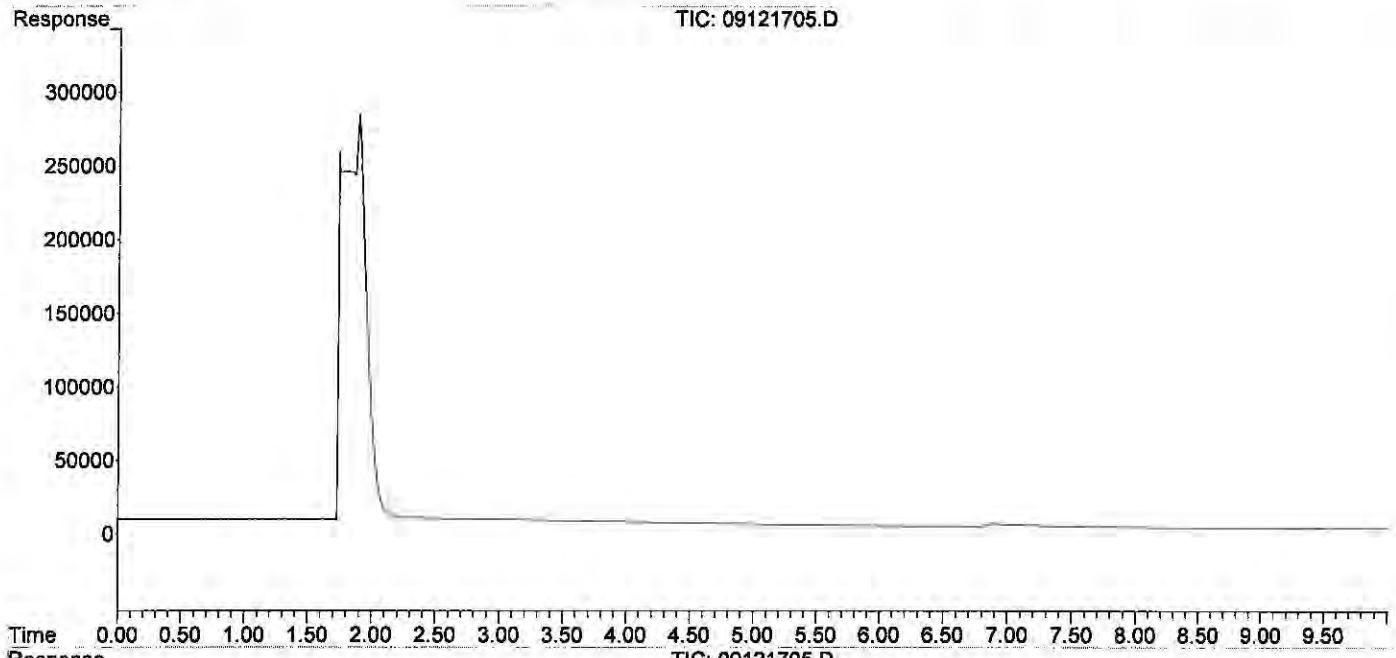
(f)=RT Delta > 1/2 Window (m)=manual int.

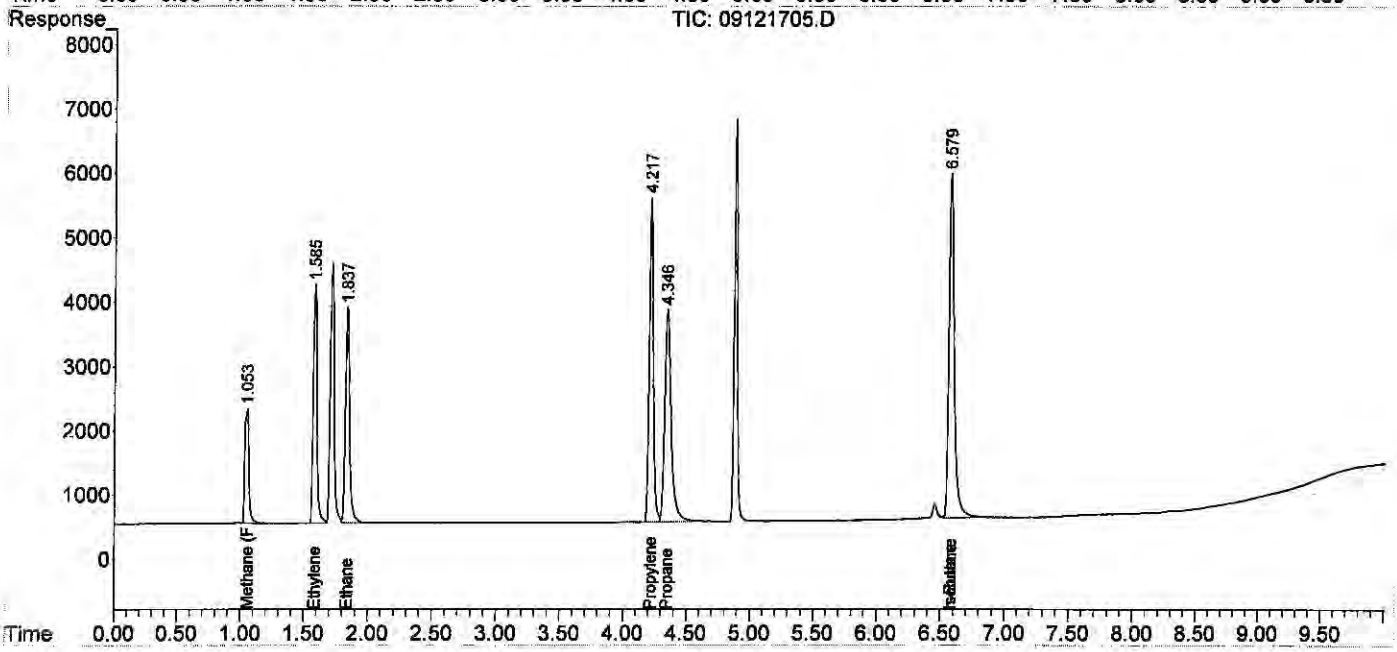
Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121705.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 12:09
Operator : MC
Sample : 4.53ppm 0.3ml s32-09051701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:06:32 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121706.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 12:30
Operator : MC
Sample : 10.57ppm 0.7ml s32-09051701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:09:24 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

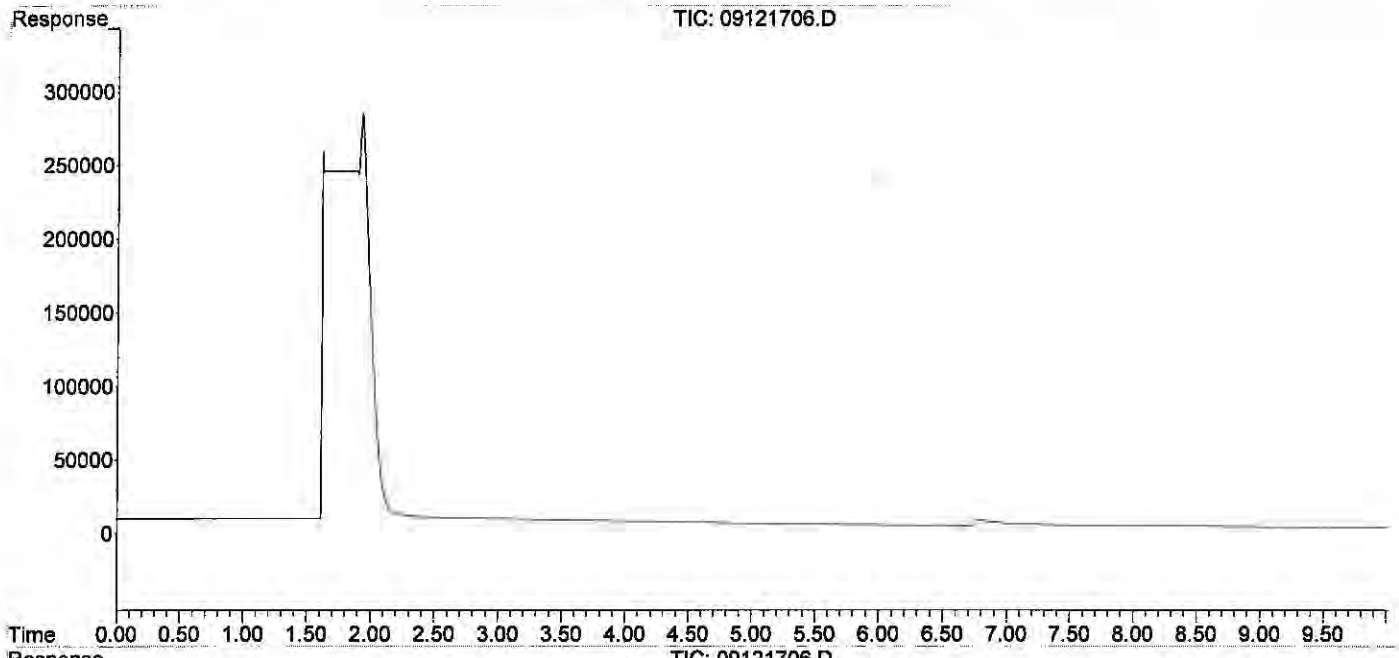
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.929f	-31871242	N.D.	ppm
2)	Carbon monoxide	1.929f	-31871242	1.818	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.025	91967	10.135	ppm
7)	Ethylene	1.568	172086	10.273	ppm
8)	Ethane	1.822	178841	10.441	ppm
9)	Propylene	4.214	248004	10.236	ppm
10)	Propane	4.344	257124	10.458	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	6.578f	338181	9.254	ppm
13)	n-Butane	6.578f	338181	9.254	ppm

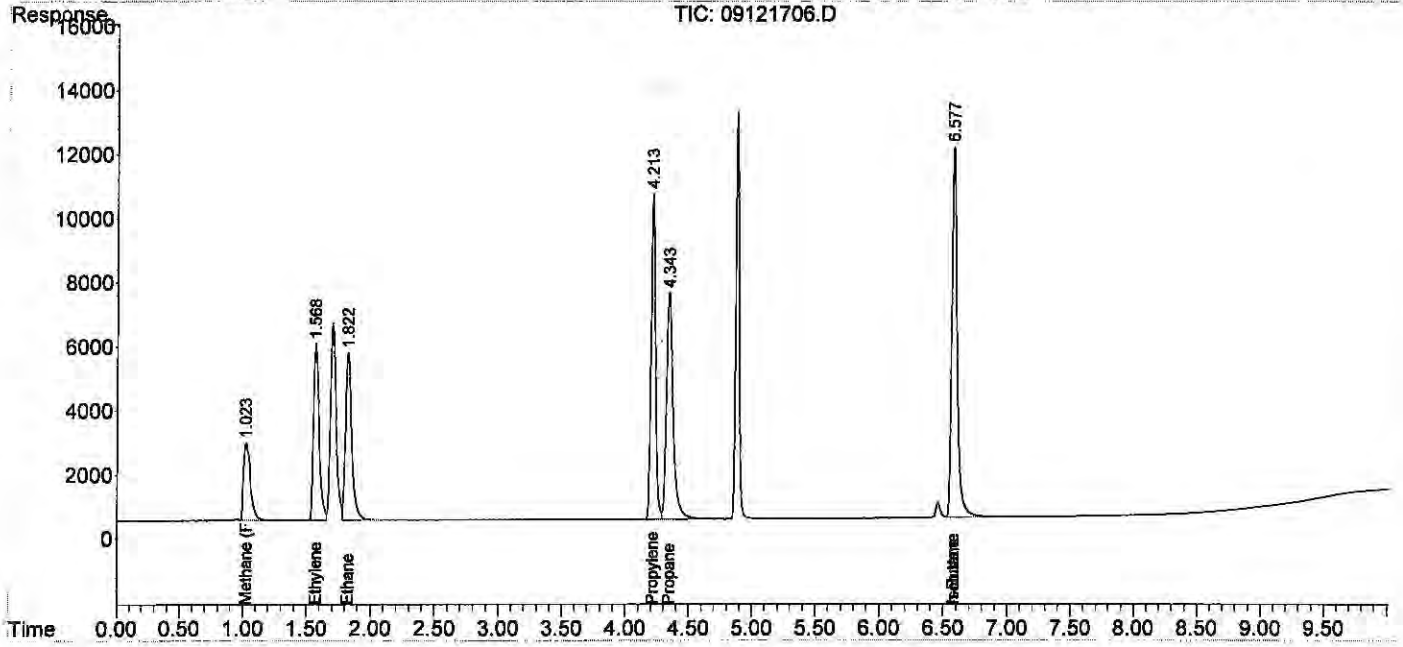
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121706.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 12:30
Operator : MC
Sample : 10.57ppm 0.7ml s32-09051701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:09:24 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121707.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 12:47
Operator : MC
Sample : 200ppm 0.1ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:09:59 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.897	155286	0.065	ppm
2)	Carbon monoxide	1.897	155286	N.D.	ppm
3)	Methane (TCD)	4.079f	27015	2856.472	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.063	1735997	190.792	ppm
7)	Ethylene	1.597	3339702	198.758	ppm
8)	Ethane	1.849	3350442	194.597	ppm
9)	Propylene	4.201	4504060	185.706	ppm
10)	Propane	4.333	5043036	204.809	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

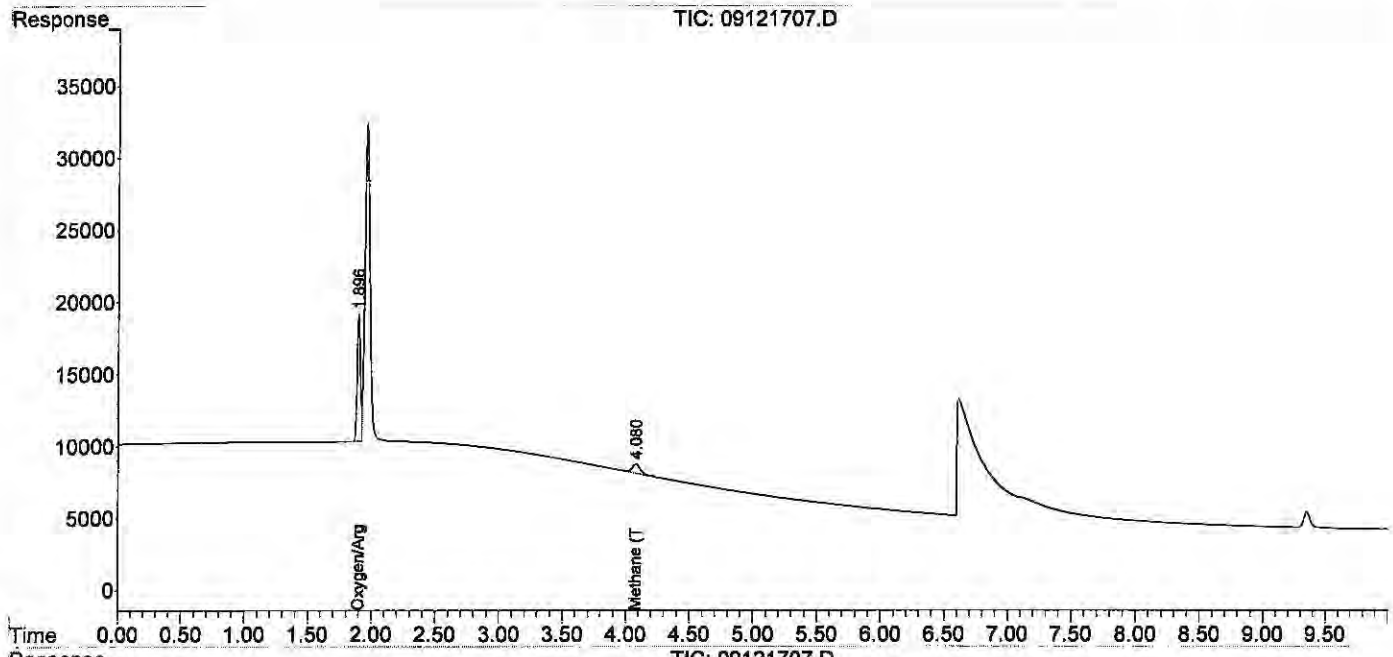
(f)=RT Delta > 1/2 Window (m)=manual int.

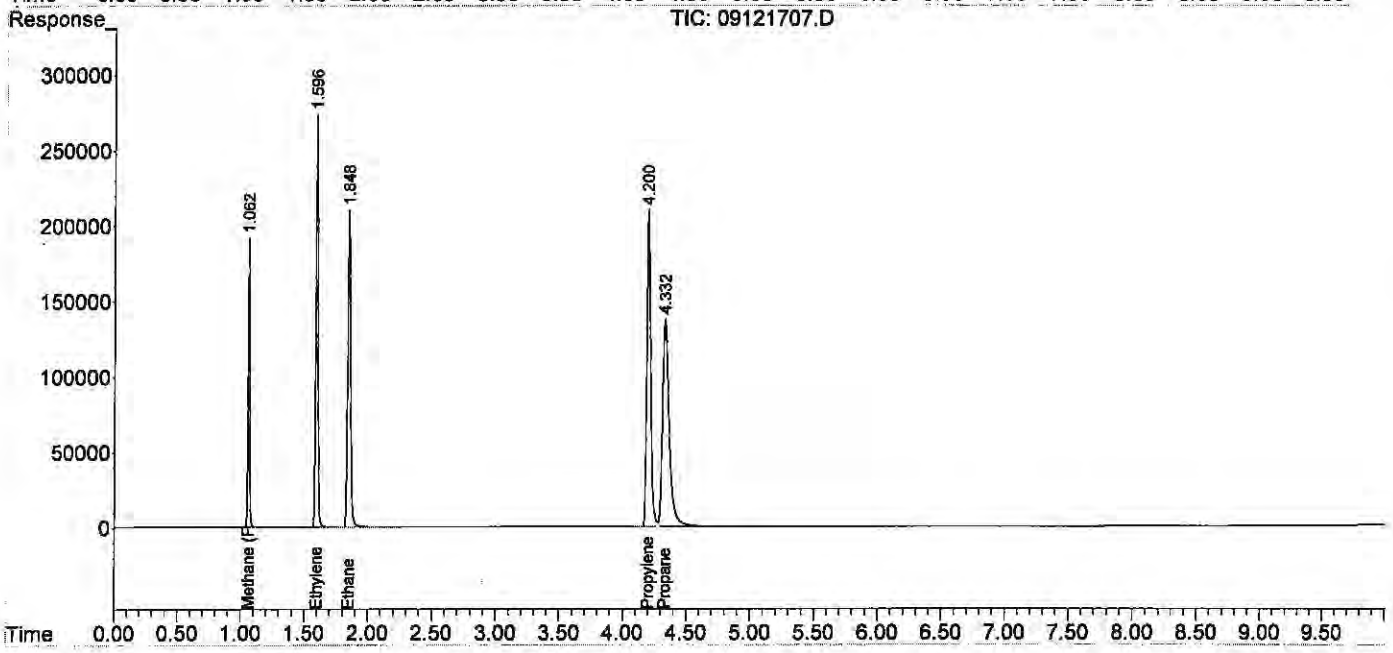
Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121707.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 12:47
Operator : MC
Sample : 200ppm 0.1ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:09:59 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121708.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 13:00
Operator : MC
Sample : 600ppm 0.3ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:10:57 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:10:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.884	196022	0.124	ppm
2)	Carbon monoxide	1.884	196022	N.D.	ppm
3)	Methane (TCD)	4.070f	88282	782.730	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.044	5189849	539.759	ppm
7)	Ethylene	1.573	10007759	590.286	ppm
8)	Ethane	1.822	10048964	583.213	ppm
9)	Propylene	4.160	13569343	562.612	ppm
10)	Propane	4.300	15251326	615.171	ppm
11)	Isobutylene	6.143	9815	NoCal	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

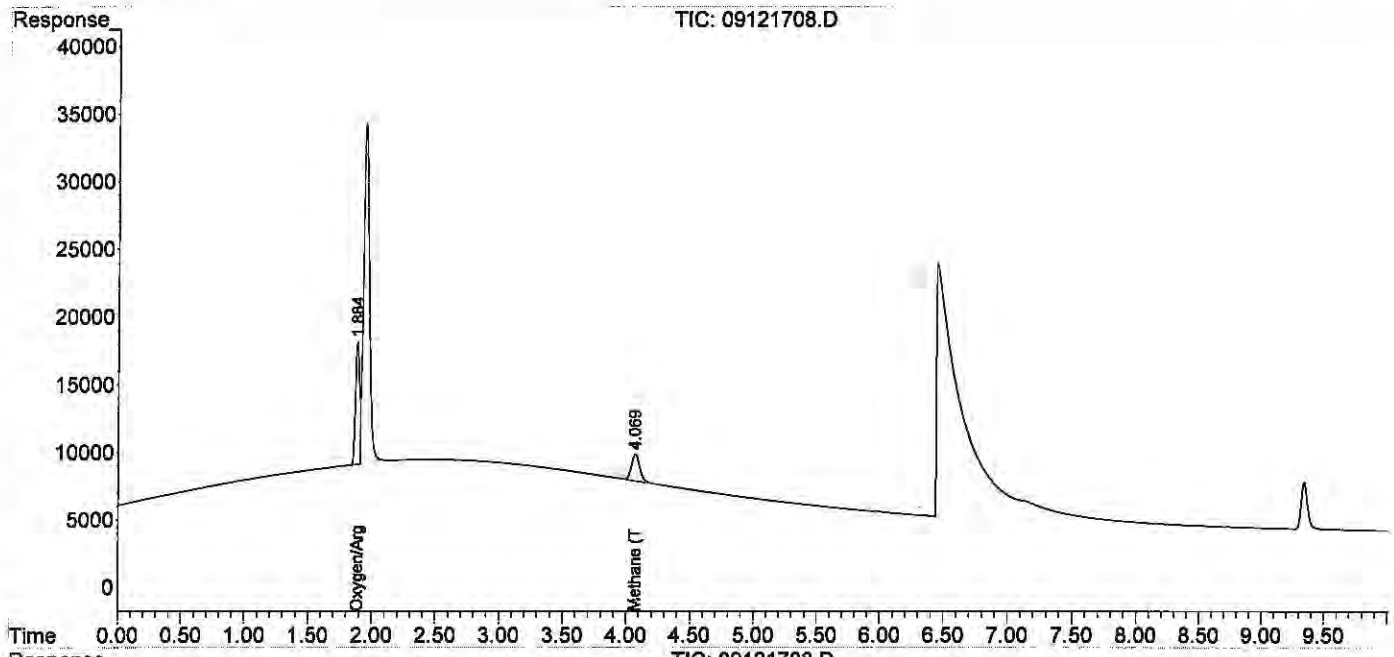
(f)=RT Delta > 1/2 Window (m)=manual int.

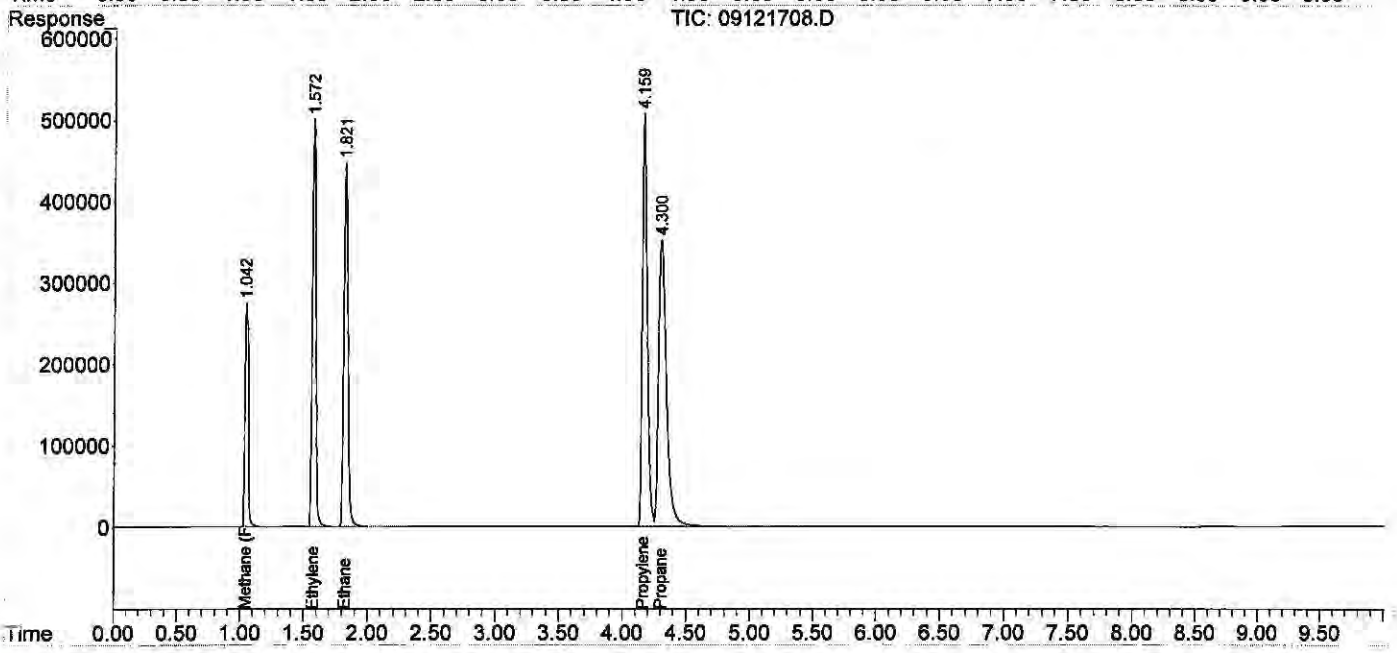
Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121708.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 13:00
Operator : MC
Sample : 600ppm 0.3ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:10:57 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:10:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121709.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 13:47
Operator : MC
Sample : 1000ppm 0.5ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:11:46 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:11:38 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

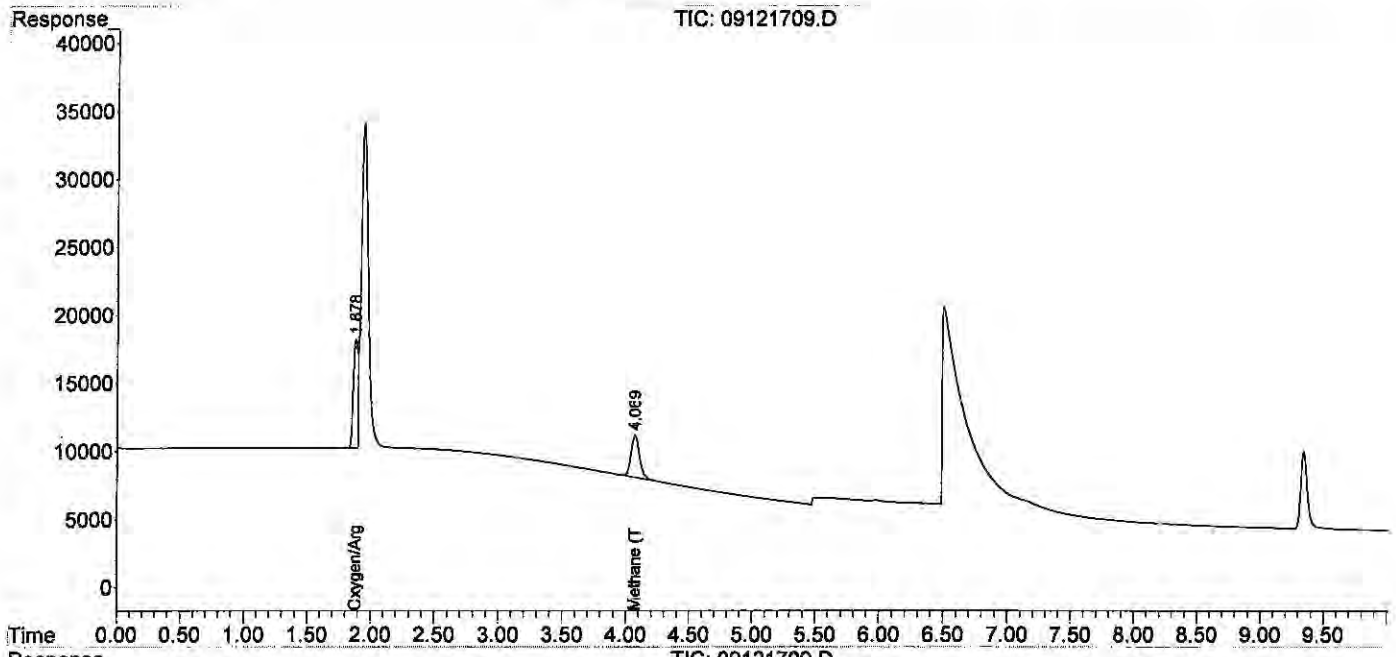
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.879	192611	0.162	ppm
2)	Carbon monoxide	1.879	192611	N.D.	ppm
3)	Methane (TCD)	4.070f	145492	1244.729	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.039	8598534	945.644	ppm
7)	Ethylene	1.576	16608504	981.887	ppm
8)	Ethane	1.827	16709165	973.644	ppm
9)	Propylene	4.161	22494888	941.060	ppm
10)	Propane	4.298	25459411	1023.223	ppm
11)	Isobutylene	6.138	16970	8645.243	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

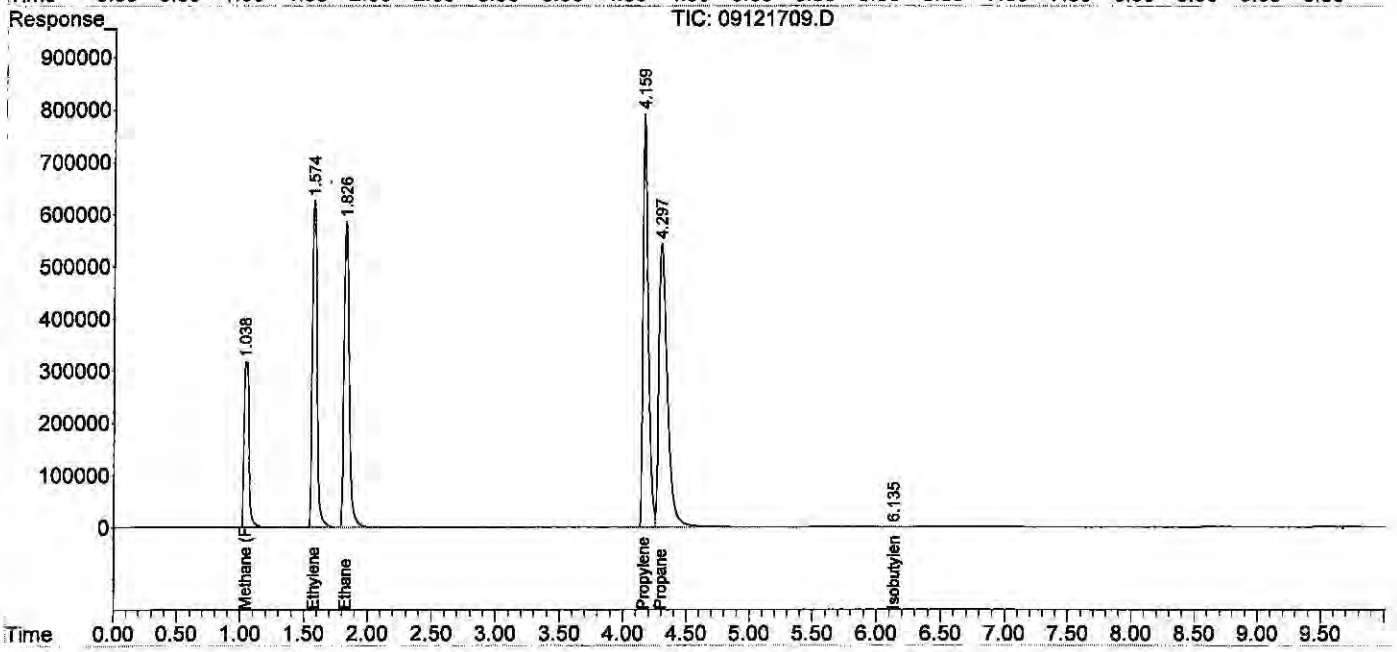
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121709.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 13:47
Operator : MC
Sample : 1000ppm 0.5ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:11:46 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:11:38 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121710.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 14:07
Operator : MC
Sample : 2000ppm 1ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:12:33 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:12:25 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.922f	1578147	1.659	ppm	
2)	Carbon monoxide	1.922f	1578147	N.D.	ppm	
3)	Methane (TCD)	4.057f	281651	3526.607	ppm	
4)	Carbon dioxide	0.000	0	N.D.	ppm	
6)	Methane (FID)	1.016	16098209	1763.622	ppm	
7)	Ethylene	1.552	31192444	1848.268	ppm	
8)	Ethane	1.801	31424218	1837.143	ppm	
9)	Propylene	4.129	42124690	1775.341	ppm	m
10)	Propane	4.269	48583085	1946.921	ppm	
11)	Isobutylene	6.136	33832	25613.603	ppm	
12)	Isobutane	6.576f	3845	0.120	ppm	
13)	n-Butane	6.576f	3845	0.120	ppm	

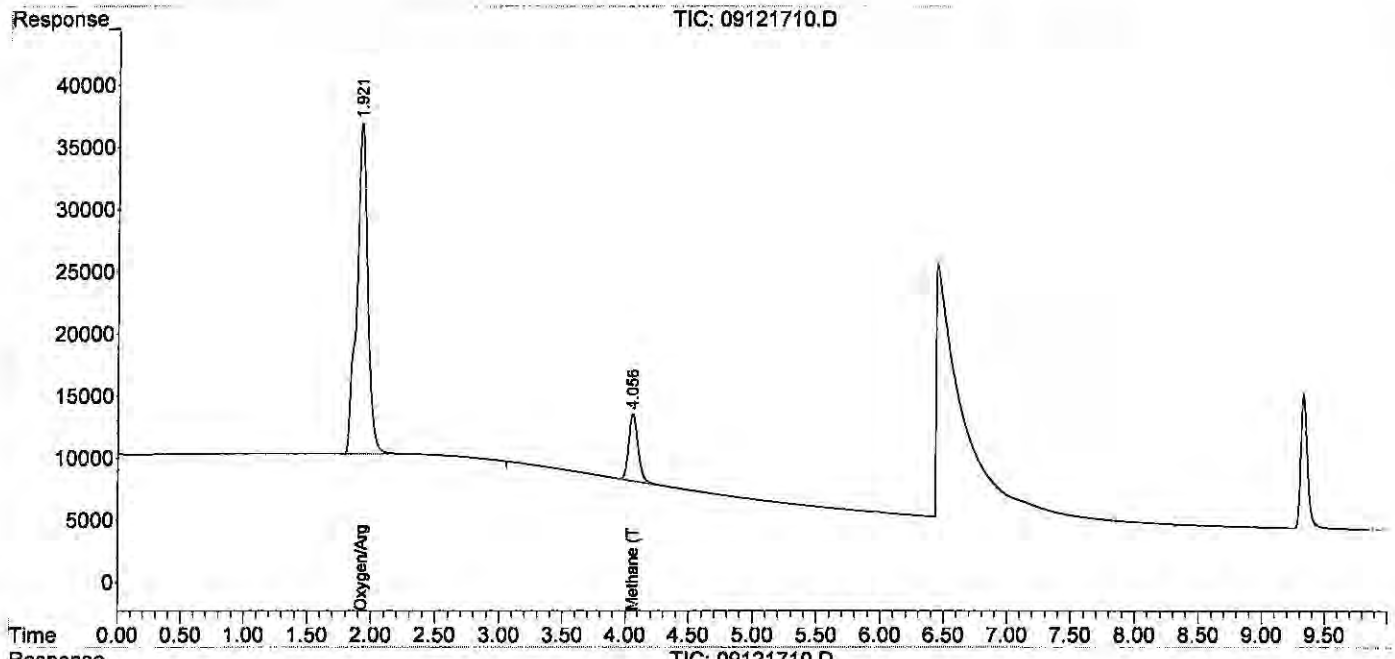
(f)=RT Delta > 1/2 Window (m)=manual int.

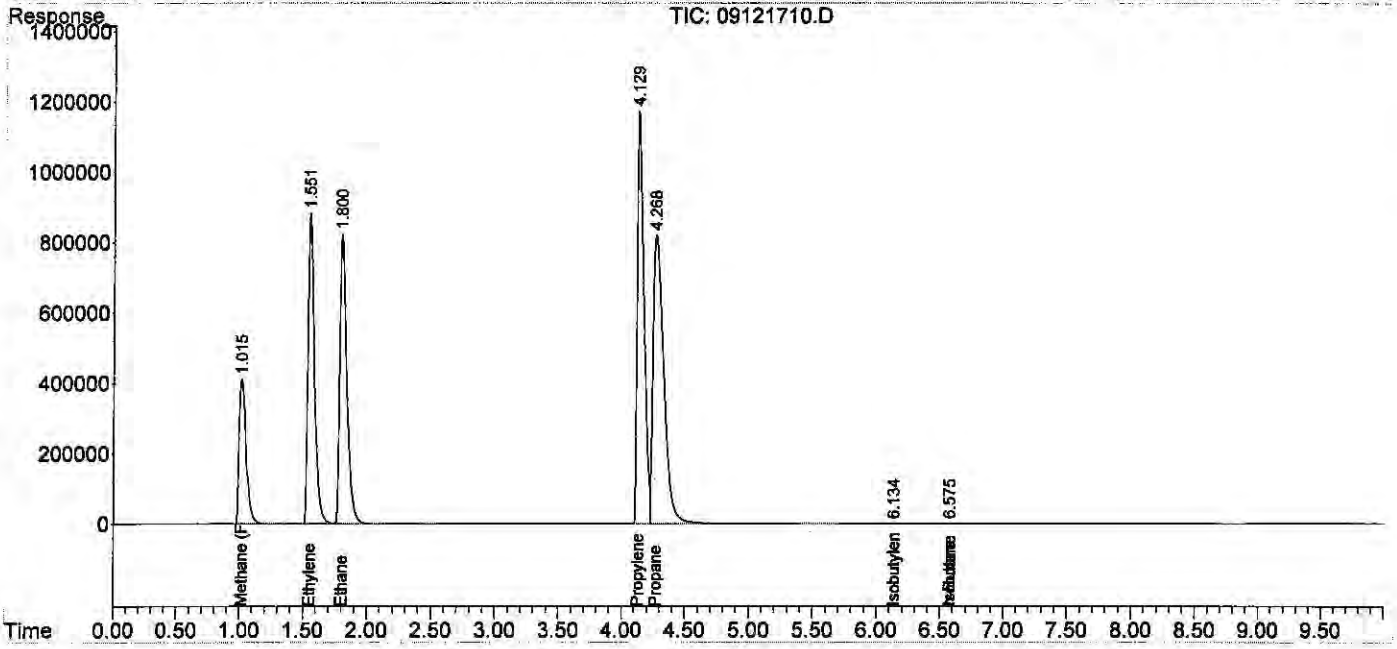
Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121710.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 14:07
Operator : MC
Sample : 2000ppm 1ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:12:33 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:12:25 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



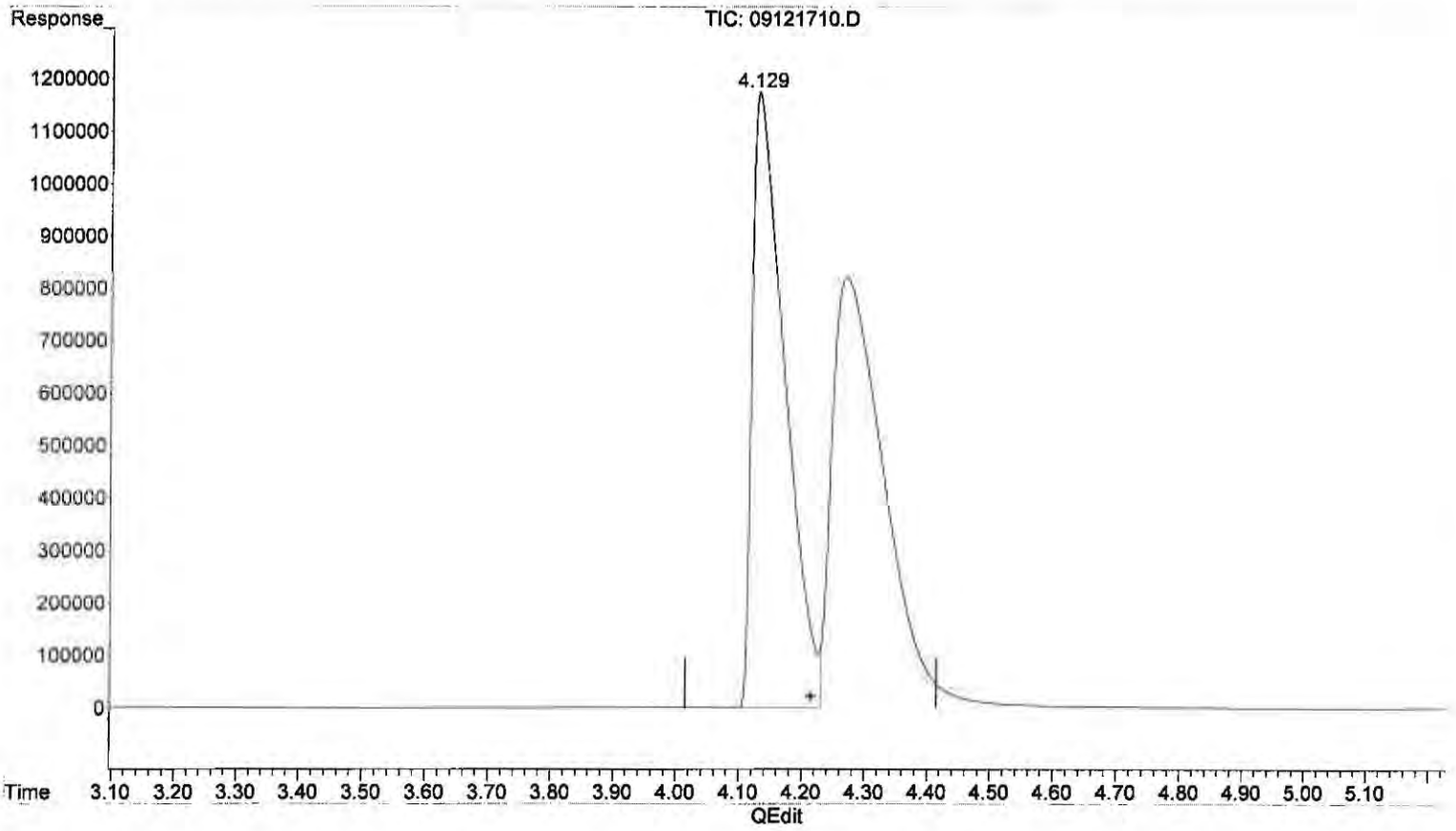


Quantitation Report (Qedit)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121710.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 14:07
Operator : MC
Sample : 2000ppm 1ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:12:33 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:12:25 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(9) Propylene

4.129min 1775.341 ppm m

response 42124690

(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121711.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 14:48
Operator : MC
Sample : 4000ppm 0.1ml s32-08231701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:13:37 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:13:29 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

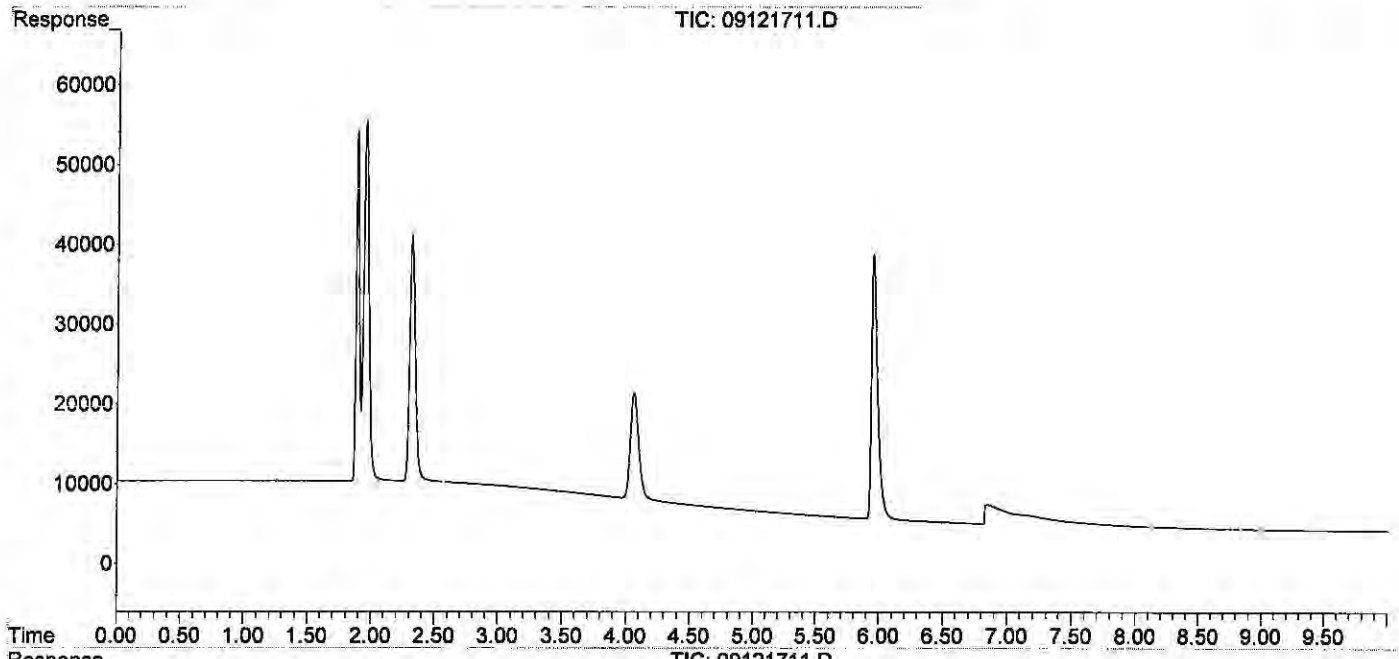
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	0.000	0	N.D.	ppm	d
2)	Carbon monoxide	0.000	0	N.D.	ppm	d
3)	Methane (TCD)	0.000	0	N.D.	ppm	d
4)	Carbon dioxide	0.000	0	N.D.	ppm	d
6)	Methane (FID)	1.059	35776839	3925.122	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

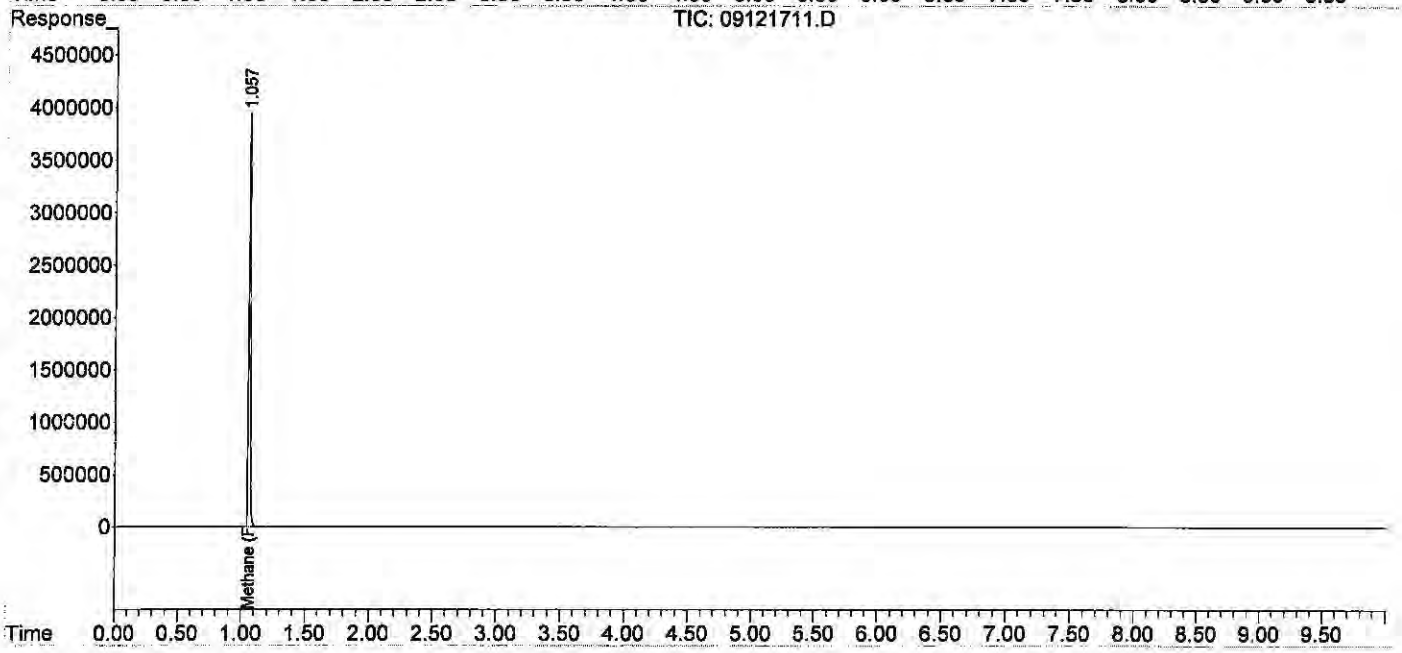
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121711.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 14:48
Operator : MC
Sample : 4000ppm 0.1ml s32-08231701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:13:37 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:13:29 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase :
Signal #1 Info :
Signal #2 Phase:
Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121712.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 15:21
Operator : MC
Sample : 20000ppm 0.5ml s32-08231701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:14:17 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:13:29 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	0.000	0	N.D.	ppm	d
2)	Carbon monoxide	1.836	3190788	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	d
4)	Carbon dioxide	0.000	0	N.D.	ppm	d
6)	Methane (FID)	1.034	169009160	18492.064	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

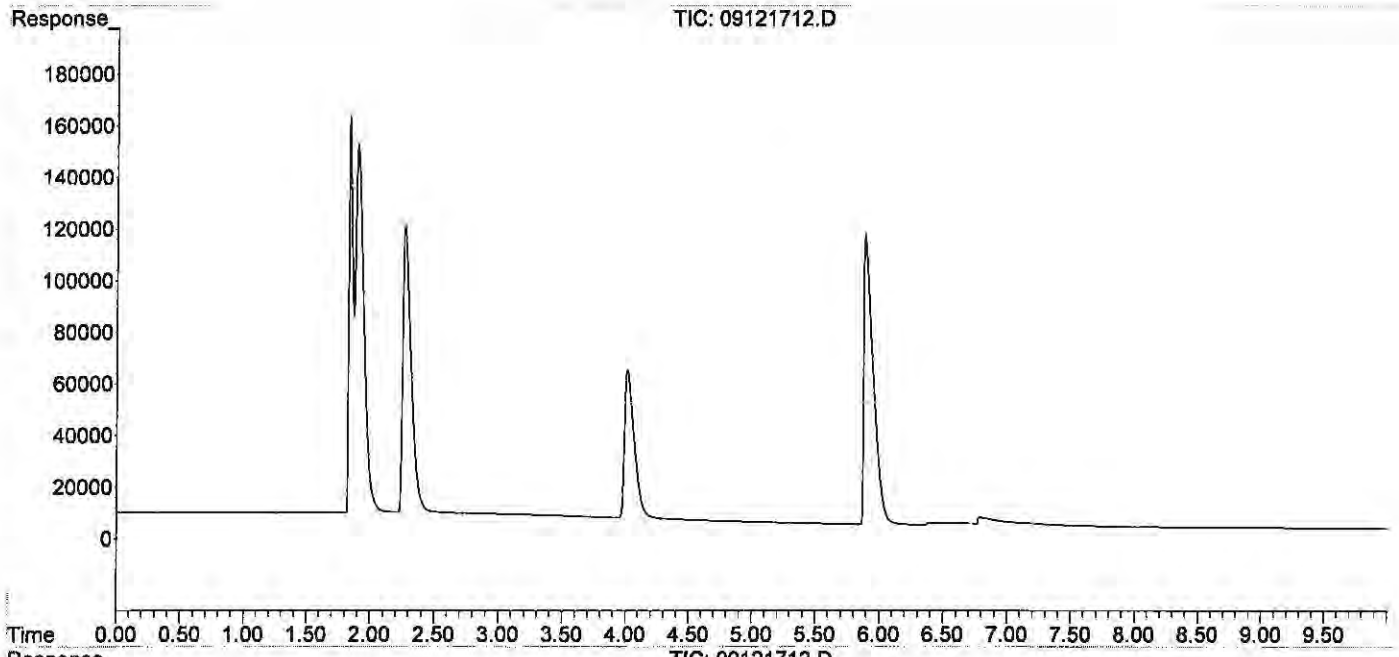
(f)=RT Delta > 1/2 Window (m)=manual int.

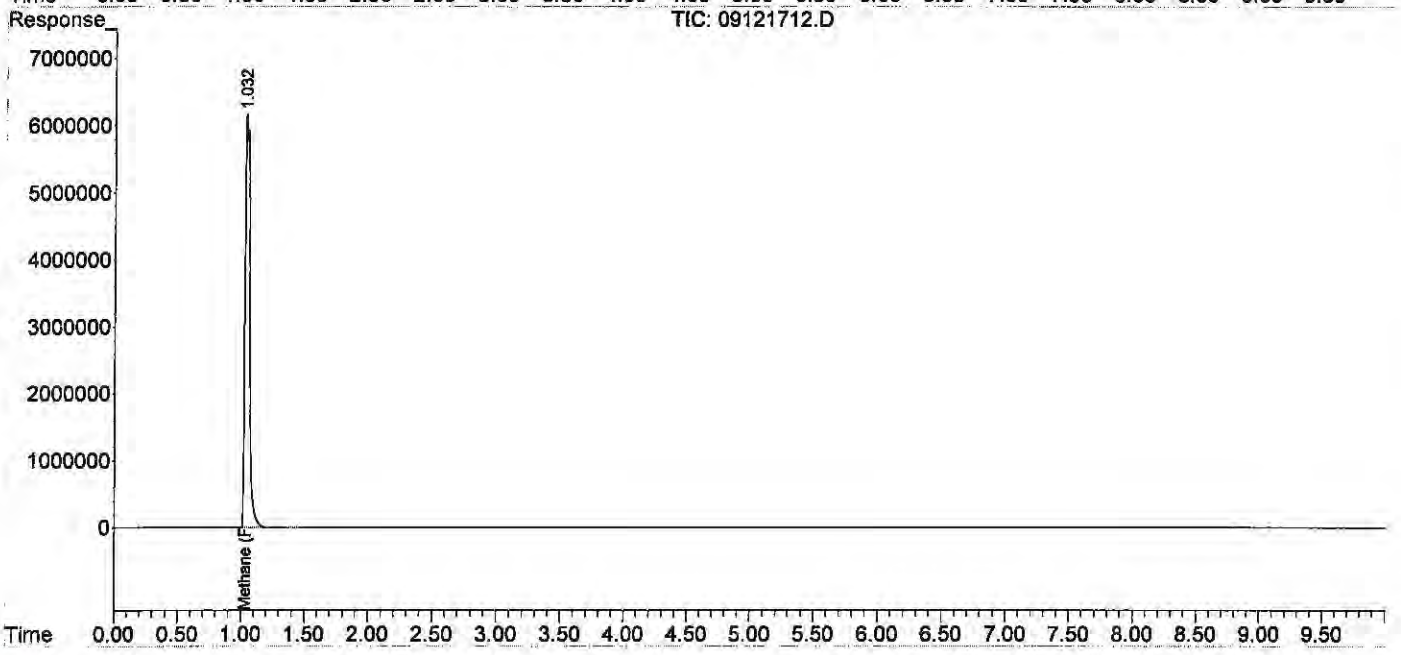
Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121712.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 15:21
Operator : MC
Sample : 20000ppm 0.5ml s32-08231701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:14:17 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:13:29 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121715.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 16:15
Operator : MC
Sample : icv s30-05241604
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:15:11 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:13:29 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.843	2922459	3.687	ppm	
2)	Carbon monoxide	1.843	2922459	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	actual %D
4)	Carbon dioxide	0.000	0	N.D.	ppm	
6)	Methane (FID)	1.063	13748	1.516	ppm	1.50 101.1
7)	Ethylene	1.598	24153	1.443	ppm	1.50 96.2
8)	Ethane	1.850	24488	1.445	ppm	1.50 96.3
9)	Propylene	4.221	36004	1.537	ppm	1.50 102.5
10)	Propane	4.350	37738	1.517	ppm	1.51 100.5
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	6.579f	48019	1.804	ppm	9/14/2
13)	n-Butane	6.579f	48019	1.804	ppm	

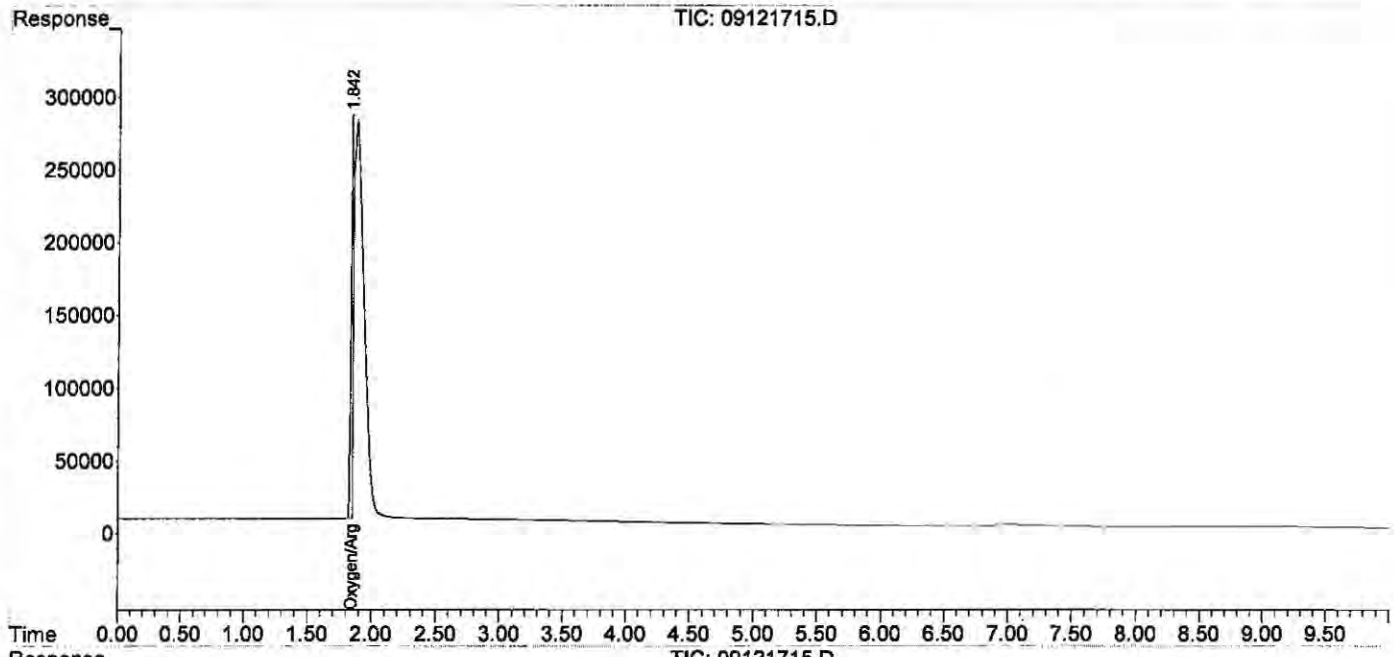
(f)=RT Delta > 1/2 Window (m)=manual int.

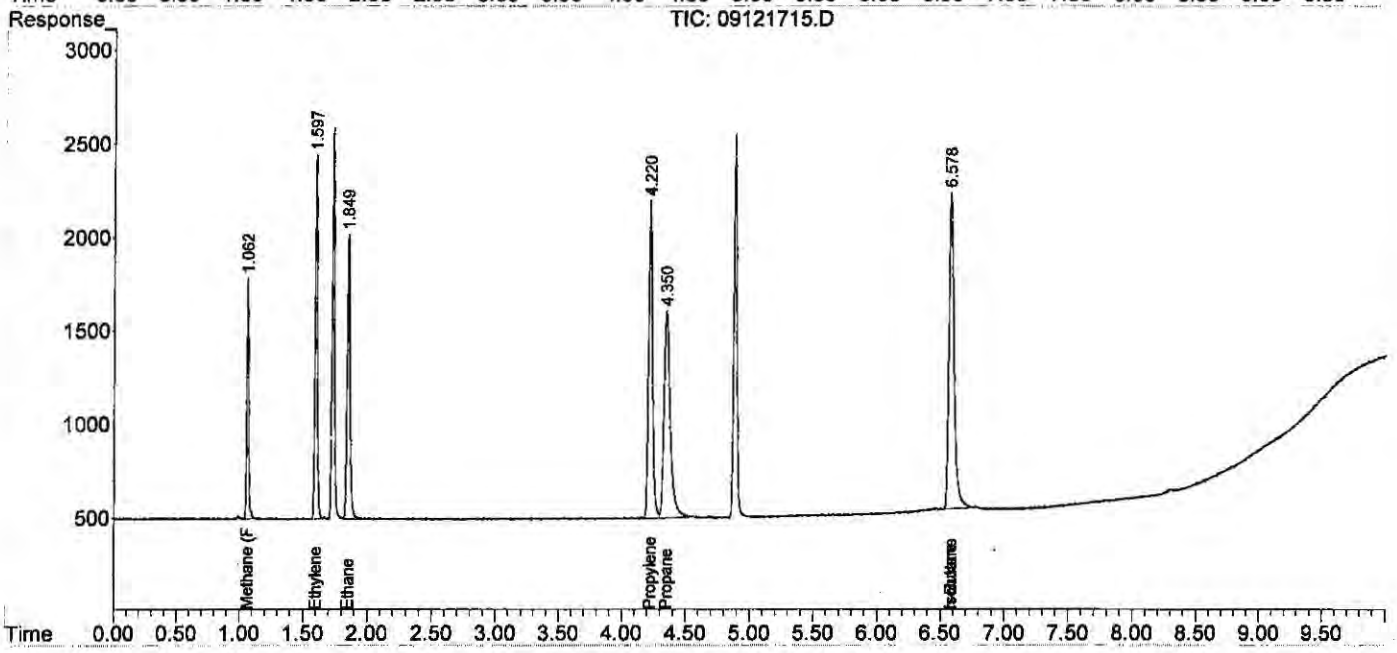
9/14/2017

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121715.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 16:15
Operator : MC
Sample : icv s30-05241604
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:15:11 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:13:29 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Dissolved Gases by RSK175

ALS Environmental

Method : RSK175 Headspace Method for Dissolved Hydrocarbon in Water by FID/TCD
Client : ALS Laboratory Group
Service Request: P1907801
Sample Vol. (ml) : 32.00 ml

Analyst : LD
Date Analysis : 12/27/19
Head Space Vol.(ml) : 8.00 ml

Instrument : GC#10
Detector : FID#10, TCD#10
Gas Constant : 24.05684 (20°C)

HEAD SPACE RESULT (ppm)

Sample ID	Inj. Vol.	Methane	Ethylene	Ethane
STD S32-05221901	0.100	93.081	98.801	97.915
ACTUAL		101.50	100.90	101.40
%Difference		8.3%	2.1%	3.4%
MCS 0.1ml	0.100	0.131	0.000	0.000
RB 0.1ml	0.100	0.000	0.000	0.000
LCS S32-07231801	0.100	1.393	1.012	1.257
LCSD S32-07231801	0.100	1.413	1.005	1.264
P1907801-001 0.1ml	0.100	1.357	0.000	0.000
P1907801-002 0.1ml	0.100	284.619	0.137	0.000
P1907801-003 0.1ml	0.100	397.459	1.399	0.000
P1907801-004 0.1ml	0.100	395.217	0.000	0.000
P1907801-005 0.1ml	0.100	709.155	0.000	0.000
P1907801-006 0.1ml	0.100	1.046	0.000	0.000
STD S32-05221901		89.407	95.301	95.003
ACTUAL		101.50	100.90	101.40
%Difference		11.9%	5.5%	6.3%

FINAL HEAD SPACE RESULT (ppm)

	Methane	Ethylene	Ethane
WWt.	16.04	28.05	30.07
HENRY'S CONSTANT	3.76E+04	1.02E+04	2.63E+04
RL	1.30	1.00	0.60
MCS 0.1ml	1.310	0.000	0.000
LCS S32-07231801	13.930	10.120	12.570
LCSD S32-07231801	14.130	10.050	12.640
P1907801-001 0.1ml	13.570	0.000	0.000
P1907801-002 0.1ml	2846.190	1.370	0.000
P1907801-003 0.1ml	3974.590	13.990	0.000
P1907801-004 0.1ml	3952.170	0.000	0.000
P1907801-005 0.1ml	7091.550	0.000	0.000
P1907801-006 0.1ml	10.460	0.000	0.000
13:09:49	1.05	0.00	0.00

LD
12/27

J:\Excel\Report\RSK175\2019\P1907801_ALS Laboratory Group_HS19121092_RSK175_1912271541_DL

Page 1 of 4
Printed: 12/27/2019 3:42 PM

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Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271901.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 09:48:42
Operator : LD
Sample : STD S32-05221901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 10:00:50 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

LD
12/27

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.115	844300	93.081	ppm
7)	Ethylene	1.688	1653369	98.801	ppm
8)	Ethane	1.954	1659675	97.915	ppm
9)	Propylene	4.328	2406501	102.704	ppm
10)	Propane	4.451	2462578	98.977	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

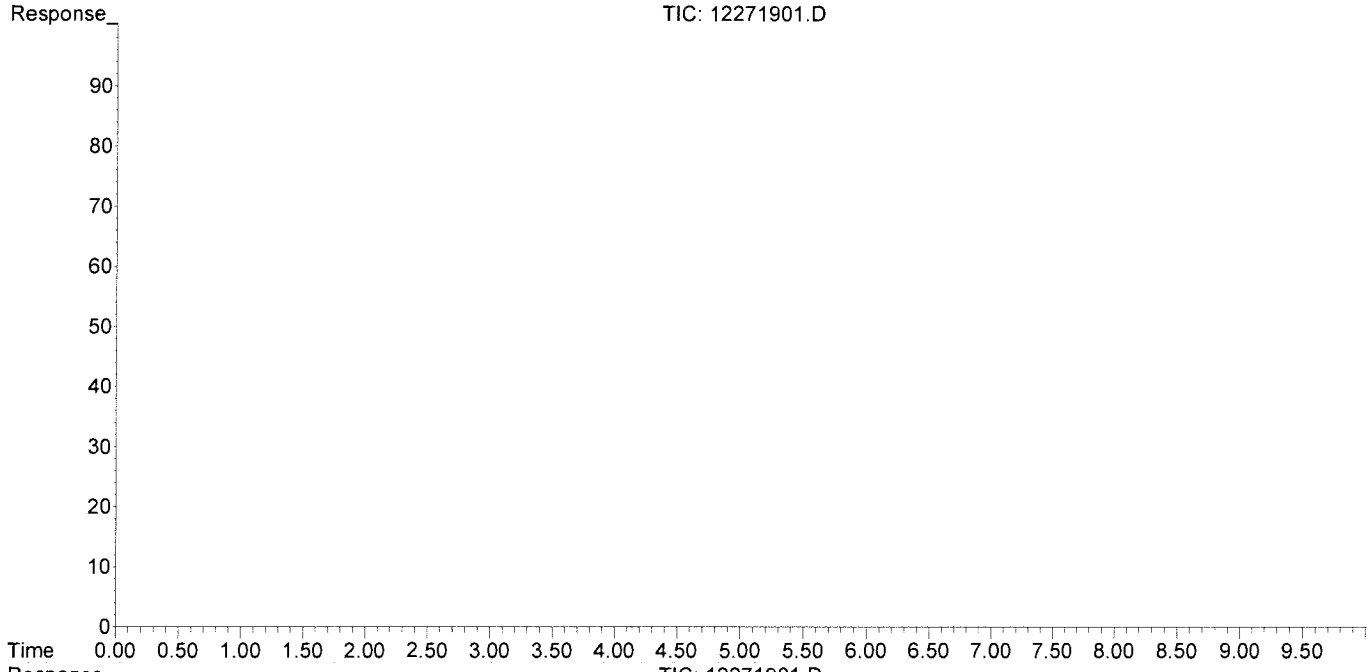
(f)=RT Delta > 1/2 Window (m)=manual int.

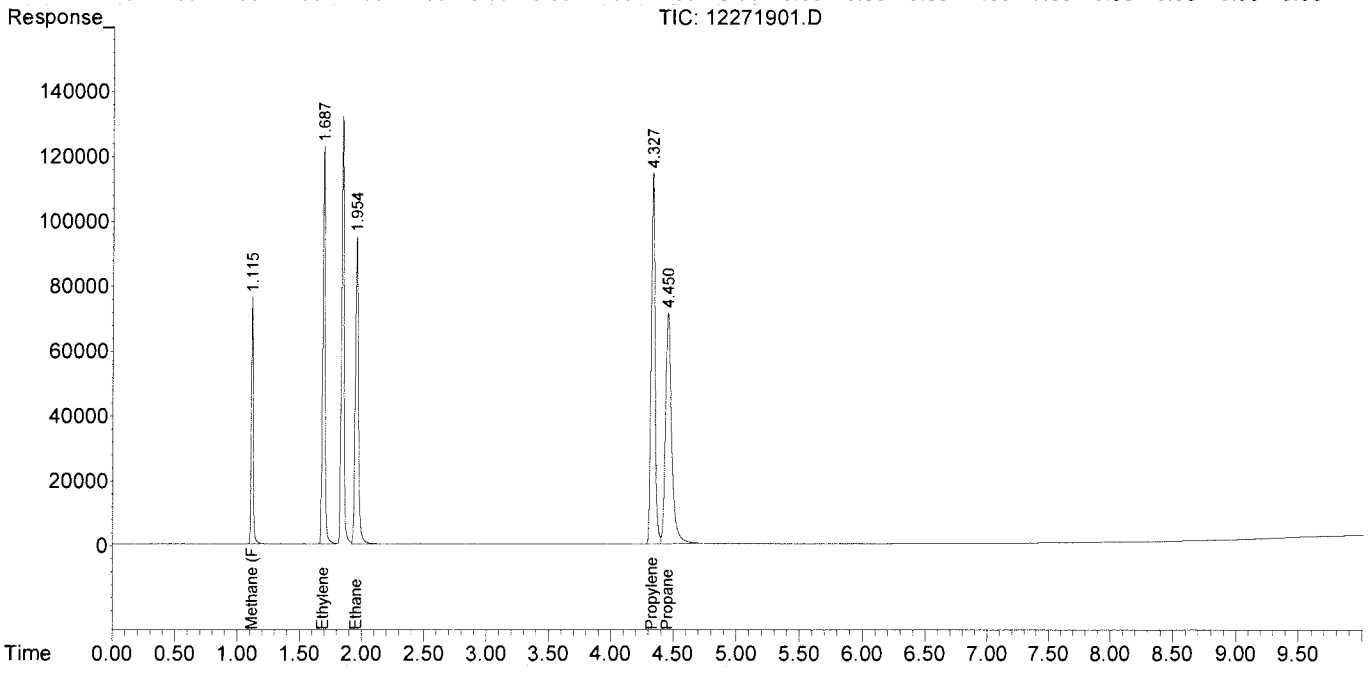
00999934

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271901.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 09:48:42
Operator : LD
Sample : STD S32-05221901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 10:00:50 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271916.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 14:20:24
Operator : LD
Sample : STD S32-05221901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:42:13 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

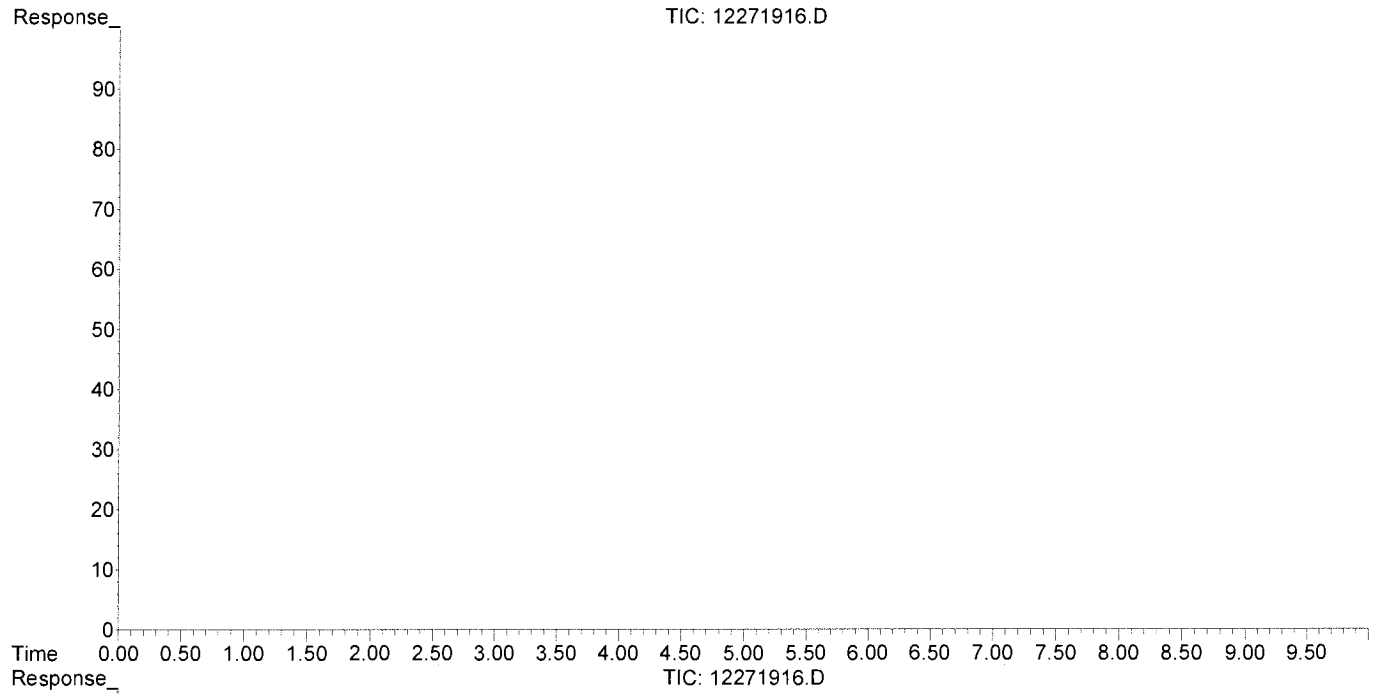
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.108	810977	89.407	ppm
7)	Ethylene	1.677	1594791	95.301	ppm
8)	Ethane	1.944	1610319	95.003	ppm
9)	Propylene	4.330	2329836	99.432	ppm
10)	Propane	4.454	2396821	96.334	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

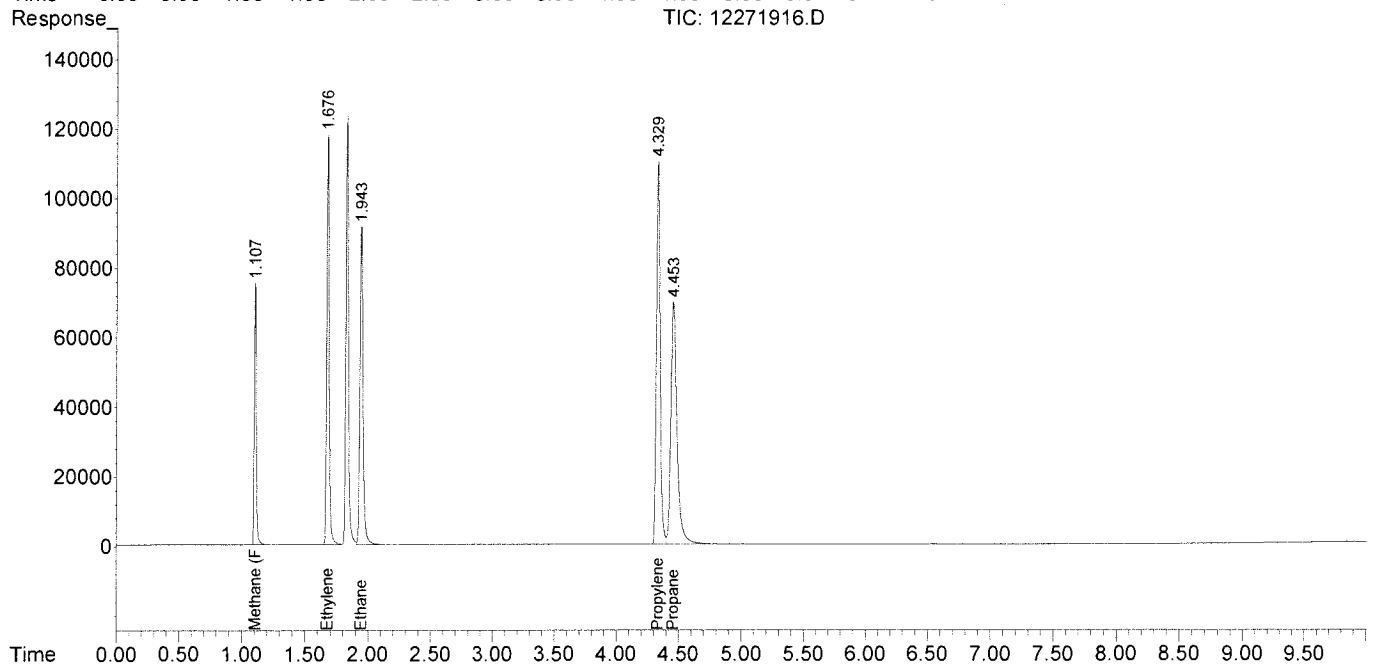
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271916.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 14:20:24
Operator : LD
Sample : STD S32-05221901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:42:13 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Injection Log

Directory: I:\GC10\DATA\RSK_FID\2017_09\12\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	12-Sep-17, 08:38:08	09121701.D	test		MC	RSKBOTH.M	
2	12-Sep-17, 10:52:40	09121702.D	0.151ppm 0.250ml s32-09121702		MC	RSKBOTH.M	Curve
3	12-Sep-17, 11:05:49	09121703.D	0.302ppm 0.5ml s32-09121702		MC	RSKBOTH.M	Curve
4	12-Sep-17, 11:45:34	09121704.D	1.51ppm 0.1ml s32-09051701		MC	RSKBOTH.M	Curve
5	12-Sep-17, 12:09:33	09121705.D	4.53ppm 0.3ml s32-09051701		MC	RSKBOTH.M	Curve
6	12-Sep-17, 12:30:23	09121706.D	10.57ppm 0.7ml s32-09051701		MC	RSKBOTH.M	Curve
7	12-Sep-17, 12:47:18	09121707.D	200ppm 0.1ml s32-09121701		MC	RSKBOTH.M	Curve
8	12-Sep-17, 13:00:22	09121708.D	600ppm 0.3ml s32-09121701		MC	RSKBOTH.M	Curve
9	12-Sep-17, 13:47:48	09121709.D	1000ppm 0.5ml s32-09121701		MC	RSKBOTH.M	Curve
10	12-Sep-17, 14:07:58	09121710.D	2000ppm 1ml s32-09121701		MC	RSKBOTH.M	Curve
11	12-Sep-17, 14:48:48	09121711.D	4000ppm 0.1ml s32-08231701		MC	RSKBOTH.M	Curve
12	12-Sep-17, 15:21:51	09121712.D	20000ppm 0.5ml s32-08231701		MC	RSKBOTH.M	Curve
13	12-Sep-17, 15:38:59	09121713.D	mb 0.5ml		MC	RSKBOTH.M	Pass
14	12-Sep-17, 15:55:35	09121714.D	mb 0.1ml		MC	RSKBOTH.M	Pass
15	12-Sep-17, 16:15:26	09121715.D	icv s30-05241604		MC	RSKBOTH.M	Pass

Injection Log

12/31/19

Directory: I:\GC10\DATA\RSK_FID\2019_12\27\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	27-Dec-19, 09:48:42	12271901.D	STD S32-05221901		LD	RSKBOTH.M	pass
2	27-Dec-19, 10:03:03	12271902.D	RB 0.1ml		LD	RSKBOTH.M	pass
3	27-Dec-19, 11:17:39	12271903.D	MCS 0.1ml		LD	RSKBOTH.M	pass
4	27-Dec-19, 11:32:18	12271904.D	LCS S32-07231801		LD	RSKBOTH.M	pass
5	27-Dec-19, 11:45:51	12271905.D	LCSD S32-07231801		LD	RSKBOTH.M	pass
6	27-Dec-19, 12:00:50	12271906.D	P1907801-001 0.1ml		LD	RSKBOTH.M	
7	27-Dec-19, 12:15:29	12271907.D	P1907801-002 0.1ml		LD	RSKBOTH.M	
8	27-Dec-19, 12:29:32	12271908.D	P1907801-003 0.1ml		LD	RSKBOTH.M	
9	27-Dec-19, 12:42:33	12271909.D	P1907801-004 0.1ml		LD	RSKBOTH.M	
10	27-Dec-19, 12:56:28	12271910.D	P1907801-005 0.1ml		LD	RSKBOTH.M	
11	27-Dec-19, 13:09:49	12271911.D	P1907801-006 0.1ml		LD	RSKBOTH.M	
12	27-Dec-19, 13:26:26	12271912.D	P1907802-001 0.1ml		LD	RSKBOTH.M	
13	27-Dec-19, 13:40:35	12271913.D	P1907802-002 0.1ml		LD	RSKBOTH.M	
14	27-Dec-19, 13:54:12	12271914.D	P1907802-003 0.1ml		LD	RSKBOTH.M	
15	27-Dec-19, 14:07:18	12271915.D	P1907802-004 0.1ml		LD	RSKBOTH.M	
16	27-Dec-19, 14:20:24	12271916.D	STD S32-05221901		LD	RSKBOTH.M	pass
17	27-Dec-19, 14:33:31	12271917.D	P1907802-005 0.1ml		LD	RSKBOTH.M	
18	27-Dec-19, 14:46:47	12271918.D	xxxxSTD S32-05221901		LD	RSKBOTH.M	fail
19	27-Dec-19, 15:04:44	12271919.D	STD S32-05221901		LD	RSKBOTH.M	pass

REPORT TO:
Name: MARCIA OLIVE
Company: BHATE ENVIRONMENTAL
Address: 445 UNION BLVD. STE 129
LAKEWOOD, CO. 80228
email: molive@bhate.com
Phone: 205-918-4000
Fax:

Project Manager: KIM NEMMERS
Project Name: LHAAP-58
Project No.: NW01312.0150

INVOICE TO: (For invoices paid by a third party it is imperative that all information be provided)
Name:
Company:
Address:
email:
Phone:
Fax:

Purchase Order No.
Subcontract No.
MI Quote No.

microbialinsights
10515 Research Dr
Knoxville, TN 37932
865-573-8188
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Please Check One:
☑ More samples to follow
☐ No Additional Samples

Report Type: ☑ Standard (default) ☐ Microbial Insights Level III raw data(15% surcharge) ☐ Microbial Insights Level IV (25% surcharge) ☐ Comprehensive Interpretive(15%) ☐ Historical Interpretive (30%)
EDD type: ☐ Microbial Insights Standard (default) ☐ All other available EDDs (5% surcharge) Specify EDD Type:

Please contact us with any questions about the analyses or filling out the COC at (865) 573-8188 (9:00 am to 5:00 pm EST, M-F). After hours email: customerservice@microbe.com

Sample Information					Analyses					CENSUS: Please select the target organism/gene																							
MI ID (Laboratory Use Only)	Sample Name	Date Sampled	Time Sampled	Matrix	PLFA	DGGE+3ID	DGGE+5ID	QuantArray Chlor	QuantArray Petro	DHC (Dehalococcoides)	DHC Functional genes (bvc, tca, vcr)	DHBt (Dehalobacter)	DSM (Desulfuromonas)	DSB (Desulfitobacterium)	EBAC (Total)	SRB (Sulfate Reducing Bacteria-APS)	MGN (Methanogens)	MOB (Methanotrophs)	SMMO	DNF (Denitrifiers-nirS and nirK)	AOB (ammonia oxidizing bacteria)	PM1 (MTBE aerobic)	RMO (Toluene Monooxygenase)	RDEG (Toluene Monooxygenase)	PHE (Phenol Hydroxylase)	NAH (Napthalene-aerobic)	BSSA (Toluene/Xylene-Anaerobic)	add. qPCR:	add. qPCR:	RNA (Expression Option)*	Other:	Other:	Other:
084QL 1	03WW01_121819	12/18/19	0900	WG							X	X																					
2	35AWW09_121819	12/18/19	0955	WG							X	X																					
3	35AWW11_121819	12/18/19	1050	WG							X	X																					
4	35AWW23_121819	12/18/19	1145	WG							X	X																					
5	35AWW19_121819	12/18/19	1240	WG							X	X																					

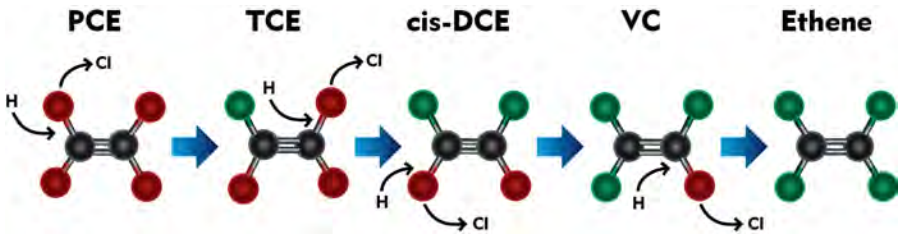
Relinquished by: Sean Bessing 12/18/19 1430
Received by: [signature] Date 12/19/19

It is vital that chain of custody is filled out correctly & that all relative information is provided.
Failure to provide sufficient and/or correct information regarding reporting, invoicing & analyses requested information may result in delays for which MI will not be liable.

DHC Interpretation

Dehalococcoides 16S rRNA gene (qDHC)

Under anaerobic conditions, tetrachloroethene (PCE) and trichloroethene (TCE) can undergo sequential reductive dechlorination through the daughter products *cis*-dichloroethene (*cis*-DCE) and vinyl chloride to nontoxic ethene (1,2).



While a number of bacterial cultures capable of utilizing PCE and TCE as growth supporting electron acceptors have been isolated (3-7), *Dehalococcoides* spp. may be the most important because they are the only bacterial group that has been isolated to date which is capable of complete reductive dechlorination of PCE to ethene (8). In fact, the presence of *Dehalococcoides* spp. has been associated with complete dechlorination to ethene at sites across North America and Europe (9).

Status	*Dehalococcoides spp.*	Observation
	**≥ 10^4** (cells/mL)	Lu et al. proposed that a concentration of 1 x 10^4 DHC cells/mL could be used as a screening criterion to identify sites where reductive dechlorination will yield a generally useful biodegradation rate (10). Similarly, in an internal study conducted with nearly 1000 groundwater samples obtained from sites across the US, ethene production was observed in approximately 80% of samples in which CENSUS® qDHC results were greater than or equal to 10^4 DHC cells/mL.
	**10^1 to < 10^4** (cells/mL)	When vinyl chloride reductase genes (See DHC functional genes discussion below) are also detected, complete reductive dechlorination of PCE and TCE to ethene may still occur even with moderate DHC concentrations. When the DHC population is below the 10^4 cells/mL criterion proposed by Lu et al. (10), project managers should carefully consider other site-specific data to determine whether subsurface conditions may be limiting reductive dechlorination. For example, the addition of an electron donor may be able to stimulate DHC growth and enhance anaerobic bioremediation.
	**< 10^1** (cells/mL)	DHC concentrations are low suggesting that complete reductive dechlorination of PCE and TCE to ethene is unlikely to occur under existing conditions. Enhanced anaerobic bioremediation options (biostimulation or bioaugmentation) may need to be considered.

10515 Research Drive
Knoxville, TN 37932
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microbialinsights

DHC Interpretation

DHC Functional Genes (*tce*A, *bvc*A, *vcr*A)

A "stall" where daughter products *cis*-DCE and vinyl chloride accumulate can occur at PCE- and TCE-impacted sites especially under MNA conditions. The accumulation of vinyl chloride, generally considered more carcinogenic than the parent compounds, is particularly problematic. Although elevated *Dehalococcoides* concentrations correspond to ethene production in numerous studies, the range of chlorinated ethenes metabolized and cometabolized varies among species and strains within the *Dehalococcoides* genus. For example, *Dehalococcoides ethenogenes* str. 195 metabolizes PCE, TCE, and *cis*-DCE and cometabolizes vinyl chloride (8) to produce ethene. Conversely, *Dehalococcoides* sp. CBDB1 utilizes PCE and TCE but does not cometabolize additional chloroethenes (11). Other *Dehalococcoides* strains, such as BAV1, GT and VS, are known to fully dechlorinate cis-DCE and VC to ethene (14,16,19). Quantification of reductive dehalogenase genes is used to more definitively confirm the potential for reductive dechlorination of TCE, cis-DCE, and vinyl chloride (12-15).

Functional Gene	Observation
TCE Reductase	
***tce*A gene**	The *tce*A gene encodes the enzyme responsible for reductive dechlorination of TCE to *cis*-DCE in some strains of *Dehalococcoides*. Absence of *tce*A does not preclude the potential for reductive dechlorination of TCE in the field since the *tce*A gene is not universally distributed among all DHC and is not present in other microorganisms capable of reductive dechlorination of TCE (e.g. *Dehalobacter*). Detection of the *tce*A gene provides an additional line of evidence indicating the potential for dechlorination of TCE.
Vinyl Chloride Reductase	
***bvc*A gene**	The *bvc*A gene encodes the vinyl chloride reductase enzyme responsible for reductive dechlorination of vinyl chloride to ethene by *Dehalococcoides* sp. str. BAV1 (16). Presence of *bvc*A gene indicates the potential for reductive dechlorination of VC to ethene. Absence of both *bvc*A and *vcr*A genes suggests VC may accumulate. An internal study with ~1,000 samples showed ethene production was observed in 80% of the samples that the DHC population was greater than or equal to 10^4 cells/mL. The *bvc*A gene was detected in over 50% of these samples. Van Der Zaan et al (17) noted that the bvcA gene was the only VC reductase gene detected at three of their sites. Alfred Spormann's laboratory at Stanford University (18) reported that the *bvc*A gene was the most abundant and active at the outflow of a PCE fed column study. This section of the column was in the DCE to VC stages of reductive dechlorination thus confirming the importance of the *bvc*A gene for complete reductive dechlorination.
***vcr*A gene**	The *vcr*A gene encodes the vinyl chloride reductase enzyme responsible for reductive dechlorination of *cis*-DCE and vinyl chloride by *Dehalococcoides* sp. strain VS (14). Presence of *vcr*A gene indicates the potential for reductive dechlorination of DCE and/or VC to ethene. Absence of both *bvc*A and *vcr*A genes suggest VC may accumulate. As with the *bvc*A gene, detection of the *vcr*A gene is associated with ethene production in internal studies (67%) and vinyl chloride reduction in independent studies (14, 17).

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ALS

DHC Interpretation

Reporting

Microbial Insights can provide a variety of data packages and reporting levels to suit the needs of any project. Data packages range from simple analytical reports with results only to more complex data packages that include a report narrative, analytical results, QC data, and supporting materials including all raw data and chain-of-custody documentation. The figure below shows our standard report and explains the way values are reported.

Microbial Insights, Inc.

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CENSUS

Client: Company Name
Project: Your Project Name

MI Project Number: Unique Laboratory Identifier
Date Received: Date Samples Arrived

Sample Information

Client Sample ID:		Sample A	Sample B	Sample C
Sample Date:		00/00/0000	00/00/0000	00/00/0000
Units:		cells/mL	cells/mL	cells/mL
Analyst:		Intials	Intials	Intials
Dechlorinating Bacteria				
Dehalococcoides spp.	DHC	**1.84E+05**	**2.76E+02**	**2.28E+01 (J)**
Functional Genes				
tceA Reductase	TCE	**6.00E+01**	**3.23E+01**	<4.00E-01
bvcA Reductase	BVC	**1.17E+04**	**1.81E+01**	<4.00E-01
vcrA Reducatase	VCR	**8.42E+04**	**1.74E+02**	<4.00E-01

"J" value
Result is an estimated value. This data qualifier (flag) is used when the target gene is detected but at a concentration or abundance below the practical quantification limit (PQL).

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

< value
The target gene was not detected at the limit of quantitation (LOQ) reported for that sample.

"I" value
QA Procedure indicated that the sample may have exhibited PCR inhibition. Although relatively rare, PCR inhibition can occur due to the presence of metals or humic acids at high concentrations in the sample.

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Quality Assurance

Microbial Insights' comprehensive Quality Assurance (QA) Program is the foundation of all laboratory analyses, ensuring that our clients receive high-quality analytical services that are timely, reliable, and meet their intended purpose in a cost effective manner. MI is committed to providing quality data that surpasses regulatory and industry standards, thus enabling the client to make well-informed decisions. MI maintains strict standard operating procedures and QA/QC measures throughout all of the analyses offered. The following Table details specific QA/QC procedures that are used for CENSUS.

QA/QC	Description
Date of Extraction	DNA and RNA extractions are performed the day the samples are received by MI to minimize the possibility of any changes to the microbial community prior to analysis.
Laboratory Method Blanks	An extraction blank (no sample added) is processed alongside each set of field samples from DNA extraction through CENSUS® analysis to ensure that cross contamination has not occurred. Although MI has never experienced this issue, the detection of the CENSUS® target (e.g. *Dehalococcoides*) in an extraction blank is direct evidence of cross contamination with a sample or contamination of a reagent and would invalidate the results. If this were to occur, MI would re-extract the sample. If not possible to re-extract, MI would contact the client immediately and notate it on the laboratory report.
Laboratory Control Samples (LCS)	A laboratory control sample (LCS) or positive control (target DNA) is included with each CENSUS® plate to confirm amplification and as a continuing calibration check.
Negative Controls	A negative control (no DNA) is included with each CENSUS plate to ensure that cross contamination has not occurred during amplification. As with the extraction blank, detection of CENSUS target (e.g. DHC) in a negative control is direct evidence of contamination and would invalidate the results. If this were to occur, MI would rerun the analysis.

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How to Retrieve and Use Estimated Percentile Ranks from the Microbial Insights Database

The MI Database

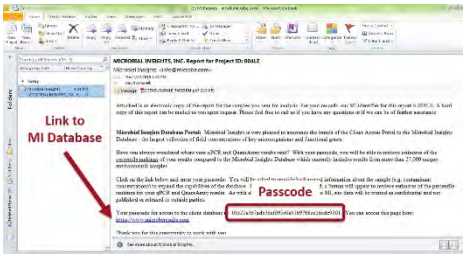
The Microbial Insights Database is the largest collection of field concentrations of key microorganisms and functional genes currently containing qPCR and QuantArray results for more than 40,000 unique groundwater, soil, and sediment samples from all 50 states and 33 countries worldwide.

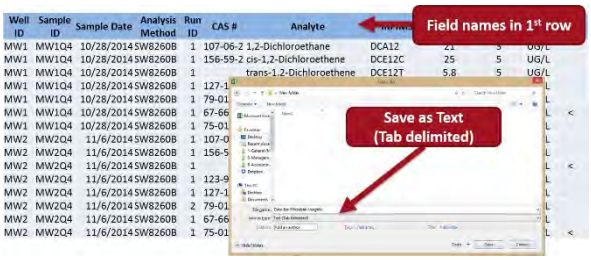
Is that low, medium or high?

In practice, biodegradation depends not just on the presence but the actual concentrations of the contaminant degrading microorganisms. The estimated percentile ranks retrieved from the MI Database answer the question "Is that low, medium or high?" by comparing your results to those of the literally thousands of other environmental samples submitted to MI for analysis over the last 20+ years.

Retrieving Estimated Percentile Ranks

With your report, you were emailed a passcode and link enabling you to login to the Client Portal. Just enter basic information about the sample (e.g. contaminant concentrations) to aid in understanding the links between environmental conditions and microbial populations and you can retrieve estimates of the percentile ranks of your results based on those compiled in the MI database at no additional charge.





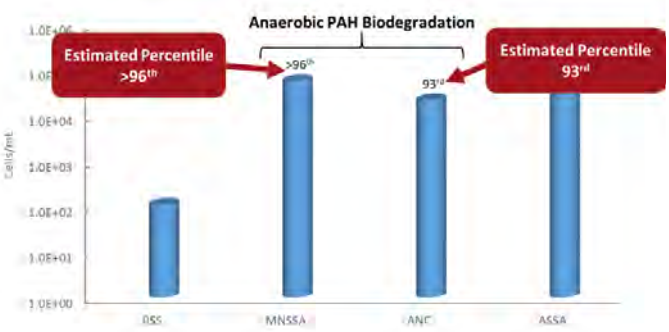
All site specific data will be treated as confidential and uploading is easy.

You can even upload chemical and geochemical data from EDDs. Just save as a Tab Delimited text file.

Example - Using Estimated Percentile for MNA Assessment at an MGP Site

CENSUS® qPCR was performed to quantify anaerobic naphthalene carboxylase (ANC) and naphthyl-2-methylsuccinate synthase (MNSSA) to assess anaerobic biodegradation of naphthalene and methyl-naphthalene under existing site conditions.

- Not only were ANC and MNSSA genes detected, but these functional genes responsible for anaerobic biodegradation of PAHs were present at concentrations "far better than average" based on the estimated percentile ranks.
- Demonstrating high concentrations of ANC and MNSSA gave an additional line of evidence indicating growth substantial populations of anaerobic PAH degraders and suggested a greater probability that monitored natural attenuation (MNA) will be successful.



How to Use Estimated Percentile Ranks from the Microbial Insights Database

The MI Database and Client Portal

The Microbial Insights Database is the largest collection of field concentrations of key microorganisms and functional genes currently containing qPCR and QuantArray results for more than 32,000 unique groundwater, soil, and sediment samples from all 50 states and 33 countries worldwide. Driven by field samples, the database reflects the impacts of common contaminants, geochemical conditions, and site management practices on critical microbial populations.

With your report, you received a passcode enabling you to retrieve estimates of the percentile ranks of your results based on those compiled in the MI database at no additional charge. When accessing the database, you will be asked to provide background information about the sample (e.g. contaminant concentrations) to aid in understanding the links between environmental conditions and microbial populations. As with all client information provided to MI, site specific data will be treated as confidential.

Is that low, medium or high?

In practice, biodegradation depends not just on the presence but the actual concentrations of the contaminant degrading microorganisms. Simply put, qPCR and QuantArray results demonstrating high concentrations of target microorganisms or functional genes suggest in situ selection, enrichment and growth of those specific contaminant degraders and therefore a greater probability that monitored natural attenuation (MNA) or bioremediation will be successful.

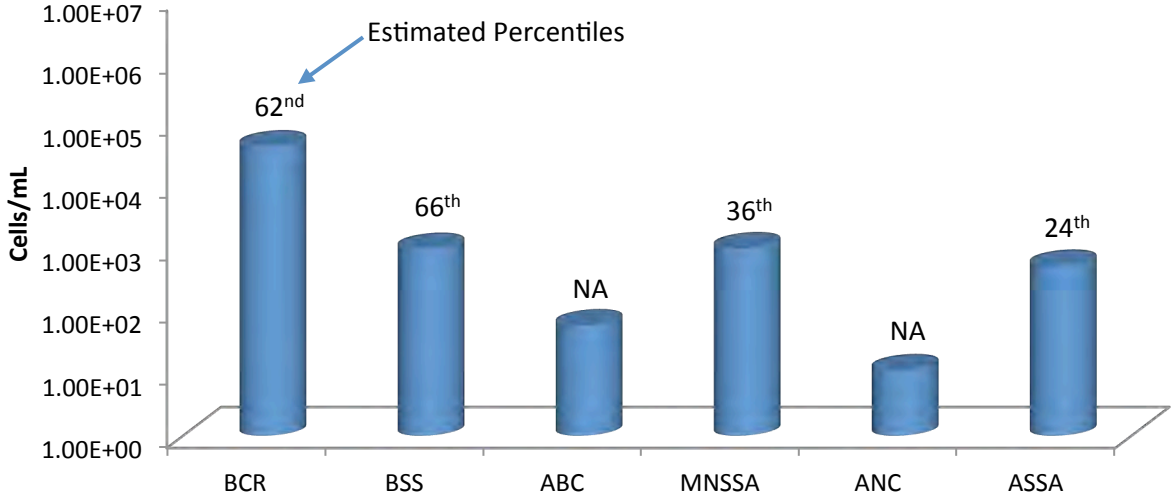
Is that a low, medium, or high concentration? The estimated percentile ranks retrieved from the MI Database answer that question by comparing your qPCR and QuantArray results to those of the literally thousands of other environmental samples submitted to MI for analysis over the last 20+ years.

Using the Estimated Percentile - Interpretation Examples

MNA Assessment – Petroleum Hydrocarbon Site:

Whenever possible, interpretation of qPCR and QuantArray results should include comparisons between samples obtained from background and impacted wells. The estimated percentile ranks however provide an additional avenue for comparison and evaluation of treatment options as shown below.

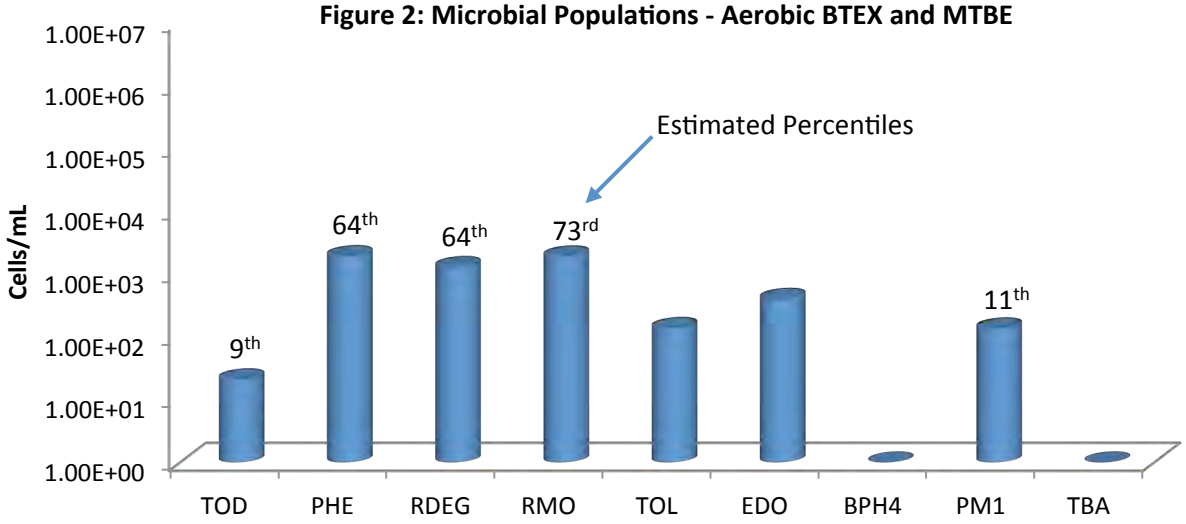
Figure 1: Microbial Populations - Anaerobic BTEX and PAHs



Anaerobic BTEX and PAH Biodegradation (Figure 1):

- With moderate concentrations of functional genes involved in anaerobic BTEX metabolism detected, the QuantArray-Petro® results were encouraging in terms of evaluating biodegradation potential under existing site conditions.
- More specifically, benzylsuccinate synthase (BSS) was detected on the order of nearly 10^3 cells/mL indicating the presence of a substantial population (66th percentile) capable of anaerobic biodegradation of toluene and other alkyl substituted benzenes.
- Naphthyl-2-methylsuccinate synthase (MNSSA) and alkylsuccinate synthase (ASSA) genes were also detected indicating the potential for anaerobic biodegradation of 2-methylnaphthalene and normal alkanes.
- The concentration of MNSSA genes would be considered modest with an estimated percentile of 36th.
- While the percentile rank for MNSSA would be "below average", a number of additional factors should be considered.
    - First, anaerobic hydrocarbon degraders are less prevalent than aerobic BTEX degraders and overall detection frequencies for many genes involved in anaerobic hydrocarbon biodegradation are less than 50%.
    - Therefore, the detection of genes like BSS, MNSSA, ASSA, anaerobic benzene carboxylase (ABC), and anaerobic naphthalene carboxylase (ANC) even at low concentrations is certainly noteworthy and inherently "better than average".
    - The estimated percentiles for all assays are based only on samples where the concentration of the target gene was greater than the practical quantitation limit (PQL).
    - For less commonly detected targets like many of the genes involved in anaerobic hydrocarbon biodegradation this is an especially important consideration.
    - Excluding samples where a gene target is below the PQL ensured that the median concentrations of less commonly detected targets would not be unduly biased low by the fact that the gene is not detected in most samples.
- Anaerobic benzene carboxylase (ABC) and naphthalene carboxylase (ANC) genes were also detected indicating the presence of bacterial populations capable of anaerobic biodegradation of benzene and naphthalene.
- For newly identified genes like ABC and ANC, estimated percentile ranks are not yet available due to the limited number of field samples that have been analyzed to date.
- However, like MNSSA and other genes involved in anaerobic hydrocarbon biodegradation, ABC and ANC detection frequencies are relatively low so the detection of these genes even at low concentrations should be considered when evaluating biodegradation potential under existing site conditions.

Figure 2: Microbial Populations - Aerobic BTEX and MTBE



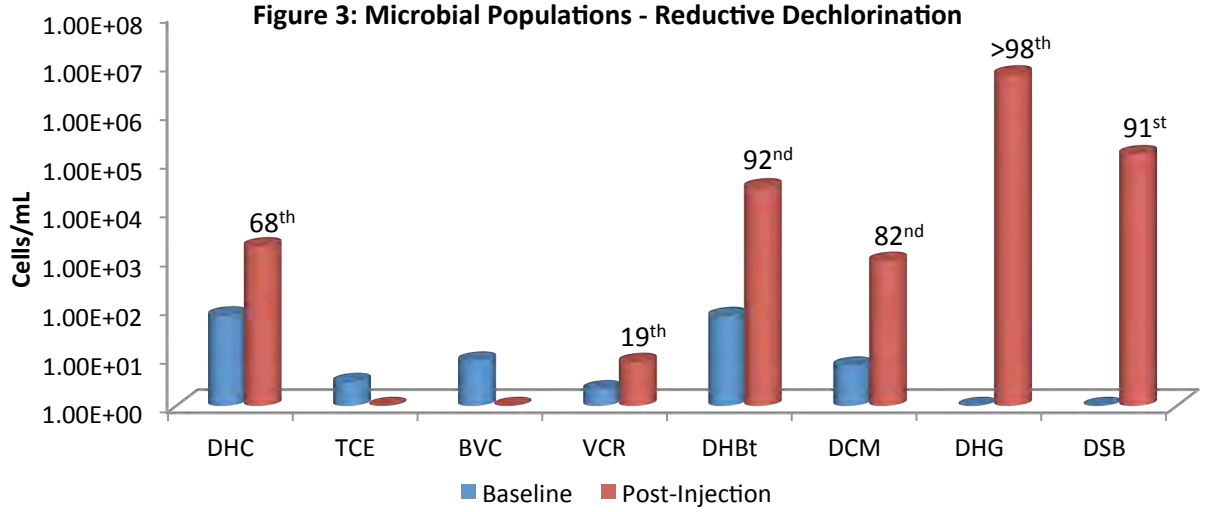
Aerobic BTEX and MTBE Biodegradation (Figure 2):

- With growing evidence that aromatic oxygenases function at low dissolved oxygen concentrations, aerobic BTEX biodegradation pathways should also be evaluated when considering MNA.
- Again, the QuantArray-Petro results were encouraging – genes encoding the first step in multiple pathways for aerobic BTEX biodegradation were detected indicating the presence of a diverse population of aerobic BTEX degraders.
- However, aerobic BTEX degraders are often considered ubiquitous. Therefore answering the question "Is that low, medium or high?" becomes especially important when evaluating aerobic BTEX biodegradation at petroleum hydrocarbon sites.
- In this case, the estimated percentile ranks of the concentrations of toluene/benzene monooxygenase (RMO and RDEG) and phenol hydroxylase (PHE) genes ranged from the 64th to 73rd percentile.
- In other words, the concentrations of RMO, RDEG, and PHE detected in this groundwater sample were greater than the concentrations detected in 64% to 73% of all other groundwater samples where these genes were analyzed and detected above the PQL.
- Aerobic BTEX degraders are common in the environment, but in this sample concentrations of toluene/benzene monooxygenase genes could be viewed as "better than average" when compared to the MI Database.

Biostimulation – Chlorinated Solvent Site:

Whenever possible, interpretation of qPCR and QuantArray results should include comparisons between baseline and post-injection monitoring events as shown below (Figure 3). The estimated percentile ranks however provide an additional avenue for comparison and evaluation of remedy performance.

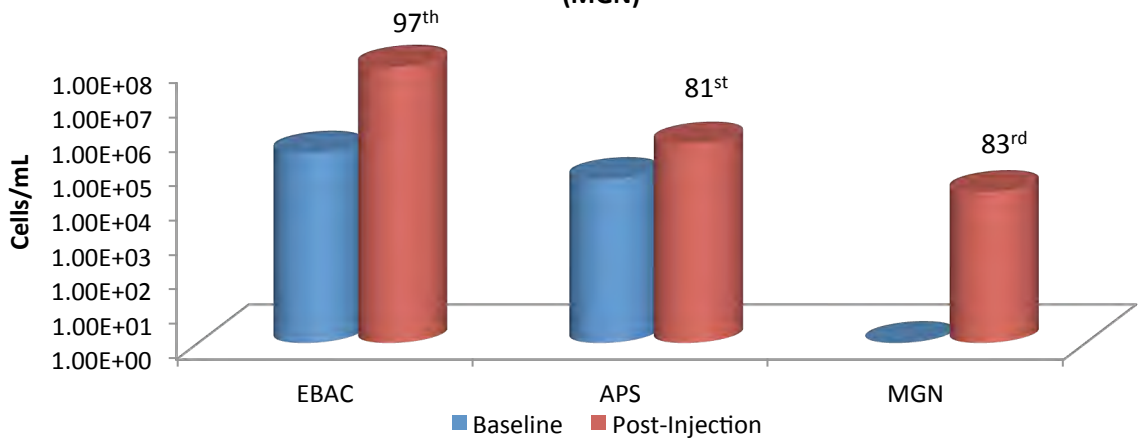
Figure 3: Microbial Populations - Reductive Dechlorination



- During the baseline groundwater sampling event, *Dehalococcoides* and vinyl chloride reductase genes were detected indicating the potential for complete reductive dechlorination of PCE and TCE to ethene.
- However, the *Dehalococcoides* concentration was well below the 10^4 cells/mL recommended by Lu et al. (2006) for generally effective rates of reductive dechlorination.
- Based on qPCR results as well as traditional groundwater monitoring, biostimulation with electron donor addition was selected as the site management plan.
- By the first monitoring event after injection, populations of halorespiring bacteria had increased substantially in response to electron donor addition.
    - *Dehalobacter* populations increased by more than two orders of magnitude to post-injection concentrations greater than 10^4 cells/mL (92nd percentile).
    - *Dehalogenimonas* (10^6 cells/mL) and *Desulfitobacterium* (10^5 cells/mL) which had not been detected prior electron donor addition were present at concentrations greater than observed in over 90% of other groundwater samples where these halorespiring bacteria were detected.
- After injection, *Dehalococcoides* populations increased by more than an order of magnitude to a concentration of over 10^3 cells/mL (68th percentile) demonstrating growth of this key group of halorespiring bacteria.
- Despite a substantial increase and a "better than average" concentration, the *Dehalococcoides* population was still below the 10^4 cells/mL threshold and vinyl chloride reductase gene copies were low (19th percentile).
    - In terms of electron donors and acceptors, the metabolic capabilities of *Dehalococcoides* are rather specialized (hydrogen utilizing obligate halorespiring bacteria) so the median concentration is low. With a low median concentration across the database, a "better than average" *Dehalococcoides* concentration in a given sample may not exceed the 10^4 cells/mL threshold established for effective reductive dechlorination (Lu et al. 2006) and ethene production (Microbial Insights, unpublished data).

- In this case, the initial growth of *Dehalococcoides* was substantial but may have been somewhat hindered by competition with sulfate reducing bacteria (Figure 4 below).
    - The baseline population of sulfate reducing bacteria was moderate (10^4 cells/mL; 63rd percentile). Consistent with an observed decreased in dissolved sulfate concentrations, populations of sulfate reducing bacteria increased and were detected at a relatively high concentration (81st percentile) after electron donor addition.
    - After injection, methanogen populations also increased to a relatively high concentration (83rd percentile) suggesting generation of methanogenic conditions.
- With sulfate depletion and generation of highly anaerobic conditions more conducive to reductive dechlorination, *Dehalococcoides* populations may continue to increase and exceed the 10^4 *Dehalococcoides* cells/mL threshold in subsequent monitoring events.
- Overall, QuantArray analysis conclusively demonstrated that electron donor addition stimulated growth of halorespiring bacteria with the estimated percentiles retrieved from the MI Database providing the "low, medium or high" perspective to the observed changes in microbial populations.

Figure 4: Total Bacteria (EBAC), Sulfate Reducering Bacteria (APS) and Methanogens (MGN)



References

Lu, X., J.T. Wilson, and D.H. Kampbell. 2006. Relationship between *Dehalococcoides* DNA in ground water and rates of reductive dechlorination at field scale. *Water Research* 40 no. 16: 3131-3140.

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Identifier: 084QL **Date Rec:** 12/19/2019 **Report Date:** 12/26/2019

Client Project #: NW01312.0150 **Client Project Name:** LHAAP-58

Purchase Order #:

Analysis Requested: CENSUS

Reviewed By:



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CENSUS

Client: **ALS Laboratory Group**
Project: LHAAP-58

MI Project Number: **084QL**
Date Received: 12/19/2019

Sample Information

Client Sample ID:		**03WW01_121819**	**35AWW09_121819**	**35AWW11_121819**	**35AWW23_121819**	**35AWW19_121819**
Sample Date:		12/18/2019	12/18/2019	12/18/2019	12/18/2019	12/18/2019
Units:		cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Analyst/Reviewer:		HT	HT	HT	HT	HT
Dechlorinating Bacteria						
Dehalococcoides	*DHC*	**2.22E+04**	**2.40E+06**	**9.00E+02**	**6.89E+02**	**1.48E+01**
tceA Reductase	TCE	**5.95E+02**	**3.77E+05**	**6.70E+00**	**2.96E+01**	**3.00E-01 (J)**
BAV1 Vinyl Chloride Reductase	BVC	**7.00E-01**	<2.60E+00	<6.00E-01	**4.00E-01 (J)**	<5.00E-01
Vinyl Chloride Reductase	VCR	**6.08E+03**	**3.30E+05**	**9.97E+01**	**6.98E+01**	**6.00E-01**
Dehalobacter spp.	*DHBt*	**2.48E+03**	**4.25E+04**	**2.13E+05**	<5.60E+00	**1.22E+04**

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

Quality Assurance/Quality Control Data

Samples Received **12/19/2019**

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
BVC	12/19/2019	12/26/2019	0 °C	109%	non-detect	non-detect
DHBt	12/19/2019	12/26/2019	0 °C	115%	non-detect	non-detect
DHC	12/19/2019	12/26/2019	0 °C	114%	non-detect	non-detect
TCE	12/19/2019	12/26/2019	0 °C	105%	non-detect	non-detect
VCR	12/19/2019	12/26/2019	0 °C	108%	non-detect	non-detect

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January 09, 2020

Analytical Report for Service Request No: K1911998

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: HS19121092

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory December 20, 2019
For your reference, these analyses have been assigned our service request number **K1911998.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy

Kelley Lovejoy
Project Manager

RIGHT SOLUTIONS | RIGHT PARTNER

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Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

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ALS Environmental

Client: ALS Environmental - US
Project: HS19121092
Sample Matrix: Ground Water

Service Request: K1911998
Date Received: 12/20/2019

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Six ground water samples were received for analysis at ALS Environmental on 12/20/2019. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

Method SM 5310 C, 01/01/2020:The Relative Percent Difference (RPD) for the analysis of Total Organic Carbon in sample batch QC K1912042-005 was outside the normal ALS control limits (14% RPD versus a control limit of 10%). The associated QA/QC results (e.g. control sample, method blank, calibration standards, etc.) indicate the analysis was in control. No further corrective action was appropriate.

Approved by Kelley Lovejoy Date 01/09/2020

Chain of Custody

ALS Environmental—Kelso Laboratory
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KL1911998

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Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID:** **12918**

SUBCONTRACT TO:

ALS Environmental Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Phone: +1 360 501 3312

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS19121092
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS19121092-01**	**35AWW09_121819**	**Groundwater**	**18 Dec 2019 08:00**
	TOC Analysis for DOD Level IV/Excel EDD			30 Dec 2019
2.	**HS19121092-02**	**03WW01_121819**	**Groundwater**	**18 Dec 2019 09:00**
	TOC Analysis for DOD Level IV/Excel EDD			30 Dec 2019
3.	**HS19121092-03**	**35AWW08_121819**	**Groundwater**	**18 Dec 2019 09:55**
	TOC Analysis for DOD Level IV/Excel EDD			30 Dec 2019
4.	**HS19121092-04**	**35AWW11_121819**	**Groundwater**	**18 Dec 2019 10:50**
	TOC Analysis for DOD Level IV/Excel EDD			30 Dec 2019
5.	**HS19121092-05**	**35AWW23_121819**	**Groundwater**	**18 Dec 2019 11:45**
	TOC Analysis for DOD Level IV/Excel EDD			30 Dec 2019
6.	**HS19121092-06**	**35AWW19_121819**	**Groundwater**	**18 Dec 2019 12:40**
	TOC Analysis for DOD Level IV/Excel EDD			30 Dec 2019

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Recd 12/20/19 1000

Subcontract Chain of Custody

SAMPLING STATE: **Texas**

COC ID: **12918**

Relinquished By: _____ Date/Time: 12.19.19 18:00

Received By: _____ Date/Time: 12/20/19 1000

Cooler ID(s): _____ Temperature(s): _____

PC KL

Cooler Receipt and Preservation Form

Client ALS Houston Service Request K19 11998

Received: 12/20/19 Opened: 12/20/19 By: CG Unloaded: 12/20/19 By: CG

1. Samples were received via? *USPS* (Fed Ex) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (Cooler) *Box* *Envelope* *Other*____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 1 Front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
-0.1	-0.2	1.0	0.9	-0.1	374	12918	1251 0293 0639	

4. Packing material: *Inserts* (Baggies) *Bubble Wrap* *Gel Packs* (Wet Ice) *Dry Ice* *Sleeves*
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA (Y) N
   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
11. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

*Notes, Discrepancies, & Resolutions:*____

RUSH

General Chemistry

ALS Environmental—Kelso Laboratory
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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K1911998
Project:	HS19121092	**Date Collected:**	12/18/19
Sample Matrix:	Ground Water	**Date Received:**	12/20/19
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Carbon, Total Organic

Sample Name	Lab Code	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
35AWW09_121819	K1911998-001	**2.96**	0.50	0.20	0.07	1	12/31/19 22:45	
03AWW01_121819	K1911998-002	**92**	50	20	7	100	12/31/19 23:14	
35AWW08_121819	K1911998-003	**291**	25	10	4	50	01/07/20 19:36	
35AWW11_121819	K1911998-004	**9.94**	0.50	0.20	0.07	1	01/01/20 00:10	
35AWW23_121819	K1911998-005	**127**	25	10	4	50	01/01/20 01:07	
35AWW19_121819	K1911998-006	**1.75**	0.50	0.20	0.07	1	01/01/20 01:35	
Method Blank	K1911998-MB1	ND U	0.50	0.20	0.07	1	12/31/19 21:04	
Method Blank	K1911998-MB2	ND U	0.50	0.20	0.07	1	01/07/20 18:52	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K1911998
Project	HS19121092	**Date Collected:**	12/18/19
Sample Matrix:	Ground Water	**Date Received:**	12/20/19
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Carbon, Total Organic

Sample Name:	Lab Code:	LOQ	LOD	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1911934-002DUP	0.50	0.20	0.07	0.80	0.63	0.715	23 #	10	01/01/20
Batch QC	K1911980-001DUP	0.50	0.20	0.07	3.94	3.92	3.93	<1	10	01/01/20
Batch QC	K1911981-001DUP	0.50	0.20	0.07	3.51	3.50	3.50	<1	10	01/01/20
Batch QC	K1911995-001DUP	0.50	0.20	0.07	2.19	2.23	2.21	2	10	12/31/19
35AWW09_121819	K1911998-001DUP	0.50	0.20	0.07	2.96	2.86	2.91	3	10	12/31/19
03AWW01_121819	K1911998-002DUP	50	20	7	92	88	89.6	5	10	12/31/19
35AWW08_121819	K1911998-003DUP	25	10	4	291	288	290	<1	10	01/07/20
35AWW11_121819	K1911998-004DUP	0.50	0.20	0.07	9.94	9.77	9.86	2	10	01/01/20
35AWW23_121819	K1911998-005DUP	25	10	4	127	125	126	2	10	01/01/20
35AWW19_121819	K1911998-006DUP	0.50	0.20	0.07	1.75	1.77	1.76	1	10	01/01/20
Batch QC	K1912042-001DUP	0.50	0.20	0.07	4.44	4.41	4.42	<1	10	01/01/20
Batch QC	K1912042-002DUP	0.50	0.20	0.07	4.10	4.01	4.05	2	10	01/01/20
Batch QC	K1912042-003DUP	0.50	0.20	0.07	13.1	13.4	13.2	3	10	01/01/20
Batch QC	K1912042-004DUP	0.50	0.20	0.07	13.8	14.5	14.1	5	10	01/01/20
Batch QC	K1912042-005DUP	0.50	0.20	0.07	3.48	3.01	3.24	14 *	10	01/01/20
Batch QC	K1912140-002DUP	50	20	7	631	648	639	3	10	01/07/20
Batch QC	K1912140-003DUP	50	20	7	734	733	733	<1	10	01/07/20
Batch QC	K1912140-004DUP	50	20	7	721	716	718	<1	10	01/07/20
Batch QC	K1912160-001DUP	0.50	0.20	0.07	2.70	2.59	2.64	4	10	01/07/20
Batch QC	K2000034-001DUP	0.50	0.20	0.07	2.13	2.11	2.12	<1	10	01/07/20
Batch QC	K2000035-001DUP	0.50	0.20	0.07	0.24 J	0.18 J	0.208	29 #	10	01/07/20
Batch QC	K2000035-002DUP	0.50	0.20	0.07	0.37 J	0.47 J	0.420	25 #	10	01/07/20
Batch QC	K2000090-001DUP	0.50	0.20	0.07	0.99	0.89	0.939	11 #	10	01/08/20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K1911998
Project:	HS19121092	**Date Collected:**	N/A
Sample Matrix:	Ground Water	**Date Received:**	N/A
		Date Analyzed:	12/31/19
		Date Extracted:	NA

Matrix Spike Summary
Carbon, Total Organic

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1911995-001	**Basis:**	NA
Analysis Method:	SM 5310 C		
Prep Method:	None		

Matrix Spike
K1911995-001MS

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Total Organic	2.19	28.3	25.0	104	83-117

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K1911998
Project:	HS19121092	**Date Collected:**	N/A
Sample Matrix:	Ground Water	**Date Received:**	N/A
		Date Analyzed:	01/7/20
		Date Extracted:	NA

Matrix Spike Summary
Carbon, Total Organic

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1912160-001	**Basis:**	NA
Analysis Method:	SM 5310 C		
Prep Method:	None		

Matrix Spike
K1912160-001MS

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Total Organic	2.70	29.9	25.0	109	83-117

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K1911998
Project:	HS19121092	**Date Analyzed:**	12/31/19
Sample Matrix:	Ground Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	665302

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1911998-LCS1	25.1	25.0	100	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K1911998
Project:	HS19121092	**Date Analyzed:**	01/07/20
Sample Matrix:	Ground Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	665574

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1911998-LCS2	26.5	25.0	106	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K1911998
Project: HS19121092

Continuing Calibration Verification (CCV) Summary

Carbon, Total Organic

Analysis Method: SM 5310 C **Units:** mg/L

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	665302	KQ1919248-01	12/31/19 20:35	25.0	24.0	96	90-110
CCV2	665302	KQ1919248-02	01/01/20 00:38	25.0	25.1	100	90-110
CCV3	665302	KQ1919248-03	01/01/20 05:48	25.0	24.0	96	90-110
CCV4	665574	KQ2000092-01	01/07/20 18:23	25.0	25.5	102	90-110
CCV5	665574	KQ2000092-02	01/07/20 22:26	25.0	25.4	102	90-110
CCV6	665574	KQ2000092-03	01/08/20 02:14	25.0	25.3	101	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:**K1911998
Project: HS19121092

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic

Analysis Method: SM 5310 C **Units:**mg/L

	Analysis Lot	Lab Code	Date Analyzed	LOQ	LOD	MDL	Result	Q
CCB1	665302	KQ1919248-04	12/31/19 20:49	0.50	0.20	0.07	ND	U
CCB2	665302	KQ1919248-05	01/01/20 00:53	0.50	0.20	0.07	ND	U
CCB3	665302	KQ1919248-06	01/01/20 06:03	0.50	0.20	0.07	ND	U
CCB4	665574	KQ2000092-04	01/07/20 18:38	0.50	0.20	0.07	ND	U
CCB5	665574	KQ2000092-05	01/07/20 22:40	0.50	0.20	0.07	ND	U
CCB6	665574	KQ2000092-06	01/08/20 02:28	0.50	0.20	0.07	ND	U

Raw Data

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General Chemistry

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11914, 11968, 11970, 12040, 12074
IV IV IV IV II

Work Request # Original (_____) K1911762, 11807, 11895, 11934, 11980, 11981, 11995, 11998, 12042, 11810, 11868, 11909, 11910, 11960, 12004
II II I I II II IV IV IV II IV IV II I II

Tier: _____

Date Analyzed: 12/27/2019

Analyst: BCP

Analysis: TOC

Run # TOC: 664898, 664900, 664901, 664902

DATA QUALITY REPORT
INORGANICS

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

1.	Is the method name and number correct and appropriate?	yes/no/NA
2.	Holding times met for all analyses and for all samples?	yes/no/NA
3.	Are calculations correct?	yes/no/NA
4.	Is the reporting basis correct? (Dry Weight)	yes/no/NA
5.	All quality control criteria met?	yes/no
6.	Is the calibration curve correlation coefficient ≥ 0.995?	yes/no/NA
7.	MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency?	yes/no/NA
8.	Are ICVs, CCVs, and CCBs all within acceptance limits?	yes/no/NA
9.	Are results for methods blanks all ND?	yes/no/NA
10.	Are all QC samples within acceptance criteria? (LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.)	yes/no/NA
11.	Are all exceptions explained?	yes/no/NA
12.	Have all applicable service requests been reviewed?	yes/no/NA
13.	Are all samples labeled correctly?	yes/no/NA
14.	Have all instructions on the service request been followed? (e.g. Special MRLs, QC on a specific sample, Form V)	yes/no/NA
15.	Are detection limits and units reported correctly?	yes/no/NA
16.	Is the unused space on the benchsheet crossed out?	yes/no/NA
17.	Was analysis turned in by the due date? (n-2) (If not record SR#)	yes/no/NA

COMMENTS: K1911995-1, 11998-1/2/3/4/5/6, 12042-1/2/3/4/5, 11934-2, 11980-1, 11981-1 sent for RA due to contaminated CCBs.
K1911807-4/4d, 11868-4/4d, 11914-7/7d, 11970-5/5d report a high % RSD.
However, these samples are less than 5x the MRL

Final Approved by: QC Date: 12/31/19

DQREPORT

C:\Documents and Settings\adam.bradbury\My Documents\DATAQUAL.DOC

00999977

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 664898 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K1911762-003	Carbon, Total Organic	N/A		Water	4.08 mg/L	10 ml	408 mg/L	100	7	50			12/28/19 08:10	N	II
K1911762-004	Carbon, Total Organic	N/A		Water	5.35 mg/L	10 ml	535 mg/L	100	7	50			12/28/19 08:38	N	II
K1911762-005	Carbon, Total Organic	N/A		Water	5.51 mg/L	10 ml	551 mg/L	100	7	50			12/28/19 09:06	N	II
K1911807-004	Carbon, Total Organic	N/A		Water	0.66 mg/L	10 ml	0.66 mg/L	1	0.07	0.50			12/28/19 09:34	N	II
K1911895-001	Carbon, Total Organic	N/A		Drinking Water	0.45 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/28/19 07:42	N	I
K1911934-002	Carbon, Total Organic	N/A		Drinking Water	1.04 mg/L	10 ml	1.04 mg/L	1	0.07	0.50			12/28/19 05:19	N	I
K1911980-001	Carbon, Total Organic	N/A		Water	4.22 mg/L	10 ml	4.22 mg/L	1	0.07	0.50			12/28/19 05:47	N	II
K1911981-001	Carbon, Total Organic	N/A		Water	3.74 mg/L	10 ml	3.74 mg/L	1	0.07	0.50			12/28/19 06:15	N	II
K1911995-001	Carbon, Total Organic	N/A		Water	2.64 mg/L	10 ml	2.64 mg/L	1	0.07	0.50			12/27/19 22:43	N	IV
K1911998-001	Carbon, Total Organic	N/A		Ground Water	3.35 mg/L	10 ml	3.35 mg/L	1	0.07	0.50			12/27/19 23:40	N	IV
K1911998-002	Carbon, Total Organic	N/A		Ground Water	1.31 mg/L	10 ml	131 mg/L	100	7	50			12/28/19 00:08	N	IV
K1911998-003	Carbon, Total Organic	N/A		Ground Water	0.32 mg/L	10 ml	320 mg/L J	1000	70	500			12/28/19 00:37	N	IV
K1911998-004	Carbon, Total Organic	N/A		Ground Water	10.95 mg/L	10 ml	10.9 mg/L	1	0.07	0.50			12/28/19 01:05	N	IV
K1911998-005	Carbon, Total Organic	N/A		Ground Water	94.31 mg/L	10 ml	94.3 mg/L	1	0.07	0.50			12/28/19 02:02	N	IV
K1911998-006	Carbon, Total Organic	N/A		Ground Water	6.19 mg/L	10 ml	6.19 mg/L	1	0.07	0.50			12/28/19 02:30	N	IV
K1912042-001	Carbon, Total Organic	N/A		Ground Water	6.24 mg/L	10 ml	6.24 mg/L	1	0.07	0.50			12/28/19 02:59	N	IV
K1912042-002	Carbon, Total Organic	N/A		Ground Water	5.13 mg/L	10 ml	5.13 mg/L	1	0.07	0.50			12/28/19 03:27	N	IV
K1912042-003	Carbon, Total Organic	N/A		Ground Water	14.04 mg/L	10 ml	14.0 mg/L	1	0.07	0.50			12/28/19 03:55	N	IV
K1912042-004	Carbon, Total Organic	N/A		Ground Water	14.68 mg/L	10 ml	14.7 mg/L	1	0.07	0.50			12/28/19 04:23	N	IV
K1912042-005	Carbon, Total Organic	N/A		Ground Water	4.14 mg/L	10 ml	4.14 mg/L	1	0.07	0.50			12/28/19 04:51	N	IV
KQ1919209-01	Carbon, Total Organic	CCV		Water	24.92 mg/L	10 ml	24.9 mg/L	1					12/27/19 21:30	N	IV
KQ1919209-02	Carbon, Total Organic	CCV		Water	26.02 mg/L	10 ml	26.0 mg/L	1					12/28/19 01:33	N	IV
KQ1919209-03	Carbon, Total Organic	CCV		Water	24.62 mg/L	10 ml	24.6 mg/L	1					12/28/19 06:43	N	IV
KQ1919209-04	Carbon, Total Organic	CCV		Water	24.84 mg/L	10 ml	24.8 mg/L	1					12/28/19 11:12	N	IV
KQ1919209-05	Carbon, Total Organic	CCB		Water	0.58 mg/L	10 ml	0.58 mg/L	1	0.07	0.50			12/27/19 21:45	N	IV
KQ1919209-06	Carbon, Total Organic	CCB		Water	0.54 mg/L	10 ml	0.54 mg/L	1	0.07	0.50			12/28/19 01:47	N	IV
KQ1919209-07	Carbon, Total Organic	CCB		Water	0.16 mg/L	10 ml	0.16 mg/L J	1	0.07	0.50			12/28/19 06:58	N	IV
KQ1919209-08	Carbon, Total Organic	CCB		Water	0.15 mg/L	10 ml	0.15 mg/L J	1	0.07	0.50			12/28/19 11:27	N	IV
KQ1919209-09	Carbon, Total Organic	MB		Water	0.03 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/27/19 21:59	N	IV
KQ1919209-10	Carbon, Total Organic	LCS		Water	26.17 mg/L	10 ml	26.2 mg/L	1	0.07	0.50	105		12/27/19 22:14	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 664898 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1919209-11	Carbon, Total Organic	MS	K1911995-001	Water	28.07 mg/L	10 ml	28.1 mg/L	1	0.07	0.50	102		12/27/19 23:11	N	IV
KQ1919209-12	Carbon, Total Organic	DUP	K1911807-004	Water	0.56 mg/L	10 ml	0.56 mg/L	1	0.07	0.50		16*	12/28/19 09:34	N	II
KQ1919209-13	Carbon, Total Organic	DUP	K1911762-003	Water	4.12 mg/L	10 ml	412 mg/L	100	7	50		<1	12/28/19 08:10	N	II
KQ1919209-14	Carbon, Total Organic	DUP	K1911895-001	Drinking Water	0.30 mg/L	10 ml	0.30 mg/L J	1	0.07	0.50		NC	12/28/19 07:42	N	I
KQ1919209-15	Carbon, Total Organic	DUP	K1911762-004	Water	5.35 mg/L	10 ml	535 mg/L	100	7	50		<1	12/28/19 08:38	N	II
KQ1919209-16	Carbon, Total Organic	DUP	K1911934-002	Drinking Water	0.87 mg/L	10 ml	0.87 mg/L	1	0.07	0.50		17*	12/28/19 05:19	N	I
KQ1919209-17	Carbon, Total Organic	DUP	K1911762-005	Water	5.43 mg/L	10 ml	543 mg/L	100	7	50		2	12/28/19 09:06	N	II
KQ1919209-18	Carbon, Total Organic	DUP	K1911980-001	Water	4.17 mg/L	10 ml	4.17 mg/L	1	0.07	0.50		1	12/28/19 05:47	N	II
KQ1919209-19	Carbon, Total Organic	DUP	K1911981-001	Water	3.66 mg/L	10 ml	3.66 mg/L	1	0.07	0.50		2	12/28/19 06:15	N	II
KQ1919209-20	Carbon, Total Organic	DUP	K1911995-001	Water	2.63 mg/L	10 ml	2.63 mg/L	1	0.07	0.50		<1	12/27/19 22:43	N	IV
KQ1919209-21	Carbon, Total Organic	DUP	K1911998-002	Ground Water	1.23 mg/L	10 ml	123 mg/L	100	7	50		6	12/28/19 00:08	N	IV
KQ1919209-22	Carbon, Total Organic	DUP	K1911998-001	Ground Water	3.35 mg/L	10 ml	3.35 mg/L	1	0.07	0.50		<1	12/27/19 23:40	N	IV
KQ1919209-23	Carbon, Total Organic	DUP	K1911998-003	Ground Water	0.30 mg/L	10 ml	300 mg/L J	1000	70	500		5	12/28/19 00:37	N	IV
KQ1919209-24	Carbon, Total Organic	DUP	K1911998-004	Ground Water	10.80 mg/L	10 ml	10.8 mg/L	1	0.07	0.50		1	12/28/19 01:05	N	IV
KQ1919209-25	Carbon, Total Organic	DUP	K1911998-005	Ground Water	94.83 mg/L	10 ml	94.8 mg/L	1	0.07	0.50		<1	12/28/19 02:02	N	IV
KQ1919209-26	Carbon, Total Organic	DUP	K1911998-006	Ground Water	3.61 mg/L	10 ml	3.61 mg/L	1	0.07	0.50		53*	12/28/19 02:30	N	IV
KQ1919209-27	Carbon, Total Organic	DUP	K1912042-002	Ground Water	4.85 mg/L	10 ml	4.84 mg/L	1	0.07	0.50		6	12/28/19 03:27	N	IV
KQ1919209-28	Carbon, Total Organic	DUP	K1912042-001	Ground Water	5.79 mg/L	10 ml	5.79 mg/L	1	0.07	0.50		7	12/28/19 02:59	N	IV
KQ1919209-29	Carbon, Total Organic	DUP	K1912042-003	Ground Water	13.92 mg/L	10 ml	13.9 mg/L	1	0.07	0.50		<1	12/28/19 03:55	N	IV
KQ1919209-30	Carbon, Total Organic	DUP	K1912042-004	Ground Water	14.90 mg/L	10 ml	14.9 mg/L	1	0.07	0.50		1	12/28/19 04:23	N	IV
KQ1919209-31	Carbon, Total Organic	DUP	K1912042-005	Ground Water	3.58 mg/L	10 ml	3.58 mg/L	1	0.07	0.50		14*	12/28/19 04:51	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 664900 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K1911810-001	Carbon, Total Organic	N/A		Water	2.42 mg/L	10 ml	2.42 mg/L	1	0.07	0.50			12/28/19 10:02	N	II
K1911810-002	Carbon, Total Organic	N/A		Water	2.24 mg/L	10 ml	2.24 mg/L	1	0.07	0.50			12/28/19 10:30	N	II
K1911868-001	Carbon, Total Organic	N/A		Ground Water	0.72 mg/L	10 ml	0.72 mg/L	1	0.07	0.50			12/28/19 11:42	N	IV
K1911868-002	Carbon, Total Organic	N/A		Ground Water	0.75 mg/L	10 ml	0.75 mg/L	1	0.07	0.50			12/28/19 12:10	N	IV
K1911868-003	Carbon, Total Organic	N/A		Ground Water	7.88 mg/L	10 ml	7.88 mg/L	1	0.07	0.50			12/28/19 12:38	N	IV
K1911868-004	Carbon, Total Organic	N/A		Ground Water	0.14 mg/L	10 ml	0.14 mg/L J	1	0.07	0.50			12/28/19 13:06	N	IV
K1911909-001	Carbon, Total Organic	N/A		Water	-0.15 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/28/19 13:34	N	IV
K1911910-001	Carbon, Total Organic	N/A		Water	9.84 mg/L	10 ml	98.4 mg/L	10	0.7	5.0			12/28/19 14:02	N	II
K1911960-001	Carbon, Total Organic	N/A		Water	8.94 mg/L	10 ml	8.94 mg/L	1	0.07	0.50			12/28/19 14:59	N	I
K1911960-002	Carbon, Total Organic	N/A		Water	12.64 mg/L	10 ml	12.6 mg/L	1	0.07	0.50			12/28/19 15:27	N	I
K1911960-003	Carbon, Total Organic	N/A		Water	1.80 mg/L	10 ml	1.80 mg/L	1	0.07	0.50			12/28/19 15:55	N	I
K1911960-004	Carbon, Total Organic	N/A		Water	23.35 mg/L	10 ml	23.3 mg/L	1	0.07	0.50			12/28/19 17:22	N	I
K1911960-005	Carbon, Total Organic	N/A		Water	8.92 mg/L	10 ml	8.92 mg/L	1	0.07	0.50			12/28/19 17:50	N	I
K1911960-006	Carbon, Total Organic	N/A		Water	15.47 mg/L	10 ml	15.5 mg/L	1	0.07	0.50			12/28/19 18:18	N	I
K1911960-007	Carbon, Total Organic	N/A		Water	4.86 mg/L	10 ml	38.9 mg/L	8	0.6	4.0			12/28/19 18:46	N	I
K1911960-008	Carbon, Total Organic	N/A		Water	11.31 mg/L	10 ml	11.3 mg/L	1	0.07	0.50			12/28/19 19:14	N	I
K1911960-009	Carbon, Total Organic	N/A		Water	15.59 mg/L	10 ml	15.6 mg/L	1	0.07	0.50			12/28/19 19:42	N	I
K1912004-001	Carbon, Total Organic	N/A		Water	-0.26 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/28/19 14:31	N	II
KQ1919210-01	Carbon, Total Organic	CCV		Water	24.62 mg/L	10 ml	24.6 mg/L	1					12/28/19 06:43	N	II
KQ1919210-02	Carbon, Total Organic	CCV		Water	24.84 mg/L	10 ml	24.8 mg/L	1					12/28/19 11:12	N	II
KQ1919210-03	Carbon, Total Organic	CCV		Water	24.79 mg/L	10 ml	24.8 mg/L	1					12/28/19 16:23	N	II
KQ1919210-04	Carbon, Total Organic	CCV		Water	24.27 mg/L	10 ml	24.3 mg/L	1					12/28/19 21:07	N	II
KQ1919210-05	Carbon, Total Organic	CCB		Water	0.16 mg/L	10 ml	0.16 mg/L J	1	0.07	0.50			12/28/19 06:58	N	II
KQ1919210-06	Carbon, Total Organic	CCB		Water	0.15 mg/L	10 ml	0.15 mg/L J	1	0.07	0.50			12/28/19 11:27	N	II
KQ1919210-07	Carbon, Total Organic	CCB		Water	-0.03 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/28/19 16:38	N	II
KQ1919210-08	Carbon, Total Organic	CCB		Water	-0.25 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/28/19 21:21	N	II
KQ1919210-09	Carbon, Total Organic	MB		Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/28/19 07:12	N	II
KQ1919210-10	Carbon, Total Organic	LCS		Water	25.86 mg/L	10 ml	25.9 mg/L	1	0.07	0.50	103		12/28/19 07:27	N	II
KQ1919210-11	Carbon, Total Organic	MS	K1911810-001	Water	28.47 mg/L	10 ml	28.5 mg/L	1	0.07	0.50	104		12/28/19 10:58	N	II
KQ1919210-12	Carbon, Total Organic	DUP	K1911810-001	Water	2.38 mg/L	10 ml	2.38 mg/L	1	0.07	0.50		2	12/28/19 10:02	N	II
KQ1919210-13	Carbon, Total Organic	DUP	K1911810-002	Water	2.24 mg/L	10 ml	2.24 mg/L	1	0.07	0.50		<1	12/28/19 10:30	N	II
KQ1919210-14	Carbon, Total Organic	DUP	K1911868-001	Ground Water	0.70 mg/L	10 ml	0.70 mg/L	1	0.07	0.50		3	12/28/19 11:42	N	IV
KQ1919210-15	Carbon, Total Organic	DUP	K1911868-002	Ground Water	0.71 mg/L	10 ml	0.71 mg/L	1	0.07	0.50		5	12/28/19 12:10	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 664900 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1919210-16	Carbon, Total Organic	DUP	K1911868-003	Ground Water	7.92 mg/L	10 ml	7.92 mg/L	1	0.07	0.50		<1	12/28/19 12:38	N	IV
KQ1919210-17	Carbon, Total Organic	DUP	K1911868-004	Ground Water	0.09 mg/L	10 ml	0.09 mg/L J	1	0.07	0.50		47*	12/28/19 13:06	N	IV
KQ1919210-18	Carbon, Total Organic	DUP	K1911910-001	Water	9.71 mg/L	10 ml	97.1 mg/L	10	0.7	5.0		1	12/28/19 14:02	N	II
KQ1919210-19	Carbon, Total Organic	DUP	K1911909-001	Water	-0.20 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50		NC	12/28/19 13:34	N	IV
KQ1919210-20	Carbon, Total Organic	DUP	K1911960-001	Water	8.96 mg/L	10 ml	8.96 mg/L	1	0.07	0.50		<1	12/28/19 14:59	N	I
KQ1919210-21	Carbon, Total Organic	DUP	K1911960-002	Water	12.32 mg/L	10 ml	12.3 mg/L	1	0.07	0.50		3	12/28/19 15:27	N	I
KQ1919210-22	Carbon, Total Organic	DUP	K1911960-003	Water	1.67 mg/L	10 ml	1.67 mg/L	1	0.07	0.50		7	12/28/19 15:55	N	I
KQ1919210-23	Carbon, Total Organic	DUP	K1911960-004	Water	23.44 mg/L	10 ml	23.4 mg/L	1	0.07	0.50		<1	12/28/19 17:22	N	I
KQ1919210-24	Carbon, Total Organic	DUP	K1911960-005	Water	8.85 mg/L	10 ml	8.85 mg/L	1	0.07	0.50		<1	12/28/19 17:50	N	I
KQ1919210-25	Carbon, Total Organic	DUP	K1911960-006	Water	15.42 mg/L	10 ml	15.4 mg/L	1	0.07	0.50		<1	12/28/19 18:18	N	I
KQ1919210-26	Carbon, Total Organic	DUP	K1911960-007	Water	4.68 mg/L	10 ml	37.4 mg/L	8	0.6	4.0		4	12/28/19 18:46	N	I
KQ1919210-27	Carbon, Total Organic	DUP	K1911960-008	Water	11.04 mg/L	10 ml	11.0 mg/L	1	0.07	0.50		2	12/28/19 19:14	N	I
KQ1919210-28	Carbon, Total Organic	DUP	K1911960-009	Water	15.45 mg/L	10 ml	15.4 mg/L	1	0.07	0.50		<1	12/28/19 19:42	N	I
KQ1919210-29	Carbon, Total Organic	DUP	K1912004-001	Water	-0.07 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50		NC	12/28/19 14:31	N	II

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 664901 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K1911914-001	Carbon, Total Organic	N/A		Ground Water	0.55 mg/L	10 ml	0.55 mg/L	1	0.07	0.50			12/28/19 23:00	Y	IV
K1911914-002	Carbon, Total Organic	N/A		Ground Water	1.54 mg/L	10 ml	1.54 mg/L	1	0.07	0.50			12/28/19 23:57	N	IV
K1911914-003	Carbon, Total Organic	N/A		Ground Water	3.20 mg/L	10 ml	3.20 mg/L	1	0.07	0.50			12/29/19 00:25	N	IV
K1911914-004	Carbon, Total Organic	N/A		Ground Water	0.52 mg/L	10 ml	0.52 mg/L	1	0.07	0.50			12/29/19 00:53	N	IV
K1911914-005	Carbon, Total Organic	N/A		Ground Water	5.68 mg/L	10 ml	5.68 mg/L	1	0.07	0.50			12/29/19 01:22	N	IV
K1911914-006	Carbon, Total Organic	N/A		Ground Water	9.50 mg/L	10 ml	9.50 mg/L	1	0.07	0.50			12/29/19 02:48	N	IV
K1911914-007	Carbon, Total Organic	N/A		Ground Water	0.33 mg/L	10 ml	0.33 mg/L J	1	0.07	0.50			12/29/19 03:17	N	IV
K1911914-008	Carbon, Total Organic	N/A		Ground Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/29/19 03:45	N	IV
K1911914-009	Carbon, Total Organic	N/A		Ground Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/29/19 04:13	N	IV
K1911968-001	Carbon, Total Organic	N/A		Water	1.23 mg/L	10 ml	1.23 mg/L	1	0.07	0.50			12/28/19 20:11	N	IV
K1911968-002	Carbon, Total Organic	N/A		Water	1.15 mg/L	10 ml	1.15 mg/L	1	0.07	0.50			12/28/19 20:39	N	IV
K1911968-003	Carbon, Total Organic	N/A		Water	0.70 mg/L	10 ml	0.70 mg/L	1	0.07	0.50			12/28/19 21:36	N	IV
KQ1919211-01	Carbon, Total Organic	CCV		Water	24.79 mg/L	10 ml	24.8 mg/L	1					12/28/19 16:23	N	IV
KQ1919211-02	Carbon, Total Organic	CCV		Water	24.27 mg/L	10 ml	24.3 mg/L	1					12/28/19 21:07	N	IV
KQ1919211-03	Carbon, Total Organic	CCV		Water	24.10 mg/L	10 ml	24.1 mg/L	1					12/29/19 01:50	N	IV
KQ1919211-04	Carbon, Total Organic	CCV		Water	23.91 mg/L	10 ml	23.9 mg/L	1					12/29/19 06:21	N	IV
KQ1919211-05	Carbon, Total Organic	CCB		Water	-0.03 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/28/19 16:38	N	IV
KQ1919211-06	Carbon, Total Organic	CCB		Water	-0.25 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/28/19 21:21	N	IV
KQ1919211-07	Carbon, Total Organic	CCB		Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/29/19 02:04	N	IV
KQ1919211-08	Carbon, Total Organic	CCB		Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/29/19 06:35	N	IV
KQ1919211-09	Carbon, Total Organic	MB		Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/28/19 16:53	N	IV
KQ1919211-10	Carbon, Total Organic	LCS		Water	25.70 mg/L	10 ml	25.7 mg/L	1	0.07	0.50	103		12/28/19 17:07	N	IV
KQ1919211-11	Carbon, Total Organic	MS	K1911914-001	Ground Water	27.35 mg/L	10 ml	27.3 mg/L	1	0.07	0.50	107		12/28/19 23:28	N	IV
KQ1919211-12	Carbon, Total Organic	DUP	K1911914-001	Ground Water	0.55 mg/L	10 ml	0.55 mg/L	1	0.07	0.50		<1	12/28/19 23:00	N	IV
KQ1919211-13	Carbon, Total Organic	DUP	K1911914-002	Ground Water	1.47 mg/L	10 ml	1.47 mg/L	1	0.07	0.50		5	12/28/19 23:57	N	IV
KQ1919211-14	Carbon, Total Organic	DUP	K1911914-003	Ground Water	3.11 mg/L	10 ml	3.11 mg/L	1	0.07	0.50		3	12/29/19 00:25	N	IV
KQ1919211-15	Carbon, Total Organic	DUP	K1911914-004	Ground Water	0.48 mg/L	10 ml	0.48 mg/L J	1	0.07	0.50		8	12/29/19 00:53	N	IV
KQ1919211-16	Carbon, Total Organic	DUP	K1911914-005	Ground Water	5.66 mg/L	10 ml	5.66 mg/L	1	0.07	0.50		<1	12/29/19 01:22	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 664901 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1919211-17	Carbon, Total Organic	DUP	K1911914-006	Ground Water	9.42 mg/L	10 ml	9.42 mg/L	1	0.07	0.50		<1	12/29/19 02:48	N	IV
KQ1919211-18	Carbon, Total Organic	DUP	K1911914-007	Ground Water	0.24 mg/L	10 ml	0.24 mg/L J	1	0.07	0.50		32*	12/29/19 03:17	N	IV
KQ1919211-19	Carbon, Total Organic	DUP	K1911914-008	Ground Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50		NC	12/29/19 03:45	N	IV
KQ1919211-20	Carbon, Total Organic	DUP	K1911914-009	Ground Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50		NC	12/29/19 04:13	N	IV
KQ1919211-21	Carbon, Total Organic	DUP	K1911968-001	Water	1.15 mg/L	10 ml	1.15 mg/L	1	0.07	0.50		7	12/28/19 20:11	N	IV
KQ1919211-22	Carbon, Total Organic	DUP	K1911968-002	Water	1.20 mg/L	10 ml	1.20 mg/L	1	0.07	0.50		4	12/28/19 20:39	N	IV
KQ1919211-23	Carbon, Total Organic	DUP	K1911968-003	Water	0.63 mg/L	10 ml	0.63 mg/L	1	0.07	0.50		10	12/28/19 21:36	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 664902 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K1911970-001	Carbon, Total Organic	N/A		Ground Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/29/19 04:41	N	IV
K1911970-002	Carbon, Total Organic	N/A		Ground Water	0.67 mg/L	10 ml	0.67 mg/L	1	0.07	0.50			12/29/19 05:09	N	IV
K1911970-003	Carbon, Total Organic	N/A		Ground Water	0.05 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/29/19 05:38	N	IV
K1911970-004	Carbon, Total Organic	N/A		Ground Water	17.01 mg/L	10 ml	17.0 mg/L	1	0.07	0.50			12/29/19 06:50	N	IV
K1911970-005	Carbon, Total Organic	N/A		Ground Water	0.85 mg/L	10 ml	0.85 mg/L	1	0.07	0.50			12/29/19 07:18	N	IV
K1912040-001	Carbon, Total Organic	N/A		Water	1.23 mg/L	10 ml	1.23 mg/L	1	0.07	0.50			12/29/19 08:43	N	IV
K1912040-002	Carbon, Total Organic	N/A		Water	16.08 mg/L	10 ml	16.1 mg/L	1	0.07	0.50			12/29/19 09:11	N	IV
K1912040-003	Carbon, Total Organic	N/A		Water	2.94 mg/L	10 ml	2.94 mg/L	1	0.07	0.50			12/29/19 09:39	N	IV
K1912074-001	Carbon, Total Organic	N/A		Water	8.38 mg/L	10 ml	838 mg/L	100	7	50			12/29/19 07:46	N	II
K1912074-002	Carbon, Total Organic	N/A		Water	6.55 mg/L	10 ml	655 mg/L	100	7	50			12/29/19 08:15	N	II
KQ1919213-01	Carbon, Total Organic	CCV		Ground Water	24.10 mg/L	10 ml	24.1 mg/L	1					12/29/19 01:50	N	IV
KQ1919213-02	Carbon, Total Organic	CCV		Ground Water	23.91 mg/L	10 ml	23.9 mg/L	1					12/29/19 06:21	N	IV
KQ1919213-03	Carbon, Total Organic	CCV		Ground Water	23.95 mg/L	10 ml	23.9 mg/L	1					12/29/19 10:07	N	IV
KQ1919213-04	Carbon, Total Organic	CCB		Ground Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/29/19 02:04	N	IV
KQ1919213-05	Carbon, Total Organic	CCB		Ground Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/29/19 06:35	N	IV
KQ1919213-06	Carbon, Total Organic	CCB		Ground Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/29/19 10:22	N	IV
KQ1919213-07	Carbon, Total Organic	MB		Ground Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/29/19 02:19	N	IV
KQ1919213-08	Carbon, Total Organic	LCS		Ground Water	25.40 mg/L	10 ml	25.4 mg/L	1	0.07	0.50	102		12/29/19 02:34	N	IV
KQ1919213-09	Carbon, Total Organic	MS	K1911970-003	Ground Water	26.71 mg/L	10 ml	26.7 mg/L	1	0.07	0.50	107		12/29/19 06:06	N	IV
KQ1919213-10	Carbon, Total Organic	DUP	K1911970-001	Ground Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50		NC	12/29/19 04:41	N	IV
KQ1919213-11	Carbon, Total Organic	DUP	K1911970-005	Ground Water	0.75 mg/L	10 ml	0.75 mg/L	1	0.07	0.50		12*	12/29/19 07:18	N	IV
KQ1919213-12	Carbon, Total Organic	DUP	K1911970-002	Ground Water	0.64 mg/L	10 ml	0.64 mg/L	1	0.07	0.50		5	12/29/19 05:09	N	IV
KQ1919213-13	Carbon, Total Organic	DUP	K1911970-003	Ground Water	0.08 mg/L	10 ml	0.08 mg/L J	1	0.07	0.50		NC	12/29/19 05:38	N	IV
KQ1919213-14	Carbon, Total Organic	DUP	K1911970-004	Ground Water	17.18 mg/L	10 ml	17.2 mg/L	1	0.07	0.50		<1	12/29/19 06:50	N	IV
KQ1919213-15	Carbon, Total Organic	DUP	K1912040-002	Water	15.96 mg/L	10 ml	16.0 mg/L	1	0.07	0.50		<1	12/29/19 09:11	N	IV
KQ1919213-16	Carbon, Total Organic	DUP	K1912040-001	Water	1.14 mg/L	10 ml	1.14 mg/L	1	0.07	0.50		7	12/29/19 08:43	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 664902 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1919213-17	Carbon, Total Organic	DUP	K1912040-003	Water	2.87 mg/L	10 ml	2.87 mg/L	1	0.07	0.50		2	12/29/19 09:39	N	IV
KQ1919213-18	Carbon, Total Organic	DUP	K1912074-001	Water	8.44 mg/L	10 ml	844 mg/L	100	7	50		<1	12/29/19 07:46	N	II
KQ1919213-19	Carbon, Total Organic	DUP	K1912074-002	Water	6.51 mg/L	10 ml	651 mg/L	100	7	50		<1	12/29/19 08:15	N	II

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

0.901				OBSERVATIONS	13	ABOVE
0.345	0.345	0.345	0.345	STD Deviation	0.33082	0.3446
0.862				AVERAGE	0.26252	ABOVE
0.481	0.481			UCL	0.59335	0.4808
0.000				LCL	-0.06830	0
0.464	0.464					0.4641
0.291	0.291	0.291	0.291			0.2909
0.000				OBSERVATIONS	5	0
0.070	0.070			STD Deviation	0.12251	0.0696
0.000				AVERAGE	0.33000	0
0.000				UCL	0.45251	0
0.000				LCL	0.20749	0
0.000						0
						0
				OBSERVATIONS	2	0
				STD Deviation	0.08838	0
				AVERAGE	0.31775	0
				UCL	0.40613	0
				LCL	0.22937	0
						0
						0
				OBSERVATIONS	2	0
				STD Deviation	0.05370	0
				AVERAGE	0.31775	0
						0
						0
						0
						0
						0
						0

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.241	0.3178	24.9233	24.92325	24.9	12/27/2019
3	ccb	1	0.901	0.3178	0.5831	0.58305	0.6	12/27/2019
4	mb	1	0.345	0.3178	0.0269	0.02685	<0.5	12/27/2019
5	lcs	1	26.489	0.3178	26.1708	26.17075	26.2	12/27/2019
6	K1911995-001	1	2.955	0.3178	2.6369	2.63685	2.64	12/27/2019
7	K1911995-001	1	2.948	0.3178	2.6302	2.63015	2.6	12/27/2019
8	KQ1919209-11	1	28.386	0.3178	28.0678	28.06775	28	12/27/2019
9	K1911998-001	1	3.672	0.3178	3.3540	3.35395	3.35	12/27/2019
10	K1911998-001	1	3.668	0.3178	3.3502	3.35015	3.35	12/27/2019
11	K1911998-002	100	1.625	0.3178	1.3077	130.765	130.8	12/28/2019
12	K1911998-002	100	1.551	0.3178	1.2329	123.285	123.29	12/28/2019
13	K1911998-003	1000	0.637	0.3178	0.3194	319.35	319.35	12/28/2019
14	K1911998-003	1000	0.621	0.3178	0.3030	302.95	302.95	12/28/2019
15	K1911998-004	1	11.265	0.3178	10.9472	10.94715	10.9	12/28/2019
16	K1911998-004	1	11.121	0.3178	10.8035	10.80345	10.8	12/28/2019
17	ccv	1	26.337	0.3178	26.0197	26.01965	26.02	12/28/2019
18	ccb	1	0.862	0.3178	0.5443	0.54425	0.5	12/28/2019
19	K1911998-005	1	94.630	0.3178	94.3122	94.31215	94.3	12/28/2019
20	K1911998-005	1	95.146	0.3178	94.8286	94.82855	94.83	12/28/2019
21	K1911998-006	1	6.508	0.3178	6.1905	6.19045	6.19	12/28/2019
22	K1911998-006	1	3.924	0.3178	3.6058	3.60575	3.6	12/28/2019
23	K1912042-001	1	6.555	0.3178	6.2375	6.23745	6.2	12/28/2019
24	K1912042-001	1	6.107	0.3178	5.7892	5.78915	5.79	12/28/2019
25	K1912042-002	1	5.452	0.3178	5.1345	5.13445	5.13	12/28/2019

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

		date	time
Analyzed By: KCV	Date Analyzed	12/27/19	
Reviewed By: JC	Date Reviewed	12/31/19	

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K1912042-002	1	5.163	0.3178	4.8450	4.84495	4.84	12/28/2019
27	K1912042-003	1	14.359	0.3178	14.0413	14.04125	14.04	12/28/2019
28	K1912042-003	1	14.240	0.3178	13.9223	13.92225	13.9	12/28/2019
29	K1912042-004	1	14.997	0.3178	14.6791	14.67905	14.7	12/28/2019
30	K1912042-004	1	15.218	0.3178	14.9001	14.90005	14.9	12/28/2019
31	K1912042-005	1	4.455	0.3178	4.1372	4.13715	4.1	12/28/2019
32	K1912042-005	1	3.898	0.3178	3.5806	3.58055	3.6	12/28/2019
33	K1911934-002	1	1.353	0.3178	1.0353	1.03525	1.0	12/28/2019
34	K1911934-002	1	1.192	0.3178	0.8746	0.87455	0.9	12/28/2019
35	K1911980-001	1	4.533	0.3178	4.2155	4.21545	4.2	12/28/2019
36	K1911980-001	1	4.484	0.3178	4.1659	4.16585	4.2	12/28/2019
37	K1911981-001	1	4.055	0.3178	3.7372	3.73715	3.7	12/28/2019
38	K1911981-001	1	3.976	0.3178	3.6578	3.65775	3.7	12/28/2019
39	ccv	1	24.936	0.3178	24.6181	24.61805	24.6	12/28/2019
40	ccb	1	0.481	0.3178	0.1631	0.16305	<0.5	12/28/2019
41	K1911895-001	1	0.768	0.3178	0.4502	0.45015	<0.5	12/28/2019
42	K1911895-001	1	0.614	0.3178	0.2964	0.29635	<0.5	12/28/2019
43	K1911762-003	100	4.396	0.3178	4.0784	407.835	407.8	12/28/2019
44	K1911762-003	100	4.433	0.3178	4.1152	411.515	411.5	12/28/2019
45	K1911762-004	100	5.663	0.3178	5.3455	534.545	534.5	12/28/2019
46	K1911762-004	100	5.668	0.3178	5.3498	534.975	535.0	12/28/2019
47	K1911762-005	100	5.831	0.3178	5.5134	551.335	551.3	12/28/2019
48	K1911762-005	100	5.749	0.3178	5.4308	543.075	543.1	12/28/2019
49	K1911807-004	1	0.976	0.3178	0.6581	0.65805	0.7	12/28/2019
50	K1911807-004	1	0.878	0.3178	0.5605	0.56045	0.6	12/28/2019

Analyzed By:	KP	Date Analyzed	12/27/19
Reviewed By:	JC	Date Reviewed	12/31/19

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
51	ccv	1	25.159	0.3178	24.8417	24.84165	24.84	12/28/2019
52	ccb	1	0.464	0.3178	0.1464	0.14635	<0.5	12/28/2019
53		1		0.0000	0.0000	0	<0.5	
54		1		0.0000	0.0000	0	<0.5	
55		1		0.0000	0.0000	0	<0.5	
56		1		0.0000	0.0000	0	<0.5	
57		1		0.0000	0.0000	0	<0.5	
58		1		0.0000	0.0000	0	<0.5	
59		1		0.0000	0.0000	0	<0.5	
60		1		0.0000	0.0000	0	<0.5	
61		1		0.0000	0.0000	0	<0.5	
62		1		0.0000	0.0000	0	<0.5	
63		1		0.0000	0.0000	0	<0.5	
64		1		0.0000	0.0000	0	<0.5	
65		1		0.0000	0.0000	0	<0.5	
66		1		0.0000	0.0000	0	<0.5	
67		1		0.0000	0.0000	0	<0.5	
68		1		0.0000	0.0000	0	<0.5	
69		1		0.0000	0.0000	0	<0.5	
70		1		0.0000	0.0000	0	<0.5	
71		1		0.0000	0.0000	0	<0.5	
72		1		0.0000	0.0000	0	<0.5	
73		1		0.0000	0.0000	0	<0.5	
74		1		0.0000	0.0000	0	<0.5	
75		1		0.0000	0.0000	0	<0.5	

Analyzed By:	BCP	Date Analyzed	12/27/19
Reviewed By:	JC	Date Reviewed	12/31/19

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	24.936	0.3178	24.6181	24.61805	24.6	12/28/2019
3	ccb	1	0.481	0.3178	0.1631	0.16305	<0.5	12/28/2019
4	mb	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/28/2019
5	lcs	1	26.176	0.3178	25.8584	25.85835	25.9	12/28/2019
6	K1911810-001	1	2.742	0.3178	2.4243	2.42425	2.42	12/28/2019
7	K1911810-001	1	2.703	0.3178	2.3848	2.38475	2.4	12/28/2019
8	K1911810-002	1	2.561	0.3178	2.2434	2.24335	2	12/28/2019
9	K1911810-002	1	2.553	0.3178	2.2354	2.23535	2.24	12/28/2019
10	KQ1919210-11	1	28.785	0.3178	28.4677	28.46765	28.47	12/28/2019
11	ccv	1	25.159	0.3178	24.8417	24.84165	24.8	12/28/2019
12	ccb	1	0.464	0.3178	0.1464	0.14635	<0.5	12/28/2019
13	K1911868-001	1	1.037	0.3178	0.7189	0.71885	0.72	12/28/2019
14	K1911868-001	1	1.014	0.3178	0.6965	0.69645	0.70	12/28/2019
15	K1911868-002	1	1.065	0.3178	0.7476	0.74755	0.7	12/28/2019
16	K1911868-002	1	1.031	0.3178	0.7129	0.71285	0.7	12/28/2019
17	K1911868-003	1	8.200	0.3178	7.8822	7.88215	7.88	12/28/2019
18	K1911868-003	1	8.241	0.3178	7.9237	7.92365	7.9	12/28/2019
19	K1911868-004	1	0.455	0.3178	0.1376	0.13755	<0.5	12/28/2019
20	K1911868-004	1	0.403	0.3178	0.0856	0.08555	<0.5	12/28/2019
21	K1911909-001	1	0.164	0.3178	-0.1542	-0.15415	<0.5	12/28/2019
22	K1911909-001	1	0.113	0.3178	-0.2046	-0.20455	<0.5	12/28/2019
23	K1911910-001	10	10.159	0.3178	9.8411	98.4105	98.4	12/28/2019
24	K1911910-001	10	10.027	0.3178	9.7092	97.0915	97.09	12/28/2019
25	K1912004-001	1	0.056	0.3178	-0.2621	-0.26205	<0.5	12/28/2019

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

		date	time
Analyzed By: KP	Date Analyzed 12/27/19		
Reviewed By:	Date Reviewed 12/31/19		

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K1912004-001	1	0.250	0.3178	-0.0683	-0.06825	<0.5	12/28/2019
27	K1911960-001	1	9.254	0.3178	8.9358	8.93575	8.94	12/28/2019
28	K1911960-001	1	9.274	0.3178	8.9559	8.95585	9.0	12/28/2019
29	K1911960-002	1	12.963	0.3178	12.6449	12.64485	12.6	12/28/2019
30	K1911960-002	1	12.640	0.3178	12.3218	12.32175	12.3	12/28/2019
31	K1911960-003	1	2.117	0.3178	1.7992	1.79915	1.8	12/28/2019
32	K1911960-003	1	1.991	0.3178	1.6728	1.67275	1.7	12/28/2019
33	ccv	1	25.104	0.3178	24.7865	24.78645	24.8	12/28/2019
34	ccb	1	0.291	0.3178	-0.0269	-0.02685	<0.5	12/28/2019
35	K1911960-004	1	23.664	0.3178	23.3464	23.34635	23.3	12/28/2019
36	K1911960-004	1	23.753	0.3178	23.4351	23.43505	23.4	12/28/2019
37	K1911960-005	1	9.239	0.3178	8.9215	8.92145	8.9	12/28/2019
38	K1911960-005	1	9.171	0.3178	8.8533	8.85325	8.9	12/28/2019
39	K1911960-006	1	15.788	0.3178	15.4703	15.47025	15.5	12/28/2019
40	K1911960-006	1	15.741	0.3178	15.4229	15.42285	15.4	12/28/2019
41	K1911960-007	8	5.175	0.3178	4.8576	38.8604	38.9	12/28/2019
42	K1911960-007	8	4.998	0.3178	4.6805	37.4436	37.4	12/28/2019
43	K1911960-008	1	11.627	0.3178	11.3094	11.30935	11.3	12/28/2019
44	K1911960-008	1	11.358	0.3178	11.0407	11.04065	11.0	12/28/2019
45	K1911960-009	1	15.908	0.3178	15.5904	15.59035	15.6	12/28/2019
46	K1911960-009	1	15.767	0.3178	15.4491	15.44905	15.4	12/28/2019
47	ccv	1	24.588	0.3178	24.2698	24.26975	24.3	12/28/2019
48	ccb	1	0.070	0.3178	-0.2482	-0.24815	<0.5	12/28/2019
49		1		0.0000	0.0000	0	<0.5	
50		1		0.0000	0.0000	0	<0.5	

Analyzed By:	BCP	Date Analyzed	12/27/19
Reviewed By:	QC	Date Reviewed	12/31/19

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.104	0.3178	24.7865	24.78645	24.8	12/28/2019
3	ccb	1	0.291	0.3178	-0.0269	-0.02685	<0.5	12/28/2019
4	mb	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/28/2019
5	lcs	1	26.014	0.3178	25.6966	25.69655	25.7	12/28/2019
6	K1911968-001	1	1.551	0.3178	1.2336	1.23355	1.23	12/28/2019
7	K1911968-001	1	1.469	0.3178	1.1508	1.15075	1.2	12/28/2019
8	K1911968-002	1	1.466	0.3178	1.1482	1.14815	1	12/28/2019
9	K1911968-002	1	1.513	0.3178	1.1955	1.19545	1.20	12/28/2019
10	ccv	1	24.588	0.3178	24.2698	24.26975	24.27	12/28/2019
11	ccb	1	0.070	0.3178	-0.2482	-0.24815	<0.5	12/28/2019
12	K1911968-003	1	1.018	0.3178	0.7005	0.70045	0.70	12/28/2019
13	K1911968-003	1	0.949	0.3178	0.6315	0.63145	0.63	12/28/2019
14	K1911968-004	1	1.361	0.3178	1.0430	1.04295	1.04	12/28/2019
15	K1911968-004	1	1.318	0.3178	1.0003	1.00025	1.0	12/28/2019
16	K1911968-005	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/28/2019
17	K1911968-005	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/28/2019
18	K1911914-001	1	0.868	0.3178	0.5501	0.55005	0.6	12/28/2019
19	K1911914-001	1	0.869	0.3178	0.5512	0.55115	0.6	12/28/2019
20	KQ1919211-11	1	27.664	0.3178	27.3458	27.34575	27.35	12/28/2019
21	K1911914-002	1	1.861	0.3178	1.5430	1.54295	1.54	12/28/2019
22	K1911914-002	1	1.788	0.3178	1.4704	1.47035	1.5	12/28/2019
23	K1911914-003	1	3.520	0.3178	3.2018	3.20175	3.2	12/29/2019
24	K1911914-003	1	3.427	0.3178	3.1096	3.10955	3.11	12/29/2019
25	K1911914-004	1	0.839	0.3178	0.5213	0.52125	0.52	12/29/2019

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

		date time
Analyzed By:	Date Analyzed	12/29/19
Reviewed By:	Date Reviewed	12/31/19

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ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K1911914-004	1	0.800	0.3178	0.4826	0.48255	<0.5	12/29/2019
27	K1911914-005	1	5.996	0.3178	5.6786	5.67855	5.68	12/29/2019
28	K1911914-005	1	5.978	0.3178	5.6600	5.65995	5.7	12/29/2019
29	ccv	1	24.413	0.3178	24.0955	24.09545	24.1	12/29/2019
30	ccb	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
31	K1911914-006	1	9.818	0.3178	9.4999	9.49985	9.5	12/29/2019
32	K1911914-006	1	9.738	0.3178	9.4199	9.41985	9.4	12/29/2019
33	K1911914-007	1	0.649	0.3178	0.3317	0.33165	<0.5	12/29/2019
34	K1911914-007	1	0.559	0.3178	0.2408	0.24075	<0.5	12/29/2019
35	K1911914-008	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
36	K1911914-008	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
37	K1911914-009	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
38	K1911914-009	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
39	ccv	1	24.226	0.3178	23.9078	23.90775	23.9	12/29/2019
40	ccb	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
41		1		0.0000	0.0000	0	<0.5	
42		1		0.0000	0.0000	0	<0.5	
43		1		0.0000	0.0000	0	<0.5	
44		1		0.0000	0.0000	0	<0.5	
45		1		0.0000	0.0000	0	<0.5	
46		1		0.0000	0.0000	0	<0.5	
47		1		0.0000	0.0000	0	<0.5	
48		1		0.0000	0.0000	0	<0.5	
49		1		0.0000	0.0000	0	<0.5	
50		1		0.0000	0.0000	0	<0.5	

Analyzed By: BCB	Date Analyzed 12/27/19
Reviewed By: JC	Date Reviewed 12/31/19

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	24.413	0.3178	24.0955	24.09545	24.1	12/29/2019
3	ccb	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
4	mb	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
5	lcs	1	25.715	0.3178	25.3971	25.39705	25.4	12/29/2019
6	K1911970-001	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
7	K1911970-001	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
8	K1911970-002	1	0.990	0.3178	0.6720	0.67195	1	12/29/2019
9	K1911970-002	1	0.959	0.3178	0.6414	0.64135	0.64	12/29/2019
10	K1911970-003	1	0.373	0.3178	0.0548	0.05475	<0.5	12/29/2019
11	K1911970-003	1	0.398	0.3178	0.0800	0.07995	<0.5	12/29/2019
12	KQ1919213-09	1	27.031	0.3178	26.7129	26.71285	26.71	12/29/2019
13	ccv	1	24.226	0.3178	23.9078	23.90775	23.91	12/29/2019
14	ccb	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
15	K1911970-004	1	17.332	0.3178	17.0143	17.01425	17.0	12/29/2019
16	K1911970-004	1	17.495	0.3178	17.1771	17.17705	17.2	12/29/2019
17	K1911970-005	1	1.164	0.3178	0.8466	0.84655	0.85	12/29/2019
18	K1911970-005	1	1.069	0.3178	0.7513	0.75125	0.8	12/29/2019
19	K1912074-001	100	8.699	0.3178	8.3813	838.125	838.1	12/29/2019
20	K1912074-001	100	8.760	0.3178	8.4421	844.205	844.21	12/29/2019
21	K1912074-002	100	6.870	0.3178	6.5525	655.245	655.25	12/29/2019
22	K1912074-002	100	6.824	0.3178	6.5065	650.645	650.6	12/29/2019
23	K1912040-001	1	1.543	0.3178	1.2254	1.22535	1.2	12/29/2019
24	K1912040-001	1	1.461	0.3178	1.1433	1.14325	1.14	12/29/2019
25	K1912040-002	1	16.394	0.3178	16.0760	16.07595	16.08	12/29/2019

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

		date time
Analyzed By: BCB	Date Analyzed 12/27/19	
Reviewed By: JC	Date Reviewed 12/31/19	

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K1912040-002	1	16.273	0.3178	15.9556	15.95555	15.96	12/29/2019
27	K1912040-003	1	3.257	0.3178	2.9392	2.93915	2.94	12/29/2019
28	K1912040-003	1	3.192	0.3178	2.8743	2.87425	2.9	12/29/2019
29	ccv	1	24.267	0.3178	23.9497	23.94965	23.9	12/29/2019
30	ccb	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
31		1		0.0000	0.0000	0	<0.5	
32		1		0.0000	0.0000	0	<0.5	
33		1		0.0000	0.0000	0	<0.5	
34		1		0.0000	0.0000	0	<0.5	
35		1		0.0000	0.0000	0	<0.5	
36		1		0.0000	0.0000	0	<0.5	
37		1		0.0000	0.0000	0	<0.5	
38		1		0.0000	0.0000	0	<0.5	
39		1		0.0000	0.0000	0	<0.5	
40		1		0.0000	0.0000	0	<0.5	
41		1		0.0000	0.0000	0	<0.5	
42		1		0.0000	0.0000	0	<0.5	
43		1		0.0000	0.0000	0	<0.5	
44		1		0.0000	0.0000	0	<0.5	
45		1		0.0000	0.0000	0	<0.5	
46		1		0.0000	0.0000	0	<0.5	
47		1		0.0000	0.0000	0	<0.5	
48		1		0.0000	0.0000	0	<0.5	
49		1		0.0000	0.0000	0	<0.5	
50		1		0.0000	0.0000	0	<0.5	

Analyzed By: [illegible]	Date Analyzed 12/27/19
Reviewed By: [illegible]	Date Reviewed 12/31/19

TOC: 664898, 664900, 664901, 664902

Schedule: 12272019b

Version: 2
Instrument: Fusion1
Last Saved by: Fusion1 (Fusion1)
Last Saved on: 2019/12/27 17:30 - Friday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Blank)	Blank	Reagent/Acid Blank		1	True	Ready
D	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	10	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
3	Sample	K1911995-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
4	Sample	K1911995-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
5	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
6	Sample	K1911998-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
7	Sample	K1911998-002.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
8	Sample	K1911998-003.01 1000x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
9	Sample	K1911998-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
10	Sample	K1911998-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
11	Sample	K1911998-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
12	Sample	K1912042-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
13	Sample	K1912042-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
14	Sample	K1912042-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
15	Sample	K1912042-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
16	Sample	K1912042-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
17	Sample	K1911934-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
18	Sample	K1911980-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
19	Sample	K1911981-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
20	Sample	MB2	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
21	Sample	K1911895-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
22	Sample	K1911762-003.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
23	Sample	K1911762-004.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
24	Sample	K1911762-005.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
25	Sample	K1911807-004.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
26	Sample	K1911810-001.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
27	Sample	K1911810-002.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
28	Sample	K1911810-001.02 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
29	Sample	K1911868-001.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
30	Sample	K1911868-002.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
31	Sample	K1911868-003.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
32	Sample	K1911868-004.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
33	Sample	K1911909-001.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
34	Sample	K1911910-001.04 10x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
35	Sample	K1912004-001.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
36	Sample	K1911960-001.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
37	Sample	K1911960-002.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
38	Sample	K1911960-003.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready

Schedule: 12272019b

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
39	Sample	MB3	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
40	Sample	K1911960-004.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
41	Sample	K1911960-005.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
42	Sample	K1911960-006.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
43	Sample	K1911960-007.02 8x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
44	Sample	K1911960-008.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
45	Sample	K1911960-009.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
46	Sample	K1911968-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
47	Sample	K1911968-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
48	Sample	K1911968-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
49	Sample	K1911968-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
50	Sample	K1911968-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
51	Sample	K1911914-001.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
52	Sample	K1911914-001.15 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
53	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
54	Sample	K1911914-002.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
55	Sample	K1911914-003.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
56	Sample	K1911914-004.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
57	Sample	K1911914-005.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
58	Sample	MB4	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
59	Sample	K1911914-006.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
60	Sample	K1911914-007.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
61	Sample	K1911914-008.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
62	Sample	K1911914-009.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
63	Sample	K1911970-001.17	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
64	Sample	K1911970-002.17	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
65	Sample	K1911970-003.17	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
66	Sample	K1911970-003.17 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
67	Sample	K1911970-004.17	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
68	Sample	K1911970-005.17	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
69	Sample	K1912074-001.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
70	Sample	K1912074-002.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
71	Sample	K1912040-001.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
72	Sample	K1912040-002.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
73	Sample	K1912040-003.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
					False	

Fusion Report - 12272019b
Friday, December 27, 2019 05:30 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2019/12/31 09:22 - Tuesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	12272019b	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v1) Fusion1 (Fusion1) (v2)		
Comment:			

Report Results

Sample Type: Clean — From Schedule Version 1

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2019/12/27 17:30

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	12.29	16.86	4.57	49.49	05:21
2	TC Clean	6.57	10.18	3.61	49.94	04:02
3	TC Clean	2.92	6.53	3.61	50.03	03:47
4	TC Clean	1.77	5.39	3.62	50.00	03:54

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2019/12/27 17:52

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.81	4.38	3.57	49.51	05:21
2	TC Clean	6.44	10.21	3.77	50.03	04:04
3	TC Clean	3.63	7.20	3.57	49.98	03:49
4	TC Clean	2.71	6.27	3.56	49.94	03:53

Sample Type: Clean From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2019/12/27 18:14

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.97	4.54	3.57	49.41	05:22
2	TC Clean	8.19	11.96	3.77	50.04	04:00
3	TC Clean	4.38	8.04	3.66	50.03	03:47
4	TC Clean	2.72	6.39	3.67	50.01	03:46

Sample Type: Blank (Creating v1332) From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(blank)		Reagent/Acid Blank	2019/12/27 18:36

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	1.17	4.75	3.57	49.60	05:23
2	TC Clean	8.55	12.23	3.68	49.94	04:00
3	TC Clean	5.26	8.93	3.67	50.02	03:45
4	TC Clean	3.21	7.06	3.85	49.92	03:44
5	Reagent Blank	18.61	22.61	4.00	49.93	05:04
6	Acid Blank	2.58	6.18	3.60	49.49	05:26

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	D	TOC	RB	0.5662 ppm	0.2739 ppm	48.3700%	2019/12/27 19:09

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2975	12.9750	21.21	25.07	3.85	49.99	10:27
2	TOC	0.7216	7.2162	17.30	21.09	3.79	50.03	10:26
3	TOC	0.5472	5.4720	16.12	19.94	3.82	50.01	10:26
4	TOC	0.4790	4.7899	15.66	19.61	3.95	50.01	10:30
5	TOC	0.4326	4.3258	15.34	19.13	3.79	50.00	10:26
6	TOC	0.4862	4.8621	15.71	19.40	3.69	50.00	10:26
7	TOC	0.4528	4.5276	15.48	19.18	3.70	49.99	10:30

8	TOC	0.4206	4.2065	15.26	18.88	3.62	50.01	10:29
9	TOC	0.4489	4.4893	15.45	18.99	3.54	49.98	10:28
10	TOC	0.3759	3.7586	14.96	18.62	3.67	49.98	10:27

Dilution: 1:10
Blank Contribution: (TC) 12.4067 (IC) (v1332)
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm — From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.2410 ppm (PASS)	0.0000 ppm	0%	2019/12/27 21:30

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.2410	252.4101	180.80	184.44	3.64	49.96	10:33

Completion State: Success - Criteria met.
Success Action: Do Nothing
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)
STD Conc - Pos B: 50 ppmC

Sample Type: Check Standard --> CCB — From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.9008 ppm (PASS)	0.0000 ppm	0%	2019/12/27 21:45

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.9008	9.0079	15.58	19.24	3.66	49.96	10:29

Completion State: Success - Criteria met.
Success Action: Do Nothing
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)
STD Conc - Pos D: 0 ppmC

Sample Type: Sample — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	1	TOC	MB1	0.3446 ppm	0.0000 ppm	0.0000%	2019/12/27 21:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3446	3.4463	14.75	18.44	3.70	49.97	10:31

Dilution: 1:10
Blank Contribution: (TC) 12.4067 (IC) (v1332)
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)

Sample Type: Check Standard --> LCS

From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	26.4885 ppm (PASS)	0.0000 ppm	0%	2019/12/27 22:14

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	26.4885	264.8852	189.26	192.85	3.59	49.94	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	25 ppmC

Sample Type: Sample

From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	2	TOC	ICS	1.0163 ppm	0.0000 ppm	0.0000%	2019/12/27 22:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0163	10.1626	19.30	22.94	3.64	49.96	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	3	TOC	K1911995-001.01	2.9512 ppm	0.0047 ppm	0.1600%	2019/12/27 22:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.9546	29.5455	32.46	36.12	3.66	49.94	10:26
2	TOC	2.9479	29.4792	32.42	36.25	3.83	49.93	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	4	TOC	K1911995-001.01 ms	28.3855 ppm	0.0000 ppm	0.0000%	2019/12/27 23:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	28.3855	283.8554	205.09	208.77	3.69	49.92	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time

◆	5	TOC	RB	0.5110 ppm	0.0000 ppm	0.0000%	2019/12/27 23:26

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5110	5.1096	15.88	19.70	3.82	49.93	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	6	TOC	K1911998-001.01	3.6698 ppm	0.0027 ppm	0.0700%	2019/12/27 23:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.6717	36.7171	37.33	41.13	3.80	49.91	10:26
2	TOC	3.6679	36.6788	37.30	41.00	3.69	49.93	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	7	TOC	K1911998-002.01 100x	1.5880 ppm	0.0529 ppm	3.3300%	2019/12/28 00:08

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6254	16.2543	23.44	27.14	3.70	49.93	10:27
2	TOC	1.5506	15.5059	22.93	26.59	3.65	49.92	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	8	TOC	K1911998-003.01 1000x	0.6289 ppm	0.0116 ppm	1.8400%	2019/12/28 00:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6371	6.3706	16.73	20.36	3.63	49.91	10:27
2	TOC	0.6207	6.2071	16.62	20.38	3.76	49.92	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	9	TOC	K1911998-004.01	11.1931 ppm	0.1016 ppm	0.9100%	2019/12/28 01:05

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	11.2649	112.6488	88.87	92.56	3.68	49.90	10:27
2	TOC	11.1212	111.2124	87.90	91.68	3.78	49.90	10:26

Dilution	Blank Contribution	Method	Calibration

1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.3374 ppm (PASS)	0.0000 ppm	0%	2019/12/28 01:33

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.3374	263.3737	188.24	191.98	3.74	49.92	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.8620 ppm (PASS)	0.0000 ppm	0%	2019/12/28 01:47

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.8620	8.6205	15.31	18.91	3.60	49.89	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	10	TOC	K1911998-005.01	94.8881 ppm	0.3651 ppm	0.3800%	2019/12/28 02:02

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	94.6299	946.2993	654.75	658.45	3.70	49.86	10:28
2	TOC	95.1463	951.4628	658.25	662.80	4.54	49.87	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	11	TOC	K1911998-006.01	5.2158 ppm	1.8277 ppm	35.0400%	2019/12/28 02:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	6.5082	65.0821	56.58	60.95	4.37	49.89	10:28
2	TOC	3.9235	39.2348	39.04	42.79	3.75	49.88	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	12	TOC	K1912042-001.01	6.3311 ppm	0.3170 ppm	5.0100%	2019/12/28 02:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	6.5552	65.5520	56.90	60.70	3.79	49.92	10:27
2	TOC	6.1069	61.0691	53.86	57.52	3.66	49.91	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	13	TOC	K1912042-002.01	5.3075 ppm	0.2047 ppm	3.8600%	2019/12/28 03:27

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.4522	54.5222	49.42	52.92	3.51	49.91	10:26
2	TOC	5.1627	51.6273	47.45	50.87	3.42	49.89	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	14	TOC	K1912042-003.01	14.2995 ppm	0.0842 ppm	0.5900%	2019/12/28 03:55

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.3590	143.5904	109.88	113.45	3.57	49.87	10:28
2	TOC	14.2400	142.4001	109.07	112.55	3.48	49.89	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	15	TOC	K1912042-004.01	15.1073 ppm	0.1563 ppm	1.0300%	2019/12/28 04:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.9968	149.9679	114.20	117.83	3.62	49.88	10:27
2	TOC	15.2178	152.1777	115.70	119.33	3.63	49.86	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC)	CAS_salt_010711	CAS_salt_010711

(v1332) (v4) (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	16	TOC	K1912042-005.01	4.1766 ppm	0.3936 ppm	9.4200%	2019/12/28 04:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.4549	44.5486	42.65	46.32	3.67	49.90	10:27
2	TOC	3.8983	38.9829	38.87	42.52	3.66	49.87	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	17	TOC	K1911934-002.01	1.2727 ppm	0.1137 ppm	8.9300%	2019/12/28 05:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.3530	13.5304	21.59	25.06	3.46	49.88	10:31
2	TOC	1.1923	11.9231	20.50	24.01	3.51	49.89	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	18	TOC	K1911980-001.01	4.5084 ppm	0.0351 ppm	0.7800%	2019/12/28 05:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.5332	45.3324	43.18	46.80	3.62	49.88	10:28
2	TOC	4.4836	44.8359	42.84	46.35	3.51	49.88	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	19	TOC	K1911981-001.01	4.0152 ppm	0.0561 ppm	1.4000%	2019/12/28 06:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.0549	40.5489	39.93	43.50	3.57	49.90	10:29
2	TOC	3.9755	39.7548	39.39	42.97	3.58	49.88	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time

◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	24.9358 ppm (PASS)	0.0000 ppm	0%	2019/12/28 06:43

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.9358	249.3577	178.72	182.40	3.68	49.90	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.4808 ppm (PASS)	0.0000 ppm	0%	2019/12/28 06:58

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.4808	4.8078	12.73	16.46	3.74	49.90	10:35

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	20	TOC	MB2	0.0000 ppm	0.0000 ppm	0.0000%	2019/12/28 07:12

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	12.27	15.90	3.63	49.90	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> LCS From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	26.1761 ppm (PASS)	0.0000 ppm	0%	2019/12/28 07:27

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	26.1761	261.7606	187.14	190.88	3.74	49.91	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	25 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	21	TOC	K1911895-001.01	0.6910 ppm	0.1088 ppm	15.7400%	2019/12/28 07:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7679	7.6788	17.62	21.33	3.71	49.90	10:31
2	TOC	0.6141	6.1408	16.58	20.39	3.81	49.90	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	22	TOC	K1911762-003.01 100x	4.4145 ppm	0.0260 ppm	0.5900%	2019/12/28 08:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.3961	43.9608	42.25	46.00	3.76	49.90	10:29
2	TOC	4.4329	44.3291	42.50	46.24	3.74	49.92	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	23	TOC	K1911762-004.01 100x	5.6653 ppm	0.0030 ppm	0.0500%	2019/12/28 08:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.6632	56.6318	50.85	54.53	3.68	49.90	10:27
2	TOC	5.6675	56.6745	50.88	54.47	3.59	49.93	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	24	TOC	K1911762-005.01 100x	5.7898 ppm	0.0584 ppm	1.0100%	2019/12/28 09:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.8311	58.3113	51.99	55.60	3.61	49.91	10:26
2	TOC	5.7485	57.4848	51.43	55.18	3.75	49.91	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	25	TOC	K1911807-004.03	0.9270 ppm	0.0690 ppm	7.4400%	2019/12/28 09:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9758	9.7575	19.03	22.67	3.64	49.90	10:26
2	TOC	0.8782	8.7822	18.37	22.03	3.66	49.89	10:27

Dilution 1:10 | **Blank Contribution** (TC) 12.4067 (IC) (v1332) | **Method** CAS_salt_010711 (v4) | **Calibration** CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	26	TOC	K1911810-001.02	2.7222 ppm	0.0279 ppm	1.0300%	2019/12/28 10:02

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.7420	27.4197	31.02	34.71	3.69	49.89	10:27
2	TOC	2.7025	27.0249	30.75	34.34	3.59	49.89	10:25

Dilution 1:10 | **Blank Contribution** (TC) 12.4067 (IC) (v1332) | **Method** CAS_salt_010711 (v4) | **Calibration** CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	27	TOC	K1911810-002.02	2.5571 ppm	0.0056 ppm	0.2200%	2019/12/28 10:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.5611	25.6106	29.79	33.53	3.74	49.90	10:26
2	TOC	2.5531	25.5311	29.74	33.46	3.73	49.92	10:30

Dilution 1:10 | **Blank Contribution** (TC) 12.4067 (IC) (v1332) | **Method** CAS_salt_010711 (v4) | **Calibration** CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	28	TOC	K1911810-001.02 ms	28.7854 ppm	0.0000 ppm	0.0000%	2019/12/28 10:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	28.7854	287.8536	207.80	211.55	3.75	49.91	10:32

Dilution 1:10 | **Blank Contribution** (TC) 12.4067 (IC) (v1332) | **Method** CAS_salt_010711 (v4) | **Calibration** CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.1594 ppm (PASS)	0.0000 ppm	0%	2019/12/28 11:12

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.1594	251.5940	180.24	184.00	3.76	49.92	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.4641 ppm (PASS)	0.0000 ppm	0%	2019/12/28 11:27

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.4641	4.6413	12.61	16.27	3.66	49.93	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	29	TOC	K1911868-001.15	1.0254 ppm	0.0158 ppm	1.5400%	2019/12/28 11:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0366	10.3659	19.44	23.20	3.76	49.92	10:30
2	TOC	1.0142	10.1420	19.29	22.99	3.70	49.95	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	30	TOC	K1911868-002.15	1.0479 ppm	0.0246 ppm	2.3500%	2019/12/28 12:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0653	10.6532	19.64	23.28	3.64	49.98	10:31
2	TOC	1.0306	10.3055	19.40	22.93	3.52	49.96	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	31	TOC	K1911868-003.15	8.2207 ppm	0.0294 ppm	0.3600%	2019/12/28 12:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	8.1999	81.9989	68.07	71.60	3.53	49.98	10:28
2	TOC	8.2414	82.4143	68.35	71.85	3.50	49.96	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	32	TOC	K1911868-004.15	0.4293 ppm	0.0368 ppm	8.5700%	2019/12/28 13:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4553	4.5527	15.50	19.14	3.65	49.99	10:28
2	TOC	0.4033	4.0326	15.14	18.65	3.50	50.01	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	33	TOC	K1911909-001.02	0.1384 ppm	0.0356 ppm	25.7400%	2019/12/28 13:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1636	1.6357	13.52	17.00	3.48	50.00	10:29
2	TOC	0.1132	1.1319	13.18	16.76	3.59	50.04	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	34	TOC	K1911910-001.04 10x	10.0929 ppm	0.0932 ppm	0.9200%	2019/12/28 14:02

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	10.1588	101.5880	81.36	84.88	3.51	49.99	10:28
2	TOC	10.0269	100.2695	80.47	84.18	3.71	50.00	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	35	TOC	K1912004-001.02	0.1526 ppm	0.1370 ppm	89.7700%	2019/12/28 14:31

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0557	0.5574	12.78	16.33	3.55	50.03	10:28
2	TOC	0.2495	2.4946	14.10	17.67	3.57	49.99	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC)	CAS_salt_010711	CAS_salt_010711

(v1332) (v4) (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	36	TOC	K1911960-001.02	9.2635 ppm	0.0142 ppm	0.1500%	2019/12/28 14:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	9.2535	92.5352	75.22	78.74	3.52	49.98	10:28
2	TOC	9.2736	92.7355	75.36	79.02	3.67	50.01	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	37	TOC	K1911960-002.02	12.8011 ppm	0.2284 ppm	1.7800%	2019/12/28 15:27

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	12.9626	129.6260	100.40	104.17	3.77	49.97	10:29
2	TOC	12.6395	126.3952	98.20	101.92	3.72	49.99	10:22

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	38	TOC	K1911960-003.02	2.0537 ppm	0.0894 ppm	4.3500%	2019/12/28 15:55

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.1169	21.1689	26.78	30.53	3.76	49.94	10:30
2	TOC	1.9905	19.9049	25.92	29.64	3.73	49.99	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.1042 ppm (PASS)	0.0000 ppm	0%	2019/12/28 16:23

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.1042	251.0415	179.87	183.48	3.61	50.01	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.2909 ppm (PASS)	0.0000 ppm	0%	2019/12/28 16:38

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.2909	2.9089	11.44	15.05	3.61	49.99	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	39	TOC	MB3	0.0000 ppm	0.0000 ppm	0.0000%	2019/12/28 16:53

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	10.91	14.46	3.55	50.00	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> LCS From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	26.0143 ppm (PASS)	0.0000 ppm	0%	2019/12/28 17:07

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	26.0143	260.1430	186.05	189.61	3.56	50.03	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	25 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	40	TOC	K1911960-004.02	23.7084 ppm	0.0627 ppm	0.2600%	2019/12/28 17:22

Rep	Base			Adjusted		Baseline	Pressure	Run

#	Analysis Type	ppm	µg	(Abs)	NDIR (Abs)	(Abs)	(psig)	Time
1	TOC	23.6641	236.6407	173.04	176.72	3.69	50.01	10:27
2	TOC	23.7528	237.5276	173.64	177.22	3.58	50.01	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	41	TOC	K1911960-005.02	9.2051 ppm	0.0482 ppm	0.5200%	2019/12/28 17:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	9.2392	92.3923	75.12	78.86	3.74	49.98	10:29
2	TOC	9.1710	91.7102	74.66	78.30	3.65	50.00	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	42	TOC	K1911960-006.02	15.7643 ppm	0.0335 ppm	0.2100%	2019/12/28 18:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	15.7880	157.8805	119.58	123.29	3.71	49.98	10:30
2	TOC	15.7406	157.4061	119.25	122.89	3.63	49.97	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	43	TOC	K1911960-007.02 8x	5.0867 ppm	0.1252 ppm	2.4600%	2019/12/28 18:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.1753	51.7526	47.54	51.13	3.59	49.98	10:26
2	TOC	4.9982	49.9818	46.33	50.08	3.75	49.97	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	44	TOC	K1911960-008.02	11.4928 ppm	0.1900 ppm	1.6500%	2019/12/28 19:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	11.6271	116.2714	91.33	95.12	3.79	49.94	10:27
2	TOC	11.3584	113.5843	89.51	93.31	3.80	49.94	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	15.9081	159.0811	120.39	124.14	3.75	49.96	10:25
2	TOC	15.7668	157.6683	119.43	123.27	3.84	49.97	10:28

Dilution 1:10

Blank Contribution (TC) 12.4067 (IC) (v1332)

Method CAS_salt_010711 (v4)

Calibration CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	46	TOC	K1911968-001.01	1.5099 ppm	0.0585 ppm	3.8800%	2019/12/28 20:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.5513	15.5133	22.94	26.64	3.70	49.94	10:27
2	TOC	1.4685	14.6854	22.38	26.13	3.75	49.94	10:25

Dilution 1:10

Blank Contribution (TC) 12.4067 (IC) (v1332)

Method CAS_salt_010711 (v4)

Calibration CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	47	TOC	K1911968-002.01	1.4895 ppm	0.0334 ppm	2.2400%	2019/12/28 20:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4659	14.6588	22.36	26.08	3.73	49.93	10:25
2	TOC	1.5132	15.1317	22.68	26.43	3.75	49.92	10:24

Dilution 1:10

Blank Contribution (TC) 12.4067 (IC) (v1332)

Method CAS_salt_010711 (v4)

Calibration CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	24.5875 ppm (PASS)	0.0000 ppm	0%	2019/12/28 21:07

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.5875	245.8750	176.36	180.03	3.67	49.92	10:29

Completion State Success - Criteria met.

Success Action Do Nothing

Method CAS_salt_010711 (v4)

Calibration CAS_salt_010711 (v30)

STD Conc - Pos B 50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0696 ppm (PASS)	0.0000 ppm	0%	2019/12/28 21:21

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0696	0.6961	9.94	13.73	3.80	49.92	10:35

Completion State: Success - Criteria met.
Success Action: Do Nothing
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)
STD Conc - Pos D: 0 ppmC

Sample Type: Sample — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	48	TOC	K1911968-003.01	0.9837 ppm	0.0488 ppm	4.9600%	2019/12/28 21:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0182	10.1818	19.32	22.91	3.59	49.90	10:28
2	TOC	0.9492	9.4923	18.85	22.61	3.76	49.91	10:27

Dilution: 1:10
Blank Contribution: (TC) 12.4067 (IC) (v1332)
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	49	TOC	K1911968-004.01	1.3393 ppm	0.0302 ppm	2.2600%	2019/12/28 22:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.3607	13.6070	21.64	25.30	3.65	49.91	10:28
2	TOC	1.3180	13.1797	21.35	25.07	3.72	49.90	10:26

Dilution: 1:10
Blank Contribution: (TC) 12.4067 (IC) (v1332)
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	50	TOC	K1911968-005.01	0.0000 ppm	0.0000 ppm	0.0000%	2019/12/28 22:32

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	9.84	13.63	3.79	49.92	10:25
2	TOC	0.0000	0.0000	9.88	13.46	3.58	49.91	10:25

Dilution: 1:10
Blank Contribution: (TC) 12.4067 (IC) (v1332)
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time

◆	51	TOC	K1911914-001.15	0.8684 ppm	0.0008 ppm	0.1000%	2019/12/28 23:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8678	8.6776	18.30	21.91	3.62	49.91	10:26
2	TOC	0.8689	8.6894	18.30	21.90	3.60	49.92	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	52	TOC	K1911914-001.15 ms	27.6635 ppm	0.0000 ppm	0.0000%	2019/12/28 23:28

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.6635	276.6352	200.18	203.73	3.54	49.90	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	53	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2019/12/28 23:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	9.34	13.06	3.73	49.90	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	54	TOC	K1911914-002.15	1.8244 ppm	0.0514 ppm	2.8100%	2019/12/28 23:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.8607	18.6070	25.04	28.69	3.65	49.91	10:26
2	TOC	1.7881	17.8807	24.54	28.23	3.69	49.89	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	55	TOC	K1911914-003.15	3.4734 ppm	0.0652 ppm	1.8800%	2019/12/29 00:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.5195	35.1953	36.30	39.92	3.63	49.92	10:27
2	TOC	3.4273	34.2730	35.67	39.10	3.43	49.89	10:23

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8390	8.3904	18.10	21.56	3.46	49.89	10:29
2	TOC	0.8003	8.0029	17.84	21.44	3.60	49.89	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	57	TOC	K1911914-005.15	5.9870 ppm	0.0131 ppm	0.2200%	2019/12/29 01:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.9963	59.9627	53.11	56.59	3.48	49.85	10:29
2	TOC	5.9777	59.7771	52.98	56.57	3.58	49.86	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	24.4132 ppm (PASS)	0.0000 ppm	0%	2019/12/29 01:50

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.4132	244.1322	175.18	178.89	3.71	49.83	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2019/12/29 02:04

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	8.80	12.34	3.55	49.79	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D

Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	58	TOC	MB4	0.0000 ppm	0.0000 ppm	0.0000%	2019/12/29 02:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.16	11.78	3.61	49.79	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> LCS — From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	25.7148 ppm (PASS)	0.0000 ppm	0%	2019/12/29 02:34

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	25.7148	257.1480	184.01	187.45	3.44	49.78	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	25 ppmC

Sample Type: Sample — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	59	TOC	K1911914-006.15	9.7776 ppm	0.0566 ppm	0.5800%	2019/12/29 02:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	9.8176	98.1761	79.05	82.68	3.63	49.78	10:25
2	TOC	9.7376	97.3761	78.50	82.20	3.70	49.79	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	60	TOC	K1911914-007.15	0.6040 ppm	0.0643 ppm	10.6400%	2019/12/29 03:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time

1	TOC	0.6494	6.4944	16.81	20.50	3.68	49.78	10:26
2	TOC	0.5585	5.5854	16.20	19.77	3.57	49.77	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	61	TOC	K1911914-008.15	0.0000 ppm	0.0000 ppm	0.0000%	2019/12/29 03:45

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.95	12.59	3.64	49.78	10:26
2	TOC	0.0000	0.0000	8.91	12.36	3.45	49.80	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	62	TOC	K1911914-009.15	0.0000 ppm	0.0000 ppm	0.0000%	2019/12/29 04:13

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.15	11.75	3.60	49.81	10:25
2	TOC	0.0000	0.0000	8.11	11.69	3.58	49.80	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	63	TOC	K1911970-001.17	0.0000 ppm	0.0000 ppm	0.0000%	2019/12/29 04:41

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.88	11.51	3.63	49.83	10:30
2	TOC	0.0000	0.0000	7.73	11.42	3.69	49.84	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	64	TOC	K1911970-002.17	0.9744 ppm	0.0217 ppm	2.2200%	2019/12/29 05:09

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9897	9.8975	19.12	22.79	3.67	49.84	10:30
2	TOC	0.9591	9.5910	18.92	22.49	3.58	49.84	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	65	TOC	K1911970-003.17	0.3851 ppm	0.0178 ppm	4.6300%	2019/12/29 05:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3725	3.7247	14.94	18.63	3.70	49.83	10:29
2	TOC	0.3977	3.9767	15.11	18.56	3.46	49.86	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	66	TOC	K1911970-003.17 ms	27.0306 ppm	0.0000 ppm	0.0000%	2019/12/29 06:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.0306	270.3063	195.89	199.51	3.62	49.85	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	24.2255 ppm (PASS)	0.0000 ppm	0%	2019/12/29 06:21

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.2255	242.2554	173.90	177.52	3.62	49.84	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2019/12/29 06:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.48	11.18	3.69	49.86	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria	Do Nothing	CAS_salt_010711	CAS_salt_010711	0 ppmC

met.	(v4)	(v30)

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	67	TOC	K1911970-004.17	17.4134 ppm	0.1151 ppm	0.6600%	2019/12/29 06:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	17.3320	173.3196	130.06	133.74	3.69	49.86	10:30
2	TOC	17.4948	174.9475	131.16	134.76	3.60	49.86	10:23

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	68	TOC	K1911970-005.17	1.1167 ppm	0.0674 ppm	6.0400%	2019/12/29 07:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1643	11.6432	20.31	23.95	3.64	49.87	10:28
2	TOC	1.0690	10.6900	19.66	23.22	3.56	49.86	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	69	TOC	K1912074-001.01 100x	8.7294 ppm	0.0430 ppm	0.4900%	2019/12/29 07:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	8.6990	86.9901	71.46	75.03	3.58	49.89	10:31
2	TOC	8.7598	87.5985	71.87	75.53	3.66	49.87	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	70	TOC	K1912074-002.01 100x	6.8472 ppm	0.0325 ppm	0.4700%	2019/12/29 08:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	6.8702	68.7017	59.04	62.60	3.55	49.87	10:28
2	TOC	6.8242	68.2421	58.73	62.52	3.79	49.89	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time

◆	71	TOC	K1912040-001.15	1.5021 ppm	0.0580 ppm	3.8600%	2019/12/29 08:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.5431	15.4308	22.88	26.63	3.75	49.87	10:31
2	TOC	1.4610	14.6102	22.32	25.86	3.53	49.86	10:25

Dilution 1:10 | **Blank Contribution** (TC) 12.4067 (IC) (v1332) | **Method** CAS_salt_010711 (v4) | **Calibration** CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	72	TOC	K1912040-002.15	16.3335 ppm	0.0851 ppm	0.5200%	2019/12/29 09:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	16.3937	163.9368	123.69	127.23	3.54	49.87	10:27
2	TOC	16.2733	162.7332	122.87	126.56	3.69	49.87	10:32

Dilution 1:10 | **Blank Contribution** (TC) 12.4067 (IC) (v1332) | **Method** CAS_salt_010711 (v4) | **Calibration** CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	73	TOC	K1912040-003.15	3.2244 ppm	0.0458 ppm	1.4200%	2019/12/29 09:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.2569	32.5685	34.51	38.15	3.64	49.87	10:31
2	TOC	3.1920	31.9203	34.07	37.70	3.62	49.88	10:29

Dilution 1:10 | **Blank Contribution** (TC) 12.4067 (IC) (v1332) | **Method** CAS_salt_010711 (v4) | **Calibration** CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm — From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	24.2674 ppm (PASS)	0.0000 ppm	0%	2019/12/29 10:07

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.2674	242.6738	174.19	177.71	3.52	49.88	10:31

Completion State Success - Criteria met. | **Success Action** Do Nothing | **Method** CAS_salt_010711 (v4) | **Calibration** CAS_salt_010711 (v30) | **STD Conc - Pos B** 50 ppmC

Sample Type: Check Standard --> CCB — From Schedule Version 2

			Concentration			Min / Max				

	Pos	BAT	(ppm)	Dil	Sample ID	(% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2019/12/29 10:22

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.26	10.83	3.57	49.86	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1331	6.0703	3.0960	0.0000	0.0000	0.0000	2019/12/27 15:34	Fusion1 (Fusion1)
v1332	6.2033	2.5850	0.0000	0.0000	0.0000	2019/12/27 19:09	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version: v30

Ver Creation: 2019/03/05 17:42

Comment:

Operator: Fusion1 (Fusion1)

Basic Analysis Type: TOC

Calibration curve formula: TOC: y = 6.788x + 9.463

r^2 value: TOC: r^2 = 0.99963

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	7.8970	0.0000		2019/03/05 16:15
0.500 ppm	11.5280	0.5000		2019/03/05 16:29
1.0 ppm	14.9760	1.0000		2019/03/05 16:44
5.0 ppm	43.6500	5.0000		2019/03/05 16:58
10 ppm	79.6020	10.0000		2019/03/05 17:12
25 ppm	183.3580	25.0000		2019/03/05 17:26
50 ppm	346.3230	50.0000		2019/03/05 17:40

Methods

Name: CAS_salt_010711 (TOC)

Version: v4 Operator: Fusion1 (Fusion1)
Ver Creation: 2019/02/21 17:57
Comment:

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml
UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml
BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date

1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2019/12/29 10:37

ALS Environmental

StarLIMS Run: 664898, 664900, 664901, 664902

Analysis: DOC/TOC

Method: SM 5310 C, 9060A, 415.1, 9060

CCV: 11-GEN-05-82C 50 ppm LCS: 11-GEN-05-79J 25.0 ppm

ICAL Date: 3/6/19

ICAL ID: 11-GEN-05-76H

ICS ID: 11-GEN-05-78M

ICS TV: 25.0 ppm ICS % R < 1

Spike ID: 11-GEN-05-82C 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor

Sodium Persulfate: 11-GEN-05-83H

21 % H3PO4: 11-GEN-05-83G

Equipment ID: K-TOC-03

PIPETTE ID: 124276B, 129001F, N11314F, Marge

FILTER ID: 16967789

Analyzed By: BCP	Date Analyzed: 12/27/19
Reviewed By: JC	Date Reviewed: 12/31/19

Work Request # (Original) K1911934, 11980, 11981, 11995, 11998, 12042, 11912, 11968, 12074, 12105, 12140, 11963

Tier: I II II IV IV IV II IV II IV II III

Date Analyzed: 12/31/19 TOC: 665302, 665303

Analyst: BCP Run # DOC: 665304

Analysis: TOC/DOC

DATA QUALITY REPORT
INORGANICS

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

1.	Is the method name and number correct and appropriate?	yes/no/NA
2.	Holding times met for all analyses and for all samples?	yes/no/NA
3.	Are calculations correct?	yes/no/NA
4.	Is the reporting basis correct? (Dry Weight)	yes/no/NA
5.	All quality control criteria met?	yes/no
6.	Is the calibration curve correlation coefficient ≥ 0.995?	yes/no/NA
7.	MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency?	yes/no/NA
8.	Are ICVs, CCVs, and CCBs all within acceptance limits?	yes/no/NA
9.	Are results for methods blanks all ND?	yes/no/NA
10.	Are all QC samples within acceptance criteria? (LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.)	yes/no/NA
11.	Are all exceptions explained?	yes/no/NA
12.	Have all applicable service requests been reviewed?	yes/no/NA
13.	Are all samples labeled correctly?	yes/no/NA
14.	Have all instructions on the service request been followed? (e.g. Special MRLs, QC on a specific sample, Form V)	yes/no/NA
15.	Are detection limits and units reported correctly?	yes/no/NA
16.	Is the unused space on the benchsheet crossed out?	yes/no/NA
17.	Was analysis turned in by the due date? (n-2) (If not record SR#)	yes/no/NA

COMMENTS: K1911934-2/2d report a high %RSD. However, these samples are less than 5x the MRL.
K1912042-5/5d report a high %RSD due to suspected non-homogenous sample.
K1911998-3 Sent for RA due to being overdiluted.

Final Approved by: _____ Date: 01/03/20

DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 665302 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K1911934-002	Carbon, Total Organic	N/A		Drinking Water	0.80 mg/L	10 mL	0.80 mg/L	1	0.07	0.50			1/1/20 04:24:00	N	I
K1911980-001	Carbon, Total Organic	N/A		Water	3.94 mg/L	10 mL	3.94 mg/L	1	0.07	0.50			1/1/20 04:52:00	N	II
K1911981-001	Carbon, Total Organic	N/A		Water	3.51 mg/L	10 mL	3.51 mg/L	1	0.07	0.50			1/1/20 05:20:00	N	II
K1911995-001	Carbon, Total Organic	N/A		Water	2.19 mg/L	10 mL	2.19 mg/L	1	0.07	0.50			12/31/19 21:48:00	N	IV
K1911998-001	Carbon, Total Organic	N/A		Ground Water	2.96 mg/L	10 mL	2.96 mg/L	1	0.07	0.50			12/31/19 22:45:00	N	IV
K1911998-002	Carbon, Total Organic	N/A		Ground Water	0.92 mg/L	10 mL	92 mg/L	100	7	50			12/31/19 23:14:00	N	IV
K1911998-003	Carbon, Total Organic	N/A		Ground Water	0.00 mg/L	10 mL	500 mg/L U	1000	70	500			12/31/19 23:42:00	N	IV
K1911998-004	Carbon, Total Organic	N/A		Ground Water	9.94 mg/L	10 mL	9.94 mg/L	1	0.07	0.50			1/1/20 00:10:00	N	IV
K1911998-005	Carbon, Total Organic	N/A		Ground Water	2.54 mg/L	10 mL	127 mg/L	50	4	25			1/1/20 01:07:00	N	IV
K1911998-006	Carbon, Total Organic	N/A		Ground Water	1.75 mg/L	10 mL	1.75 mg/L	1	0.07	0.50			1/1/20 01:35:00	N	IV
K1912042-001	Carbon, Total Organic	N/A		Ground Water	4.44 mg/L	10 mL	4.44 mg/L	1	0.07	0.50			1/1/20 02:03:00	N	IV
K1912042-002	Carbon, Total Organic	N/A		Ground Water	4.10 mg/L	10 mL	4.10 mg/L	1	0.07	0.50			1/1/20 02:32:00	N	IV
K1912042-003	Carbon, Total Organic	N/A		Ground Water	13.05 mg/L	10 mL	13.1 mg/L	1	0.07	0.50			1/1/20 03:00:00	N	IV
K1912042-004	Carbon, Total Organic	N/A		Ground Water	13.77 mg/L	10 mL	13.8 mg/L	1	0.07	0.50			1/1/20 03:28:00	N	IV
K1912042-005	Carbon, Total Organic	N/A		Ground Water	3.48 mg/L	10 mL	3.48 mg/L	1	0.07	0.50			1/1/20 03:56:00	N	IV
KQ1919248-01	Carbon, Total Organic	CCV		Water	23.98 mg/L	10 mL	24.0 mg/L	1					12/31/19 20:35:00	N	IV
KQ1919248-02	Carbon, Total Organic	CCV		Water	25.08 mg/L	10 mL	25.1 mg/L	1					1/1/20 00:38:00	N	IV
KQ1919248-03	Carbon, Total Organic	CCV		Water	24.03 mg/L	10 mL	24.0 mg/L	1					1/1/20 05:48:00	N	IV
KQ1919248-04	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			12/31/19 20:49:00	N	IV
KQ1919248-05	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 00:53:00	N	IV
KQ1919248-06	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 06:03:00	N	IV
KQ1919248-07	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			12/31/19 21:04:00	N	IV
KQ1919248-08	Carbon, Total Organic	LCS		Water	25.12 mg/L	10 mL	25.1 mg/L	1	0.07	0.50	100		12/31/19 21:19:00	N	IV
KQ1919248-09	Carbon, Total Organic	MS	K1911995-001	Water	28.29 mg/L	10 mL	28.3 mg/L	1	0.07	0.50	104		12/31/19 22:16:00	N	IV
KQ1919248-10	Carbon, Total Organic	DUP	K1911934-002	Drinking Water	0.63 mg/L	10 mL	0.63 mg/L	1	0.07	0.50		23*	1/1/20 04:24:00	N	I
KQ1919248-11	Carbon, Total Organic	DUP	K1911980-001	Water	3.92 mg/L	10 mL	3.92 mg/L	1	0.07	0.50		<1	1/1/20 04:52:00	N	II
KQ1919248-12	Carbon, Total Organic	DUP	K1911981-001	Water	3.50 mg/L	10 mL	3.50 mg/L	1	0.07	0.50		<1	1/1/20 05:20:00	N	II
KQ1919248-13	Carbon, Total Organic	DUP	K1911995-001	Water	2.23 mg/L	10 mL	2.23 mg/L	1	0.07	0.50		2	12/31/19 21:48:00	N	IV
KQ1919248-14	Carbon, Total Organic	DUP	K1911998-002	Ground Water	0.88 mg/L	10 mL	88 mg/L	100	7	50		5	12/31/19 23:14:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

01/03/20

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 665302 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1919248-15	Carbon, Total Organic	DUP	K1911998-001	Ground Water	2.86 mg/L	10 mL	2.86 mg/L	1	0.07	0.50		3	12/31/19 22:45:00	N	IV
KQ1919248-16	Carbon, Total Organic	DUP	K1911998-003	Ground Water	0.00 mg/L	10 mL	500 mg/L U	1000	70	500		NC	12/31/19 23:42:00	N	IV
KQ1919248-17	Carbon, Total Organic	DUP	K1911998-004	Ground Water	9.77 mg/L	10 mL	9.77 mg/L	1	0.07	0.50		2	1/1/20 00:10:00	N	IV
KQ1919248-18	Carbon, Total Organic	DUP	K1911998-005	Ground Water	2.50 mg/L	10 mL	125 mg/L	50	4	25		2	1/1/20 01:07:00	N	IV
KQ1919248-19	Carbon, Total Organic	DUP	K1911998-006	Ground Water	1.77 mg/L	10 mL	1.77 mg/L	1	0.07	0.50		1	1/1/20 01:35:00	N	IV
KQ1919248-20	Carbon, Total Organic	DUP	K1912042-002	Ground Water	4.01 mg/L	10 mL	4.01 mg/L	1	0.07	0.50		2	1/1/20 02:32:00	N	IV
KQ1919248-21	Carbon, Total Organic	DUP	K1912042-001	Ground Water	4.41 mg/L	10 mL	4.41 mg/L	1	0.07	0.50		<1	1/1/20 02:03:00	N	IV
KQ1919248-22	Carbon, Total Organic	DUP	K1912042-003	Ground Water	13.43 mg/L	10 mL	13.4 mg/L	1	0.07	0.50		3	1/1/20 03:00:00	N	IV
KQ1919248-23	Carbon, Total Organic	DUP	K1912042-004	Ground Water	14.50 mg/L	10 mL	14.5 mg/L	1	0.07	0.50		5	1/1/20 03:28:00	N	IV
KQ1919248-24	Carbon, Total Organic	DUP	K1912042-005	Ground Water	3.01 mg/L	10 mL	3.01 mg/L	1	0.07	0.50		14*	1/1/20 03:56:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 665303 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K1911912-001	Carbon, Total Organic	N/A		Water	1.32 mg/L	10 mL	1.32 mg/L	1	0.07	0.50			1/1/20 07:44:00	N	II
K1911912-002	Carbon, Total Organic	N/A		Water	0.42 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 08:12:00	N	II
K1911912-003	Carbon, Total Organic	N/A		Water	0.62 mg/L	10 mL	0.62 mg/L	1	0.07	0.50			1/1/20 08:40:00	N	II
K1911912-004	Carbon, Total Organic	N/A		Water	0.35 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 09:08:00	N	II
K1911968-004	Carbon, Total Organic	N/A		Water	1.15 mg/L	10 mL	1.15 mg/L	1	0.07	0.50			1/1/20 09:36:00	N	IV
K1911968-005	Carbon, Total Organic	N/A		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 10:34:00	N	IV
K1912074-003	Carbon, Total Organic	N/A		Water	7.12 mg/L	10 mL	7.12 mg/L	1	0.07	0.50			1/1/20 11:02:00	N	II
K1912105-001	Carbon, Total Organic	N/A		Water	2.46 mg/L	10 mL	2.46 mg/L	1	0.07	0.50			1/1/20 06:47:00	N	IV
K1912140-001	Carbon, Total Organic	N/A		Water	7.36 mg/L	10 mL	7.36 mg/L	1	0.07	0.50			1/1/20 11:30:00	N	II
KQ1919247-01	Carbon, Total Organic	CCV		Water	24.03 mg/L	10 mL	24.0 mg/L	1					1/1/20 05:48:00	N	IV
KQ1919247-02	Carbon, Total Organic	CCV		Water	23.99 mg/L	10 mL	24.0 mg/L	1					1/1/20 10:04:00	N	IV
KQ1919247-03	Carbon, Total Organic	CCV		Water	23.70 mg/L	10 mL	23.7 mg/L	1					1/1/20 15:01:00	N	IV
KQ1919247-04	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 06:03:00	N	IV
KQ1919247-05	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 10:19:00	N	IV
KQ1919247-06	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 15:15:00	N	IV
KQ1919247-07	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 06:18:00	N	IV
KQ1919247-08	Carbon, Total Organic	LCS		Water	25.08 mg/L	10 mL	25.1 mg/L	1	0.07	0.50	100		1/1/20 06:32:00	N	IV
KQ1919247-09	Carbon, Total Organic	MS	K1912105-001	Water	28.13 mg/L	10 mL	28.1 mg/L	1	0.07	0.50	103		1/1/20 07:15:00	N	IV
KQ1919247-10	Carbon, Total Organic	DUP	K1911912-001	Water	1.28 mg/L	10 mL	1.28 mg/L	1	0.07	0.50		3	1/1/20 07:44:00	N	II
KQ1919247-11	Carbon, Total Organic	DUP	K1911912-002	Water	0.40 mg/L	10 mL	0.40 mg/L J	1	0.07	0.50		NC	1/1/20 08:12:00	N	II
KQ1919247-12	Carbon, Total Organic	DUP	K1911912-003	Water	0.63 mg/L	10 mL	0.63 mg/L	1	0.07	0.50		2	1/1/20 08:40:00	N	II
KQ1919247-13	Carbon, Total Organic	DUP	K1911912-004	Water	0.35 mg/L	10 mL	0.35 mg/L J	1	0.07	0.50		NC	1/1/20 09:08:00	N	II
KQ1919247-14	Carbon, Total Organic	DUP	K1911968-004	Water	1.21 mg/L	10 mL	1.21 mg/L	1	0.07	0.50		5	1/1/20 09:36:00	N	IV
KQ1919247-15	Carbon, Total Organic	DUP	K1911968-005	Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	1/1/20 10:34:00	N	IV
KQ1919247-16	Carbon, Total Organic	DUP	K1912074-003	Water	7.18 mg/L	10 mL	7.18 mg/L	1	0.07	0.50		<1	1/1/20 11:02:00	N	II
KQ1919247-17	Carbon, Total Organic	DUP	K1912105-001	Water	2.33 mg/L	10 mL	2.33 mg/L	1	0.07	0.50		5	1/1/20 06:47:00	N	IV
KQ1919247-18	Carbon, Total Organic	DUP	K1912140-001	Water	7.35 mg/L	10 mL	7.35 mg/L	1	0.07	0.50		<1	1/1/20 11:30:00	N	II

01/03/20

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 665304 **Method/Testcode:** SM 5310 C/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K1911963-001	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	2.40 mg/L	10 mL	2.40 mg/L	1	0.07	0.50			1/1/20 12:13:00	N	II
K1911963-002	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	2.38 mg/L	10 mL	2.38 mg/L	1	0.07	0.50			1/1/20 12:41:00	N	II
K1911963-003	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	0.51 mg/L	10 mL	0.51 mg/L	1	0.07	0.50			1/1/20 13:09:00	N	II
K1911963-004	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	1.57 mg/L	10 mL	1.57 mg/L	1	0.07	0.50			1/1/20 13:37:00	N	II
K1911963-005	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	1.50 mg/L	10 mL	1.50 mg/L	1	0.07	0.50			1/1/20 14:05:00	N	II
K1911963-006	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	1.96 mg/L	10 mL	1.96 mg/L	1	0.07	0.50			1/1/20 14:33:00	N	II
K1911963-007	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	2.14 mg/L	10 mL	2.14 mg/L	1	0.07	0.50			1/1/20 16:00:00	N	II
K1911963-008	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	1.92 mg/L	10 mL	1.92 mg/L	1	0.07	0.50			1/1/20 16:28:00	N	II
K1911963-009	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	1.95 mg/L	10 mL	1.95 mg/L	1	0.07	0.50			1/1/20 16:56:00	N	II
K1911963-010	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	2.04 mg/L	10 mL	2.04 mg/L	1	0.07	0.50			1/1/20 17:25:00	N	II
K1911963-011	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	1.93 mg/L	10 mL	1.93 mg/L	1	0.07	0.50			1/1/20 17:53:00	N	II
K1911963-012	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	0.46 mg/L	10 mL	0.46 mg/L J	1	0.07	0.50			1/1/20 18:21:00	N	II
KQ1919246-01	Carbon, Dissolved Organic (DOC)	MS	K1911963-012	Surface Water	27.18 mg/L	10 mL	27.2 mg/L	1	0.07	0.50	107		1/1/20 18:49:00	N	II
KQ1919246-02	Carbon, Dissolved Organic (DOC)	CCV		Surface Water	23.99 mg/L	10 mL	24.0 mg/L	1					1/1/20 10:04:00	N	II
KQ1919246-03	Carbon, Dissolved Organic (DOC)	CCV		Surface Water	23.70 mg/L	10 mL	23.7 mg/L	1					1/1/20 15:01:00	N	II
KQ1919246-04	Carbon, Dissolved Organic (DOC)	CCV		Surface Water	23.80 mg/L	10 mL	23.8 mg/L	1					1/1/20 19:32:00	N	II
KQ1919246-05	Carbon, Dissolved Organic (DOC)	CCB		Surface Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 10:19:00	N	II
KQ1919246-06	Carbon, Dissolved Organic (DOC)	CCB		Surface Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 15:15:00	N	II
KQ1919246-07	Carbon, Dissolved Organic (DOC)	CCB		Surface Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 19:46:00	N	II
KQ1919246-08	Carbon, Dissolved Organic (DOC)	MB		Surface Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 15:30:00	N	II
KQ1919246-09	Carbon, Dissolved Organic (DOC)	LCS		Surface Water	24.87 mg/L	10 mL	24.9 mg/L	1	0.07	0.50	99		1/1/20 15:45:00	N	II
KQ1919246-10	Carbon, Dissolved Organic (DOC)	DUP	K1911963-001	Surface Water	2.35 mg/L	10 mL	2.35 mg/L	1	0.07	0.50		2	1/1/20 12:13:00	N	II
KQ1919246-11	Carbon, Dissolved Organic (DOC)	DUP	K1911963-002	Surface Water	2.35 mg/L	10 mL	2.35 mg/L	1	0.07	0.50		1	1/1/20 12:41:00	N	II

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

01/03/20

Printed 1/3/20 10:19

Results Summary

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 665304 **Method/Testcode:** SM 5310 C/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1919246-12	Carbon, Dissolved Organic (DOC)	DUP	K1911963-003	Surface Water	0.51 mg/L	10 mL	0.51 mg/L	1	0.07	0.50		1	1/1/20 13:09:00	N	II
KQ1919246-13	Carbon, Dissolved Organic (DOC)	DUP	K1911963-004	Surface Water	1.53 mg/L	10 mL	1.53 mg/L	1	0.07	0.50		3	1/1/20 13:37:00	N	II
KQ1919246-14	Carbon, Dissolved Organic (DOC)	DUP	K1911963-005	Surface Water	1.40 mg/L	10 mL	1.40 mg/L	1	0.07	0.50		7	1/1/20 14:05:00	N	II
KQ1919246-15	Carbon, Dissolved Organic (DOC)	DUP	K1911963-006	Surface Water	1.93 mg/L	10 mL	1.93 mg/L	1	0.07	0.50		1	1/1/20 14:33:00	N	II
KQ1919246-16	Carbon, Dissolved Organic (DOC)	DUP	K1911963-007	Surface Water	2.00 mg/L	10 mL	2.00 mg/L	1	0.07	0.50		6	1/1/20 16:00:00	N	II
KQ1919246-17	Carbon, Dissolved Organic (DOC)	DUP	K1911963-008	Surface Water	1.89 mg/L	10 mL	1.89 mg/L	1	0.07	0.50		2	1/1/20 16:28:00	N	II
KQ1919246-18	Carbon, Dissolved Organic (DOC)	DUP	K1911963-009	Surface Water	1.82 mg/L	10 mL	1.82 mg/L	1	0.07	0.50		7	1/1/20 16:56:00	N	II
KQ1919246-19	Carbon, Dissolved Organic (DOC)	DUP	K1911963-010	Surface Water	1.90 mg/L	10 mL	1.90 mg/L	1	0.07	0.50		7	1/1/20 17:25:00	N	II
KQ1919246-20	Carbon, Dissolved Organic (DOC)	DUP	K1911963-011	Surface Water	1.88 mg/L	10 mL	1.88 mg/L	1	0.07	0.50		2	1/1/20 17:53:00	N	II
KQ1919246-21	Carbon, Dissolved Organic (DOC)	DUP	K1911963-012	Surface Water	0.46 mg/L	10 mL	0.46 mg/L J	1	0.07	0.50		<1	1/1/20 18:21:00	N	II

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

TOC: 665302, 665303
DOC: 665304

Schedule: Daily Run Method 010711

Version: 80
Instrument: Fusion1
Last Saved by: Fusion1 (Fusion1)
Last Saved on: 2019/12/31 16:45 - Tuesday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Blank)	Blank	Reagent/Acid Blank		1	True	Ready
D	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	10	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
3	Sample	K1911995-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
4	Sample	K1911995-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
5	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
6	Sample	K1911998-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
7	Sample	K1911998-002.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
8	Sample	K1911998-003.01 1000x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
9	Sample	K1911998-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
10	Sample	K1911998-005.01 50x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
11	Sample	K1911998-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
12	Sample	K1912042-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
13	Sample	K1912042-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
14	Sample	K1912042-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
15	Sample	K1912042-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
16	Sample	K1912042-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
17	Sample	K1911934-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
18	Sample	K1911980-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
19	Sample	K1911981-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
20	Sample	MB2	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
21	Sample	K1912105-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
22	Sample	K1912105-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
23	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
24	Sample	K1911912-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
25	Sample	K1911912-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
26	Sample	K1911912-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
27	Sample	K1911912-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
28	Sample	K1911968-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
29	Sample	K1911968-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
30	Sample	K1912074-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
31	Sample	K1912140-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
32	Sample	FB 12/20/19 1501	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
33	Sample	K1911963-001.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
34	Sample	K1911963-002.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
35	Sample	K1911963-003.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
36	Sample	K1911963-004.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
37	Sample	K1911963-005.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
38	Sample	K1911963-006.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready

01/03/20

Schedule: Daily Run Method 010711

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
39	Sample	MB3	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
40	Sample	K1911963-007.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
41	Sample	K1911963-008.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
42	Sample	K1911963-009.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
43	Sample	K1911963-010.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
44	Sample	K1911963-011.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
45	Sample	K1911963-012.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
46	Sample	K1911963-012.01 ms doc	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
47	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
					False	

Fusion Report - Daily Run Method 010711
Tuesday, December 31, 2019 04:35 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/01/03 09:21 - Friday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	Daily Run Method 010711	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v79) Fusion1 (Fusion1) (v80)		
Comment:			

Report Results

01/03/20

Sample Type: Clean — From Schedule Version 79

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2019/12/31 16:35

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	13.71	19.28	5.58	49.47	05:23
2	TC Clean	14.29	17.33	3.04	50.01	04:04
3	TC Clean	2.88	6.69	3.81	49.97	03:47
4	TC Clean	2.31	6.12	3.80	50.02	03:53

Sample Type: Clean — From Schedule Version 80

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2019/12/31 16:57

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	1.21	5.09	3.88	49.61	05:24
2	TC Clean	5.91	9.66	3.76	50.10	04:01
3	TC Clean	2.51	6.24	3.73	50.04	03:45
4	TC Clean	2.01	5.82	3.81	49.94	03:47

Sample Type: Clean From Schedule Version 80

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2019/12/31 17:19

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	1.28	5.01	3.73	49.37	05:20
2	TC Clean	6.29	10.12	3.84	50.05	04:01
3	TC Clean	2.28	6.27	3.99	50.05	03:44
4	TC Clean	2.20	5.97	3.77	50.08	03:46

Sample Type: Blank (Creating v1333) From Schedule Version 80

	Pos	Analysis Type	Sample ID	Start Time
◆	(blank)		Reagent/Acid Blank	2019/12/31 17:40

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	1.32	5.05	3.72	49.64	05:13
2	TC Clean	5.58	9.42	3.84	49.99	04:01
3	TC Clean	2.53	6.30	3.78	50.09	03:47
4	TC Clean	2.36	6.26	3.90	49.92	03:51
5	Reagent Blank	4.25	8.29	4.04	50.14	05:02
6	Acid Blank	1.36	5.20	3.84	49.53	05:26

Sample Type: Sample From Schedule Version 80

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	D	TOC	RB	0.0441 ppm	0.1394 ppm	316.2300%	2019/12/31 18:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4407	4.4075	11.79	15.74	3.95	50.07	10:28
2	TOC	0.0000	0.0000	7.58	11.48	3.89	50.07	10:27
3	TOC	0.0000	0.0000	6.95	10.79	3.84	50.09	10:25
4	TOC	0.0000	0.0000	7.18	11.14	3.96	50.11	10:27
5	TOC	0.0000	0.0000	6.53	10.27	3.73	50.09	10:27
6	TOC	0.0000	0.0000	6.62	10.19	3.57	50.12	10:27
7	TOC	0.0000	0.0000	6.43	10.02	3.58	50.08	10:26

8	TOC	0.0000	0.0000	6.52	10.04	3.52	50.11	10:28
9	TOC	0.0000	0.0000	6.12	9.81	3.70	50.09	10:29
10	TOC	0.0000	0.0000	6.26	10.07	3.82	50.10	10:30

Dilution: 1:10
Blank Contribution: (TC) 8.7992 (IC) (v1333)
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm — From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	23.9773 ppm (PASS)	0.0000 ppm	0%	2019/12/31 20:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	23.9773	239.7730	172.22	176.04	3.82	50.08	10:30

Completion State: Success - Criteria met.
Success Action: Do Nothing
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)
STD Conc - Pos B: 50 ppmC

Sample Type: Check Standard --> CCB — From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2019/12/31 20:49

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.78	10.54	3.76	50.08	10:33

Completion State: Success - Criteria met.
Success Action: Do Nothing
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)
STD Conc - Pos D: 0 ppmC

Sample Type: Sample — From Schedule Version 80

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	1	TOC	MB1	0.0000 ppm	0.0000 ppm	0.0000%	2019/12/31 21:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.94	9.79	3.85	50.09	10:33

Dilution: 1:10
Blank Contribution: (TC) 8.7992 (IC) (v1333)
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)

Sample Type: Check Standard --> LCS From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	25.1165 ppm (PASS)	0.0000 ppm	0%	2019/12/31 21:19

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	25.1165	251.1653	179.95	183.84	3.89	50.07	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	25 ppmC

Sample Type: Sample From Schedule Version 80

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	2	TOC	ICS	0.0636 ppm	0.0000 ppm	0.0000%	2019/12/31 21:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0636	0.6361	9.23	13.06	3.83	50.09	10:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	3	TOC	K1911995-001.01	2.2088 ppm	0.0314 ppm	1.4200%	2019/12/31 21:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.1866	21.8664	23.64	27.48	3.83	50.06	10:27
2	TOC	2.2310	22.3098	23.94	27.71	3.76	50.06	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	4	TOC	K1911995-001.01 ms	28.2887 ppm	0.0000 ppm	0.0000%	2019/12/31 22:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	28.2887	282.8866	200.82	204.62	3.80	50.05	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time

◈	5	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2019/12/31 22:31

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.43	11.35	3.92	50.02	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	6	TOC	K1911998-001.01	2.9073 ppm	0.0683 ppm	2.3500%	2019/12/31 22:45

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.9556	29.5565	28.86	32.62	3.76	50.06	10:29
2	TOC	2.8590	28.5901	28.21	31.99	3.78	50.04	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	7	TOC	K1911998-002.01 100x	0.8965 ppm	0.0303 ppm	3.3800%	2019/12/31 23:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9179	9.1792	15.03	18.91	3.88	50.07	10:27
2	TOC	0.8750	8.7505	14.74	18.37	3.63	50.05	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	8	TOC	K1911998-003.01 1000x	0.0000 ppm	0.0000 ppm	0.0000%	2019/12/31 23:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.30	12.03	3.73	50.06	10:27
2	TOC	0.0000	0.0000	7.79	11.74	3.94	50.07	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	9	TOC	K1911998-004.01	9.8591 ppm	0.1210 ppm	1.2300%	2020/01/01 00:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	9.9447	99.4466	76.30	80.14	3.84	50.03	10:31
2	TOC	9.7735	97.7347	75.14	79.02	3.87	50.08	10:29

Dilution	Blank Contribution	Method	Calibration

1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm — From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.0809 ppm (PASS)	0.0000 ppm	0%	2020/01/01 00:38

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.0809	250.8088	179.71	183.63	3.92	50.04	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB — From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/01/01 00:53

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.54	11.40	3.87	50.02	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample — From Schedule Version 80

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	10	TOC	K1911998-005.01 50x	2.5177 ppm	0.0309 ppm	1.2300%	2020/01/01 01:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.5396	25.3962	26.04	29.64	3.60	50.04	10:30
2	TOC	2.4959	24.9586	25.74	29.62	3.88	50.03	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	11	TOC	K1911998-006.01	1.7592 ppm	0.0168 ppm	0.9500%	2020/01/01 01:35

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.7473	17.4733	20.66	24.42	3.76	50.04	10:29
2	TOC	1.7710	17.7105	20.82	24.62	3.79	50.03	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	12	TOC	K1912042-001.01	4.4235 ppm	0.0222 ppm	0.5000%	2020/01/01 02:03

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.4392	44.3916	38.93	42.78	3.85	50.07	10:30
2	TOC	4.4078	44.0778	38.72	42.49	3.77	50.03	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	13	TOC	K1912042-002.01	4.0549 ppm	0.0614 ppm	1.5100%	2020/01/01 02:32

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.0983	40.9826	36.62	40.28	3.66	50.04	10:28
2	TOC	4.0115	40.1149	36.03	39.76	3.73	50.02	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	14	TOC	K1912042-003.01	13.2410 ppm	0.2666 ppm	2.0100%	2020/01/01 03:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	13.0525	130.5252	97.40	101.21	3.82	50.04	10:26
2	TOC	13.4295	134.2952	99.96	103.63	3.67	50.04	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	15	TOC	K1912042-004.01	14.1339 ppm	0.5156 ppm	3.6500%	2020/01/01 03:28

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	13.7692	137.6924	102.26	106.01	3.75	50.01	10:24
2	TOC	14.4985	144.9847	107.21	111.01	3.80	50.04	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC)	CAS_salt_010711	CAS_salt_010711

(v1333) (v4) (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	16	TOC	K1912042-005.01	3.2440 ppm	0.3311 ppm	10.2100%	2020/01/01 03:56

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.4780	34.7804	32.41	36.29	3.88	50.01	10:27
2	TOC	3.0099	30.0986	29.23	33.20	3.97	50.04	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	17	TOC	K1911934-002.01	0.7151 ppm	0.1165 ppm	16.2900%	2020/01/01 04:24

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7974	7.9741	14.21	17.98	3.77	50.03	10:28
2	TOC	0.6327	6.3270	13.09	16.84	3.74	50.02	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	18	TOC	K1911980-001.01	3.9289 ppm	0.0122 ppm	0.3100%	2020/01/01 04:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.9375	39.3754	35.53	39.23	3.70	50.03	10:28
2	TOC	3.9203	39.2030	35.41	39.09	3.68	50.03	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	19	TOC	K1911981-001.01	3.5048 ppm	0.0034 ppm	0.1000%	2020/01/01 05:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.5072	35.0721	32.61	36.21	3.61	50.02	10:30
2	TOC	3.5024	35.0235	32.57	36.34	3.77	50.01	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time

◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	24.0346 ppm (PASS)	0.0000 ppm	0%	2020/01/01 05:48

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.0346	240.3461	172.61	176.27	3.66	50.03	10:28

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/01/01 06:03

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.34	9.85	3.50	50.01	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample From Schedule Version 80

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	20	TOC	MB2	0.0000 ppm	0.0000 ppm	0.0000%	2020/01/01 06:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.53	9.23	3.70	50.02	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> LCS From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	25.0849 ppm (PASS)	0.0000 ppm	0%	2020/01/01 06:32

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	25.0849	250.8486	179.74	183.47	3.74	50.04	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	25 ppmC

Sample Type: Sample — From Schedule Version 80

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	21	TOC	K1912105-001.01	2.3905 ppm	0.0923 ppm	3.8600%	2020/01/01 06:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.4558	24.5579	25.47	29.13	3.66	50.00	10:28
2	TOC	2.3253	23.2526	24.58	28.29	3.70	50.01	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	22	TOC	K1912105-001.01 ms	28.1332 ppm	0.0000 ppm	0.0000%	2020/01/01 07:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	28.1332	281.3324	199.77	203.34	3.58	50.01	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	23	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/01/01 07:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.30	10.96	3.66	50.03	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	24	TOC	K1911912-001.01	1.3018 ppm	0.0289 ppm	2.2200%	2020/01/01 07:44

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.3222	13.2216	17.77	21.47	3.70	50.03	10:28
2	TOC	1.2814	12.8135	17.50	21.26	3.76	50.02	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	25	TOC	K1911912-002.01	0.4133 ppm	0.0138 ppm	3.3300%	2020/01/01 08:12

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4231	4.2307	11.67	15.28	3.60	50.04	10:26
2	TOC	0.4036	4.0362	11.54	15.27	3.73	50.03	10:27

Dilution 1:10 | **Blank Contribution** (TC) 8.7992 (IC) (v1333) | **Method** CAS_salt_010711 (v4) | **Calibration** CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	26	TOC	K1911912-003.01	0.6258 ppm	0.0079 ppm	1.2700%	2020/01/01 08:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6202	6.2018	13.01	16.67	3.66	50.04	10:28
2	TOC	0.6314	6.3138	13.08	16.79	3.70	50.02	10:27

Dilution 1:10 | **Blank Contribution** (TC) 8.7992 (IC) (v1333) | **Method** CAS_salt_010711 (v4) | **Calibration** CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	27	TOC	K1911912-004.01	0.3476 ppm	0.0006 ppm	0.1800%	2020/01/01 09:08

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3481	3.4808	11.16	14.86	3.70	50.03	10:26
2	TOC	0.3472	3.4720	11.16	14.61	3.45	50.01	10:28

Dilution 1:10 | **Blank Contribution** (TC) 8.7992 (IC) (v1333) | **Method** CAS_salt_010711 (v4) | **Calibration** CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	28	TOC	K1911968-004.01	1.1812 ppm	0.0446 ppm	3.7700%	2020/01/01 09:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1497	11.4965	16.60	20.31	3.71	50.03	10:30
2	TOC	1.2127	12.1270	17.03	20.61	3.57	50.02	10:25

Dilution 1:10 | **Blank Contribution** (TC) 8.7992 (IC) (v1333) | **Method** CAS_salt_010711 (v4) | **Calibration** CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm — From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	23.9870 ppm (PASS)	0.0000 ppm	0%	2020/01/01 10:04

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	23.9870	239.8703	172.28	176.01	3.73	50.03	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/01/01 10:19

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.23	10.09	3.86	50.04	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample From Schedule Version 80

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	29	TOC	K1911968-005.01	0.0000 ppm	0.0000 ppm	0.0000%	2020/01/01 10:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.30	10.10	3.80	50.04	10:30
2	TOC	0.0000	0.0000	6.26	9.91	3.66	50.05	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	30	TOC	K1912074-003.01	7.1478 ppm	0.0402 ppm	0.5600%	2020/01/01 11:02

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	7.1194	71.1935	57.12	60.83	3.70	50.03	10:28
2	TOC	7.1762	71.7622	57.51	61.16	3.65	50.03	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	31	TOC	K1912140-001.01	7.3546 ppm	0.0080 ppm	0.1100%	2020/01/01 11:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	7.3602	73.6022	58.76	62.25	3.49	50.02	10:30
2	TOC	7.3489	73.4888	58.68	62.37	3.69	50.03	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	32	TOC	FB 12/20/19 1501	0.0000 ppm	0.0000 ppm	0.0000%	2020/01/01 11:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.83	10.55	3.72	50.02	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	33	TOC	K1911963-001.01 doc	2.3762 ppm	0.0331 ppm	1.3900%	2020/01/01 12:13

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.3997	23.9966	25.09	28.67	3.58	50.02	10:25
2	TOC	2.3528	23.5281	24.77	28.44	3.67	50.03	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	34	TOC	K1911963-002.01 doc	2.3673 ppm	0.0236 ppm	1.0000%	2020/01/01 12:41

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.3840	23.8405	24.98	28.84	3.86	50.04	10:27
2	TOC	2.3506	23.5060	24.76	28.37	3.61	50.03	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	35	TOC	K1911963-003.01 doc	0.5096 ppm	0.0047 ppm	0.9200%	2020/01/01 13:09

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5063	5.0630	12.24	16.00	3.76	50.02	10:29
2	TOC	0.5129	5.1293	12.28	15.83	3.55	50.02	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	36	TOC	K1911963-004.01 doc	1.5474 ppm	0.0310 ppm	2.0100%	2020/01/01 13:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.5694	15.6937	19.45	23.25	3.80	50.02	10:26
2	TOC	1.5255	15.2546	19.15	22.81	3.66	50.03	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	37	TOC	K1911963-005.01 doc	1.4530 ppm	0.0733 ppm	5.0500%	2020/01/01 14:05

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.5048	15.0484	19.01	22.69	3.68	50.05	10:30
2	TOC	1.4011	14.0113	18.31	22.18	3.87	50.03	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	38	TOC	K1911963-006.01 doc	1.9425 ppm	0.0184 ppm	0.9500%	2020/01/01 14:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9555	19.5549	22.07	25.96	3.89	50.07	10:27
2	TOC	1.9294	19.2942	21.90	25.73	3.84	50.03	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	23.6980 ppm (PASS)	0.0000 ppm	0%	2020/01/01 15:01

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	23.6980	236.9798	170.32	174.08	3.75	50.05	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/01/01 15:15

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.31	10.01	3.71	50.03	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample From Schedule Version 80

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	39	TOC	MB3	0.0000 ppm	0.0000 ppm	0.0000%	2020/01/01 15:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.21	9.12	3.91	50.03	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> LCS From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.8695 ppm (PASS)	0.0000 ppm	0%	2020/01/01 15:45

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.8695	248.6947	178.28	182.07	3.80	50.03	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	25 ppmC

Sample Type: Sample From Schedule Version 80

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	40	TOC	K1911963-007.01 doc	2.0700 ppm	0.0933 ppm	4.5100%	2020/01/01 16:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time

1	TOC	2.1360	21.3596	23.30	27.18	3.88	50.03	10:29
2	TOC	2.0040	20.0396	22.40	26.30	3.90	50.06	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	41	TOC	K1911963-008.01 doc	1.9025 ppm	0.0215 ppm	1.1300%	2020/01/01 16:28

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9176	19.1763	21.82	25.60	3.79	50.04	10:30
2	TOC	1.8873	18.8728	21.61	25.29	3.68	50.05	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	42	TOC	K1911963-009.01 doc	1.8852 ppm	0.0954 ppm	5.0600%	2020/01/01 16:56

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9527	19.5269	22.05	25.78	3.72	50.07	10:27
2	TOC	1.8177	18.1775	21.14	24.92	3.79	50.08	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	43	TOC	K1911963-010.01 doc	1.9715 ppm	0.0951 ppm	4.8200%	2020/01/01 17:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.0387	20.3873	22.64	26.35	3.71	50.05	10:24
2	TOC	1.9042	19.0422	21.72	25.60	3.87	50.04	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	44	TOC	K1911963-011.01 doc	1.9039 ppm	0.0315 ppm	1.6500%	2020/01/01 17:53

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9262	19.2617	21.87	25.48	3.60	50.05	10:29
2	TOC	1.8817	18.8168	21.57	25.40	3.83	50.04	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	45	TOC	K1911963-012.01 doc	0.4572 ppm	0.0020 ppm	0.4300%	2020/01/01 18:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4558	4.5577	11.89	15.63	3.73	50.04	10:26
2	TOC	0.4586	4.5857	11.91	15.54	3.63	50.04	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	46	TOC	K1911963-012.01 ms doc	27.1795 ppm	0.0000 ppm	0.0000%	2020/01/01 18:49

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.1795	271.7949	193.29	197.03	3.73	50.05	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	47	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/01/01 19:03

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.24	10.00	3.76	50.05	10:28
2	TOC	0.0000	0.0000	6.14	9.84	3.70	50.05	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	23.7970 ppm (PASS)	0.0000 ppm	0%	2020/01/01 19:32

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	23.7970	237.9698	170.99	174.59	3.59	50.06	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/01/01 19:46

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.81	9.46	3.65	50.06	10:35

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1332	6.2033	2.5850	0.0000	0.0000	0.0000	2019/12/27 19:09	Fusion1 (Fusion1)
v1333	1.4150	1.3570	0.0000	0.0000	0.0000	2019/12/31 18:14	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version:	v30	Calibration curve formula:	TOC: y = 6.788x + 9.463
Ver Creation:	2019/03/05 17:42	r^2 value:	TOC: r^2 = 0.99963
Comment:			
Operator:	Fusion1 (Fusion1)		
Basic Analysis Type	TOC		

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	7.8970	0.0000		2019/03/05 16:15
0.500 ppm	11.5280	0.5000		2019/03/05 16:29
1.0 ppm	14.9760	1.0000		2019/03/05 16:44
5.0 ppm	43.6500	5.0000		2019/03/05 16:58
10 ppm	79.6020	10.0000		2019/03/05 17:12
25 ppm	183.3580	25.0000		2019/03/05 17:26
50 ppm	346.3230	50.0000		2019/03/05 17:40

Methods

Name: CAS_salt_010711 (TOC)

Version: v4 Operator: Fusion1 (Fusion1)
Ver Creation: 2019/02/21 17:57
Comment:

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml
UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml
BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date

1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/01/01 20:01

ALS Environmental

StarLIMS Run: 665302, 665303, 665304

Analysis: DOC/TOC

Method: SM 5310 C, 9060A, 415.1, 9060

CCV: 11-GEN-05-82C 50 ppm LCS: 11-GEN-05-79J 25.0 ppm

ICAL Date: 3/6/19

ICAL ID: 11-GEN-05-76H

ICS ID: 11-GEN-05-78M

ICS TV: 25.0 ppm ICS % R < 1

Spike ID: 11-GEN-05-82C 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor

Sodium Persulfate: 11-GEN-05-83H

21 % H3PO4: 11-GEN-05-83I

Equipment ID: K-TOC-03

PIPETTE ID: 124276B, 129001F, N11314F, Marge

FILTER ID: 16967789

Analyzed By: BCP	Date Analyzed: 12/31/19
Reviewed By:	Date Reviewed: ~~12~~/01/03/20 TH

Work Request # Original ( ) K1911998, 2140, 2160, K2000034, 35, 90, T1901631

Tier: IV II II IV IV IV IV

Date Analyzed: 1/7/2020

Analyst: BCP

Analysis: TOC/DOC

TOC: 665574

DOC: 665575

Run #

DATA QUALITY REPORT
INORGANICS

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

1.	Is the method name and number correct and appropriate?	(yes)/no/NA
2.	Holding times met for all analyses and for all samples?	(yes)/no/NA
3.	Are calculations correct?	(yes)/no/NA
4.	Is the reporting basis correct? (Dry Weight)	(yes)/no/NA
5.	All quality control criteria met?	(yes)/no
6.	Is the calibration curve correlation coefficient ≥ 0.995?	(yes)/no/NA
7.	MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency?	(yes)/no/NA
8.	Are ICVs, CCVs, and CCBs all within acceptance limits?	(yes)/no/NA
9.	Are results for methods blanks all ND?	(yes)/no/NA
10.	Are all QC samples within acceptance criteria? (LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.)	yes/(no)/NA
11.	Are all exceptions explained?	(yes)/no/NA
12.	Have all applicable service requests been reviewed?	(yes)/no/NA
13.	Are all samples labeled correctly?	(yes)/no/NA
14.	Have all instructions on the service request been followed? (e.g. Special MRLs, QC on a specific sample, Form V)	(yes)/no/NA
15.	Are detection limits and units reported correctly?	(yes)/no/NA
16.	Is the unused space on the benchsheet crossed out?	(yes)/no/NA
17.	Was analysis turned in by the due date? (n-2) (If not record SR#)	yes/(no)/NA

COMMENTS: K2000035-1/1d, 35-2/2d, 90-1/1d report on high %RSD. However these samples are less than 5x the MRL.

Final Approved by: [signature] Date: 01/08/20

DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 665574 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K1911998-003	Carbon, Total Organic	N/A		Ground Water	5.81 mg/L	10 ml	291 mg/L	50	4	25			1/7/20 19:36	N	IV
K1912140-002	Carbon, Total Organic	N/A		Water	6.31 mg/L	10 ml	631 mg/L	100	7	50			1/7/20 20:05	N	II
K1912140-003	Carbon, Total Organic	N/A		Water	7.34 mg/L	10 ml	734 mg/L	100	7	50			1/7/20 20:33	N	II
K1912140-004	Carbon, Total Organic	N/A		Water	7.21 mg/L	10 ml	721 mg/L	100	7	50			1/7/20 21:01	N	II
K1912160-001	Carbon, Total Organic	N/A		Water	2.70 mg/L	10 ml	2.70 mg/L	1	0.07	0.50			1/7/20 21:29	N	II
K2000034-001	Carbon, Total Organic	N/A		Water	2.13 mg/L	10 ml	2.13 mg/L	1	0.07	0.50			1/7/20 22:55	N	IV
K2000035-001	Carbon, Total Organic	N/A		Water	0.24 mg/L	10 ml	0.24 mg/L J	1	0.07	0.50			1/7/20 23:23	N	IV
K2000035-002	Carbon, Total Organic	N/A		Water	0.37 mg/L	10 ml	0.37 mg/L J	1	0.07	0.50			1/7/20 23:51	N	IV
K2000090-001	Carbon, Total Organic	N/A		Water	0.99 mg/L	10 ml	0.99 mg/L	1	0.07	0.50			1/8/20 01:46	N	IV
KQ2000092-01	Carbon, Total Organic	CCV		Ground Water	25.47 mg/L	10 ml	25.5 mg/L	1					1/7/20 18:23	N	IV
KQ2000092-02	Carbon, Total Organic	CCV		Ground Water	25.44 mg/L	10 ml	25.4 mg/L	1					1/7/20 22:26	N	IV
KQ2000092-03	Carbon, Total Organic	CCV		Ground Water	25.32 mg/L	10 ml	25.3 mg/L	1					1/8/20 02:14	N	IV
KQ2000092-04	Carbon, Total Organic	CCB		Ground Water	-0.01 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			1/7/20 18:38	N	IV
KQ2000092-05	Carbon, Total Organic	CCB		Ground Water	-0.01 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			1/7/20 22:40	N	IV
KQ2000092-06	Carbon, Total Organic	CCB		Ground Water	-0.01 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			1/8/20 02:28	N	IV
KQ2000092-07	Carbon, Total Organic	MB		Ground Water	0.03 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			1/7/20 18:52	N	IV
KQ2000092-08	Carbon, Total Organic	LCS		Ground Water	26.49 mg/L	10 ml	26.5 mg/L	1	0.07	0.50	106		1/7/20 19:07	N	IV
KQ2000092-09	Carbon, Total Organic	MS	K1912160-001	Water	29.87 mg/L	10 ml	29.9 mg/L	1	0.07	0.50	109		1/7/20 21:57	N	II
KQ2000092-10	Carbon, Total Organic	DUP	K1911998-003	Ground Water	5.77 mg/L	10 ml	288 mg/L	50	4	25		<1	1/7/20 19:36	N	IV
KQ2000092-11	Carbon, Total Organic	DUP	K1912160-001	Water	2.59 mg/L	10 ml	2.59 mg/L	1	0.07	0.50		4	1/7/20 21:29	N	II
KQ2000092-12	Carbon, Total Organic	DUP	K1912140-002	Water	6.48 mg/L	10 ml	648 mg/L	100	7	50		3	1/7/20 20:05	N	II
KQ2000092-13	Carbon, Total Organic	DUP	K1912140-003	Water	7.33 mg/L	10 ml	733 mg/L	100	7	50		<1	1/7/20 20:33	N	II
KQ2000092-14	Carbon, Total Organic	DUP	K1912140-004	Water	7.16 mg/L	10 ml	716 mg/L	100	7	50		<1	1/7/20 21:01	N	II
KQ2000092-15	Carbon, Total Organic	DUP	K2000034-001	Water	2.11 mg/L	10 ml	2.11 mg/L	1	0.07	0.50		<1	1/7/20 22:55	N	IV
KQ2000092-16	Carbon, Total Organic	DUP	K2000035-001	Water	0.18 mg/L	10 ml	0.18 mg/L J	1	0.07	0.50		29*	1/7/20 23:23	N	IV
KQ2000092-17	Carbon, Total Organic	DUP	K2000035-002	Water	0.47 mg/L	10 ml	0.47 mg/L J	1	0.07	0.50		25*	1/7/20 23:51	N	IV
KQ2000092-18	Carbon, Total Organic	DUP	K2000090-001	Water	0.89 mg/L	10 ml	0.89 mg/L	1	0.07	0.50		11*	1/8/20 01:46	N	IV

01/08/20

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 665575 **Method/Testcode:** SM 5310 C/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ2000093-01	Carbon, Dissolved Organic (DOC)	CCV		Water	25.44 mg/L	10 ml	25.4 mg/L	1					1/7/20 22:26	N	IV
KQ2000093-02	Carbon, Dissolved Organic (DOC)	CCV		Water	25.32 mg/L	10 ml	25.3 mg/L	1					1/8/20 02:14	N	IV
KQ2000093-03	Carbon, Dissolved Organic (DOC)	CCB		Water	-0.01 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			1/7/20 22:40	N	IV
KQ2000093-04	Carbon, Dissolved Organic (DOC)	CCB		Water	-0.01 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			1/8/20 02:28	N	IV
KQ2000093-05	Carbon, Dissolved Organic (DOC)	MB		Water	-0.01 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			1/8/20 01:16	N	IV
KQ2000093-06	Carbon, Dissolved Organic (DOC)	LCS		Water	26.28 mg/L	10 ml	26.3 mg/L	1	0.07	0.50	105		1/8/20 01:31	N	IV
KQ2000093-07	Carbon, Dissolved Organic (DOC)	MS	T1901631-001	Water	31.46 mg/L	10 ml	31.5 mg/L	1	0.07	0.50	112		1/8/20 00:47	N	IV
KQ2000093-08	Carbon, Dissolved Organic (DOC)	DUP	T1901631-001	Water	3.55 mg/L	10 ml	3.55 mg/L	1	0.07	0.50		1	1/8/20 00:19	N	IV
T1901631-001	Carbon, Dissolved Organic (DOC)	N/A		Water	3.51 mg/L	10 ml	3.51 mg/L	1	0.07	0.50			1/8/20 00:19	Y	IV

01/08/20

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

0.036	OBSERVATIONS	5	ABOVE
0.000	STD Deviation	0.01628	0
0.000	AVERAGE	0.00728	0
0.000	UCL	0.02356	0
0.000	LCL	-0.00900	0
			0
			0
	OBSERVATIONS	0	0
	STD Deviation	0.00000	0
	AVERAGE	#DIV/0!	0
	UCL	#DIV/0!	0
	LCL	#DIV/0!	0
			0
			0
	OBSERVATIONS	0	0
	STD Deviation	0.00000	0
	AVERAGE	#DIV/0!	0
	UCL	#DIV/0!	0
	LCL	#DIV/0!	0
			0
			0
	OBSERVATIONS	0	0
	STD Deviation	#DIV/0!	0
	AVERAGE	#DIV/0!	0
			0
			0
			0
			0
			0
			0

BCD 1/8/2020

01/08/20

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.476	0.0073	25.4682	25.46822	25.5	1/7/2020
3	ccb	1	0.000	0.0073	-0.0073	-0.00728	<0.5	1/7/2020
4	mb	1	0.036	0.0073	0.0291	0.02912	<0.5	1/7/2020
5	lcs	1	26.501	0.0073	26.4935	26.49352	26.5	1/7/2020
6	K1911998-003	50	5.821	0.0073	5.8137	290.686	290.69	1/7/2020
7	K1911998-003	50	5.777	0.0073	5.7699	288.496	288.5	1/7/2020
8	K1912140-002	100	6.313	0.0073	6.3059	630.592	631	1/7/2020
9	K1912140-002	100	6.486	0.0073	6.4783	647.832	647.83	1/7/2020
10	K1912140-003	100	7.343	0.0073	7.3358	733.582	733.58	1/7/2020
11	K1912140-003	100	7.333	0.0073	7.3260	732.602	732.6	1/7/2020
12	K1912140-004	100	7.217	0.0073	7.2096	720.962	720.96	1/7/2020
13	K1912140-004	100	7.163	0.0073	7.1552	715.522	715.52	1/7/2020
14	K1912160-001	1	2.708	0.0073	2.7008	2.70082	2.70	1/7/2020
15	K1912160-001	1	2.595	0.0073	2.5878	2.58782	2.6	1/7/2020
16	KQ2000092-09	1	29.873	0.0073	29.8656	29.86562	29.9	1/7/2020
17	ccv	1	25.451	0.0073	25.4432	25.44322	25.44	1/7/2020
18	ccb	1	0.000	0.0073	-0.0073	-0.00728	<0.5	1/7/2020
19	K2000034-001	1	2.133	0.0073	2.1255	2.12552	2.1	1/7/2020
20	K2000034-001	1	2.118	0.0073	2.1104	2.11042	2.11	1/7/2020
21	K2000035-001	1	0.246	0.0073	0.2382	0.23822	<0.5	1/7/2020
22	K2000035-001	1	0.184	0.0073	0.1770	0.17702	<0.5	1/7/2020
23	K2000035-002	1	0.374	0.0073	0.3668	0.36682	<0.5	1/7/2020
24	K2000035-002	1	0.480	0.0073	0.4727	0.47272	<0.5	1/7/2020
25	K2000090-001	1	0.998	0.0073	0.9908	0.99082	0.99	1/8/2020

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

		date	time
Analyzed By: BCD	Date Analyzed	1/7/2020	
Reviewed By:	Date Reviewed	01/08/20	

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K2000090-001	1	0.895	0.0073	0.8879	0.88792	0.89	1/8/2020
27	ccv	1	25.331	0.0073	25.3234	25.32342	25.32	1/8/2020
28	ccb	1	0.000	0.0073	-0.0073	-0.00728	<0.5	1/8/2020
29		1		0.0000	0.0000	0	<0.5	
30		1		0.0000	0.0000	0	<0.5	
31		1		0.0000	0.0000	0	<0.5	
32		1		0.0000	0.0000	0	<0.5	
33		1		0.0000	0.0000	0	<0.5	
34		1		0.0000	0.0000	0	<0.5	
35		1		0.0000	0.0000	0	<0.5	
36		1		0.0000	0.0000	0	<0.5	
37		1		0.0000	0.0000	0	<0.5	
38		1		0.0000	0.0000	0	<0.5	
39		1		0.0000	0.0000	0	<0.5	
40		1		0.0000	0.0000	0	<0.5	
41		1		0.0000	0.0000	0	<0.5	
42		1		0.0000	0.0000	0	<0.5	
43		1		0.0000	0.0000	0	<0.5	
44		1		0.0000	0.0000	0	<0.5	
45		1		0.0000	0.0000	0	<0.5	
46		1		0.0000	0.0000	0	<0.5	
47		1		0.0000	0.0000	0	<0.5	
48		1		0.0000	0.0000	0	<0.5	
49		1		0.0000	0.0000	0	<0.5	
50		1		0.0000	0.0000	0	<0.5	

Analyzed By: BOP	Date Analyzed 1/7/2020
Reviewed By:	Date Reviewed 01/08/20

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.451	0.0073	25.4432	25.44322	25.4	1/7/2020
3	ccb	1	0.000	0.0073	-0.0073	-0.00728	<0.5	1/7/2020
4	T1901631-001	1	3.522	0.0073	3.5147	3.51472	3.5	1/8/2020
5	T1901631-001	1	3.562	0.0073	3.5546	3.55462	3.6	1/8/2020
6	T1901631-001 ms	1	31.468	0.0073	31.4609	31.46092	31.46	1/8/2020
7	mb	1	0.000	0.0073	-0.0073	-0.00728	<0.5	1/8/2020
8	lcs	1	26.283	0.0073	26.2760	26.27602	26	1/8/2020
9	ccv	1	25.331	0.0073	25.3234	25.32342	25.32	1/8/2020
10	ccb	1	0.000	0.0073	-0.0073	-0.00728	<0.5	1/8/2020
11		1		0.0000	0.0000	0	<0.5	
12		1		0.0000	0.0000	0	<0.5	
13		1		0.0000	0.0000	0	<0.5	
14		1		0.0000	0.0000	0	<0.5	
15		1		0.0000	0.0000	0	<0.5	
16		1		0.0000	0.0000	0	<0.5	
17		1		0.0000	0.0000	0	<0.5	
18		1		0.0000	0.0000	0	<0.5	
19		1		0.0000	0.0000	0	<0.5	
20		1		0.0000	0.0000	0	<0.5	
21		1		0.0000	0.0000	0	<0.5	
22		1		0.0000	0.0000	0	<0.5	
23		1		0.0000	0.0000	0	<0.5	
24		1		0.0000	0.0000	0	<0.5	
25		1		0.0000	0.0000	0	<0.5	

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

		date	time
Analyzed By: BW	Date Analyzed	1/7/2020	
Reviewed By: [signature]	Date Reviewed	01/08/20	

TOC:665574
ROC:665575

Schedule: 01072020

Version: 3
Instrument: Fusion1
Last Saved by: Fusion1 (Fusion1)
Last Saved on: 2020/01/07 16:38 - Tuesday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Blank)	Blank	Reagent/Acid Blank		1	True	Ready
17	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
3	Sample	K1911998-003.02 50x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
4	Sample	K1912140-002.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
5	Sample	K1912140-003.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
6	Sample	K1912140-004.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
7	Sample	K1912160-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
8	Sample	K1912160-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
9	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
10	Sample	K2000034-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
11	Sample	K2000035-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
12	Sample	K2000035-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
13	Sample	T1901631-001.02 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
14	Sample	T1901631-001.02 ms doc	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
15	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
16	Sample	MB2	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
18	Sample	K2000090-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
					False	

01/08/20

Fusion Report - 01072020
Tuesday, January 07, 2020 04:29 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/01/08 09:19 - Wednesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	01072020	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v2) Fusion1 (Fusion1) (v3)		
Comment:			

Report Results

01/08/20

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/01/07 16:29

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	9.80	14.12	4.32	49.51	05:23
2	TC Clean	6.17	9.77	3.60	50.05	04:04
3	TC Clean	2.20	6.08	3.87	50.03	03:48
4	TC Clean	1.58	5.33	3.75	49.99	03:55

Sample Type: Clean — From Schedule Version 3

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2020/01/07 16:51

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.55	4.24	3.70	49.65	05:24
2	TC Clean	4.63	8.36	3.73	50.12	04:04
3	TC Clean	2.38	5.95	3.57	49.99	03:50
4	TC Clean	1.72	5.48	3.76	49.98	03:52

Sample Type: Clean

From Schedule Version 3

	Pos	Analysis Type	Sample ID	Start Time
◈	(clean)		Clean	2020/01/07 17:13

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.77	4.34	3.57	49.40	05:20
2	TC Clean	4.41	8.11	3.70	49.97	04:01
3	TC Clean	2.09	5.83	3.74	50.05	03:46
4	TC Clean	1.53	5.40	3.87	50.06	03:54

Sample Type: Blank (Creating v1339)

From Schedule Version 3

	Pos	Analysis Type	Sample ID	Start Time
◈	(blank)		Reagent/Acid Blank	2020/01/07 17:35

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.54	4.37	3.82	49.48	05:22
2	TC Clean	4.22	7.99	3.77	50.07	04:00
3	TC Clean	1.95	5.93	3.97	50.10	03:47
4	TC Clean	1.53	5.36	3.83	50.00	03:46
5	Reagent Blank	8.26	12.03	3.77	50.00	05:05
6	Acid Blank	1.53	5.40	3.87	49.43	05:25

Sample Type: Sample

From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	17	TOC	RB	0.2812 ppm	0.0000 ppm	0.0000%	2020/01/07 18:08

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2812	2.8122	11.51	15.43	3.92	50.11	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.7309 (IC) (v1339)	CAS_salt_010711 (v4)	CAS_salt_010711 (v31)

Sample Type: Check Standard --> CCV 25 ppm

From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.4755 ppm (PASS)	0.0000 ppm	0%	2020/01/07 18:23

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.4755	254.7546	171.28	175.15	3.88	50.11	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v31)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/01/07 18:38

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	10.02	13.85	3.83	50.13	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v31)	0 ppmC

Sample Type: Sample From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	1	TOC	MB1	0.0364 ppm	0.0000 ppm	0.0000%	2020/01/07 18:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0364	0.3639	9.96	13.62	3.66	50.11	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.7309 (IC) (v1339)	CAS_salt_010711 (v4)	CAS_salt_010711 (v31)

Sample Type: Check Standard --> LCS From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	26.5008 ppm (PASS)	0.0000 ppm	0%	2020/01/07 19:07

Pos	Base Analysis	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time

	Type									
C	TOC	25.0 ppm	1	26.5008	265.0080	177.76	181.38	3.62	50.12	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v31)	25 ppmC

Sample Type: Sample From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	2	TOC	ICS	0.3054 ppm	0.0000 ppm	0.0000%	2020/01/07 19:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3054	3.0542	11.66	15.42	3.75	50.09	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.7309 (IC) (v1339)	CAS_salt_010711 (v4)	CAS_salt_010711 (v31)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	3	TOC	K1911998-003.02 50x	5.7991 ppm	0.0310 ppm	0.5300%	2020/01/07 19:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.8210	58.2099	46.54	50.08	3.55	50.12	10:28
2	TOC	5.7772	57.7718	46.26	50.11	3.85	50.09	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.7309 (IC) (v1339)	CAS_salt_010711 (v4)	CAS_salt_010711 (v31)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	4	TOC	K1912140-002.01 100x	6.3994 ppm	0.1219 ppm	1.9000%	2020/01/07 20:05

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	6.3132	63.1317	49.65	53.44	3.79	50.11	10:27
2	TOC	6.4856	64.8556	50.74	54.40	3.66	50.10	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.7309 (IC) (v1339)	CAS_salt_010711 (v4)	CAS_salt_010711 (v31)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	5	TOC	K1912140-003.01 100x	7.3382 ppm	0.0069 ppm	0.0900%	2020/01/07 20:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	7.3431	73.4309	56.16	59.80	3.64	50.10	10:27
2	TOC	7.3333	73.3329	56.10	59.74	3.64	50.12	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.7309 (IC)	CAS_salt_010711	CAS_salt_010711

(v1339) (v4) (v31)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	6	TOC	K1912140-004.01 100x	7.1897 ppm	0.0385 ppm	0.5400%	2020/01/07 21:01

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	7.2169	72.1688	55.36	58.94	3.58	50.10	10:25
2	TOC	7.1625	71.6248	55.02	58.83	3.81	50.10	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.7309 (IC) (v1339)	CAS_salt_010711 (v4)	CAS_salt_010711 (v31)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	7	TOC	K1912160-001.01	2.6516 ppm	0.0800 ppm	3.0200%	2020/01/07 21:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.7081	27.0814	26.85	30.57	3.71	50.07	10:28
2	TOC	2.5951	25.9506	26.14	29.79	3.65	50.08	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.7309 (IC) (v1339)	CAS_salt_010711 (v4)	CAS_salt_010711 (v31)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	8	TOC	K1912160-001.01 ms	29.8729 ppm	0.0000 ppm	0.0000%	2020/01/07 21:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	29.8729	298.7288	198.61	202.22	3.61	50.07	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.7309 (IC) (v1339)	CAS_salt_010711 (v4)	CAS_salt_010711 (v31)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	9	TOC	RB	0.0171 ppm	0.0000 ppm	0.0000%	2020/01/07 22:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0171	0.1710	9.84	13.40	3.56	50.05	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.7309 (IC) (v1339)	CAS_salt_010711 (v4)	CAS_salt_010711 (v31)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.4505 ppm	0.0000 ppm	0%	2020/01/07 22:26

						(PASS)				

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.4505	254.5047	171.12	174.92	3.80	50.04	10:32

Completion State: Success - Criteria met.
Success Action: Do Nothing
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v31)
STD Conc - Pos B: 50 ppmC

Sample Type: Check Standard --> CCB — From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/01/07 22:40

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	8.95	12.76	3.81	50.03	10:35

Completion State: Success - Criteria met.
Success Action: Do Nothing
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v31)
STD Conc - Pos D: 0 ppmC

Sample Type: Sample — From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	10	TOC	K2000034-001.01	2.1253 ppm	0.0106 ppm	0.5000%	2020/01/07 22:55

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.1328	21.3276	23.22	27.08	3.86	50.02	10:27
2	TOC	2.1177	21.1774	23.12	26.74	3.62	50.03	10:30

Dilution: 1:10
Blank Contribution: (TC) 9.7309 (IC) (v1339)
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v31)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	11	TOC	K2000035-001.01	0.2149 ppm	0.0433 ppm	20.1400%	2020/01/07 23:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.2455	2.4548	11.28	15.01	3.73	50.01	10:27
2	TOC	0.1843	1.8427	10.90	14.59	3.69	50.03	10:25

Dilution: 1:10
Blank Contribution: (TC) 9.7309 (IC) (v1339)
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v31)

	Pos	Analysis	Sample ID	Result (ppmC)	Std. Dev.	RSD	Start Time

		Type			(ppmC)		
◆	12	TOC	K2000035-002.01	0.4270 ppm	0.0749 ppm	17.5500%	2020/01/07 23:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3741	3.7406	12.10	15.92	3.83	50.01	10:26
2	TOC	0.4800	4.8002	12.77	16.42	3.66	50.02	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.7309 (IC) (v1339)	CAS_salt_010711 (v4)	CAS_salt_010711 (v31)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	13	TOC	T1901631-001.02 doc	3.5419 ppm	0.0282 ppm	0.8000%	2020/01/08 00:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.5220	35.2202	32.00	35.79	3.79	50.01	10:27
2	TOC	3.5619	35.6187	32.25	35.98	3.72	49.99	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.7309 (IC) (v1339)	CAS_salt_010711 (v4)	CAS_salt_010711 (v31)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	14	TOC	T1901631-001.02 ms doc	31.4682 ppm	0.0000 ppm	0.0000%	2020/01/08 00:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	31.4682	314.6821	208.70	212.26	3.56	49.99	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.7309 (IC) (v1339)	CAS_salt_010711 (v4)	CAS_salt_010711 (v31)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	15	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/01/08 01:02

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	9.10	12.95	3.86	49.98	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.7309 (IC) (v1339)	CAS_salt_010711 (v4)	CAS_salt_010711 (v31)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	16	TOC	MB2	0.0000 ppm	0.0000 ppm	0.0000%	2020/01/08 01:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.93	11.77	3.84	50.00	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.7309 (IC)	CAS_salt_010711	CAS_salt_010711

(v1339) (v4) (v31)

Sample Type: Check Standard --> LCS From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	26.2833 ppm (PASS)	0.0000 ppm	0%	2020/01/08 01:31

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	26.2833	262.8333	176.38	180.12	3.73	50.05	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v31)	25 ppmC

Sample Type: Sample From Schedule Version 3

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	18	TOC	K2000090-001.01	0.9467 ppm	0.0728 ppm	7.6900%	2020/01/08 01:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9981	9.9815	16.04	19.80	3.76	49.97	10:25
2	TOC	0.8952	8.9518	15.39	19.17	3.78	49.97	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 9.7309 (IC) (v1339)	CAS_salt_010711 (v4)	CAS_salt_010711 (v31)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 3

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.3307 ppm (PASS)	0.0000 ppm	0%	2020/01/08 02:14

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.3307	253.3075	170.36	174.01	3.64	50.01	10:36

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v31)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 3

			Concentration			Min / Max				

	Pos	BAT	(ppm)	Dil	Sample ID	(% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/01/08 02:28

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	8.21	11.96	3.75	50.00	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v31)	0 ppmC

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1338	2.8760	1.7130	0.0000	0.0000	0.0000	2020/01/07 11:53	Fusion1 (Fusion1)
v1339	2.7543	1.5310	0.0000	0.0000	0.0000	2020/01/07 18:08	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version:	v31	Calibration curve formula:	TOC: y = 6.323x + 10.200
Ver Creation:	2020/01/07 14:30	r^2 value:	TOC: r^2 = 0.99991
Comment:			
Operator:	Fusion1 (Fusion1)		
Basic Analysis Type	TOC		

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	9.5850	0.0000		2020/01/07 13:02
0.500 ppm	12.6160	0.5000		2020/01/07 13:17
1.0 ppm	15.6440	1.0000		2020/01/07 13:31
5.0 ppm	43.7700	5.0000		2020/01/07 13:45
10 ppm	73.2770	10.0000		2020/01/07 14:00
25 ppm	169.4210	25.0000		2020/01/07 14:14
50 ppm	325.6260	50.0000		2020/01/07 14:28

Methods

Name: CAS_salt_010711 (TOC)

Version: v4 Operator: Fusion1 (Fusion1)
Ver Creation: 2019/02/21 17:57
Comment:

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml
UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml
BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date

1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/01/08 02:44

ALS Environmental

StarLIMS Run: 665574, 665575

Analysis: DOC/TOC

Method: SM 5310 C, 9060A, 415.1, 9060

CCV: 11-GEN-05-82C 50 ppm LCS: 11-GEN-05-79J 25.0 ppm

ICAL Date: 1/7/2020

ICAL ID: 11-GEN-05-76H

ICS ID: 11-GEN-05-78M

ICS TV: 25.0 ppm ICS % R < 1

Spike ID: 11-GEN-05-82C 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor

Sodium Persulfate: 11-GEN-05-83J

21 % H3PO4: 11-GEN-05-83I

Equipment ID: K-TOC-03

PIPETTE ID: 124276B, 129001F, N11314F, Marge

FILTER ID: 16967789

Analyzed By: BDP	Date Analyzed: 1/7/2020
Reviewed By: [signature]	Date Reviewed: 01/08/20

HS19121092 8260 Raw Data

ALS WO# HS19121092

MSVOA09 -Logbook

Batch: 38616 **Analyst:** Devak Giga

Date: 12-27-2019 **Reviewer:**

Method: 8260 **Laboratory:** Houston

Comments:

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	12-27-2019 11:03 am	1.00	0.00 mL	0.00 mL	U122701.D	Liquid	Y	NA
	Auto find/purged									
2	VSTD000.25	ICAL1	12-27-2019 11:27 am	1.00	5.00 mL	0.00 mL	U122702.D	Liquid	Y	NA
3	VSTD000.5	ICAL2	12-27-2019 11:51 am	1.00	5.00 mL	0.00 mL	U122703.D	Liquid	Y	NA
4	VSTD001	ICAL3	12-27-2019 12:40 pm	1.00	5.00 mL	0.00 mL	U122704.D	Liquid	Y	NA
5	VSTD002	ICAL4	12-27-2019 01:04 pm	1.00	5.00 mL	0.00 mL	U122705.D	Liquid	Y	NA
6	VSTD005	ICAL5	12-27-2019 01:29 pm	1.00	5.00 mL	0.00 mL	U122706.D	Liquid	Y	NA
7	VSTD020	ICAL6	12-27-2019 01:53 pm	1.00	5.00 mL	0.00 mL	U122707.D	Liquid	Y	NA
8	VSTD050	ICAL7	12-27-2019 02:17 pm	1.00	5.00 mL	0.00 mL	U122708.D	Liquid	Y	NA
9	VSTD100	ICAL8	12-27-2019 02:41 pm	1.00	5.00 mL	0.00 mL	U122709.D	Liquid	Y	NA
10	VSTD150	ICAL9	12-27-2019 03:06 pm	1.00	5.00 mL	0.00 mL	U122710.D	Liquid	Y	NA
11	VSTD200	ICAL	12-27-2019 03:30 pm	1.00	5.00 mL	0.00 mL	U122711.D	Liquid	Y	NA
12	BLANK	SAMP	12-27-2019 03:54 pm	1.00	5.00 mL	0.00 mL	U122712.D	Liquid	Y	NA
13	VSTD050	CCV	12-27-2019 04:19 pm	1.00	5.00 mL	0.00 mL	U122713.D	Liquid	Y	NA
	10 uL cal/50 mL DI									
14	ICV	ICV	12-27-2019 04:43 pm	1.00	5.00 mL	0.00 mL	U122714.D	Liquid	Y	NA
	10 uL cal/50 mL DI									
15	CCB	SAMP	12-27-2019 05:07 pm	1.00	5.00 mL	0.00 mL	U122715.D	Liquid	Y	NA
	CCB									
16	VLCSW-191227	LCS	12-27-2019 05:32 pm	1.00	5.00 mL	0.00 mL	U122716.D	Liquid	Y	NA
	4 uL LCS std/50 mL DI									
17	BLANK	SAMP	12-27-2019 05:56 pm	1.00	5.00 mL	0.00 mL	U122717.D	Liquid	Y	NA
18	VBLKW-191227	MBLK	12-27-2019 06:20 pm	1.00	5.00 mL	0.00 mL	U122718.D	Liquid	Y	NA
19	HS19120897-06	SAMP	12-27-2019 06:45 pm	1.00	5.00 mL	0.00 mL	U122719.D	Liquid	Y	NA
20	HS19120897-04	SAMP	12-27-2019 07:09 pm	1.00	5.00 mL	0.00 mL	U122720.D	Liquid	Y	NA
21	HS19120897-05	SAMP	12-27-2019 07:33 pm	1.00	5.00 mL	0.00 mL	U122721.D	Liquid	Y	NA
22	HS19120897-05MS	MS	12-27-2019 07:58 pm	1.00	5.00 mL	0.00 mL	U122722.D	Liquid	Y	NA
	3.2 uL cal std/40 mL sample									
23	HS19120897-05MSD	MSD	12-27-2019 08:22 pm	1.00	5.00 mL	0.00 mL	U122723.D	Liquid	Y	NA
	3.2 uL cal std/40 mL sample									
24	HS19120997-01	SAMP	12-27-2019 08:46 pm	1.00	5.00 mL	0.00 mL	U122724.D	Liquid	Y	NA
25	HS19121030-01	SAMP	12-27-2019 09:10 pm	1.00	5.00 mL	0.00 mL	U122725.D	Liquid	Y	NA
26	HS19121030-02	SAMP	12-27-2019 09:35 pm	1.00	5.00 mL	0.00 mL	U122726.D	Liquid	Y	NA
27	HS19121030-03	SAMP	12-27-2019 09:59 pm	1.00	5.00 mL	0.00 mL	U122727.D	Liquid	Y	NA
28	HS19121030-04	SAMP	12-27-2019 10:23 pm	1.00	5.00 mL	0.00 mL	U122728.D	Liquid	Y	NA
29	BFB	TUNE	12-27-2019 10:48 pm	1.00	0.00 mL	0.00 mL	V122701.D	Liquid	Y	NA
	Auto find/purged									
30	VSTD050	CCV	12-27-2019 11:12 pm	1.00	5.00 mL	0.00 mL	V122702a.D	Liquid	Y	NA
	10 uL cal/50 mL DI									
31	VSTD050	CCV	12-27-2019 11:36 pm	1.00	5.00 mL	0.00 mL	V122703.D	Liquid	Y	NA
	10 uL cal/50 mL DI									
32	VLCSW-191227	LCS	12-28-2019 12:01 am	1.00	5.00 mL	0.00 mL	V122704.D	Liquid	Y	NA
	4 uL LCS std/50 mL DI									
33	BLANK	SAMP	12-28-2019 12:25 am	1.00	5.00 mL	0.00 mL	V122705.D	Liquid	Y	NA
34	VBLKW-191227	MBLK	12-28-2019 12:49 am	1.00	5.00 mL	0.00 mL	V122706.D	Liquid	Y	NA
35	MBLK-148855	MBLK	12-28-2019 01:14 am	20.00	5.00 mL	0.00 mL	V122707.D	Liquid	Y	NA

MSVOA09 -Logbook

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
36	HS19120960-01	SAMP	12-28-2019 01:38 am	20.00	5.00 mL	0.00 mL	V122708.D	Liquid	Y	NA
37	HS19120950-01	SAMP	12-28-2019 02:02 am	50.00	5.00 mL	0.00 mL	V122709.D	Liquid	Y	NA
38	HS19120960-01MS	MS	12-28-2019 02:27 am	20.00	5.00 mL	0.00 mL	V122710.D	Liquid	Y	NA
	3.2 uL cal std/40 mL sample									
39	HS19120921-01	SAMP	12-28-2019 02:51 am	20.00	5.00 mL	0.00 mL	V122711.D	Liquid	Y	NA
40	HS19120960-02	SAMP	12-28-2019 03:15 am	20.00	5.00 mL	0.00 mL	V122712.D	Liquid	Y	NA
41	HS19120960-03	SAMP	12-28-2019 03:40 am	20.00	5.00 mL	0.00 mL	V122713.D	Liquid	Y	NA
42	HS19120960-04	SAMP	12-28-2019 04:04 am	20.00	5.00 mL	0.00 mL	V122714.D	Liquid	Y	NA
43	MBLK-149069	MBLK	12-28-2019 04:28 am	20.00	5.00 mL	0.00 mL	V122715.D	Liquid	Y	NA
44	HS19121101-01	SAMP	12-28-2019 04:53 am	20.00	5.00 mL	0.00 mL	V122716.D	Liquid	Y	NA
45	HS19121102-01	SAMP	12-28-2019 05:17 am	20.00	5.00 mL	0.00 mL	V122717.D	Liquid	Y	NA
46	HS19121105-01	SAMP	12-28-2019 05:41 am	20.00	5.00 mL	0.00 mL	V122718.D	Liquid	Y	NA
47	HS19121114-01	SAMP	12-28-2019 06:06 am	20.00	5.00 mL	0.00 mL	V122719.D	Liquid	Y	NA
48	HS19121184-01	SAMP	12-28-2019 06:30 am	20.00	5.00 mL	0.00 mL	V122720.D	Liquid	Y	NA
49	HS19121242-01	SAMP	12-28-2019 06:54 am	20.00	5.00 mL	0.00 mL	V122721.D	Liquid	Y	NA
50	MBLK-148935	MBLK	12-28-2019 07:19 am	20.00	5.00 mL	0.00 mL	V122722.D	Liquid	Y	NA
51	HS19121004-01	SAMP	12-28-2019 07:43 am	20.00	5.00 mL	0.00 mL	V122723.D	Liquid	Y	NA
52	HS19121004-02	SAMP	12-28-2019 08:07 am	20.00	5.00 mL	0.00 mL	V122724.D	Liquid	Y	NA
53	HS19121004-03	SAMP	12-28-2019 08:32 am	20.00	5.00 mL	0.00 mL	V122725.D	Liquid	Y	NA
54	HS19121004-04	SAMP	12-28-2019 08:56 am	20.00	5.00 mL	0.00 mL	V122726.D	Liquid	Y	NA
55	HS19121004-05	SAMP	12-28-2019 09:20 am	20.00	5.00 mL	0.00 mL	V122727.D	Liquid	Y	NA
56	HS19121089-01	SAMP	12-28-2019 09:45 am	20.00	5.00 mL	0.00 mL	V122728.D	Liquid	Y	NA

Chemical	Value
SURR SPK ID	31108-03-04
IS ID	31108-03-04
ICV STD ID	30603-93-01
LCS/MS ID	30603-93-01
CAL STD ID	31108-03-01/02
BFB ID	31108-04-03
pH Paper	634-64-11

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121092

Matrix Spike - Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
cis-1,3-Dichloropropene	50.00	49.77	100	80-120
trans-1,3-Dichloroprope	50.00	49.00	98	80-120
1,3-Dichlorobenzene	50.00	50.16	100	80-120
2,2-Dichloropropane	50.00	59.72	119	80-120
1,1-Dichloropropene	50.00	50.73	101	80-120
Dibromomethane	50.00	51.25	102	80-120
1,2-Dibromoethane	50.00	52.44	105	80-120
trans-1,2-Dichloroethen	50.00	51.36	103	80-120
1,1,1,2-Tetrachloroetha	50.00	54.25	108	80-120
1,1,1-Trichloroethane	50.00	53.03	106	80-120
1,1,2,2-Tetrachloroetha	50.00	49.64	99	80-120
1,1,2-Trichloroethane	50.00	49.94	100	80-120
1,1-Dichloroethane	50.00	50.72	101	80-120
1,1-Dichloroethene	50.00	49.21	98	80-120
Trichloroethene	50.00	49.65	99	80-120
1,2,3-Trichlorobenzene	50.00	50.68	101	80-120
Trichlorofluoromethane	50.00	50.67	101	80-120
1,2,4-Trichlorobenzene	50.00	51.45	103	80-120
1,2,4-Trimethylbenzene	50.00	51.79	104	80-120
Tetrachloroethene	50.00	50.49	101	80-120
1,2-Dichlorobenzene	50.00	50.12	100	80-120
1,2-Dichloroethane	50.00	46.89	94	80-120
1,2-Dichloropropane	50.00	51.33	103	80-120
1,3,5-Trimethylbenzene	50.00	51.04	102	80-120
1,3-Dichloropropane	50.00	49.99	100	80-120
1,4-Dichlorobenzene	50.00	51.00	102	80-120
Toluene	50.00	50.74	101	80-120
2-Butanone	100.00	99.40	99	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

_____

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121092

Matrix Spike - Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
2-Chlorotoluene	50.00	49.01	98	80-120
2-Hexanone	100.00	105.66	106	80-120
4-Chlorotoluene	50.00	49.88	100	80-120
tert-Butylbenzene	50.00	50.44	101	80-120
4-Methyl-2-Pentanone	100.00	102.81	103	80-120
Acetone	100.00	99.47	99	80-120
Benzene	50.00	49.77	100	80-120
Bromobenzene	50.00	50.25	100	80-120
Bromochloromethane	50.00	52.02	104	80-120
Bromodichloromethane	50.00	53.88	108	80-120
Bromoform	50.00	46.87	94	80-120
Bromomethane	50.00	54.85	110	80-120
Carbon Disulfide	100.00	107.46	107	80-120
Carbon Tetrachloride	50.00	52.81	106	80-120
Chlorobenzene	50.00	50.05	100	80-120
Chloroethane	50.00	50.23	100	80-120
Chloroform	50.00	49.43	99	80-120
Chloromethane	50.00	51.00	102	80-120
cis-1,2-Dichloroethene	50.00	49.51	99	80-120
Dibromochloromethane	50.00	49.02	98	80-120
Dichlorodifluoromethane	50.00	51.14	102	80-120
Ethylbenzene	50.00	51.49	103	80-120
Hexachlorobutadiene	50.00	57.16	114	80-120
Isopropylbenzene	50.00	51.52	103	80-120
m,p-Xylenes	100.00	103.37	103	80-120
Methylene Chloride	50.00	50.82	102	80-120
n-Butylbenzene	50.00	54.18	108	80-120
n-Propylbenzene	50.00	50.21	100	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

_____

FORM III VOA

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121092

Matrix Spike - Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
Naphthalene	50.00	50.49	101	80-120
o-Xylene	50.00	51.35	103	80-120
sec-Butylbenzene	50.00	51.11	102	80-120
Styrene	50.00	52.93	106	80-120
Vinyl Chloride	50.00	48.60	97	80-120
1,2,3-Trichloropropane	50.00	53.40	107	80-120
p-Isopropyltoluene	50.00	51.98	104	80-120
1,2-Dibromo-3-Chloropro	50.00	47.85	96	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

_____

FORM III VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121092

Lab File ID: U122701 BFB Injection Date: 12/27/19

Instrument ID: VOA9 BFB Injection Time: 1103

GC Column: DB624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.0
75	30.0 - 60.0% of mass 95	49.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	1.4 (1.6)1
174	Greater than 50.0% of mass 95	86.4
175	5.0 - 9.0% of mass 174	7.7 (8.9)1
176	95.0 - 101.0% of mass 174	82.4 (95.3)1
177	5.0 - 9.0% of mass 176	5.9 (7.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD000.25	VSTD000.25	U122702	12/27/19	1127
02	VSTD000.5	VSTD000.5	U122703	12/27/19	1151
03	VSTD001	VSTD001	U122704	12/27/19	1240
04	VSTD002	VSTD002	U122705	12/27/19	1304
05	VSTD005	VSTD005	U122706	12/27/19	1329
06	VSTD020	VSTD020	U122707	12/27/19	1353
07	VSTD050	VSTD050	U122708	12/27/19	1417
08	VSTD100	VSTD100	U122709	12/27/19	1441
09	VSTD150	VSTD150	U122710	12/27/19	1506
10	VSTD200	VSTD200	U122711	12/27/19	1530
11	ICV	ICV	U122714	12/27/19	1643
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121092

Instrument ID: VOA9 Calibration Date(s): 12/27/19 12/27/19

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1127 1530

LAB FILE ID: RF0.25: U122702 RF0.5: U122703 RF1: U122704
RF2: U122705 RF5: U122706 RF20: U122707

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF5	RF20
cis-1,3-Dichloropropene		2992	7354	14163	40456	190610
trans-1,3-Dichloropropene		2357	6016	11913	34390	163685
1,3-Dichlorobenzene		1.627	1.866	1.666	1.658	1.706
2,2-Dichloropropane		0.446	0.558	0.500	0.515	0.608
1,1-Dichloropropene		0.420	0.525	0.501	0.470	0.515
Dibromomethane		0.210	0.250	0.257	0.261	0.260
1,2-Dibromoethane		0.330	0.432	0.405	0.441	0.456
trans-1,2-Dichloroethene		0.467	0.618	0.550	0.534	0.568
1,1,1,2-Tetrachloroethane		0.276	0.358	0.346	0.362	0.421
1,1,1-Trichloroethane		0.582	0.715	0.723	0.703	0.796
1,1,2,2-Tetrachloroethane		1.022	1.286	1.134	1.218	1.210
1,1,2-Trichloroethane		0.327	0.382	0.349	0.364	0.373
1,1-Dichloroethane		0.862	1.099	0.992	1.014	1.026
1,1-Dichloroethene		0.452	0.563	0.506	0.441	0.499
Trichloroethene		0.396	0.467	0.432	0.408	0.426
1,2,3-Trichlorobenzene		2187	5978	11689	32507	156712
Trichlorofluoromethane		0.704	0.877	0.811	0.681	0.840
1,2,4-Trichlorobenzene		2466	6121	11601	34224	162984
1,2,4-Trimethylbenzene		2.447	3.032	2.879	2.796	3.022
Tetrachloroethene		6839	12217	17923	37820	149398
1,2-Dichlorobenzene		1.583	1.801	1.672	1.705	1.722
1,2-Dichloroethane		0.549	0.591	0.557	0.563	0.531
1,2-Dichloropropane		0.329	0.417	0.401	0.429	0.421
1,3,5-Trimethylbenzene		2.195	2.836	2.854	2.705	2.834
1,3-Dichloropropane		0.652	0.806	0.741	0.795	0.798
1,4-Dichlorobenzene		1.592	1.824	1.674	1.710	1.755
Toluene		1.604	1.987	1.842	1.878	1.905
2-Butanone		0.318	0.367	0.336	0.345	0.353
2-Chlorotoluene		2.212	2.672	2.495	2.372	2.431
2-Hexanone		0.274	0.348	0.357	0.375	0.416
4-Chlorotoluene		2.374	3.036	2.802	2.758	2.786
tert-Butylbenzene		1.994	2.470	2.348	2.225	2.382
4-Methyl-2-Pentanone		0.437	0.517	0.499	0.551	0.578
Acetone		5522	8256	13406	29742	106794
Benzene		1.477	1.745	1.653	1.598	1.646
Bromobenzene		0.820	1.144	0.996	1.011	1.031
Bromochloromethane		0.268	0.354	0.340	0.324	0.334
Bromodichloromethane		0.334	0.422	0.412	0.438	0.471
Bromoform		1277	3110	6308	18227	88820
Bromomethane		2940	5991	11498	26020	87044
Carbon Disulfide		1.235	1.493	1.390	1.365	1.512
Carbon Tetrachloride		0.349	0.404	0.382	0.357	0.434
Chlorobenzene		1.089	1.335	1.181	1.216	1.203
Chloroethane		4435	6010	9879	24600	98970

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1912109

Instrument ID: VOA9 Calibration Date(s): 12/27/19 12/27/19

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1127 1530

LAB FILE ID: RF0.25: U122702 RF0.5: U122703 RF1: U122704
RF2: U122705 RF5: U122706 RF20: U122707

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF5	RF20
Chloroform		0.952	1.125	0.996	1.027	1.030
Chloromethane		7115	13636	21875	51549	183989
cis-1,2-Dichloroethene		0.638	0.728	0.654	0.628	0.671
Dibromochloromethane		1967	4837	9507	27929	122049
Dichlorodifluoromethane		0.463	0.607	0.580	0.494	0.586
Ethylbenzene		0.504	0.686	0.598	0.628	0.634
Hexachlorobutadiene		1637	3185	5509	13277	65198
Isopropylbenzene		1.505	1.830	1.754	1.702	1.847
m,p-Xylenes		0.613	0.799	0.736	0.739	0.783
Methylene Chloride		5718	10371	17003	38987	139529
n-Butylbenzene		1.907	2.159	2.145	2.055	2.312
n-Propylbenzene		3.424	4.249	3.872	3.535	3.869
Naphthalene		4873	11174	23123	81862	445256
o-Xylene		0.639	0.784	0.729	0.752	0.775
sec-Butylbenzene		2.646	3.214	3.116	2.784	3.157
Styrene		1.076	1.292	1.222	1.319	1.400
Vinyl Chloride		0.735	0.815	0.730	0.673	0.743
1,2,3-Trichloropropane		0.878	1.141	1.090	1.192	1.222
p-Isopropyltoluene		2.479	2.982	2.630	2.581	2.910
1,2-Dibromo-3-Chloropropane		488	1072	2320	6421	31460
1,2-Dichloroethane-d4		0.489	0.500	0.493	0.488	0.479
Dibromofluoromethane		0.418	0.428	0.416	0.428	0.433
Toluene-d8		1.300	1.301	1.292	1.306	1.285
4-Bromofluorobenzene		0.461	0.468	0.470	0.465	0.474

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1912109

Instrument ID: VOA9 Calibration Date(s): 12/27/19 12/27/19

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1127 1530

LAB FILE ID: RF50: U122708 RF100: U122709 RF150: U122710
RF200: U122711

COMPOUND	RF50	RF100	RF150	RF200
cis-1,3-Dichloropropene	507893	1068215	1624540	2190361
trans-1,3-Dichloropropene	455644	958698	1470268	1987271
1,3-Dichlorobenzene	1.548	1.640	1.646	1.620
2,2-Dichloropropane	0.570	0.662	0.648	0.637
1,1-Dichloropropene	0.447	0.516	0.508	0.494
Dibromomethane	0.259	0.260	0.261	0.255
1,2-Dibromoethane	0.439	0.446	0.442	0.433
trans-1,2-Dichloroethene	0.517	0.562	0.548	0.536
1,1,1,2-Tetrachloroethane	0.398	0.424	0.431	0.424
1,1,1-Trichloroethane	0.715	0.834	0.816	0.807
1,1,2,2-Tetrachloroethane	1.164	1.145	1.132	1.120
1,1,2-Trichloroethane	0.354	0.351	0.347	0.342
1,1-Dichloroethane	0.978	1.037	1.005	0.981
1,1-Dichloroethene	0.437	0.498	0.484	0.471
Trichloroethene	0.390	0.424	0.424	0.417
1,2,3-Trichlorobenzene	373073	850358	1278036	1727964
Trichlorofluoromethane	0.708	0.853	0.824	0.803
1,2,4-Trichlorobenzene	388332	904377	1368829	1848777
1,2,4-Trimethylbenzene	2.544	2.795	2.759	2.711
Tetrachloroethene	316543	725785	1090489	1456251
1,2-Dichlorobenzene	1.572	1.623	1.614	1.592
1,2-Dichloroethane	0.512	0.513	0.500	0.484
1,2-Dichloropropane	0.406	0.414	0.410	0.402
1,3,5-Trimethylbenzene	2.378	2.643	2.630	2.588
1,3-Dichloropropane	0.749	0.748	0.740	0.722
1,4-Dichlorobenzene	1.583	1.691	1.691	1.665
Toluene	1.719	1.807	1.789	1.728
2-Butanone	0.349	0.356	0.335	0.328
2-Chlorotoluene	2.114	2.259	2.243	2.211
2-Hexanone	0.408	0.404	0.397	0.397
4-Chlorotoluene	2.448	2.606	2.598	2.554
tert-Butylbenzene	1.903	2.233	2.226	2.187
4-Methyl-2-Pentanone	0.568	0.564	0.553	0.546
Acetone	263902	504619	756970	1005031
Benzene	1.554	1.612	1.586	1.537
Bromobenzene	0.955	0.983	0.994	0.984
Bromochloromethane	0.318	0.303	0.286	0.276
Bromodichloromethane	0.478	0.499	0.502	0.494
Bromoform	251576	538200	839814	1145836
Bromomethane	199087	445962	659261	887677
Carbon Disulfide	1.400	1.576	1.536	1.489
Carbon Tetrachloride	0.392	0.478	0.480	0.473
Chlorobenzene	1.120	1.172	1.162	1.132
Chloroethane	234842	482879	714112	939942

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1912109

Instrument ID: VOA9 Calibration Date(s): 12/27/19 12/27/19

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1127 1530

LAB FILE ID: RF50: U122708 RF100: U122709 RF150: U122710
RF200: U122711

COMPOUND	RF50	RF100	RF150	RF200
Chloroform	0.976	1.016	0.981	0.955
Chloromethane	423285	820443	1192994	1581098
cis-1,2-Dichloroethene	0.639	0.667	0.648	0.637
Dibromochloromethane	332096	685386	1052068	1437540
Dichlorodifluoromethane	0.496	0.591	0.572	0.562
Ethylbenzene	0.563	0.623	0.623	0.608
Hexachlorobutadiene	127976	333011	509971	685421
Isopropylbenzene	1.544	1.780	1.750	1.703
m,p-Xylenes	0.691	0.752	0.746	0.721
Methylene Chloride	341072	672930	1005600	1341737
n-Butylbenzene	1.842	2.214	2.202	2.170
n-Propylbenzene	3.189	3.665	3.679	3.535
Naphthalene	1152319	2504281	3728115	
o-Xylene	0.697	0.744	0.741	0.724
sec-Butylbenzene	2.504	2.990	2.940	2.900
Styrene	1.285	1.352	1.337	1.300
Vinyl Chloride	0.650	0.732	0.709	0.688
1,2,3-Trichloropropane	1.255	1.281	1.293	1.273
p-Isopropyltoluene	2.306	2.716	2.682	2.624
1,2-Dibromo-3-Chloropropane	84219	182822	277295	382445
1,2-Dichloroethane-d4	0.475	0.481	0.465	0.460
Dibromofluoromethane	0.439	0.437	0.429	0.426
Toluene-d8	1.290	1.268	1.257	1.265
4-Bromofluorobenzene	0.465	0.477	0.475	0.472

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1912109

Instrument ID: VOA9 Calibration Date(s): 12/27/19 12/27/19

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1127 1530

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2	MAX %RSD OR R^2
cis-1,3-Dichloropropene	LINR	2.204e-002	1.54740915		0.9997241	0.9900000
trans-1,3-Dichloropropene	LINR	2.92e-002	1.70598555		0.9996801	0.9900000
1,3-Dichlorobenzene	AVRG		1.66413611		5.225	20.000
2,2-Dichloropropane	AVRG		0.57137301		12.992	20.000
1,1-Dichloropropene	AVRG		0.48837426		7.246	20.000
Dibromomethane	AVRG		0.25249408		6.528	20.000
1,2-Dibromoethane	AVRG		0.42483251		8.965	20.000
trans-1,2-Dichloroethene	AVRG		0.54430466		7.498	20.000
1,1,1,2-Tetrachloroethane	AVRG		0.38257108		13.447	20.000
1,1,1-Trichloroethane	AVRG		0.74347982		10.628	20.000
1,1,2,2-Tetrachloroethane	AVRG		1.15907730		6.404	20.000
1,1,2-Trichloroethane	AVRG		0.35448827		4.658	20.000
1,1-Dichloroethane	AVRG		0.99955625		6.344	20.000
1,1-Dichloroethene	AVRG		0.48351169		8.113	20.000
Trichloroethene	AVRG		0.42056899		5.360	20.000
1,2,3-Trichlorobenzene	LINR	2.166e-002	0.99471536		0.9994610	0.9900000
Trichlorofluoromethane	AVRG		0.78901435		9.144	20.000
1,2,4-Trichlorobenzene	LINR	2.805e-002	0.92882023		0.9992234	0.9900000
1,2,4-Trimethylbenzene	AVRG		2.77604711		7.020	20.000
Tetrachloroethene	LINR	-3.56e-003	2.17028644		0.9989176	0.9900000
1,2-Dichlorobenzene	AVRG		1.65388636		4.649	20.000
1,2-Dichloroethane	AVRG		0.53356696		6.450	20.000
1,2-Dichloropropane	AVRG		0.40332260		7.240	20.000
1,3,5-Trimethylbenzene	AVRG		2.62904239		8.446	20.000
1,3-Dichloropropane	AVRG		0.75013175		6.334	20.000
1,4-Dichlorobenzene	AVRG		1.68725254		4.426	20.000
Toluene	AVRG		1.80666281		6.306	20.000
2-Butanone	AVRG		0.34287715		4.444	20.000
2-Chlorotoluene	AVRG		2.33427789		7.470	20.000
2-Hexanone	AVRG		0.37506864		11.821	20.000
4-Chlorotoluene	AVRG		2.66261036		7.648	20.000
tert-Butylbenzene	AVRG		2.21871900		8.091	20.000
4-Methyl-2-Pentanone	AVRG		0.53481912		8.294	20.000
Acetone	LINR	-6.27e-002	4.59646966		0.9994092	0.9900000
Benzene	AVRG		1.60112130		4.806	20.000
Bromobenzene	AVRG		0.99089558		8.434	20.000
Bromochloromethane	AVRG		0.31141628		9.575	20.000
Bromodichloromethane	AVRG		0.45010543		12.183	20.000
Bromoform	LINR	3.828e-002	2.76173758		0.9995111	0.9900000
Bromomethane	LINR	-3.36e-003	2.60090873		0.9987983	0.9900000
Carbon Disulfide	AVRG		1.44415978		7.335	20.000
Carbon Tetrachloride	AVRG		0.41673183		12.395	20.000
Chlorobenzene	AVRG		1.17900583		6.033	20.000
Chloroethane	LINR	-1.93e-002	2.43644940		0.9987847	0.9900000

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1912109

Instrument ID: VOA9 Calibration Date(s): 12/27/19 12/27/19

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1127 1530

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2	MAX %RSD OR R^2
Chloroform	AVRG		1.00658955		5.243	20.000
Chloromethane	LINR	-4.56e-002	1.45793912		0.9984914	0.9900000
cis-1,2-Dichloroethene	AVRG		0.65665343		4.590	20.000
Dibromochloromethane	LINR	2.114e-002	2.20732634		0.9998818	0.9900000
Dichlorodifluoromethane	AVRG		0.55015462		9.410	20.000
Ethylbenzene	AVRG		0.60754842		8.352	20.000
Hexachlorobutadiene	2ORDR	1.629e-002	2.68457091	-0.1250835	0.9977517	0.9900000
Isopropylbenzene	AVRG		1.71272569		6.882	20.000
m,p-Xylenes	AVRG		0.73098216		7.454	20.000
Methylene Chloride	LINR	-2.36e-002	1.72188368		0.9994911	0.9900000
n-Butylbenzene	AVRG		2.11178319		7.173	20.000
n-Propylbenzene	AVRG		3.66863082		8.312	20.000
Naphthalene	2ORDR	1.895e-002	0.34459058	-6.17e-004	0.9996411	0.9900000
o-Xylene	AVRG		0.73180124		5.967	20.000
sec-Butylbenzene	AVRG		2.91683875		8.164	20.000
Styrene	AVRG		1.28696452		7.229	20.000
Vinyl Chloride	AVRG		0.71939702		6.625	20.000
1,2,3-Trichloropropane	AVRG		1.18060729		11.204	20.000
p-Isopropyltoluene	AVRG		2.65675474		7.727	20.000
1,2-Dibromo-3-Chloropropane	LINR	3.083e-002	4.52363576		0.9995679	0.9900000
1,2-Dichloroethane-d4	AVRG		0.48109961		2.681	20.000
Dibromofluoromethane	AVRG		0.42815845		1.797	20.000
Toluene-d8	AVRG		1.28489152		1.372	20.000
4-Bromofluorobenzene	AVRG		0.46980935		1.120	20.000

FORM VI VOA

Data File: \\nahstws005\Target\chem\voa9.i\U191227.b\U122701.D Page 1

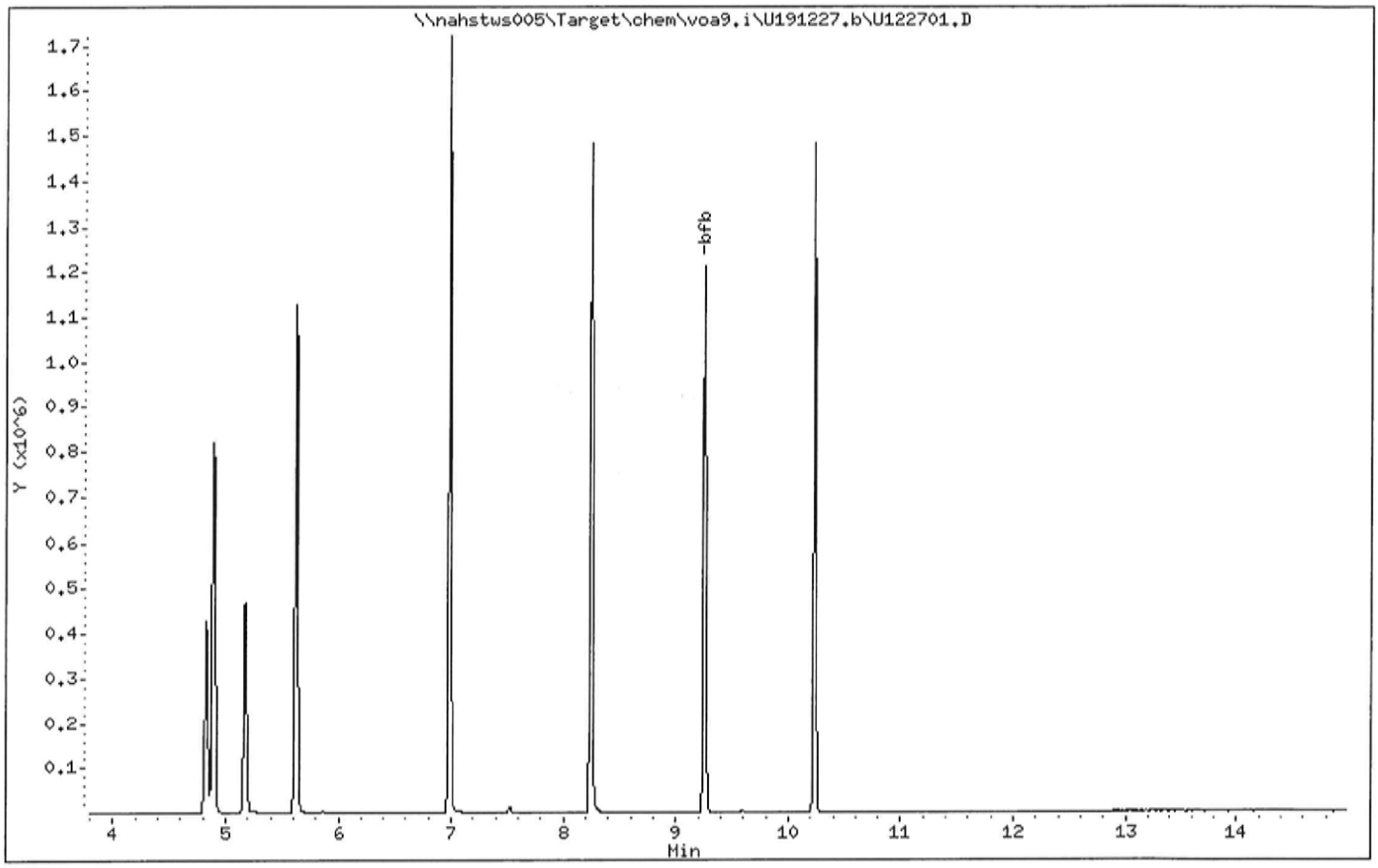
Date : 27-DEC-2019 11:03

Client ID: BFB Instrument: VOA9.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25



Data File: \\nahstws005\Target\chem\voa9.i\U191227.b\U122701.D

Date : 27-DEC-2019 11:03

Client ID: BFB

Instrument: VOA9.i

Sample Info: BFB;BFB;3;;BFB

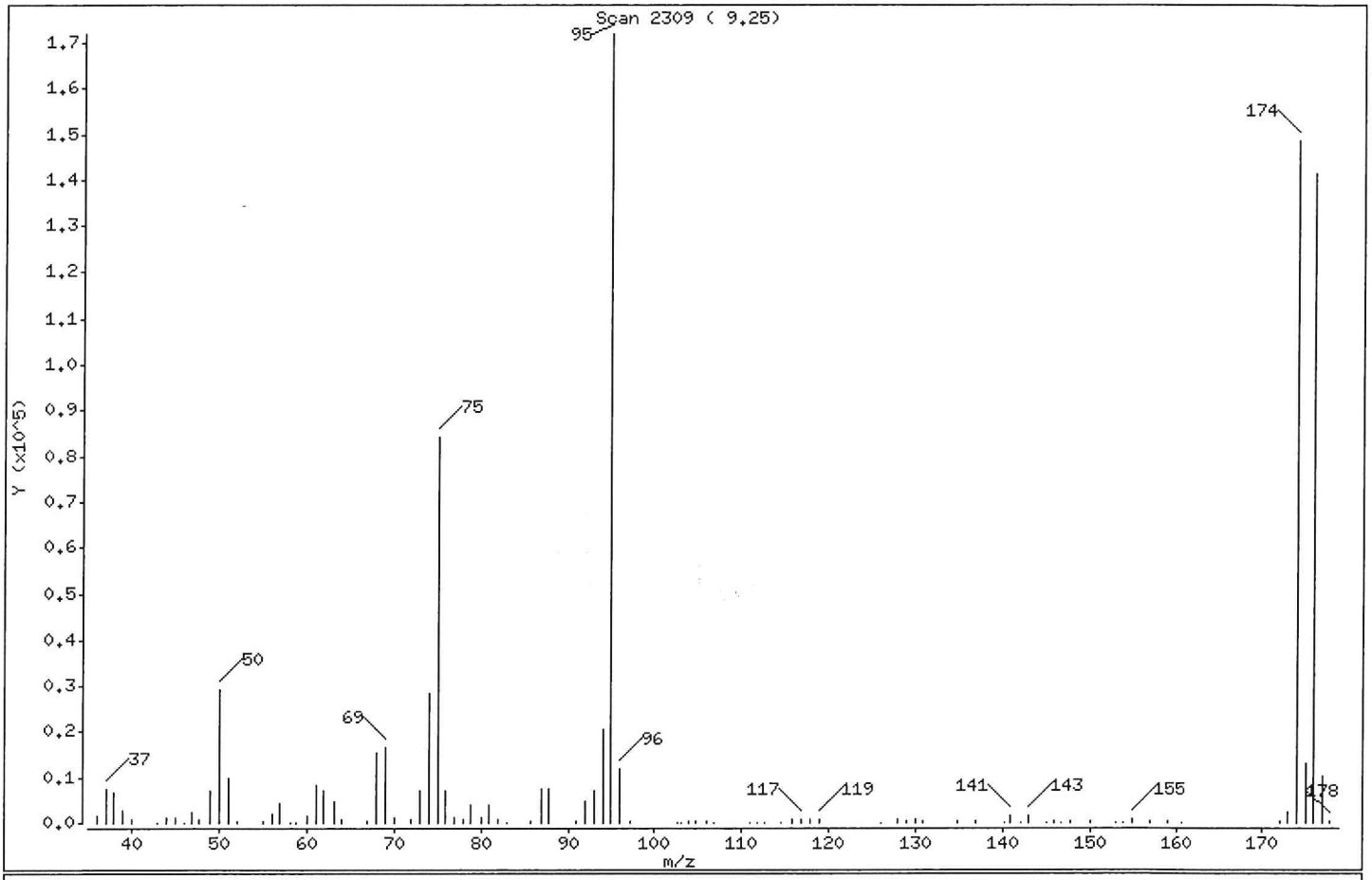
Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	17.00
75	30.00 - 60.00% of mass 95	49.04
96	5.00 - 9.00% of mass 95	6.84
173	Less than 2.00% of mass 174	1.41 (1.63)
174	Greater than 50.00% of mass 95	86.42
175	5.00 - 9.00% of mass 174	7.66 (8.86)
176	95.00 - 101.00% of mass 174	82.36 (95.31)
177	5.00 - 9.00% of mass 176	5.86 (7.12)

Data File: \\nahstws005\Target\chem\voa9.i\U191227.b\U122701.D

Date : 27-DEC-2019 11:03

Client ID: BFB Instrument: VOA9.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25

Data File: U122701.D
Spectrum: Scan 2309 (9.25)
Location of Maximum: 95.05
Number of points: 94

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1526	64.00	811	95.00	171968	140.10	174
37.00	7399	67.00	484	96.00	11765	140.90	1457
38.00	6807	68.00	15505	97.10	439	142.00	185
39.00	2611	69.00	16416	102.70	59	142.90	1548
40.00	662	70.00	1219	103.00	86	145.00	119
43.00	101	72.00	873	103.80	555	145.80	220
44.00	1258	73.00	7240	104.70	271	146.60	74
45.00	1195	74.00	28544	105.90	586	147.80	489
46.00	136	75.00	84328	106.80	96	150.00	201
47.00	2214	76.00	7210	110.90	159	153.00	119
47.80	756	77.00	1007	111.80	109	153.70	75
49.00	6988	77.90	766	112.70	103	154.90	611
50.00	29240	78.90	4047	114.60	125	156.80	314
51.00	9838	80.00	1015	115.80	684	158.90	266
52.10	474	80.90	4021	116.90	969	160.70	114
55.00	390	81.90	916	117.80	596	172.10	289
56.00	2145	83.00	55	118.90	776	173.00	2425
57.00	4350	85.80	209	125.90	104	173.90	148608
58.10	119	87.00	7455	127.90	633	175.00	13166
58.80	54	87.90	7434	128.90	351	175.90	141632
60.00	1522	90.90	501	129.90	625	176.90	10085
61.00	8304	92.00	4656	130.90	234	177.80	220
62.00	7244	93.00	7000	134.80	199		
63.10	4924	94.00	20744	136.90	277		

Data File: \\nahstws005\Target\chem\voa9.i\U191227.b\U122702.D Page 1
Report Date: 17-Jan-2020 15:02

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U191227.b\U122702.D
Lab Smp Id: VSTD000.25 Client Smp ID: VSTD000.25
Inj Date : 27-DEC-2019 11:27
Operator : PC Inst ID: VOA9.i
Smp Info : VSTD000.25;VSTD000.25;1;1;
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U191227.b\8260C.m
Meth Date : 17-Jan-2020 15:01 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 11:27 Cal File: U122702.D
Als bottle: 2 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.890	4.890	(1.000)	558300	50.0000	
* 36 1,4-Difluorobenzene	114	5.621	5.621	(1.000)	819734	50.0000	
* 47 Chlorobenzene-d5	117	8.245	8.249	(1.000)	742976	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	363529	50.0000	
$ 30 Dibromofluoromethane	113	4.826	4.826	(0.987)	233696	50.0000	48.88
$ 35 1,2-Dichloroethane-d4	65	5.171	5.171	(1.057)	275664	50.0000	51.31
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	964811	50.0000	50.53
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	344272	50.0000	49.31
60 1,1,1,2-Tetrachloroethane	131	8.346	8.346	(1.012)	1118	0.25000	0.19(a)
31 1,1,1-Trichloroethane	97	4.823	4.823	(0.986)	1950	0.25000	0.23(a)
68 1,1,2,2-Tetrachloroethane	83	9.389	9.389	(0.918)	1886	0.25000	0.22(aM)
53 1,1,2-Trichloroethane	83	7.417	7.417	(0.900)	1354	0.25000	0.25(a)
22 1,1-Dichloroethane	63	3.601	3.597	(0.736)	2815	0.25000	0.25(Ta)
11 1,1-Dichloroethene	96	2.394	2.393	(0.490)	1908	0.25000	0.35(a)
32 1,1-Dichloropropene	75	5.003	4.999	(0.890)	2225	0.25000	0.27(a)
93 1,2,3-Trichlorobenzene	180	12.331	12.331	(1.205)	1116	0.25000	1.23(aM)
71 1,2,3-Trichloropropane	75	9.422	9.426	(0.921)	2100	0.25000	0.24(a)
90 1,2,4-Trichlorobenzene	180	11.923	11.919	(1.165)	987	0.25000	1.52(aM)
79 1,2,4-Trimethylbenzene	105	9.936	9.940	(0.971)	5080	0.25000	0.25(a)
89 1,2-Dibromo-3-Chloropropane	155	11.229	11.229	(1.097)	133	0.25000	1.62(aM)
57 1,2-Dibromoethane	107	7.848	7.848	(0.952)	1477	0.25000	0.23(a)
88 1,2-Dichlorobenzene	146	10.566	10.569	(1.033)	3194	0.25000	0.26(a)
33 1,2-Dichloroethane	62	5.250	5.250	(0.934)	3050	0.25000	0.34(a)

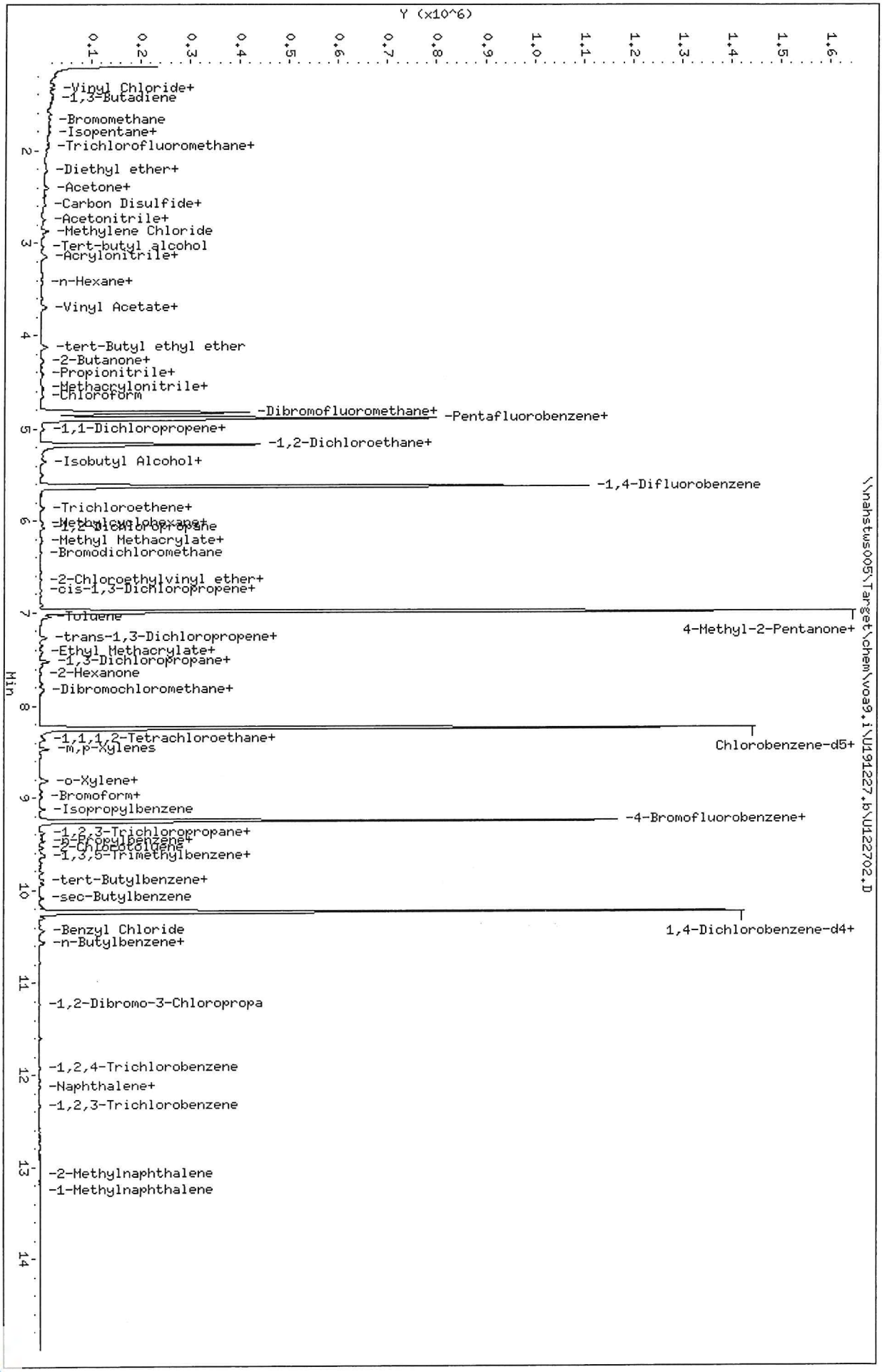
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42	1,2-Dichloropropane	63	6.075	6.078	(1.081)	1564	0.25000	0.23 (a)
75	1,3,5-Trimethylbenzene	105	9.621	9.625	(0.940)	4817	0.25000	0.25 (a)
83	1,3-Dichlorobenzene	146	10.176	10.176	(0.995)	3091	0.25000	0.25 (a)
54	1,3-Dichloropropane	76	7.559	7.563	(0.917)	2706	0.25000	0.24 (a)
84	1,4-Dichlorobenzene	146	10.251	10.254	(1.002)	3636	0.25000	0.29 (a)
26	2,2-Dichloropropane	77	4.275	4.268	(0.874)	1651	0.25000	0.25 (aM)
24	2-Butanone	43	4.347	4.335	(0.889)	2117	0.50000	0.55 (a)
76	2-Chlorotoluene	91	9.542	9.546	(0.933)	4577	0.25000	0.26 (a)
52	2-Hexanone	43	7.653	7.649	(0.928)	2776	0.50000	0.49 (a)
77	4-Chlorotoluene	91	9.636	9.636	(0.942)	5048	0.25000	0.26 (a)
82	p-Isopropyltoluene	119	10.210	10.210	(0.998)	4593	0.25000	0.23 (a)
45	4-Methyl-2-Pentanone	43	6.914	6.911	(0.839)	3677	0.50000	0.46 (a)
10	Acetone	43	2.480	2.480	(0.507)	3788	0.50000	(a)
37	Benzene	78	5.213	5.213	(0.927)	7192	0.25000	0.27 (a)
74	Bromobenzene	156	9.381	9.381	(0.917)	1792	0.25000	0.24 (a)
29	Bromochloromethane	128	4.545	4.553	(0.929)	903	0.25000	0.25 (a)
39	Bromodichloromethane	83	6.348	6.345	(1.129)	1522	0.25000	0.20 (aM)
66	Bromoform	173	8.980	8.980	(1.089)	679	0.25000	2.04 (Ta)
6	Bromomethane	94	1.670	1.655	(0.342)	2099	0.25000	0.32 (a)
19	Carbon Disulfide	76	2.589	2.585	(0.529)	8503	0.50000	0.52 (a)
34	Carbon Tetrachloride	117	4.984	4.991	(0.887)	1738	0.25000	0.25 (a)
59	Chlorobenzene	112	8.272	8.271	(1.003)	4867	0.25000	0.27 (a)
7	Chloroethane	64	1.753	1.737	(0.358)	2172	0.25000	(aM)
28	Chloroform	83	4.654	4.654	(0.952)	3719	0.25000	0.33 (a)
3	Chloromethane	50	1.340	1.336	(0.274)	6121	0.25000	(aM)
27	cis-1,2-Dichloroethene	96	4.287	4.283	(0.877)	1954	0.25000	0.26 (a)
46	cis-1,3-Dichloropropene	75	6.753	6.757	(1.201)	1520	0.25000	1.24 (a)
55	Dibromochloromethane	129	7.754	7.754	(0.940)	1048	0.25000	1.21 (a)
44	Dibromomethane	93	6.187	6.187	(1.101)	1086	0.25000	0.26 (a)
2	Dichlorodifluoromethane	85	1.205	1.201	(0.247)	1527	0.25000	0.24 (aM)
61	Ethylbenzene	106	8.369	8.369	(1.015)	2216	0.25000	0.24 (a)
91	Hexachlorobutadiene	225	12.058	12.061	(1.178)	679	0.25000	1.06 (aM)
67	Isopropylbenzene	105	9.122	9.122	(1.106)	6520	0.25000	0.25 (a)
62	m,p-Xylenes	106	8.470	8.470	(1.027)	5192	0.50000	0.47 (a)
17	Methylene Chloride	84	2.866	2.866	(0.586)	4620	0.25000	(a)
87	n-Butylbenzene	91	10.554	10.554	(1.032)	3386	0.25000	0.22 (a)
73	n-Propylbenzene	91	9.471	9.475	(0.926)	6891	0.25000	0.25 (a)
92	Naphthalene	128	12.129	12.129	(1.185)	2351	0.25000	1.05 (a)
63	o-Xylene	106	8.808	8.807	(1.068)	2837	0.25000	0.26 (a)
81	sec-Butylbenzene	105	10.082	10.086	(0.985)	5087	0.25000	0.23 (a)
64	Styrene	104	8.823	8.822	(1.070)	4530	0.25000	0.23 (a)
78	tert-Butylbenzene	119	9.895	9.898	(0.967)	4546	0.25000	0.28 (a)
56	Tetrachloroethene	166	7.522	7.522	(0.912)	5093	0.25000	0.56 (aM)
50	Toluene	91	7.042	7.046	(0.854)	7274	0.25000	0.27 (a)
20	trans-1,2-Dichloroethene	96	3.140	3.136	(0.642)	1753	0.25000	0.28 (a)
51	trans-1,3-Dichloropropene	75	7.259	7.259	(1.291)	1202	0.25000	1.58 (a)
38	Trichloroethene	130	5.861	5.857	(1.043)	2136	0.25000	0.30 (a)
8	Trichlorofluoromethane	101	1.951	1.947	(0.399)	1989	0.25000	0.22 (a)
5	Vinyl Chloride	62	1.419	1.415	(0.290)	2726	0.25000	0.33 (a)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

QC Flag Legend

M - Compound response manually integrated.



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Purge Volume: 5.0
Column phase: DB624

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Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa9.i\U191227.b\U122703.D Page 1
Report Date: 17-Jan-2020 15:02

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U191227.b\U122703.D
Lab Smp Id: VSTD000.5 Client Smp ID: VSTD000.5
Inj Date : 27-DEC-2019 11:51
Operator : PC Inst ID: VOA9.i
Smp Info : VSTD000.5;VSTD000.5;1;2;
Misc Info : 180315V9;WATER;0;1;
Comment :
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Meth Date : 17-Jan-2020 15:01 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 11:51 Cal File: U122703A.D
Als bottle: 3 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.898	4.890	(1.000)	567722	50.0000	
*	36 1,4-Difluorobenzene	114	5.625	5.621	(1.000)	843316	50.0000	
*	47 Chlorobenzene-d5	117	8.245	8.249	(1.000)	755059	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	375130	50.0000	
$	30 Dibromofluoromethane	113	4.830	4.826	(0.986)	237229	50.0000	48.79
$	35 1,2-Dichloroethane-d4	65	5.175	5.171	(1.057)	277429	50.0000	50.78
$	48 Toluene-d8	98	6.986	6.986	(0.847)	981937	50.0000	50.60
$	69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	348295	50.0000	49.09
	60 1,1,1,2-Tetrachloroethane	131	8.346	8.346	(1.012)	2087	0.50000	0.36(a)
	31 1,1,1-Trichloroethane	97	4.830	4.823	(0.986)	3302	0.50000	0.39(a)
	68 1,1,2,2-Tetrachloroethane	83	9.389	9.389	(0.918)	3835	0.50000	0.44(aM)
	53 1,1,2-Trichloroethane	83	7.413	7.417	(0.899)	2467	0.50000	0.46(a)
	22 1,1-Dichloroethane	63	3.608	3.597	(0.737)	4892	0.50000	0.43(a)
	11 1,1-Dichloroethene	96	2.409	2.393	(0.492)	2565	0.50000	0.46(a)
	32 1,1-Dichloropropene	75	5.003	4.999	(0.889)	3542	0.50000	0.43(a)
	93 1,2,3-Trichlorobenzene	180	12.331	12.331	(1.205)	2187	0.50000	1.37(a)
	71 1,2,3-Trichloropropane	75	9.422	9.426	(0.921)	3294	0.50000	0.37(a)
	90 1,2,4-Trichlorobenzene	180	11.923	11.919	(1.165)	2466	0.50000	1.70(a)
	79 1,2,4-Trimethylbenzene	105	9.940	9.940	(0.971)	9178	0.50000	0.44(a)
	89 1,2-Dibromo-3-Chloropropane	155	11.229	11.229	(1.097)	488	0.50000	1.83(aM)
	7 1,2-Dibromoethane	107	7.848	7.848	(0.952)	2494	0.50000	0.38(a)
	1 1,2-Dichlorobenzene	146	10.566	10.569	(1.033)	5937	0.50000	0.47(a)
	1,2-Dichloroethane	62	5.254	5.250	(0.934)	4633	0.50000	0.51(a)

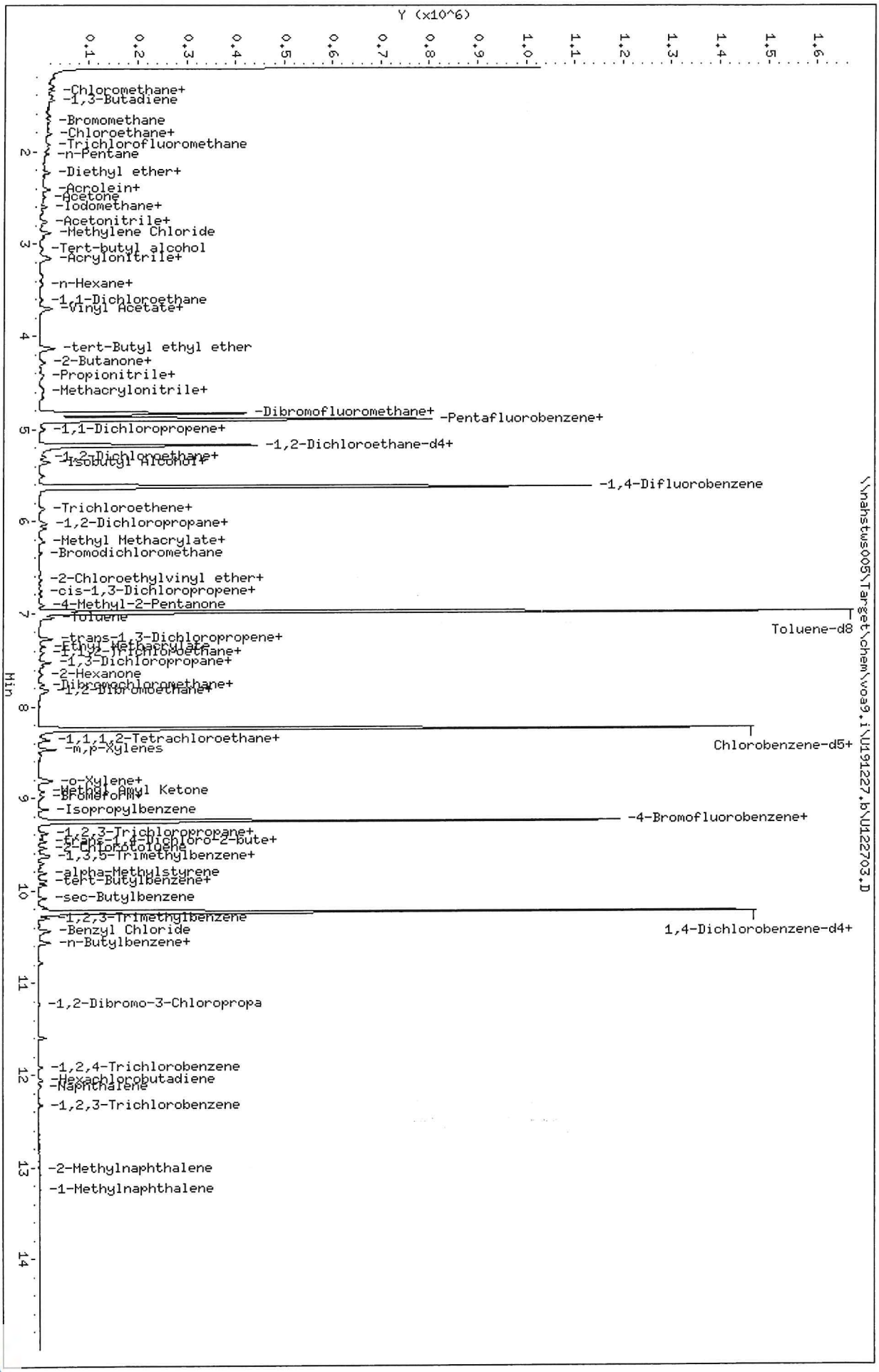
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42	1,2-Dichloropropane	63	6.082	6.078	(1.081)	2778	0.50000	0.40(a)
75	1,3,5-Trimethylbenzene	105	9.621	9.625	(0.940)	8233	0.50000	0.41(a)
83	1,3-Dichlorobenzene	146	10.176	10.176	(0.995)	6102	0.50000	0.48(a)
54	1,3-Dichloropropane	76	7.559	7.563	(0.917)	4922	0.50000	0.43(a)
84	1,4-Dichlorobenzene	146	10.255	10.254	(1.002)	5971	0.50000	0.47(a)
26	2,2-Dichloropropane	77	4.283	4.268	(0.874)	2530	0.50000	0.38(a)
24	2-Butanone	43	4.347	4.335	(0.887)	3608	1.00000	0.92(a)
76	2-Chlorotoluene	91	9.542	9.546	(0.933)	8298	0.50000	0.47(a)
52	2-Hexanone	43	7.649	7.649	(0.928)	4142	1.00000	0.73(a)
77	4-Chlorotoluene	91	9.640	9.636	(0.942)	8906	0.50000	0.44(a)
82	p-Isopropyltoluene	119	10.206	10.210	(0.997)	9298	0.50000	0.46(a)
45	4-Methyl-2-Pentanone	43	6.914	6.911	(0.839)	6595	1.00000	0.81(a)
10	Acetone	43	2.487	2.480	(0.508)	5522	1.00000	(a)
37	Benzene	78	5.220	5.213	(0.928)	12455	0.50000	0.46(a)
74	Bromobenzene	156	9.377	9.381	(0.916)	3078	0.50000	0.41(a)
29	Bromochloromethane	128	4.553	4.553	(0.930)	1524	0.50000	0.43(a)
39	Bromodichloromethane	83	6.348	6.345	(1.129)	2820	0.50000	0.37(aM)
66	Bromoform	173	8.980	8.980	(1.089)	1277	0.50000	2.14(Ta)
6	Bromomethane	94	1.678	1.655	(0.343)	2940	0.50000	0.50(a)
19	Carbon Disulfide	76	2.596	2.585	(0.530)	14019	1.00000	0.85(a)
34	Carbon Tetrachloride	117	4.995	4.991	(0.888)	2944	0.50000	0.41(a)
59	Chlorobenzene	112	8.272	8.271	(1.003)	8224	0.50000	0.46(a)
7	Chloroethane	64	1.760	1.737	(0.359)	4435	0.50000	(a)
28	Chloroform	83	4.662	4.654	(0.952)	5405	0.50000	0.47(a)
3	Chloromethane	50	1.348	1.336	(0.275)	7115	0.50000	(a)
27	cis-1,2-Dichloroethene	96	4.290	4.283	(0.876)	3621	0.50000	0.48(a)
46	cis-1,3-Dichloropropene	75	6.757	6.757	(1.201)	2992	0.50000	1.37(a)
55	Dibromochloromethane	129	7.754	7.754	(0.940)	1967	0.50000	1.34(a)
44	Dibromomethane	93	6.191	6.187	(1.101)	1767	0.50000	0.41(a)
2	Dichlorodifluoromethane	85	1.213	1.201	(0.248)	2631	0.50000	0.42(a)
61	Ethylbenzene	106	8.365	8.369	(1.015)	3803	0.50000	0.41(a)
91	Hexachlorobutadiene	225	12.058	12.061	(1.178)	1637	0.50000	1.40(a)
67	Isopropylbenzene	105	9.122	9.122	(1.106)	11362	0.50000	0.43(a)
62	m,p-Xylenes	106	8.470	8.470	(1.027)	9253	1.00000	0.83(a)
17	Methylene Chloride	84	2.877	2.866	(0.587)	5718	0.50000	(a)
87	n-Butylbenzene	91	10.551	10.554	(1.031)	7154	0.50000	0.45(a)
73	n-Propylbenzene	91	9.471	9.475	(0.926)	12844	0.50000	0.46(a)
92	Naphthalene	128	12.129	12.129	(1.185)	4873	0.50000	1.17(a)
63	o-Xylene	106	8.808	8.807	(1.068)	4823	0.50000	0.43(a)
81	sec-Butylbenzene	105	10.082	10.086	(0.985)	9927	0.50000	0.45(a)
64	Styrene	104	8.823	8.822	(1.070)	8128	0.50000	0.41(a)
78	tert-Butylbenzene	119	9.898	9.898	(0.967)	7481	0.50000	0.44(a)
56	Tetrachloroethene	166	7.522	7.522	(0.912)	6839	0.50000	0.80(aM)
50	Toluene	91	7.046	7.046	(0.855)	12112	0.50000	0.44(a)
20	trans-1,2-Dichloroethene	96	3.147	3.136	(0.643)	2650	0.50000	0.42(a)
51	trans-1,3-Dichloropropene	75	7.259	7.259	(1.291)	2357	0.50000	1.69(a)
38	Trichloroethene	130	5.861	5.857	(1.042)	3340	0.50000	0.47(a)
8	Trichlorofluoromethane	101	1.962	1.947	(0.401)	3999	0.50000	0.44(a)
5	Vinyl Chloride	62	1.426	1.415	(0.291)	4175	0.50000	0.51(a)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

QC Flag Legend

M - Compound response manually integrated.



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Sample Info: VSTD000.5;VSTD000.5;1;2;
Purge Volume: 5.0
Column phase: DB624

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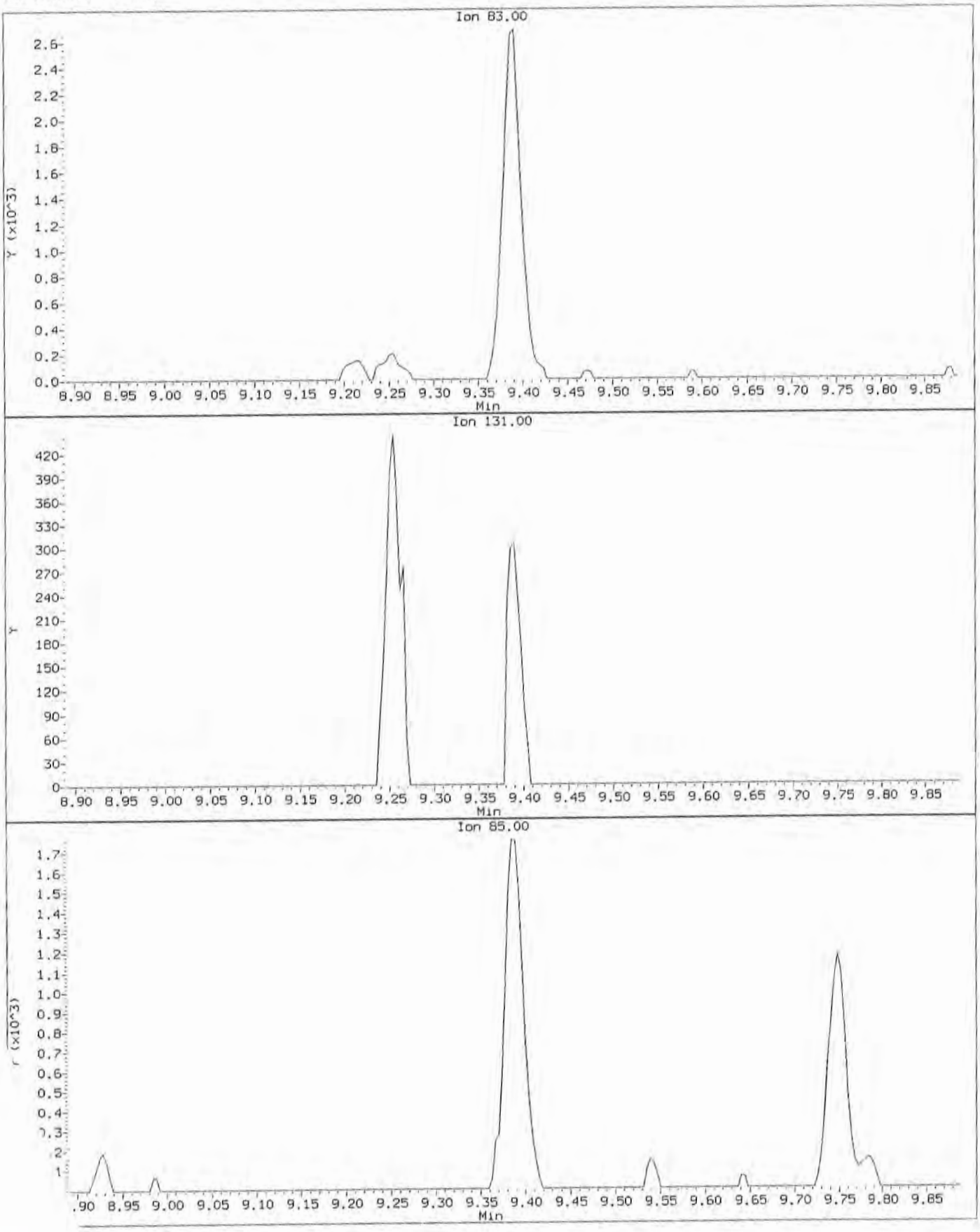
Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa9.i\U191227.b\Before\U122703.D
Injection Date: 27-DEC-2019 11:51
Instrument: VOA9.i
Client Sample ID: VSTD000.5

Compound: 1,1,2,2-Tetrachloroethane
CAS Number: 79-34-5



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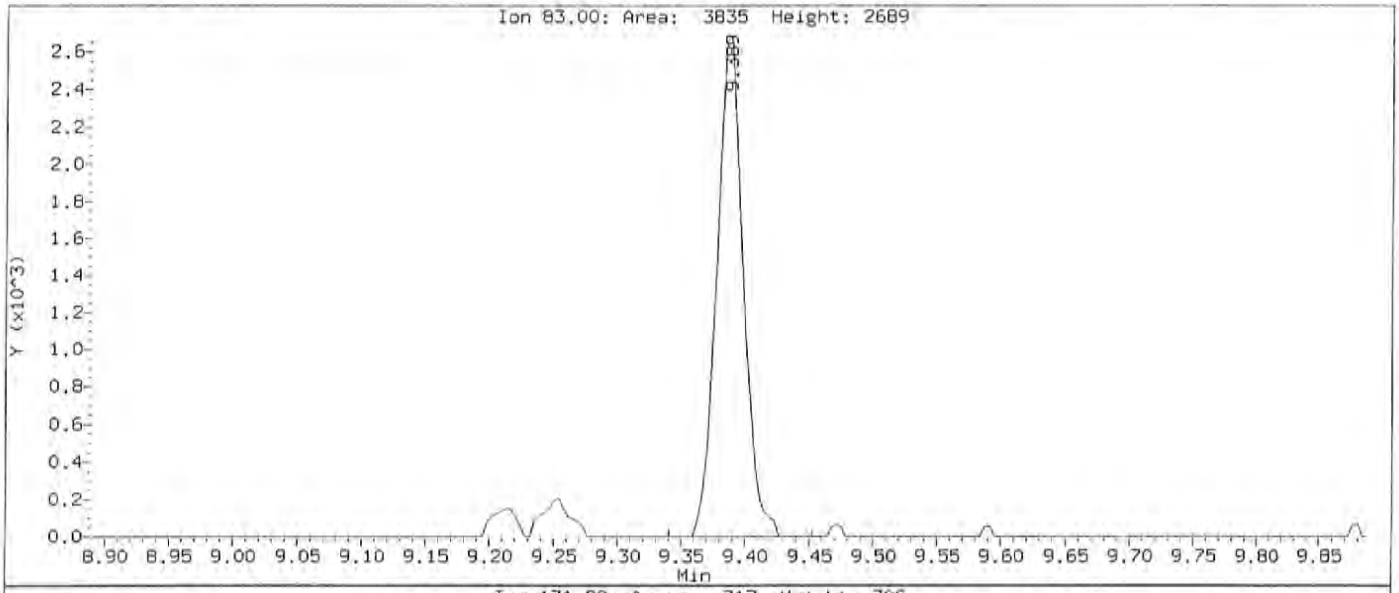
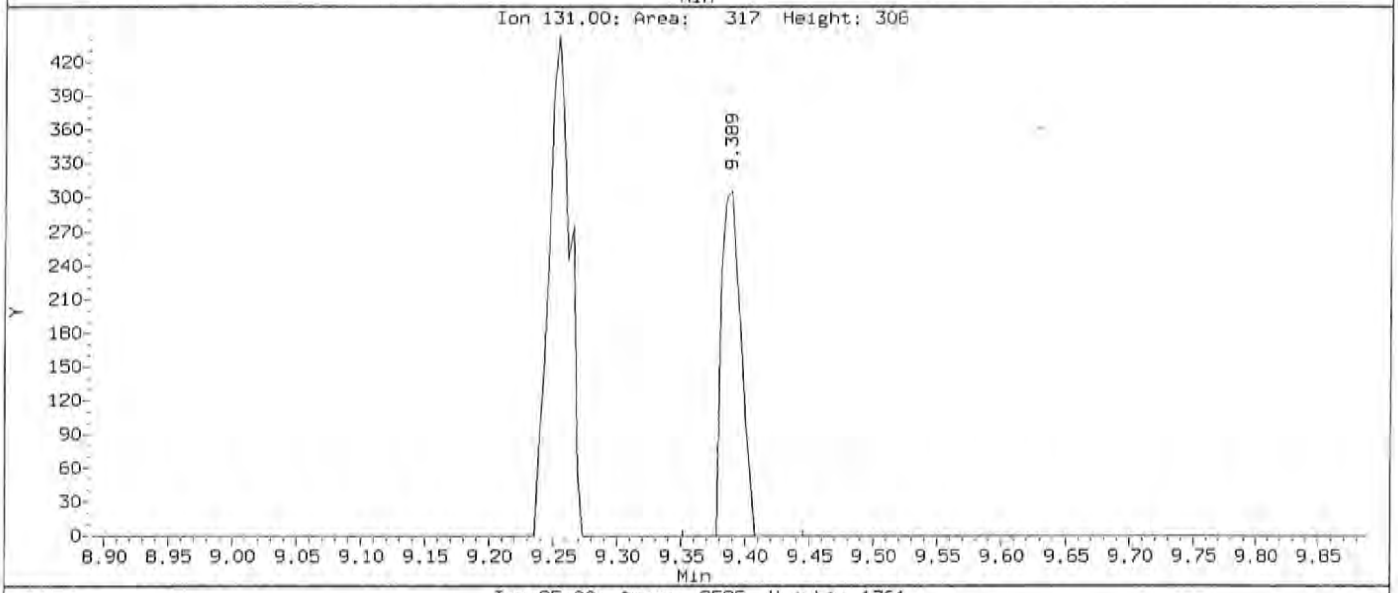
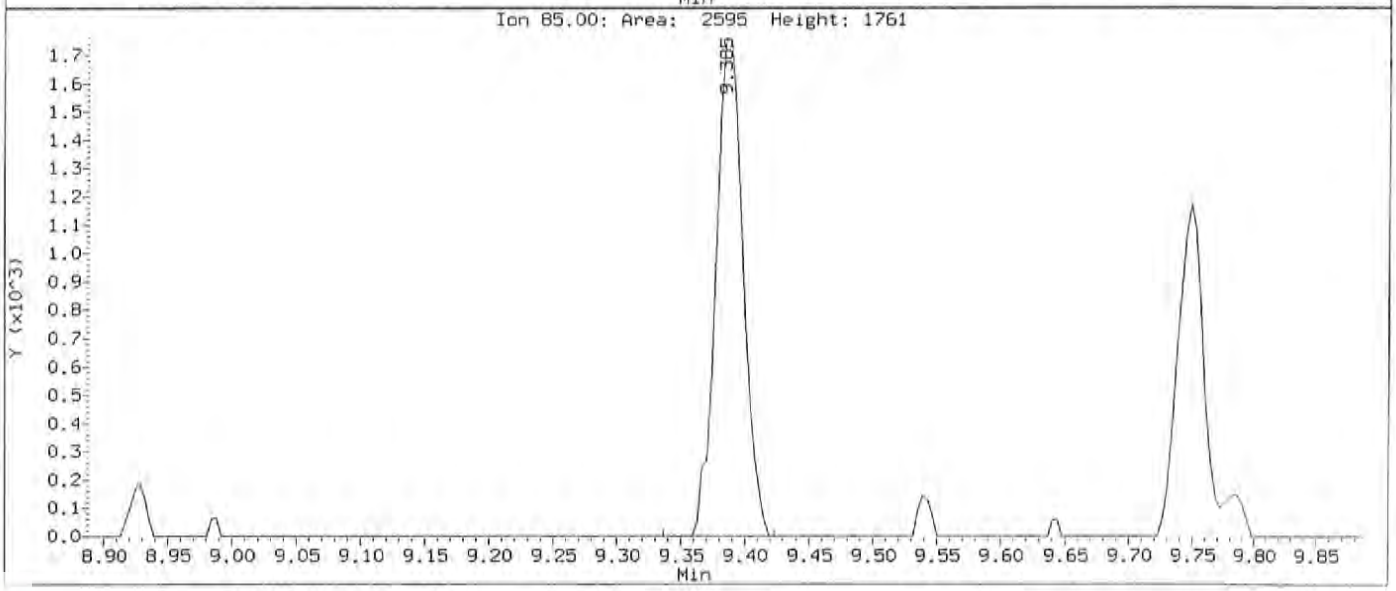
Injection Date: 27-DEC-2019 11:51
Instrument: VOA9.i
Client Sample ID: VSTD000.5

Compound: 1,1,2,2-Tetrachloroethane
CAS Number: 79-34-5







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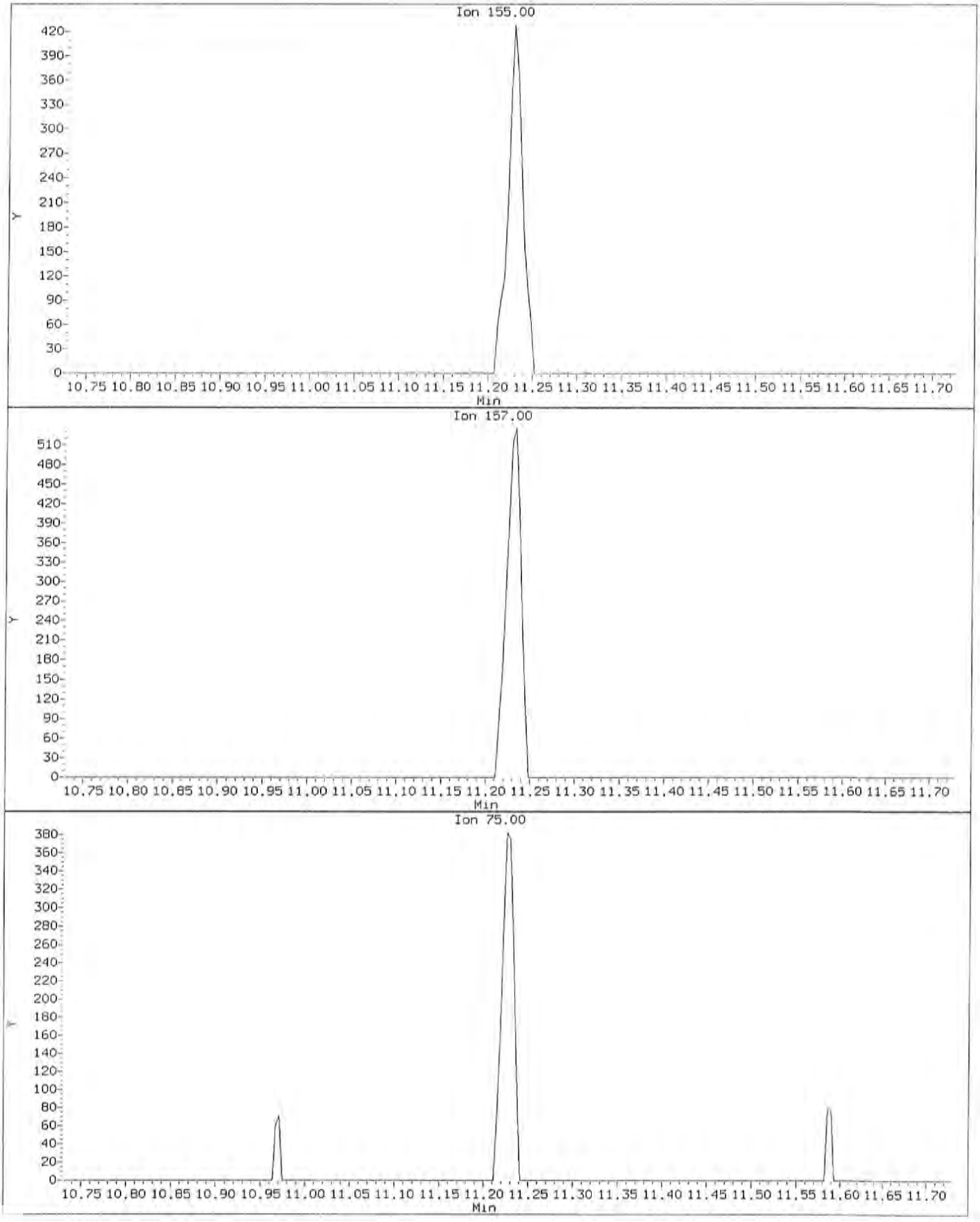
Instrument: VOA9.i
Client Sample ID: VSTD000.5

Compound: 1,2-Dibromo-3-Chloropropane
CAS Number: 96-12-8



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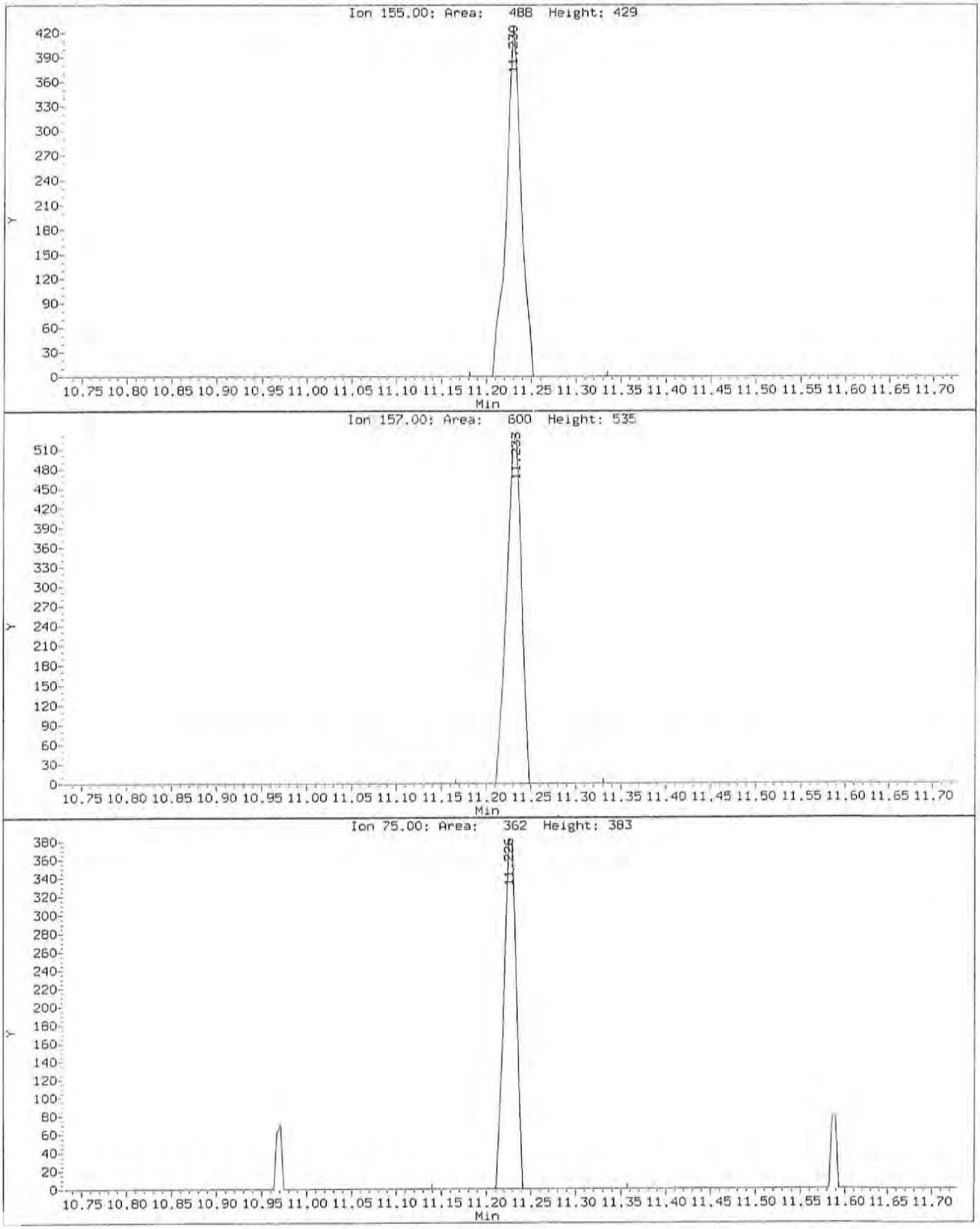
Client Sample ID: VSTD000.5

Compound: 1,2-Dibromo-3-Chloropropane
CAS Number: 96-12-8



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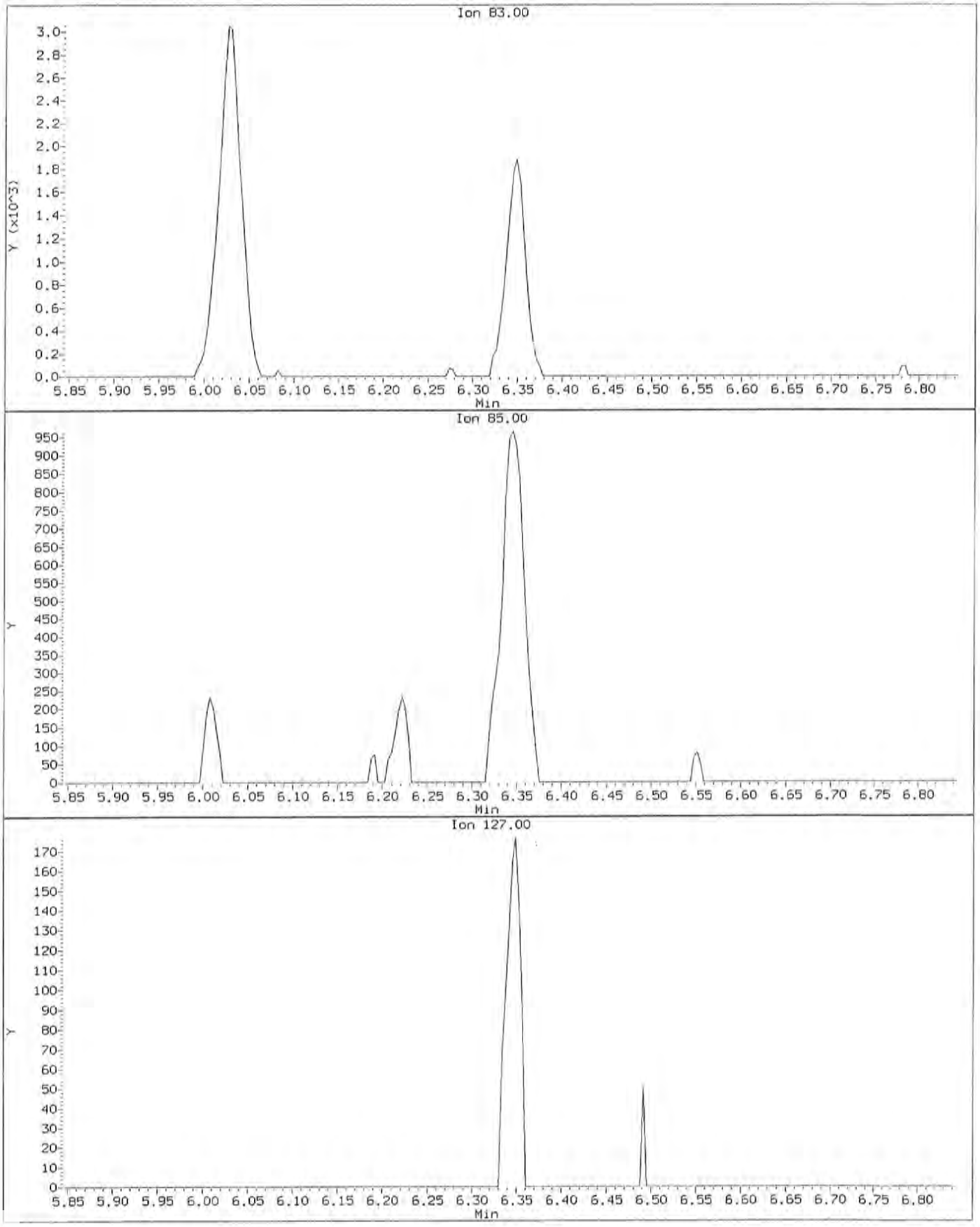
Instrument: VOA9.i
Client Sample ID: VSTD000.5

Compound: Bromodichloromethane
CAS Number: 75-27-4



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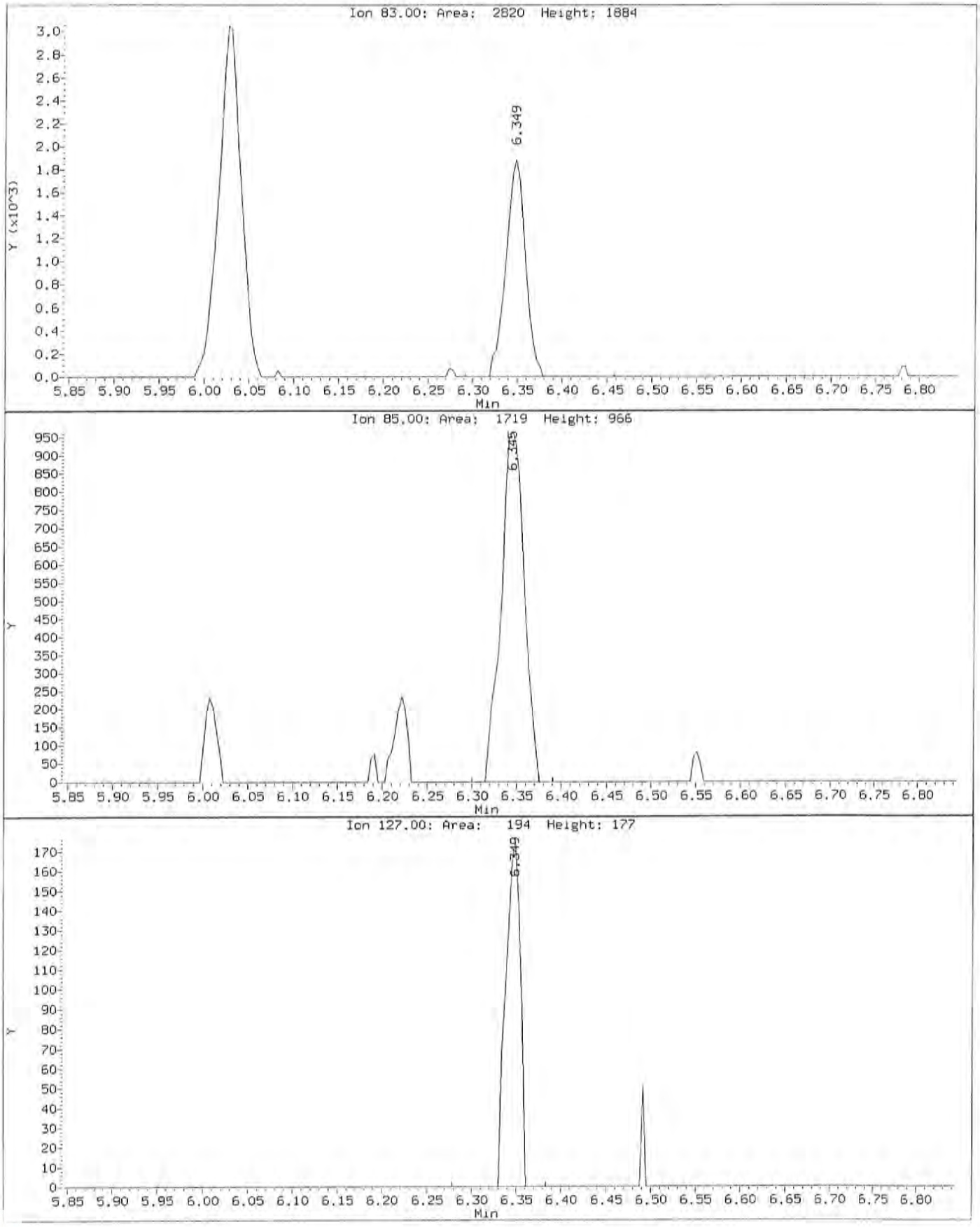
Instrument: VOA9.i
Client Sample ID: VSTD000.5

Compound: Bromodichloromethane
CAS Number: 75-27-4



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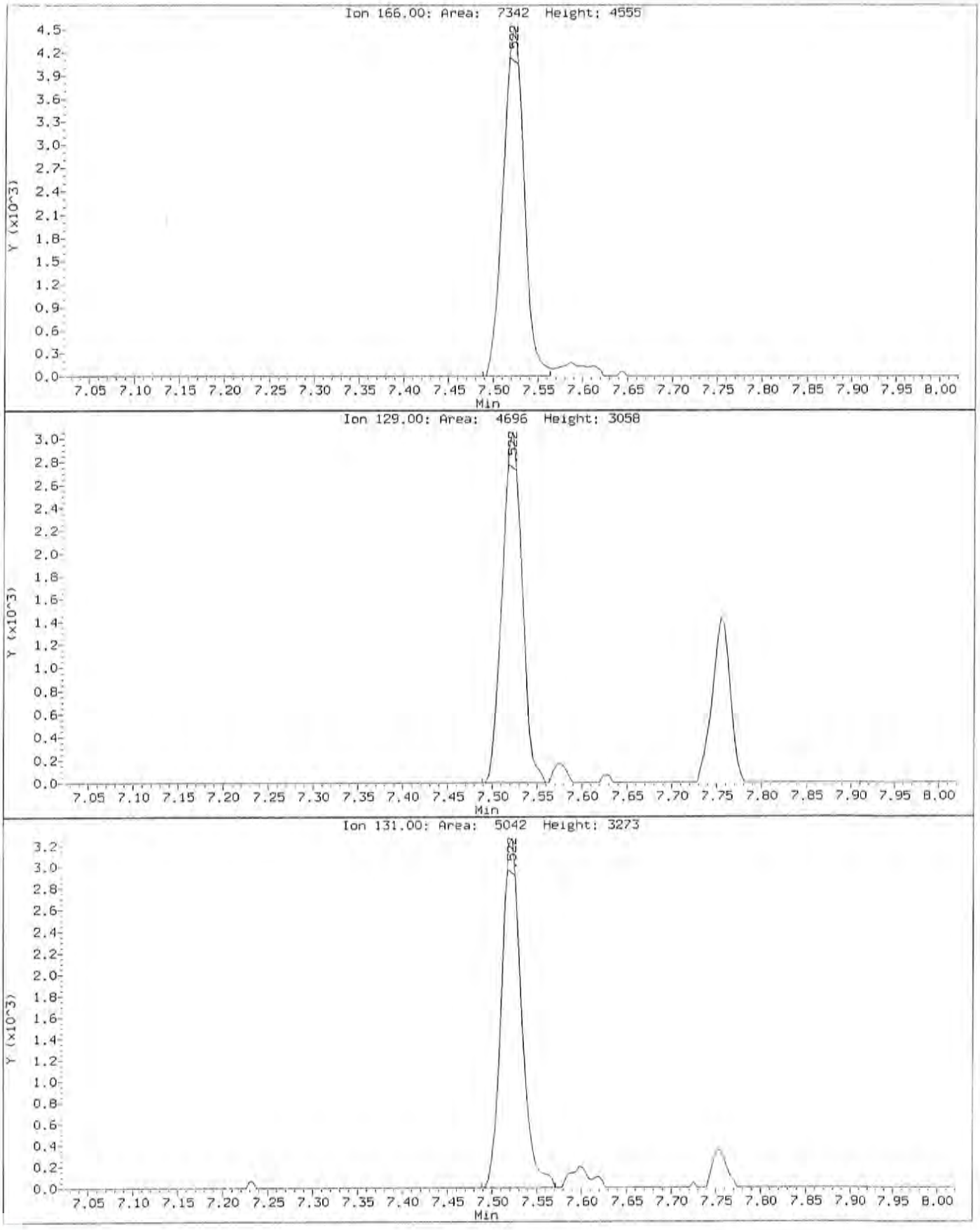
Injection Date: 27-DEC-2019 11:51
Instrument: VOA9.i
Client Sample ID: VSTD000.5

Compound: Tetrachloroethene
CAS Number: 127-18-4



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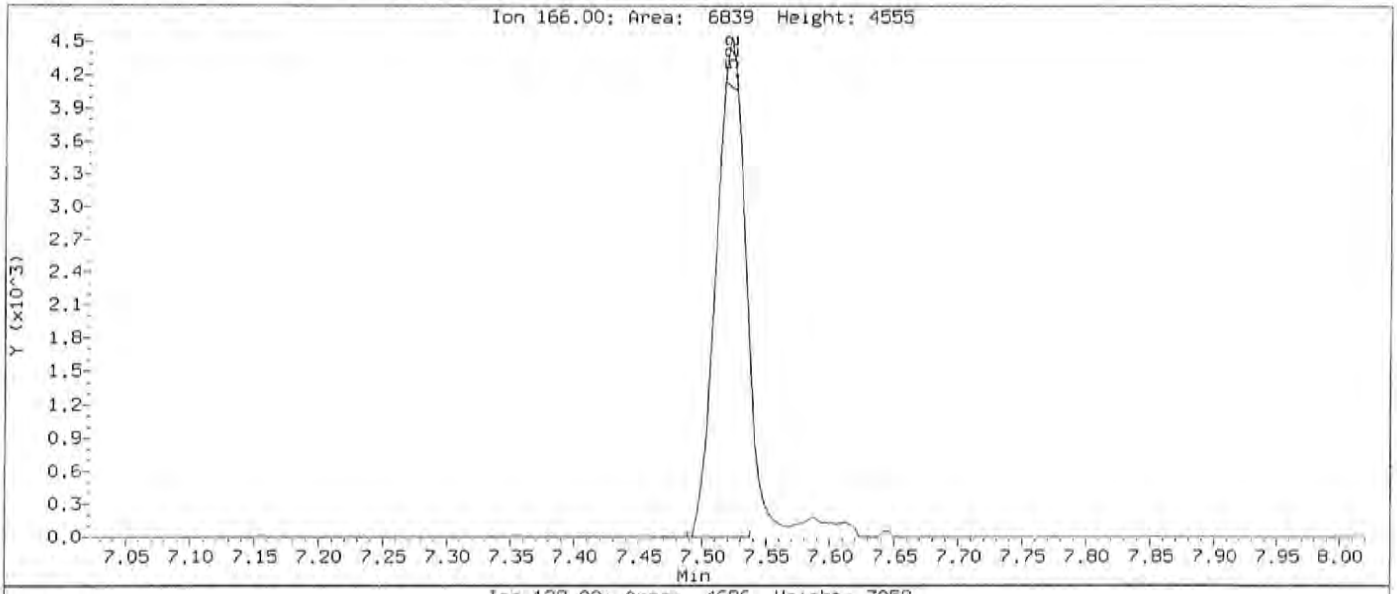
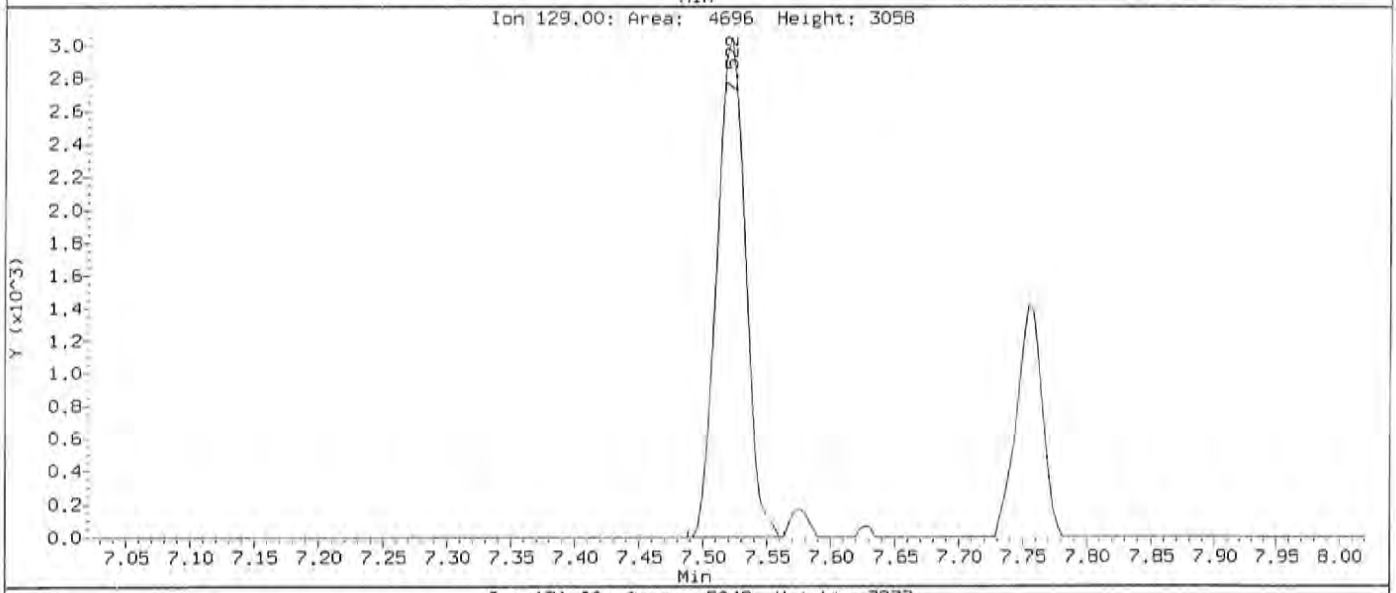
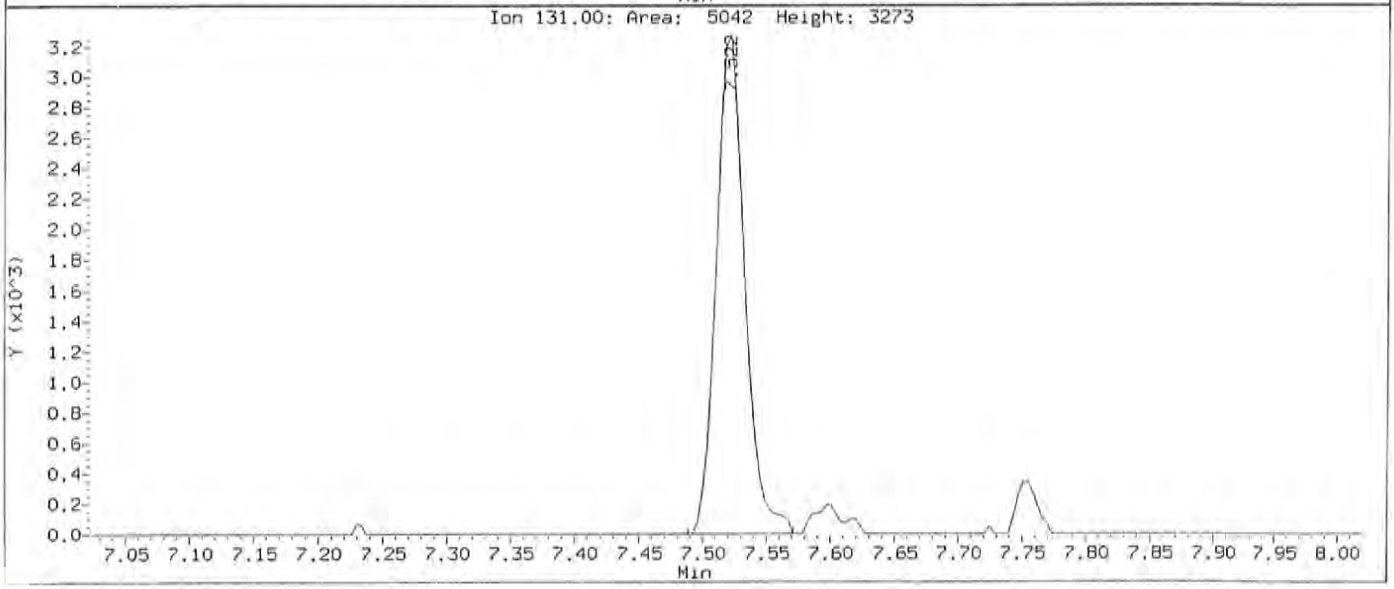
Injection Date: 27-DEC-2019 11:51
Instrument: VOA9.i
Client Sample ID: VSTD000.5

Compound: Tetrachloroethene
CAS Number: 127-18-4







Data File: \\nahstws005\Target\chem\voa9.i\U191227.b\U122704.D Page 1
Report Date: 17-Jan-2020 15:02

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Data file : \\nahstws005\Target\chem\voa9.i\U191227.b\U122704.D
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Misc Info : 180315V9;WATER;0;1;
Comment :
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Meth Date : 17-Jan-2020 15:01 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 12:40 Cal File: U122704.D
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.890	4.890	(1.000)	548783	50.0000	
*	36 1,4-Difluorobenzene	114	5.621	5.621	(1.000)	820757	50.0000	
*	47 Chlorobenzene-d5	117	8.245	8.249	(1.000)	735593	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	363438	50.0000	
$	30 Dibromofluoromethane	113	4.827	4.826	(0.987)	234765	50.0000	49.95
$	35 1,2-Dichloroethane-d4	65	5.171	5.171	(1.057)	274512	50.0000	51.98
$	48 Toluene-d8	98	6.986	6.986	(0.847)	957106	50.0000	50.63
$	69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	344213	50.0000	49.80
	60 1,1,1,2-Tetrachloroethane	131	8.347	8.346	(1.012)	5274	1.00000	0.93(a)
	31 1,1,1-Trichloroethane	97	4.823	4.823	(0.986)	7849	1.00000	0.96(a)
	68 1,1,2,2-Tetrachloroethane	83	9.385	9.389	(0.917)	9350	1.00000	1.10(a)
	53 1,1,2-Trichloroethane	83	7.417	7.417	(0.900)	5615	1.00000	1.07(a)
	22 1,1-Dichloroethane	63	3.604	3.597	(0.737)	12067	1.00000	1.09(a)
	11 1,1-Dichloroethene	96	2.397	2.393	(0.490)	6175	1.00000	1.16(a)
	32 1,1-Dichloropropene	75	5.003	4.999	(0.890)	8613	1.00000	1.07(a)
	93 1,2,3-Trichlorobenzene	180	12.331	12.331	(1.205)	5978	1.00000	1.90(a)
	71 1,2,3-Trichloropropane	75	9.422	9.426	(0.921)	8291	1.00000	0.96(a)
	90 1,2,4-Trichlorobenzene	180	11.919	11.919	(1.165)	6121	1.00000	2.18(a)
	79 1,2,4-Trimethylbenzene	105	9.940	9.940	(0.971)	22036	1.00000	1.09(a)
	89 1,2-Dibromo-3-Chloropropane	155	11.229	11.229	(1.097)	1072	1.00000	2.20(a)
	7 1,2-Dibromoethane	107	7.848	7.848	(0.952)	6359	1.00000	1.01(a)
	1,2-Dichlorobenzene	146	10.566	10.569	(1.033)	13091	1.00000	1.08(a)
	1,2-Dichloroethane	62	5.250	5.250	(0.934)	9705	1.00000	1.10(a)

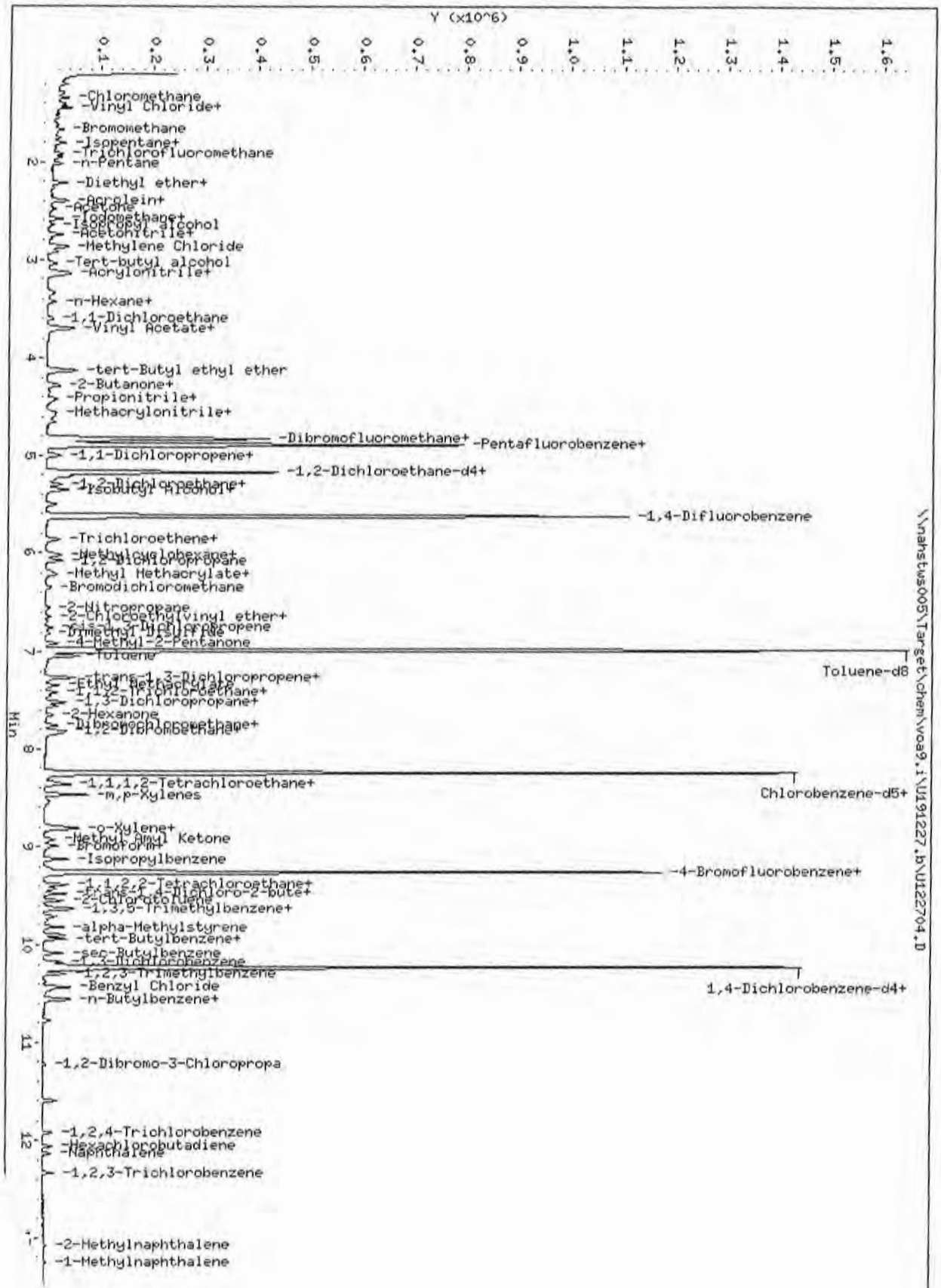
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42	1,2-Dichloropropane	63	6.079	6.078	(1.081)	6843	1.00000	1.03 (a)
75	1,3,5-Trimethylbenzene	105	9.621	9.625	(0.940)	20611	1.00000	1.07 (a)
83	1,3-Dichlorobenzene	146	10.176	10.176	(0.995)	13566	1.00000	1.12 (a)
54	1,3-Dichloropropane	76	7.559	7.563	(0.917)	11861	1.00000	1.07 (a)
84	1,4-Dichlorobenzene	146	10.251	10.254	(1.002)	13260	1.00000	1.08 (a)
26	2,2-Dichloropropane	77	4.272	4.268	(0.674)	6121	1.00000	0.97 (a)
24	2-Butanone	43	4.343	4.335	(0.868)	8060	2.00000	2.14 (a)
76	2-Chlorotoluene	91	9.542	9.546	(0.933)	19421	1.00000	1.14 (a)
52	2-Hexanone	43	7.646	7.649	(0.927)	10249	2.00000	1.85 (a)
77	4-Chlorotoluene	91	9.636	9.636	(0.942)	22070	1.00000	1.14 (a)
82	p-Isopropyltoluene	119	10.206	10.210	(0.997)	21678	1.00000	1.12 (a)
45	4-Methyl-2-Pentanone	43	6.911	6.911	(0.838)	15224	2.00000	1.93 (a)
10	Acetone	43	2.480	2.480	(0.507)	8256	2.00000	0.32 (a)
37	Benzene	78	5.216	5.213	(0.928)	28638	1.00000	1.08 (a)
74	Bromobenzene	156	9.377	9.381	(0.916)	8315	1.00000	1.15 (a)
29	Bromochloromethane	128	4.553	4.553	(0.931)	3885	1.00000	1.13 (a)
39	Bromodichloromethane	83	6.345	6.345	(1.129)	6923	1.00000	0.93 (aM)
66	Bromoform	173	8.980	8.980	(1.089)	3110	1.00000	2.49 (Ta)
6	Bromomethane	94	1.666	1.655	(0.341)	5991	1.00000	1.25 (aM)
19	Carbon Disulfide	76	2.589	2.585	(0.529)	32783	2.00000	2.06 (a)
34	Carbon Tetrachloride	117	4.992	4.991	(0.888)	6635	1.00000	0.96 (a)
59	Chlorobenzene	112	8.272	8.271	(1.003)	19644	1.00000	1.13 (a)
7	Chloroethane	64	1.753	1.737	(0.358)	6010	1.00000	0.36 (aM)
28	Chloroform	83	4.654	4.654	(0.952)	12345	1.00000	1.11 (a)
3	Chloromethane	50	1.340	1.336	(0.274)	13636	1.00000	(aM)
27	cis-1,2-Dichloroethene	96	4.287	4.283	(0.877)	7985	1.00000	1.10 (a)
46	cis-1,3-Dichloropropene	75	6.753	6.757	(1.201)	7394	1.00000	1.79 (a)
55	Dibromochloromethane	129	7.754	7.754	(0.940)	4837	1.00000	1.78 (a)
44	Dibromomethane	93	6.187	6.187	(1.101)	4109	1.00000	0.99 (a)
2	Dichlorodifluoromethane	85	1.205	1.201	(0.247)	6667	1.00000	1.10 (a)
61	Ethylbenzene	106	8.369	8.369	(1.015)	10093	1.00000	1.12 (a)
91	Hexachlorobutadiene	225	12.062	12.061	(1.179)	3185	1.00000	1.99 (a)
67	Isopropylbenzene	105	9.123	9.122	(1.106)	26924	1.00000	1.06 (a)
62	m,p-Xylenes	106	8.470	8.470	(1.027)	23510	2.00000	2.18 (a)
17	Methylene Chloride	84	2.870	2.866	(0.587)	10371	1.00000	0.44 (a)
87	n-Butylbenzene	91	10.551	10.554	(1.031)	15693	1.00000	1.02 (a)
73	n-Propylbenzene	91	9.471	9.475	(0.926)	30883	1.00000	1.15 (a)
92	Naphthalene	128	12.129	12.129	(1.185)	11174	1.00000	1.47 (a)
63	o-Xylene	106	8.808	8.807	(1.068)	11541	1.00000	1.07 (a)
81	sec-Butylbenzene	105	10.082	10.086	(0.985)	23366	1.00000	1.10 (a)
64	Styrene	104	8.823	8.822	(1.070)	19011	1.00000	1.00 (a)
78	tert-Butylbenzene	119	9.895	9.898	(0.967)	17956	1.00000	1.11 (a)
56	Tetrachloroethene	166	7.518	7.522	(0.912)	12217	1.00000	1.62 (a)
50	Toluene	91	7.046	7.046	(0.855)	29233	1.00000	1.09 (a)
20	trans-1,2-Dichloroethene	96	3.140	3.136	(0.642)	6786	1.00000	1.13 (a)
51	trans-1,3-Dichloropropene	75	7.256	7.259	(1.291)	6016	1.00000	2.08 (a)
38	Trichloroethene	130	5.857	5.857	(1.042)	7671	1.00000	1.11 (a)
8	Trichlorofluoromethane	101	1.951	1.947	(0.399)	9626	1.00000	1.11 (a)
5	Vinyl Chloride	62	1.419	1.415	(0.290)	8941	1.00000	1.13 (a)

Flag Legend

Target compound detected outside RT window.
Target compound detected but, quantitated amount
'elow Limit Of Quantitation(BLOQ).

QC Flag Legend

M - Compound response manually integrated.



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Column phase: DB624

\\nahstws005\Target\chem\voa9.i\U191227.b\U122704.D

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

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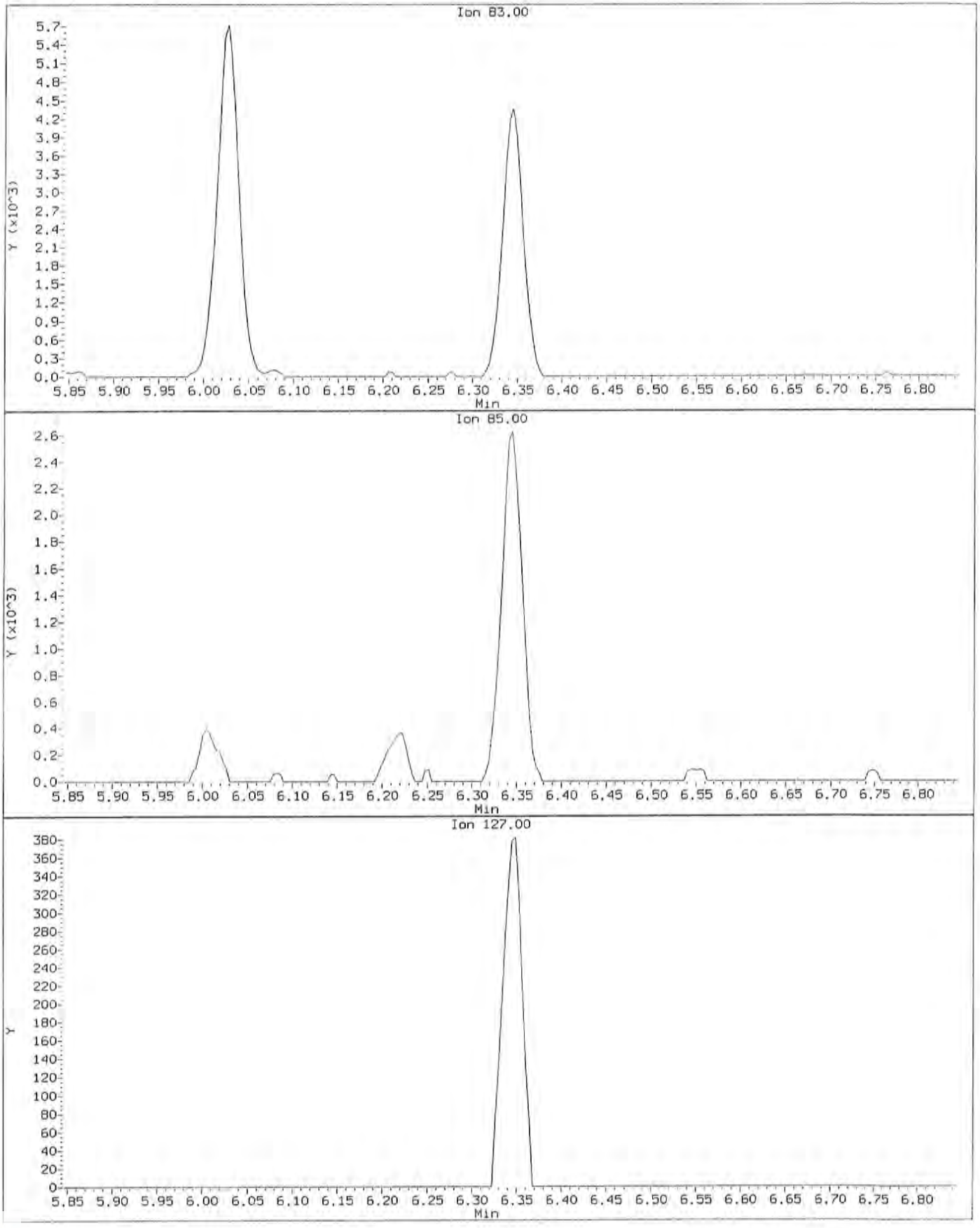
Injection Date: 27-DEC-2019 12:40
Instrument: VOA9.i
Client Sample ID: VSTD001

Compound: Bromodichloromethane
CAS Number: 75-27-4



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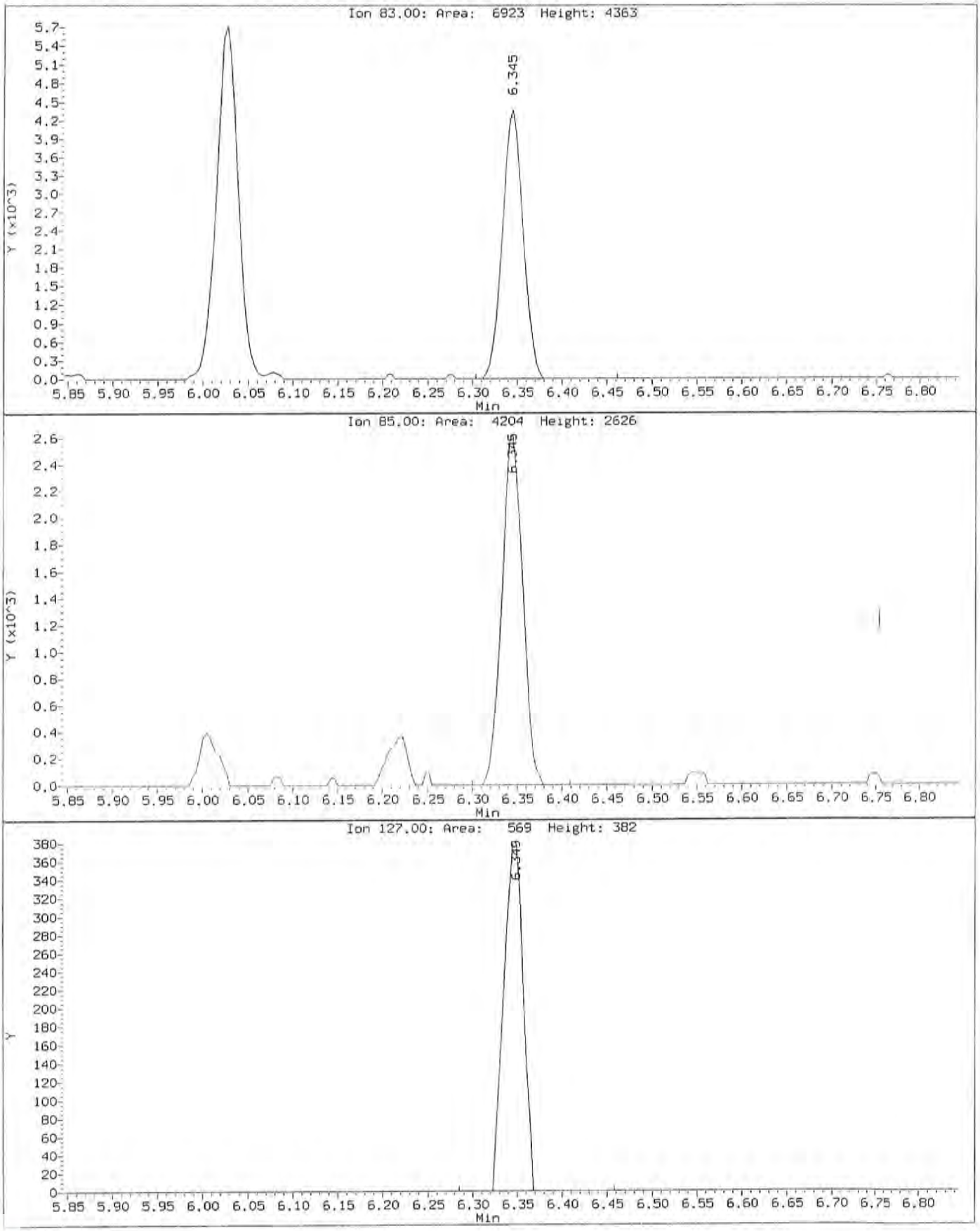
Client Sample ID: VSTD001

Compound: Bromodichloromethane
CAS Number: 75-27-4



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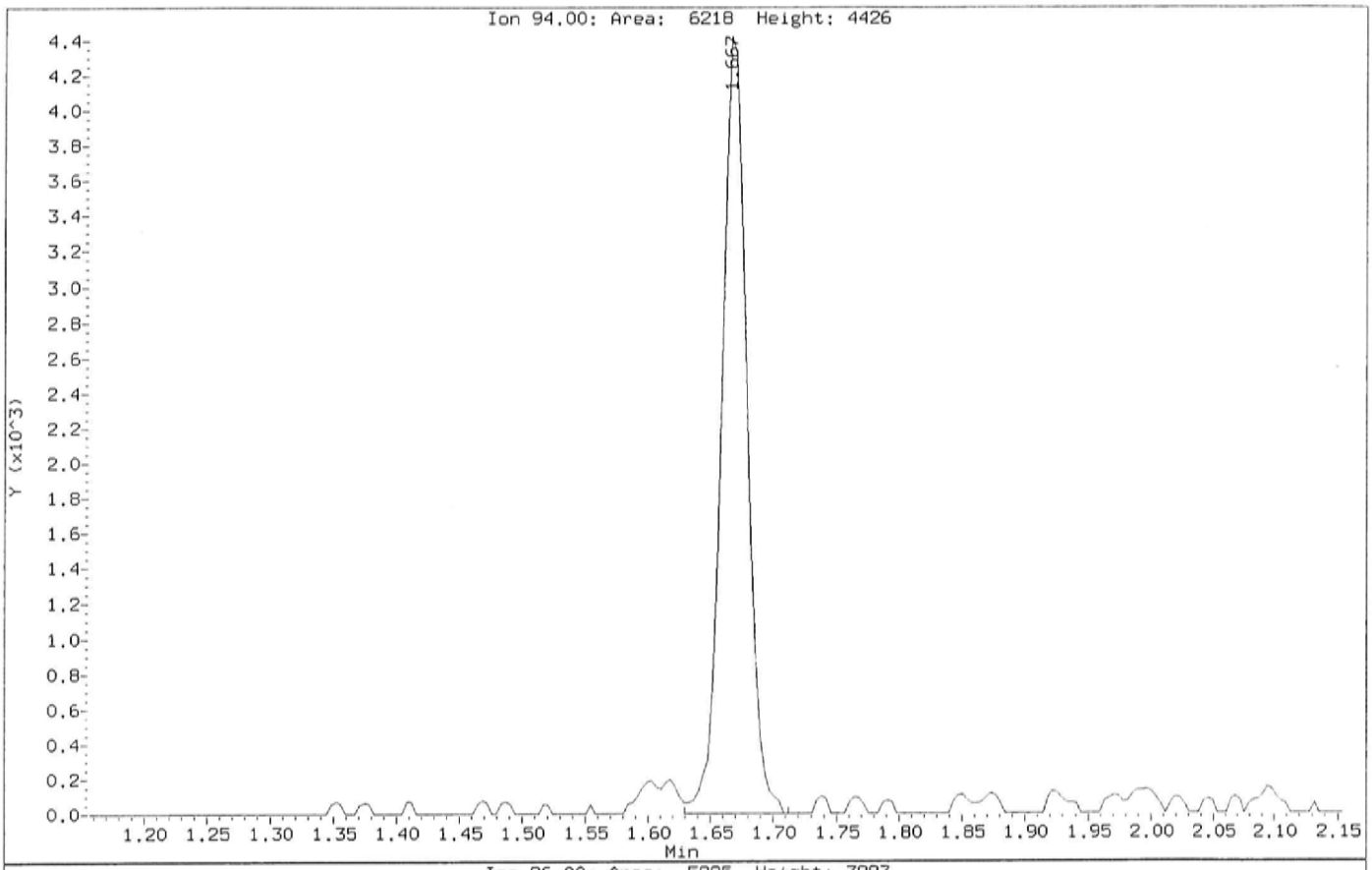
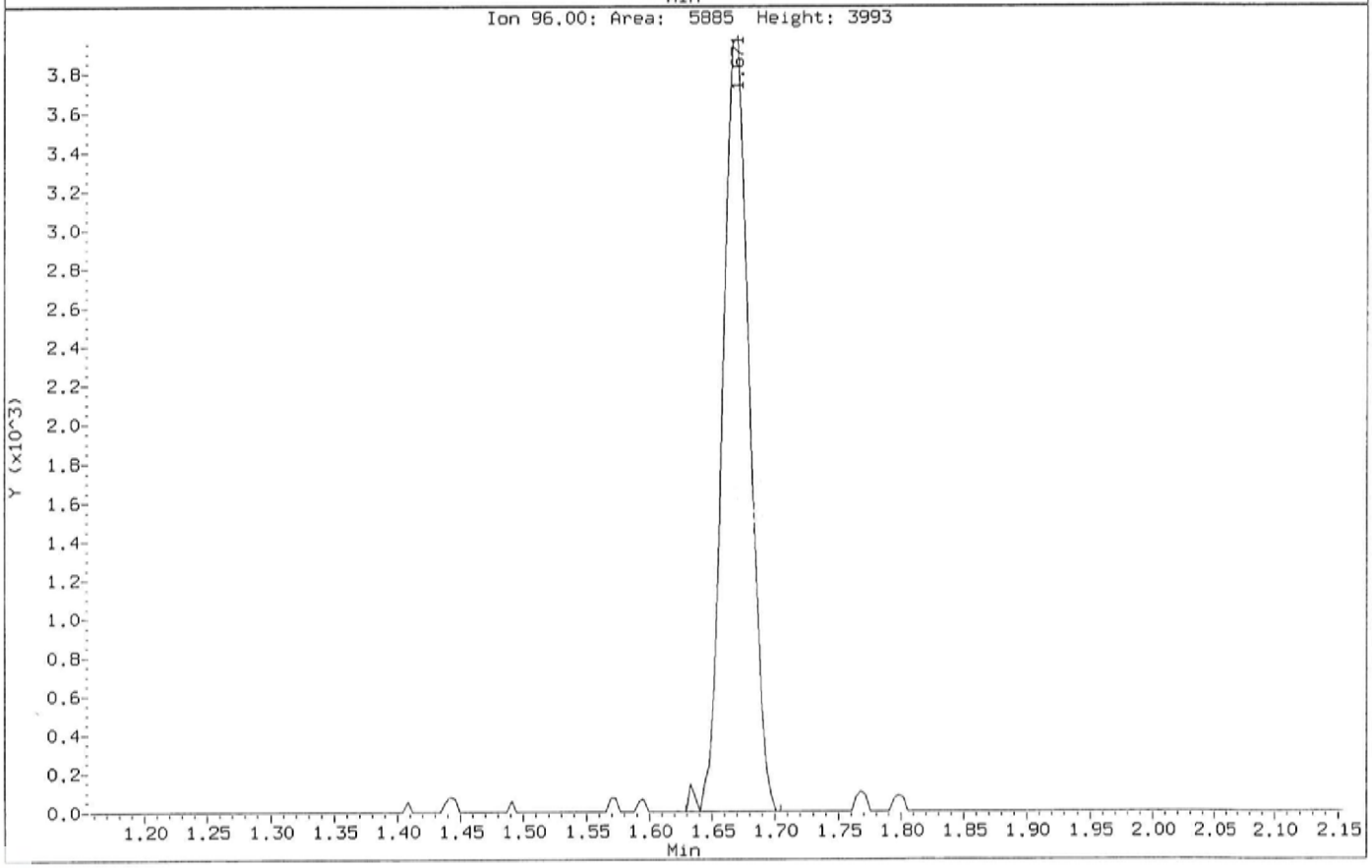
Instrument: VOA9.i
Client Sample ID: VSTD001

Compound: Bromomethane
CAS Number: 74-83-9





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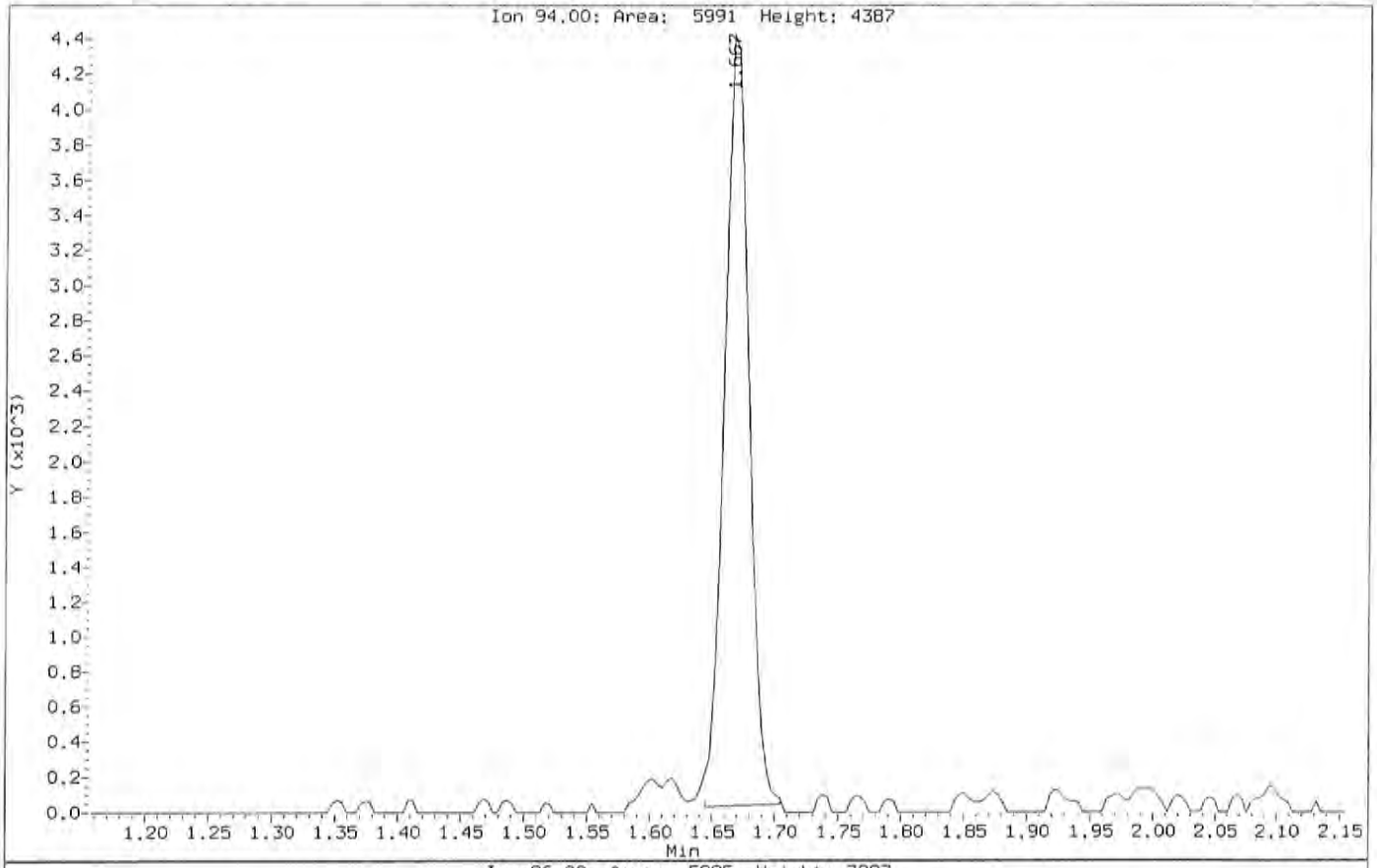
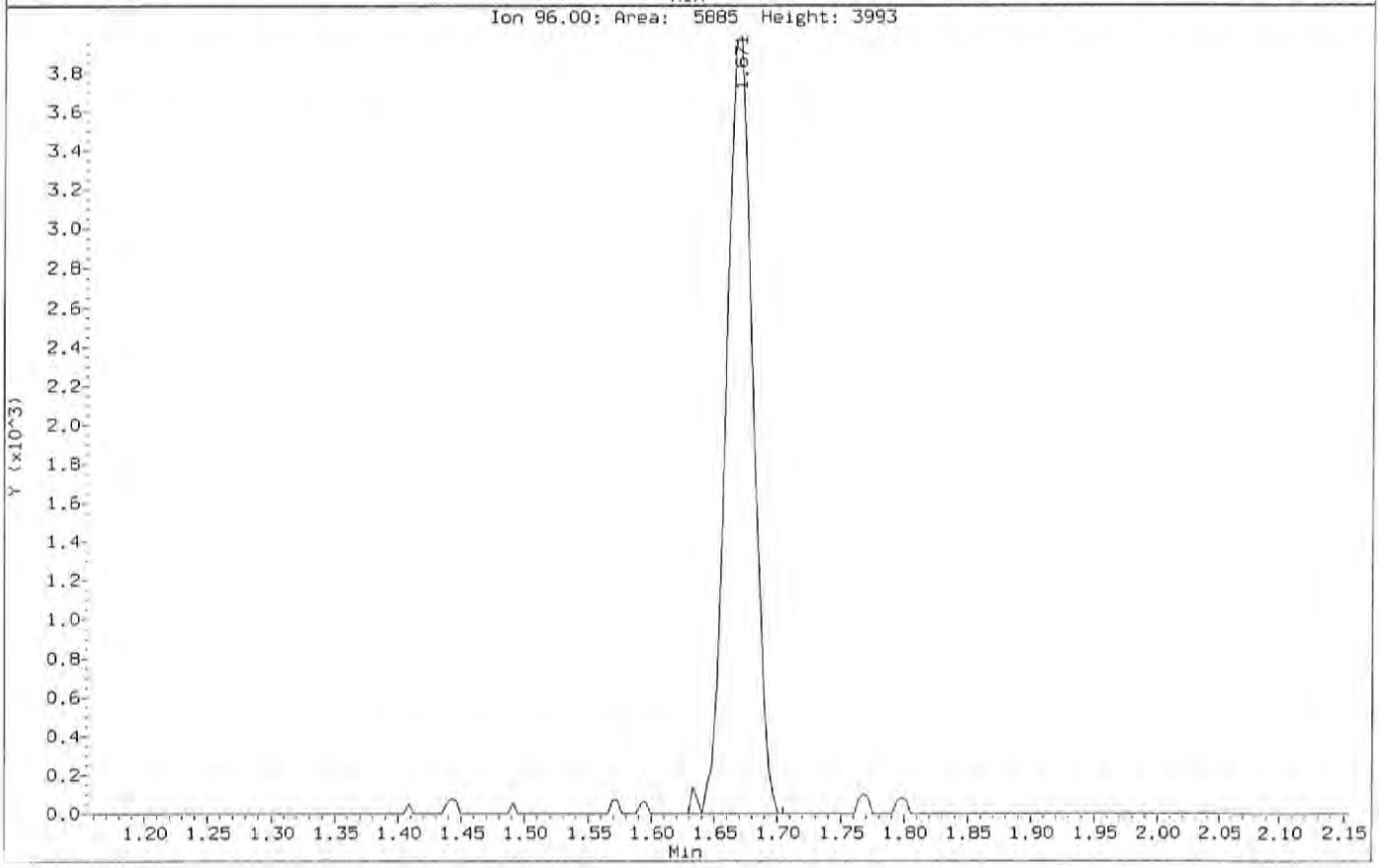
Client Sample ID: VSTD001

Compound: Bromomethane
CAS Number: 74-83-9





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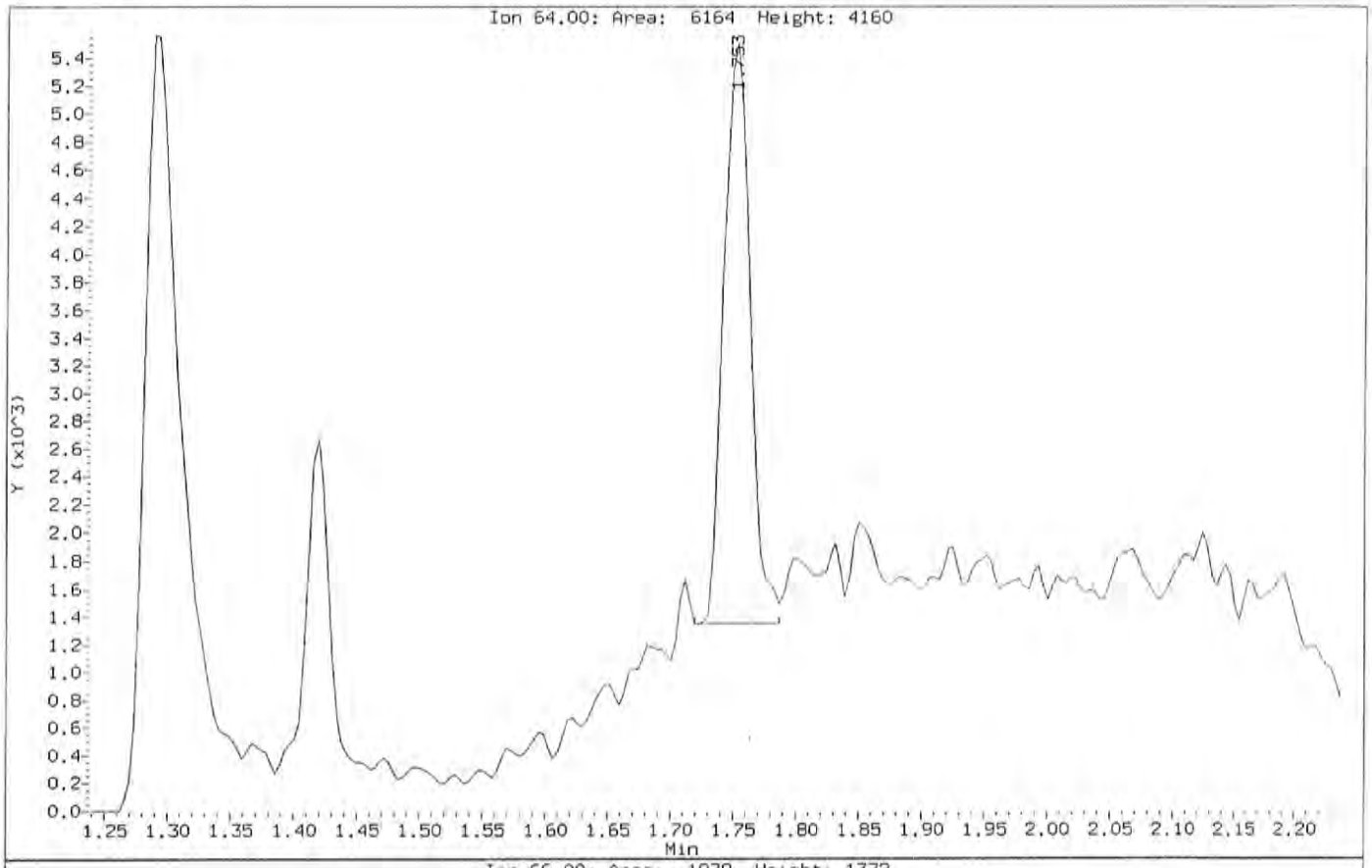
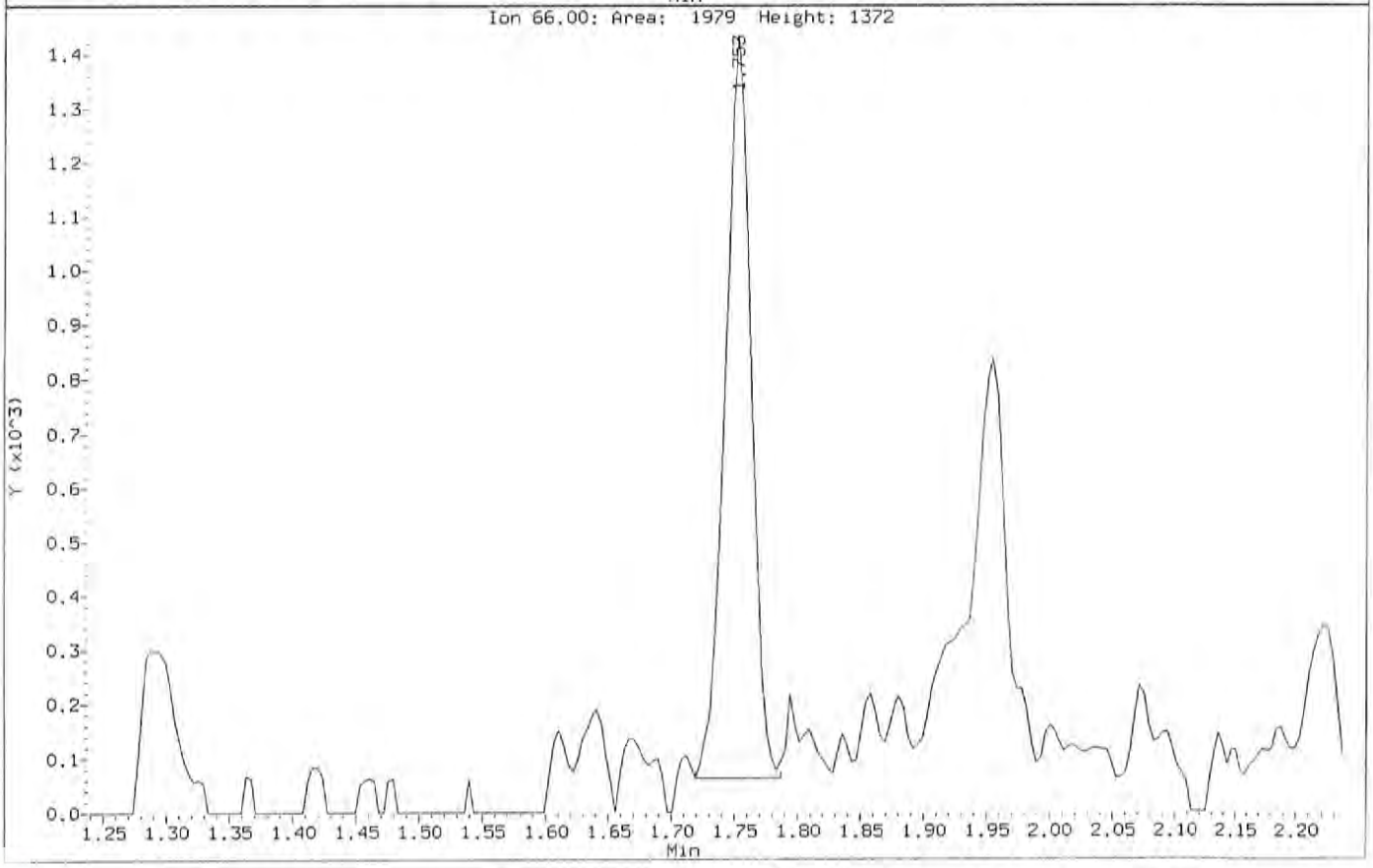
Client Sample ID: VSTD001

Compound: Chloroethane
CAS Number: 75-00-3





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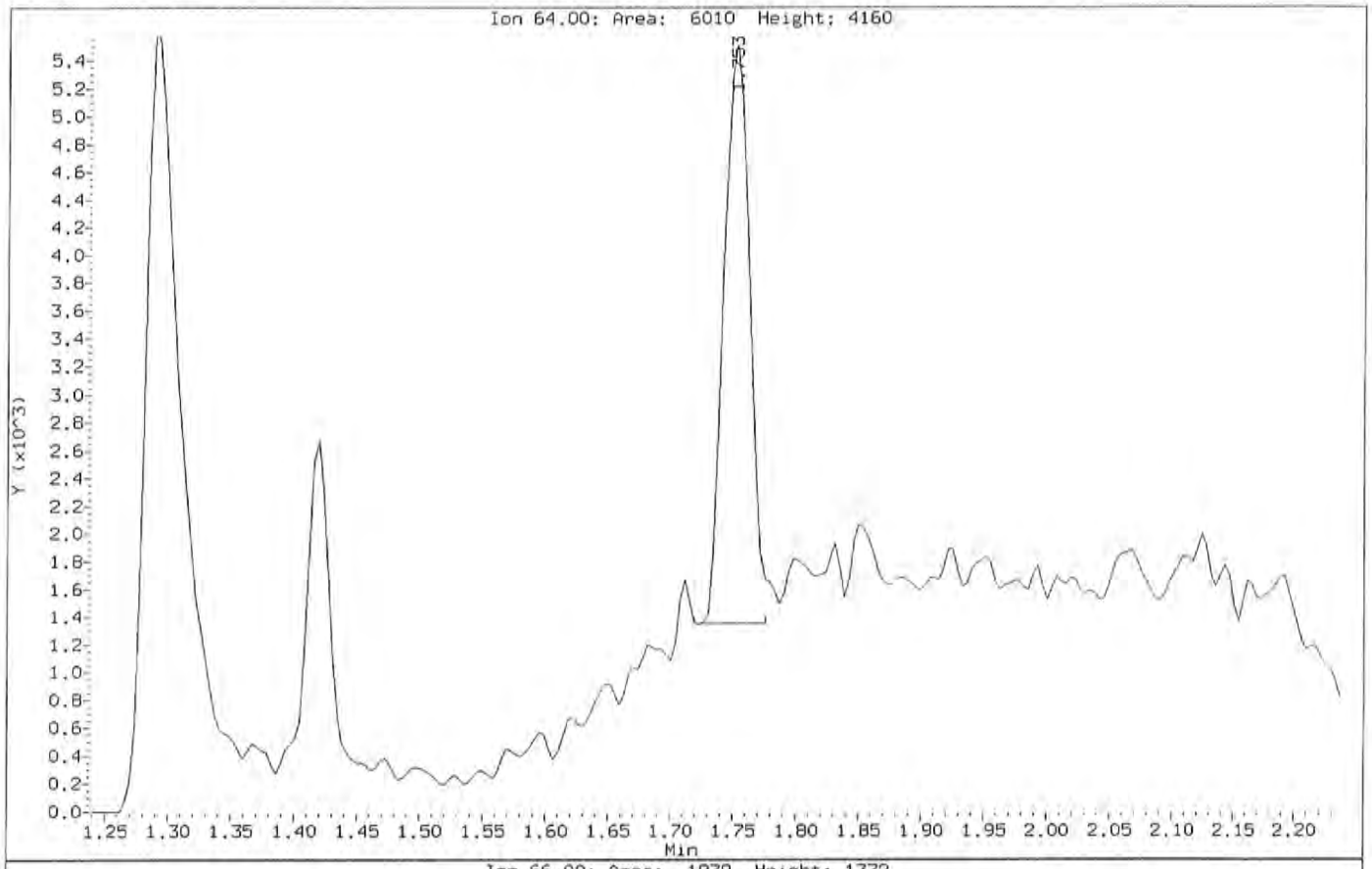
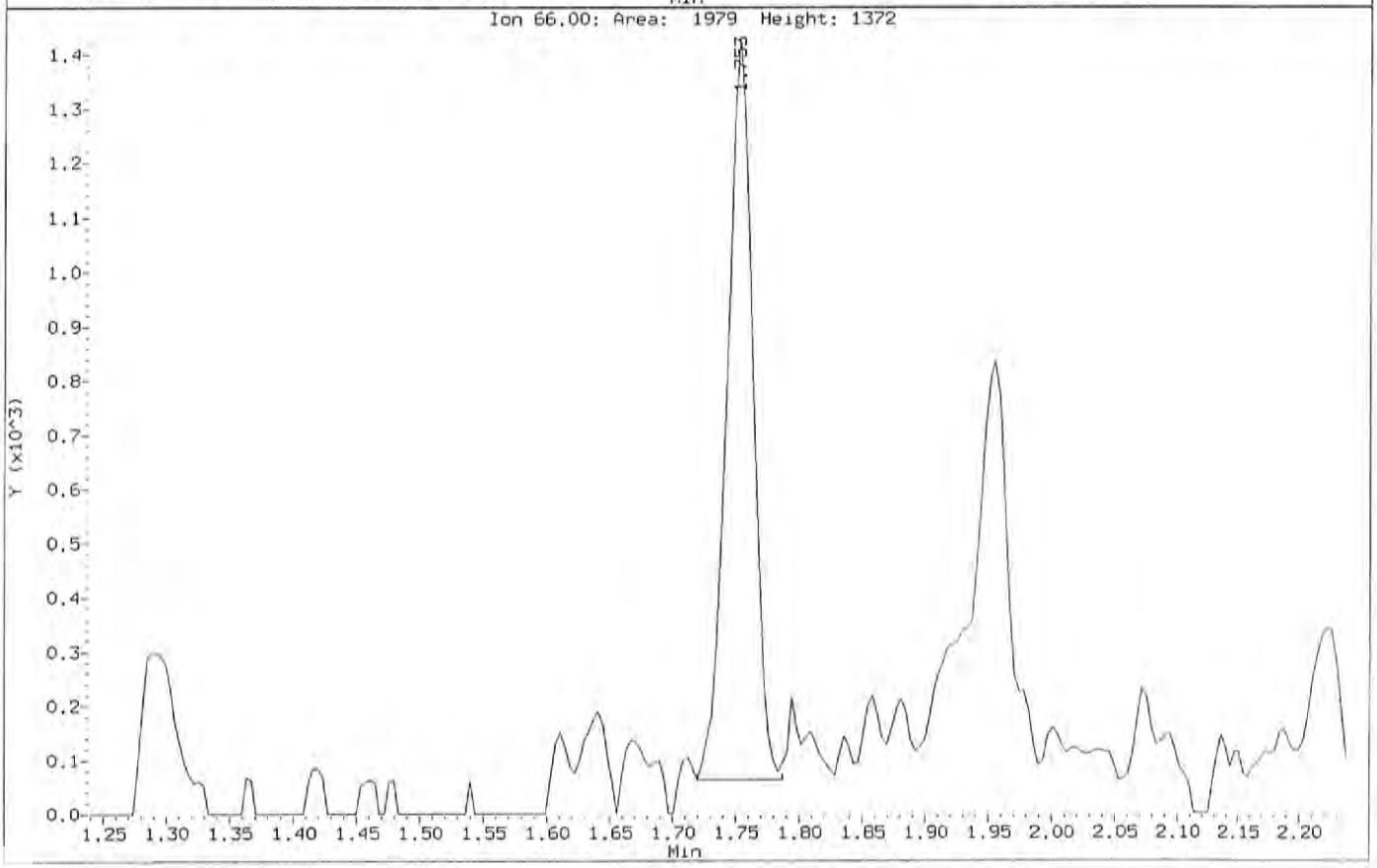
Compound: Chloroethane
CAS Number: 75-00-3





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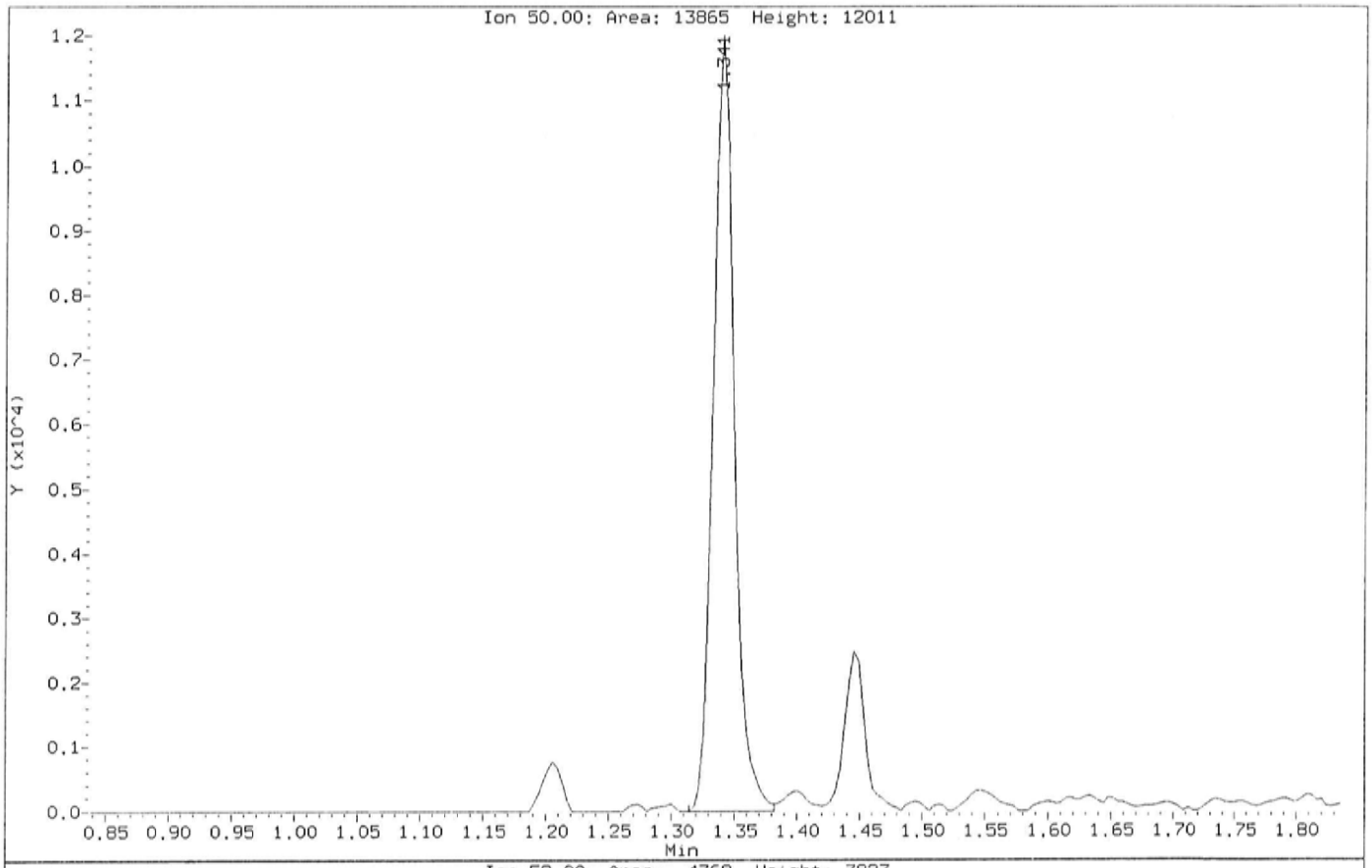
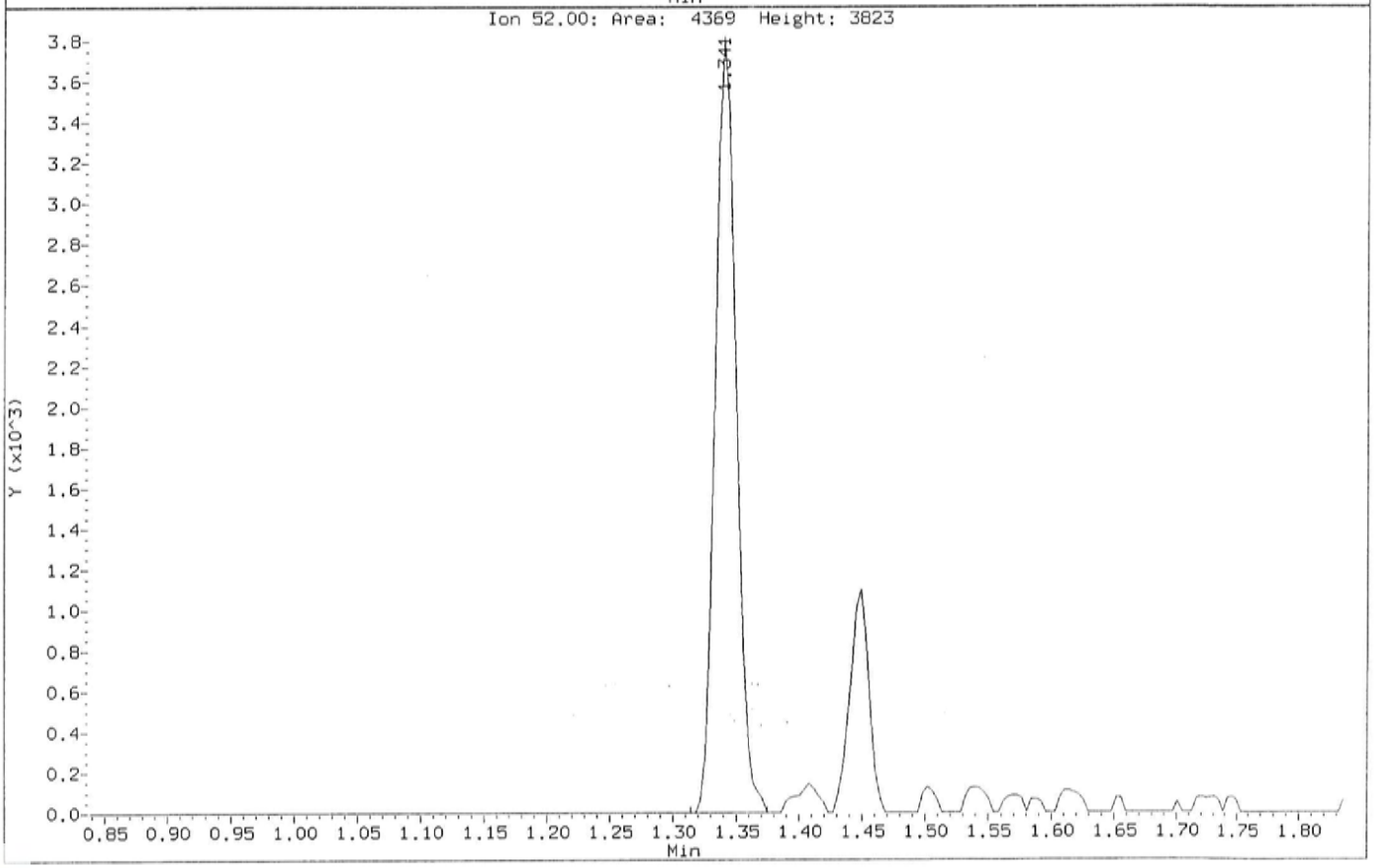
Injection Date: 27-DEC-2019 12:40
Instrument: VOA9.i
Client Sample ID: VSTD001

Compound: Chloromethane
CAS Number: 74-87-3





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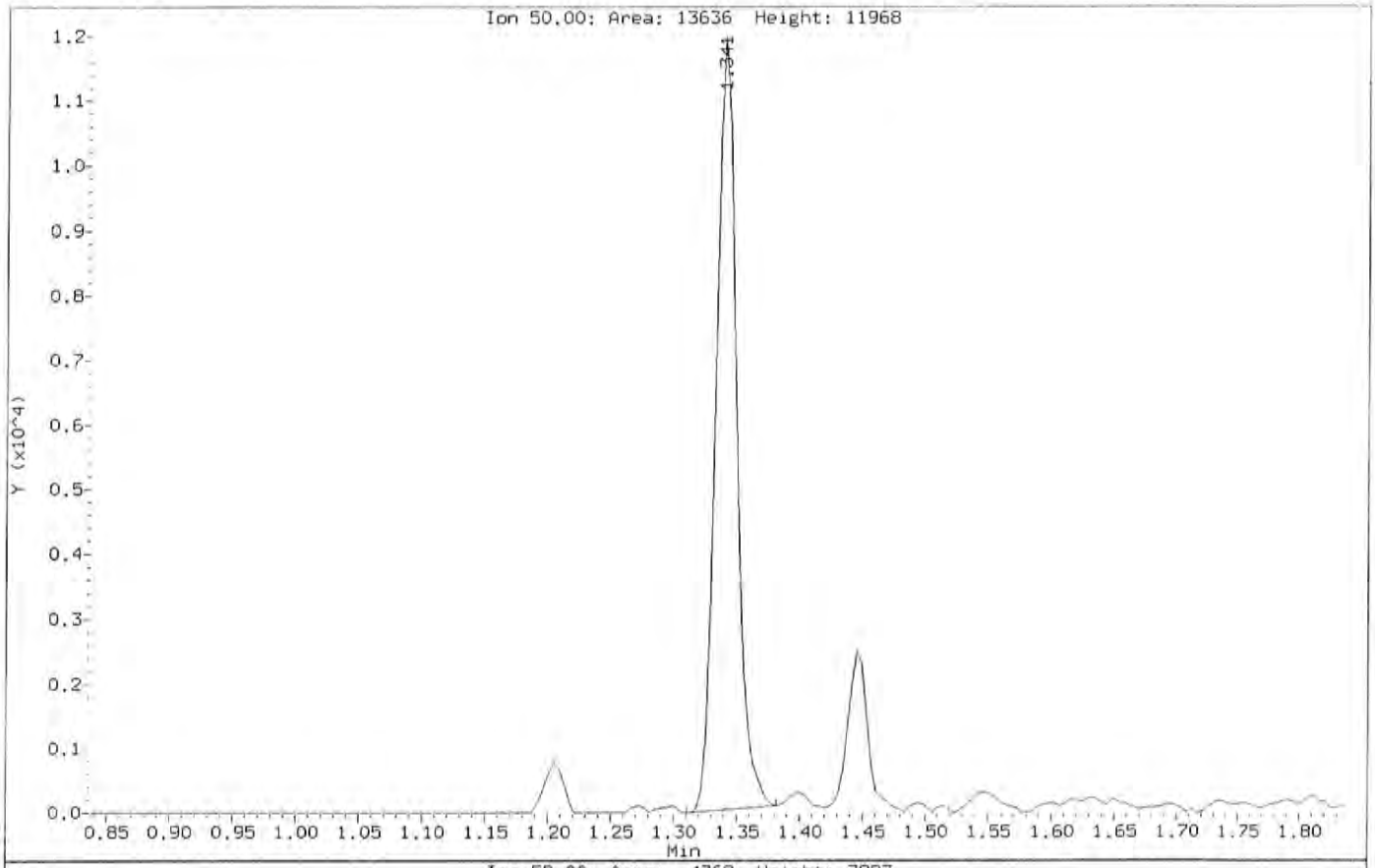
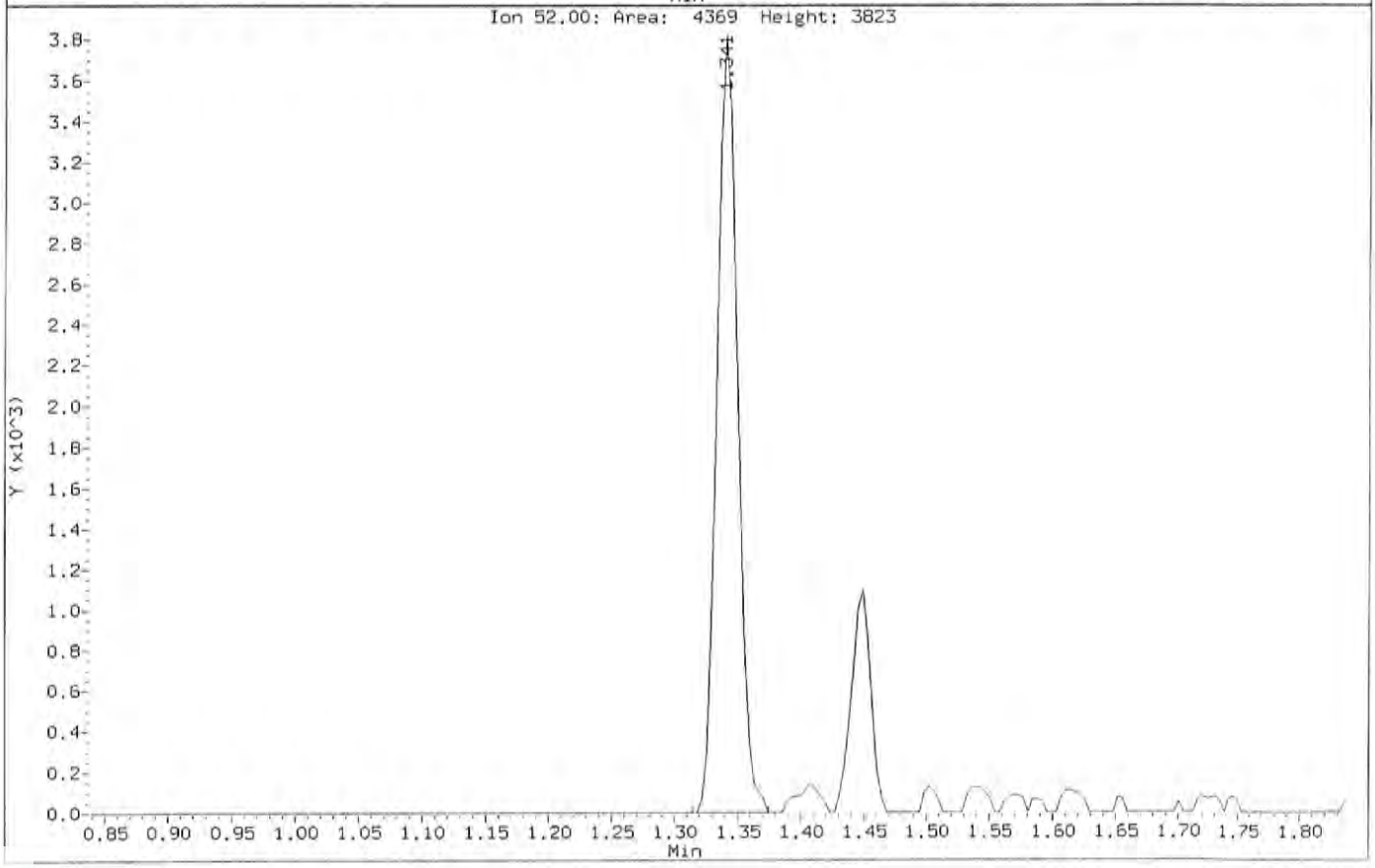
Instrument: VOA9.i
Client Sample ID: VSTD001

Compound: Chloromethane
CAS Number: 74-87-3





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Report Date: 17-Jan-2020 15:02

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U191227.b\U122705.D
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Inj Date : 27-DEC-2019 13:04
Operator : PC Inst ID: VOA9.i
Smp Info : VSTD002;VSTD002;1;4;
Misc Info : 180315V9;WATER;0;1;
Comment :
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Meth Date : 17-Jan-2020 15:01 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 13:04 Cal File: U122705.D
Als bottle: 6 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

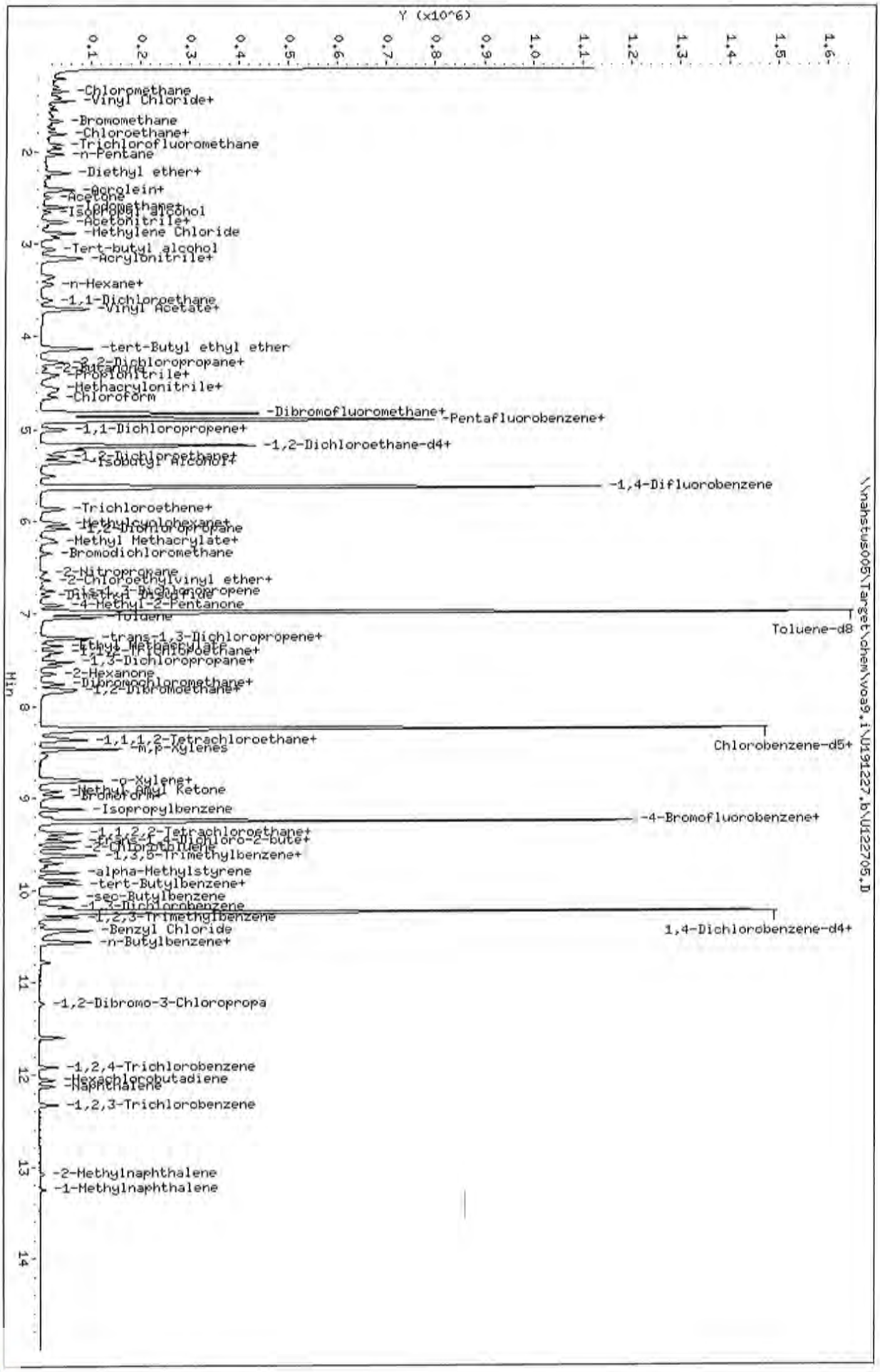
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1	Pentafluorobenzene	168	4.897	4.890	(1.000)	557956	50.0000	
* 36	1,4-Difluorobenzene	114	5.625	5.621	(1.000)	826853	50.0000	
* 47	Chlorobenzene-d5	117	8.249	8.249	(1.000)	747137	50.0000	
* 70	1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	376765	50.0000	
$ 30	Dibromofluoromethane	113	4.834	4.826	(0.987)	232278	50.0000	48.61
$ 35	1,2-Dichloroethane-d4	65	5.175	5.171	(1.057)	274983	50.0000	51.22
$ 48	Toluene-d8	98	6.985	6.986	(0.847)	964968	50.0000	50.25
$ 69	4-Bromofluorobenzene	95	9.253	9.254	(1.122)	351410	50.0000	50.05
60	1,1,1,2-Tetrachloroethane	131	8.346	8.346	(1.012)	10358	2.00000	1.81(a)
31	1,1,1-Trichloroethane	97	4.830	4.823	(0.986)	16146	2.00000	1.94(a)
68	1,1,2,2-Tetrachloroethane	83	9.388	9.389	(0.918)	17097	2.00000	1.95(a)
53	1,1,2-Trichloroethane	83	7.417	7.417	(0.899)	10437	2.00000	1.97(a)
22	1,1-Dichloroethane	63	3.612	3.597	(0.737)	22150	2.00000	1.98(a)
11	1,1-Dichloroethene	96	2.408	2.393	(0.492)	11299	2.00000	2.09(a)
32	1,1-Dichloropropene	75	5.006	4.999	(0.890)	16562	2.00000	2.05(a)
93	1,2,3-Trichlorobenzene	180	12.331	12.331	(1.205)	11689	2.00000	2.62(a)
71	1,2,3-Trichloropropane	75	9.422	9.426	(0.921)	16428	2.00000	1.84(a)
90	1,2,4-Trichlorobenzene	180	11.919	11.919	(1.165)	11601	2.00000	2.83(a)
9	1,2,4-Trimethylbenzene	105	9.939	9.940	(0.971)	43393	2.00000	2.07(a)
	1,2-Dibromo-3-Chloropropane	155	11.229	11.229	(1.097)	2320	2.00000	2.93(a)
	1,2-Dibromoethane	107	7.848	7.848	(0.951)	12097	2.00000	1.90(a)
	,2-Dichlorobenzene	146	10.565	10.569	(1.033)	25207	2.00000	2.02(a)
	2-Dichloroethane	62	5.254	5.250	(0.934)	18435	2.00000	2.08(a)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42	1,2-Dichloropropane	63	6.082	6.078	(1.081)	13255	2.00000	1.98(a)
75	1,3,5-Trimethylbenzene	105	9.621	9.625	(0.940)	43004	2.00000	2.17(a)
83	1,3-Dichlorobenzene	146	10.176	10.176	(0.995)	25101	2.00000	2.00(a)
54	1,3-Dichloropropane	76	7.563	7.563	(0.917)	22144	2.00000	1.97(a)
84	1,4-Dichlorobenzene	146	10.254	10.254	(1.002)	25237	2.00000	1.98(a)
26	2,2-Dichloropropane	77	4.279	4.268	(0.874)	11150	2.00000	1.74(a)
24	2-Butanone	43	4.350	4.335	(0.888)	15004	4.00000	3.92(a)
76	2-Chlorotoluene	91	9.542	9.546	(0.933)	37601	2.00000	2.13(a)
52	2-Hexanone	43	7.649	7.649	(0.927)	21328	4.00000	3.80(a)
77	4-Chlorotoluene	91	9.636	9.636	(0.942)	42232	2.00000	2.10(a)
82	p-Isopropyltoluene	119	10.206	10.210	(0.997)	39643	2.00000	1.98(a)
45	4-Methyl-2-Pentanone	43	6.914	6.911	(0.838)	29826	4.00000	3.73(a)
10	Acetone	43	2.487	2.480	(0.508)	13406	4.00000	2.38(a)
37	Benzene	78	5.220	5.213	(0.928)	54675	2.00000	2.06(a)
74	Bromobenzene	156	9.377	9.381	(0.916)	15012	2.00000	2.01(a)
29	Bromochloromethane	128	4.560	4.553	(0.931)	7587	2.00000	2.18(a)
39	Bromodichloromethane	83	6.348	6.345	(1.129)	13614	2.00000	1.82(a)
66	Bromoform	173	8.980	8.980	(1.089)	6308	2.00000	3.08(a)
6	Bromomethane	94	1.677	1.655	(0.343)	11498	2.00000	2.51(a)
19	Carbon Disulfide	76	2.596	2.585	(0.530)	62065	4.00000	3.85(a)
34	Carbon Tetrachloride	117	4.999	4.991	(0.889)	12652	2.00000	1.83(a)
59	Chlorobenzene	112	8.271	8.271	(1.003)	35298	2.00000	2.00(a)
7	Chloroethane	64	1.760	1.737	(0.359)	9879	2.00000	1.19(a)
28	Chloroform	83	4.661	4.654	(0.952)	22235	2.00000	1.97(a)
3	Chloromethane	50	1.351	1.336	(0.276)	21875	2.00000	0.57(a)
27	cis-1,2-Dichloroethene	96	4.290	4.283	(0.876)	14587	2.00000	1.99(a)
46	cis-1,3-Dichloropropene	75	6.757	6.757	(1.201)	14163	2.00000	2.42(a)
55	Dibromochloromethane	129	7.754	7.754	(0.940)	9507	2.00000	2.46(a)
44	Dibromomethane	93	6.191	6.187	(1.101)	8493	2.00000	2.03(a)
2	Dichlorodifluoromethane	85	1.212	1.201	(0.248)	12950	2.00000	2.10(a)
61	Ethylbenzene	106	8.369	8.369	(1.015)	17875	2.00000	1.96(a)
91	Hexachlorobutadiene	225	12.057	12.061	(1.178)	5509	2.00000	2.77(a)
67	Isopropylbenzene	105	9.122	9.122	(1.106)	52408	2.00000	2.04(a)
62	m,p-Xylenes	106	8.470	8.470	(1.027)	43977	4.00000	4.02(a)
17	Methylene Chloride	84	2.877	2.866	(0.587)	17003	2.00000	1.44(a)
87	n-Butylbenzene	91	10.550	10.554	(1.031)	32329	2.00000	2.03(a)
73	n-Propylbenzene	91	9.471	9.475	(0.926)	58361	2.00000	2.11(a)
92	Naphthalene	128	12.129	12.129	(1.185)	23123	2.00000	2.00(a)
63	o-Xylene	106	8.807	8.807	(1.068)	21798	2.00000	1.99(a)
81	sec-Butylbenzene	105	10.082	10.086	(0.985)	46962	2.00000	2.13(a)
64	Styrene	104	8.822	8.822	(1.070)	36519	2.00000	1.89(a)
78	tert-Butylbenzene	119	9.898	9.898	(0.967)	35384	2.00000	2.11(a)
56	Tetrachloroethene	166	7.522	7.522	(0.912)	17923	2.00000	2.42(a)
50	Toluene	91	7.045	7.046	(0.854)	55066	2.00000	2.03(a)
20	trans-1,2-Dichloroethene	96	3.151	3.136	(0.643)	12269	2.00000	2.01(a)
51	trans-1,3-Dichloropropene	75	7.259	7.259	(1.291)	11913	2.00000	2.68(a)
38	Trichloroethene	130	5.861	5.857	(1.042)	14298	2.00000	2.05(a)
8	Trichlorofluoromethane	101	1.962	1.947	(0.401)	18095	2.00000	2.05(a)
5	Vinyl Chloride	62	1.430	1.415	(0.292)	16286	2.00000	2.02(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).



Data File: \\nahstws005\Target\chem\voa9.i\U191227.b\U122705.D
Date : 27-DEC-2019 13:04
Client ID: VSTD002
Sample Info: VSTD002;VSTD002;1;4;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

\\nahstws005\Target\chem\voa9.i\U191227.b\U122705.D

Data File: \\nahstws005\Target\chem\voa9.i\U191227.b\U122706.D Page 1
Report Date: 17-Jan-2020 15:02

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U191227.b\U122706.D
Lab Smp Id: VSTD005 Client Smp ID: VSTD005
Inj Date : 27-DEC-2019 13:29
Operator : PC Inst ID: VOA9.i
Smp Info : VSTD005;VSTD005;1;5;
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U191227.b\8260C.m
Meth Date : 17-Jan-2020 15:01 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 13:29 Cal File: U122706.D
Als bottle: 7 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

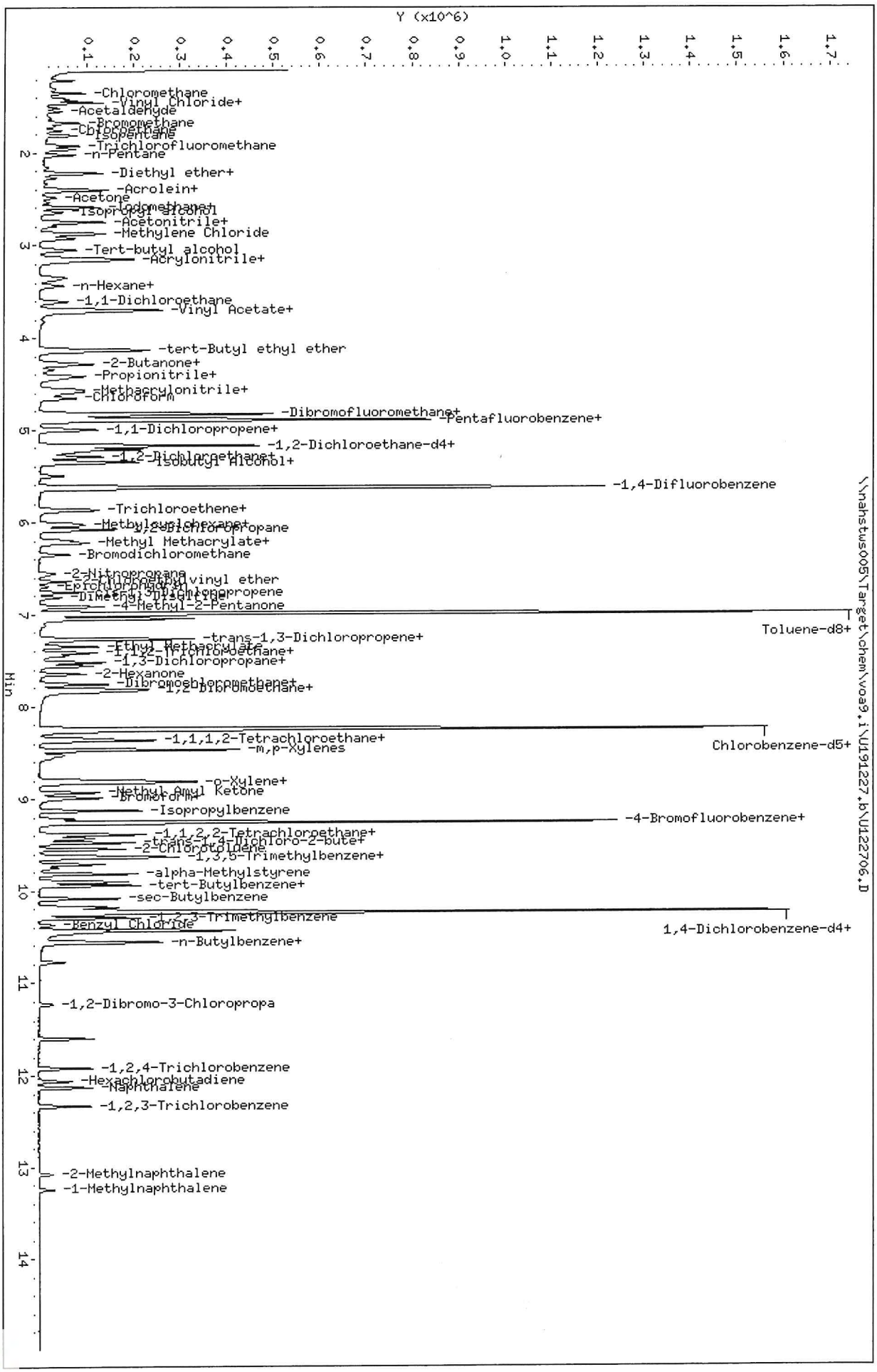
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.894	4.890	(1.000)	576308	50.0000	
* 36 1,4-Difluorobenzene	114	5.625	5.621	(1.000)	853816	50.0000	
* 47 Chlorobenzene-d5	117	8.245	8.249	(1.000)	766325	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	400454	50.0000	
$ 30 Dibromofluoromethane	113	4.830	4.826	(0.987)	246373	50.0000	49.92
$ 35 1,2-Dichloroethane-d4	65	5.175	5.171	(1.057)	281222	50.0000	50.71
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	1000963	50.0000	50.82
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	356520	50.0000	49.51
60 1,1,1,2-Tetrachloroethane	131	8.347	8.346	(1.012)	27741	5.00000	4.73(a)
31 1,1,1-Trichloroethane	97	4.827	4.823	(0.986)	40532	5.00000	4.72(a)
68 1,1,2,2-Tetrachloroethane	83	9.389	9.389	(0.918)	48782	5.00000	5.25
53 1,1,2-Trichloroethane	83	7.417	7.417	(0.900)	27883	5.00000	5.13
22 1,1-Dichloroethane	63	3.604	3.597	(0.737)	58466	5.00000	5.07
11 1,1-Dichloroethene	96	2.401	2.393	(0.491)	25437	5.00000	4.56(a)
32 1,1-Dichloropropene	75	5.003	4.999	(0.889)	40156	5.00000	4.81(a)
93 1,2,3-Trichlorobenzene	180	12.331	12.331	(1.205)	32507	5.00000	5.12
71 1,2,3-Trichloropropane	75	9.422	9.426	(0.921)	47754	5.00000	5.05
90 1,2,4-Trichlorobenzene	180	11.919	11.919	(1.165)	34224	5.00000	5.37
79 1,2,4-Trimethylbenzene	105	9.940	9.940	(0.971)	111949	5.00000	5.03
89 1,2-Dibromo-3-Chloropropane	155	11.229	11.229	(1.097)	6421	5.00000	5.16
57 1,2-Dibromoethane	107	7.848	7.848	(0.952)	33803	5.00000	5.19
88 1,2-Dichlorobenzene	146	10.566	10.569	(1.033)	68297	5.00000	5.15
33 1,2-Dichloroethane	62	5.250	5.250	(0.933)	48106	5.00000	5.27

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42	1,2-Dichloropropane	63	6.079	6.078	(1.081)	36651	5.00000	5.32
75	1,3,5-Trimethylbenzene	105	9.621	9.625	(0.940)	108317	5.00000	5.14
83	1,3-Dichlorobenzene	146	10.176	10.176	(0.995)	66416	5.00000	4.98(a)
54	1,3-Dichloropropane	76	7.559	7.563	(0.917)	60925	5.00000	5.29
84	1,4-Dichlorobenzene	146	10.251	10.254	(1.002)	68500	5.00000	5.06
26	2,2-Dichloropropane	77	4.272	4.268	(0.873)	29662	5.00000	4.50(a)
24	2-Butanone	43	4.343	4.335	(0.887)	39761	10.0000	10.06
76	2-Chlorotoluene	91	9.542	9.546	(0.933)	94983	5.00000	5.08
52	2-Hexanone	43	7.649	7.649	(0.928)	57454	10.0000	9.99
77	4-Chlorotoluene	91	9.636	9.636	(0.942)	110435	5.00000	5.17
82	p-Isopropyltoluene	119	10.206	10.210	(0.997)	103356	5.00000	4.85(a)
45	4-Methyl-2-Pentanone	43	6.911	6.911	(0.838)	84489	10.0000	10.30
10	Acetone	43	2.487	2.480	(0.508)	29742	10.0000	8.72
37	Benzene	78	5.216	5.213	(0.927)	136430	5.00000	4.98(a)
74	Bromobenzene	156	9.377	9.381	(0.916)	40474	5.00000	5.09
29	Bromochloromethane	128	4.557	4.553	(0.931)	18659	5.00000	5.19
39	Bromodichloromethane	83	6.345	6.345	(1.128)	37448	5.00000	4.87(a)
66	Bromoform	173	8.980	8.980	(1.089)	18227	5.00000	5.19
6	Bromomethane	94	1.674	1.655	(0.342)	26020	5.00000	5.70
19	Carbon Disulfide	76	2.592	2.585	(0.530)	157379	10.0000	9.45
34	Carbon Tetrachloride	117	4.995	4.991	(0.888)	30487	5.00000	4.28(a)
59	Chlorobenzene	112	8.272	8.271	(1.003)	93231	5.00000	5.15
7	Chloroethane	64	1.756	1.737	(0.359)	24600	5.00000	4.23(a)
28	Chloroform	83	4.658	4.654	(0.952)	59183	5.00000	5.10
3	Chloromethane	50	1.344	1.336	(0.275)	51549	5.00000	4.24(a)
27	cis-1,2-Dichloroethene	96	4.287	4.283	(0.876)	36221	5.00000	4.78(a)
46	cis-1,3-Dichloropropene	75	6.757	6.757	(1.201)	40456	5.00000	4.76(a)
55	Dibromochloromethane	129	7.754	7.754	(0.940)	27929	5.00000	5.07
44	Dibromomethane	93	6.187	6.187	(1.100)	22315	5.00000	5.17
2	Dichlorodifluoromethane	85	1.209	1.201	(0.247)	28458	5.00000	4.48(a)
61	Ethylbenzene	106	8.369	8.369	(1.015)	48170	5.00000	5.17
91	Hexachlorobutadiene	225	12.062	12.061	(1.179)	13277	5.00000	5.25
67	Isopropylbenzene	105	9.123	9.122	(1.106)	130419	5.00000	4.96(a)
62	m,p-Xylenes	106	8.470	8.470	(1.027)	113203	10.0000	10.10
17	Methylene Chloride	84	2.873	2.866	(0.587)	38987	5.00000	4.64(a)
87	n-Butylbenzene	91	10.555	10.554	(1.032)	82303	5.00000	4.86(a)
73	n-Propylbenzene	91	9.471	9.475	(0.926)	141557	5.00000	4.81(a)
92	Naphthalene	128	12.129	12.129	(1.185)	81862	5.00000	4.46(a)
63	o-Xylene	106	8.808	8.807	(1.068)	57652	5.00000	5.14
81	sec-Butylbenzene	105	10.082	10.086	(0.985)	111482	5.00000	4.77(a)
64	Styrene	104	8.823	8.822	(1.070)	101053	5.00000	5.12
78	tert-Butylbenzene	119	9.899	9.898	(0.967)	89109	5.00000	5.01
56	Tetrachloroethene	166	7.522	7.522	(0.912)	37820	5.00000	5.17
50	Toluene	91	7.046	7.046	(0.855)	143887	5.00000	5.19
20	trans-1,2-Dichloroethene	96	3.143	3.136	(0.642)	30783	5.00000	4.90(a)
51	trans-1,3-Dichloropropene	75	7.259	7.259	(1.291)	34390	5.00000	4.89(a)
38	Trichloroethene	130	5.861	5.857	(1.042)	34849	5.00000	4.85(a)
8	Trichlorofluoromethane	101	1.959	1.947	(0.400)	39251	5.00000	4.31(a)
5	Vinyl Chloride	62	1.423	1.415	(0.291)	38769	5.00000	4.67(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).



Data File: \\nahstws005\Target\chem\voa9,i\U191227,b\U122706,D
Date : 27-DEC-2019 13:29
Client ID: VSTD005
Sample Info: VSTD005;VSTD005;1;5;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa9.i\U191227.b\U122707.D Page 1
Report Date: 17-Jan-2020 15:02

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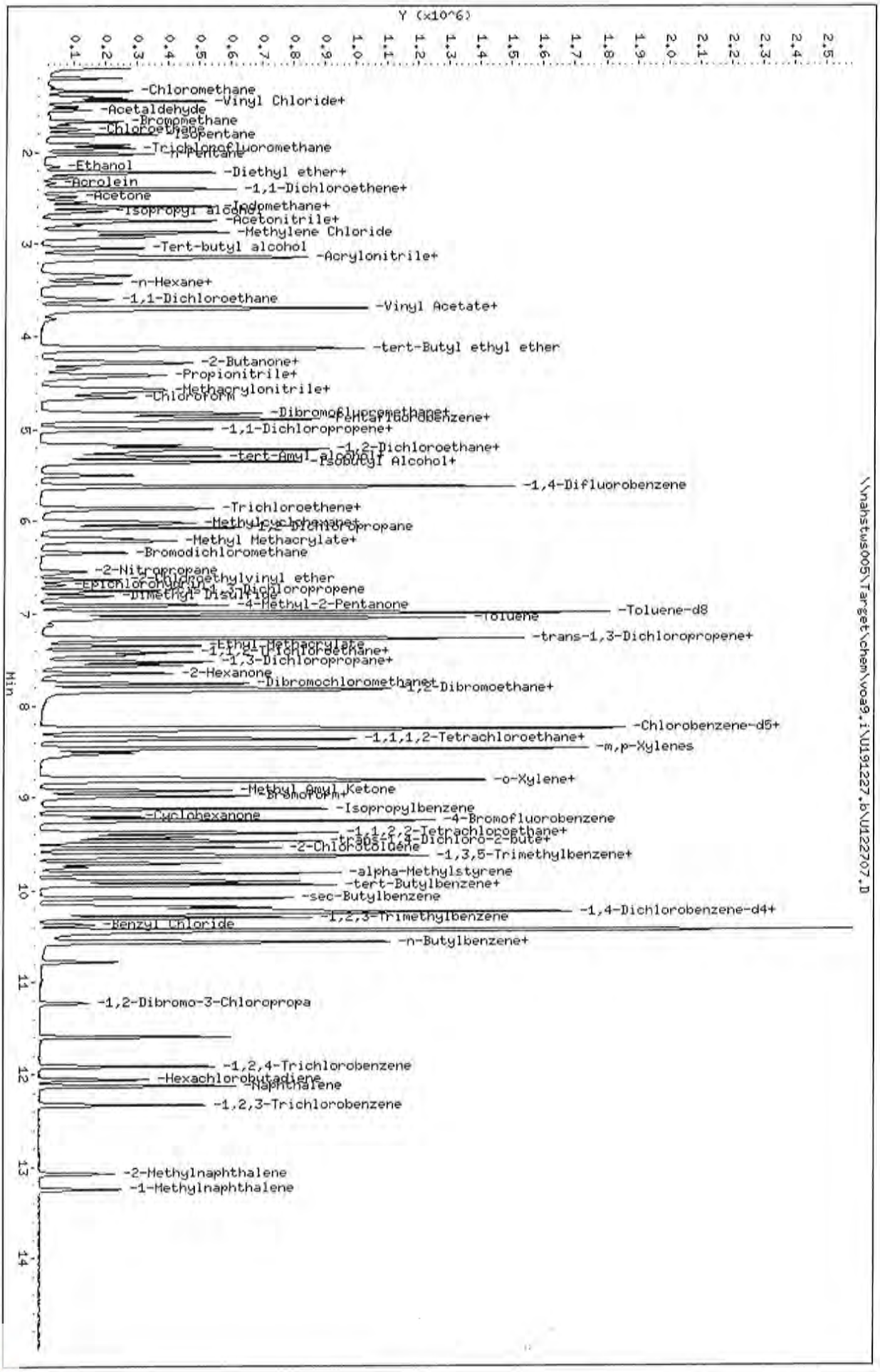
Data file : \\nahstws005\Target\chem\voa9.i\U191227.b\U122707.D
Lab Smp Id: VSTD020 Client Smp ID: VSTD020
Inj Date : 27-DEC-2019 13:53
Operator : PC Inst ID: VOA9.i
Smp Info : VSTD020;VSTD020;1;6;
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U191227.b\8260C.m
Meth Date : 17-Jan-2020 15:01 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 13:53 Cal File: U122707.D
Als bottle: 8 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.890	4.890	(1.000)	557460	50.0000	
*	36 1,4-Difluorobenzene	114	5.621	5.621	(1.000)	831536	50.0000	
*	47 Chlorobenzene-d5	117	8.245	8.249	(1.000)	747195	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	401511	50.0000	
$	30 Dibromofluoromethane	113	4.827	4.826	(0.987)	241400	50.0000	50.56
$	35 1,2-Dichloroethane-d4	65	5.171	5.171	(1.057)	266861	50.0000	49.75
$	48 Toluene-d8	98	6.986	6.986	(0.847)	960104	50.0000	50.00
$	69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	353797	50.0000	50.39
	60 1,1,1,2-Tetrachloroethane	131	8.347	8.346	(1.012)	125950	20.0000	22.03
	31 1,1,1-Trichloroethane	97	4.827	4.823	(0.987)	177492	20.0000	21.41
	68 1,1,2,2-Tetrachloroethane	83	9.389	9.389	(0.918)	194289	20.0000	20.87
	53 1,1,2-Trichloroethane	83	7.417	7.417	(0.900)	111567	20.0000	21.06
	22 1,1-Dichloroethane	63	3.601	3.597	(0.736)	228797	20.0000	20.53
	11 1,1-Dichloroethene	96	2.401	2.393	(0.491)	111239	20.0000	20.63
	32 1,1-Dichloropropene	75	5.003	4.999	(0.890)	171181	20.0000	21.07
	93 1,2,3-Trichlorobenzene	180	12.331	12.331	(1.205)	156712	20.0000	20.49
	71 1,2,3-Trichloropropane	75	9.422	9.426	(0.921)	196234	20.0000	20.69
	90 1,2,4-Trichlorobenzene	180	11.919	11.919	(1.165)	162984	20.0000	20.25
	79 1,2,4-Trimethylbenzene	105	9.940	9.940	(0.971)	485305	20.0000	21.77
	89 1,2-Dibromo-3-Chloropropane	155	11.229	11.229	(1.097)	31460	20.0000	19.26
	57 1,2-Dibromoethane	107	7.848	7.848	(0.952)	136258	20.0000	21.46
	88 1,2-Dichlorobenzene	146	10.566	10.569	(1.033)	276482	20.0000	20.81
	33 1,2-Dichloroethane	62	5.250	5.250	(0.934)	176750	20.0000	19.91

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42	1,2-Dichloropropane	63	6.079	6.078	(1.081)	140164	20.0000	20.89
75	1,3,5-Trimethylbenzene	105	9.621	9.625	(0.940)	455175	20.0000	21.56
83	1,3-Dichlorobenzene	146	10.176	10.176	(0.995)	274006	20.0000	20.50
54	1,3-Dichloropropane	76	7.559	7.563	(0.917)	238451	20.0000	21.27
84	1,4-Dichlorobenzene	146	10.251	10.254	(1.002)	281860	20.0000	20.80
26	2,2-Dichloropropane	77	4.272	4.268	(0.874)	135619	20.0000	21.28
24	2-Butanone	43	4.339	4.335	(0.887)	157359	40.0000	41.16
76	2-Chlorotoluene	91	9.542	9.546	(0.933)	390455	20.0000	20.83
52	2-Hexanone	43	7.646	7.649	(0.927)	248585	40.0000	44.35
77	4-Chlorotoluene	91	9.636	9.636	(0.942)	447466	20.0000	20.92
82	p-Isopropyltoluene	119	10.206	10.210	(0.997)	467436	20.0000	21.91
45	4-Methyl-2-Pentanone	43	6.911	6.911	(0.838)	345441	40.0000	43.22
10	Acetone	43	2.480	2.480	(0.507)	106794	40.0000	40.89
37	Benzene	78	5.216	5.213	(0.928)	547661	20.0000	20.56
74	Bromobenzene	156	9.377	9.381	(0.916)	165540	20.0000	20.80
29	Bromochloromethane	128	4.553	4.553	(0.931)	74430	20.0000	21.43
39	Bromodichloromethane	83	6.345	6.345	(1.129)	156791	20.0000	20.94
66	Bromoform	173	8.980	8.980	(1.089)	88820	20.0000	18.32
6	Bromomethane	94	1.666	1.655	(0.341)	87044	20.0000	20.13
19	Carbon Disulfide	76	2.589	2.585	(0.529)	674273	40.0000	41.87
34	Carbon Tetrachloride	117	4.991	4.991	(0.888)	144406	20.0000	20.83
59	Chlorobenzene	112	8.272	8.271	(1.003)	359494	20.0000	20.40
7	Chloroethane	64	1.753	1.737	(0.358)	98970	20.0000	20.66
28	Chloroform	83	4.654	4.654	(0.952)	229666	20.0000	20.46
3	Chloromethane	50	1.340	1.336	(0.274)	183989	20.0000	21.78
27	cis-1,2-Dichloroethene	96	4.283	4.283	(0.876)	149645	20.0000	20.44
46	cis-1,3-Dichloropropene	75	6.753	6.757	(1.201)	190610	20.0000	18.83
55	Dibromochloromethane	129	7.754	7.754	(0.940)	122049	20.0000	19.08
44	Dibromomethane	93	6.187	6.187	(1.101)	86390	20.0000	20.57
2	Dichlorodifluoromethane	85	1.205	1.201	(0.247)	130782	20.0000	21.32
61	Ethylbenzene	106	8.365	8.369	(1.015)	189372	20.0000	20.85
91	Hexachlorobutadiene	225	12.058	12.061	(1.178)	65198	20.0000	22.44
67	Isopropylbenzene	105	9.123	9.122	(1.106)	551953	20.0000	21.56
62	m,p-Xylenes	106	8.470	8.470	(1.027)	468012	40.0000	42.84
17	Methylene Chloride	84	2.870	2.866	(0.587)	139529	20.0000	20.37
87	n-Butylbenzene	91	10.551	10.554	(1.031)	371398	20.0000	21.90
73	n-Propylbenzene	91	9.471	9.475	(0.926)	621446	20.0000	21.09
92	Naphthalene	128	12.129	12.129	(1.185)	445256	20.0000	20.01
63	o-Xylene	106	8.808	8.807	(1.068)	231597	20.0000	21.17
81	sec-Butylbenzene	105	10.082	10.086	(0.985)	506988	20.0000	21.64
64	Styrene	104	8.823	8.822	(1.070)	418493	20.0000	21.75
78	tert-Butylbenzene	119	9.899	9.898	(0.967)	382518	20.0000	21.46
56	Tetrachloroethene	166	7.522	7.522	(0.912)	149398	20.0000	21.51
50	Toluene	91	7.046	7.046	(0.855)	569476	20.0000	21.09
20	trans-1,2-Dichloroethene	96	3.140	3.136	(0.642)	126632	20.0000	20.86
51	trans-1,3-Dichloropropene	75	7.256	7.259	(1.291)	163685	20.0000	18.25
38	Trichloroethene	130	5.857	5.857	(1.042)	141722	20.0000	20.26
8	Trichlorofluoromethane	101	1.951	1.947	(0.399)	187235	20.0000	21.28
5	Vinyl Chloride	62	1.419	1.415	(0.290)	165704	20.0000	20.65



Data File: \\nahstws005\Target\chem\voa9.i\U191227.b\U122707.D
Date : 27-DEC-2019 13:53
Client ID: VSTD020
Sample Info: VSTD020;VSTD020;1;6;
Purge Volume: 5.0
Column phase: DB624

\\nahstws005\Target\chem\voa9.i\U191227.b\U122707.D

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa9.i\U191227.b\U122708.D Page 1
Report Date: 17-Jan-2020 15:02

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U191227.b\U122708.D
Lab Smp Id: VSTD050 Client Smp ID: VSTD050
Inj Date : 27-DEC-2019 14:17
Operator : PC Inst ID: VOA9.i
Smp Info : VSTD050;VSTD050;1;7;
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U191227.b\8260C.m
Meth Date : 17-Jan-2020 15:01 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 9 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

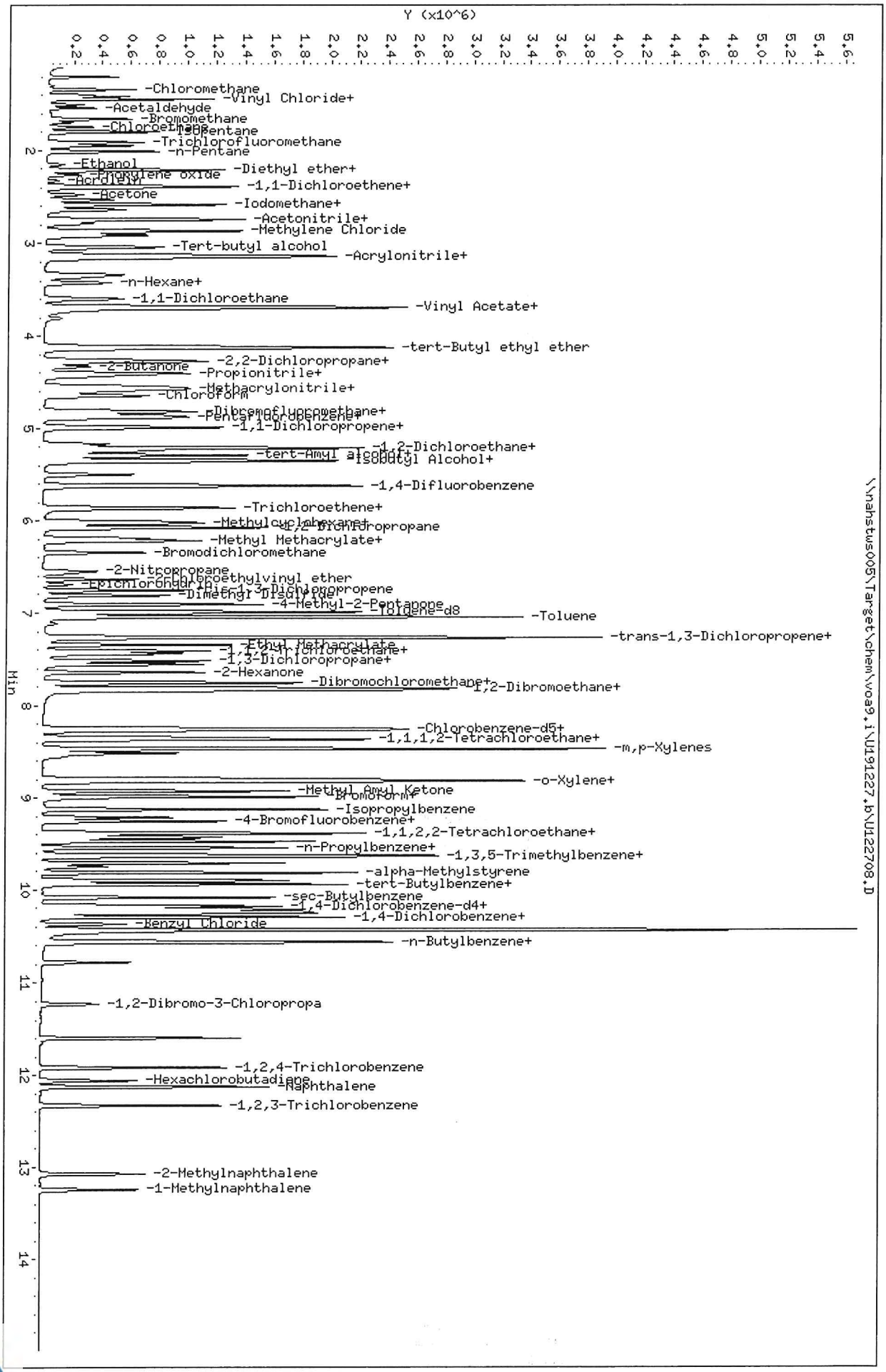
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.890	4.890	(1.000)	574148	50.0000	
*	36 1,4-Difluorobenzene	114	5.621	5.621	(1.000)	843193	50.0000	
*	47 Chlorobenzene-d5	117	8.245	8.249	(1.000)	773843	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	418073	50.0000	
$	30 Dibromofluoromethane	113	4.823	4.826	(0.986)	251866	50.0000	51.22
$	35 1,2-Dichloroethane-d4	65	5.171	5.171	(1.057)	272653	50.0000	49.35
$	48 Toluene-d8	98	6.986	6.986	(0.847)	997971	50.0000	50.18
$	69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	360058	50.0000	49.51
	60 1,1,1,2-Tetrachloroethane	131	8.346	8.346	(1.012)	308402	50.0000	52.08
	31 1,1,1-Trichloroethane	97	4.823	4.823	(0.986)	410765	50.0000	48.11
	68 1,1,2,2-Tetrachloroethane	83	9.388	9.389	(0.918)	486718	50.0000	50.22
	53 1,1,2-Trichloroethane	83	7.417	7.417	(0.900)	274203	50.0000	49.97
	22 1,1-Dichloroethane	63	3.597	3.597	(0.736)	561838	50.0000	48.94
	11 1,1-Dichloroethene	96	2.393	2.393	(0.489)	250973	50.0000	45.20
	32 1,1-Dichloropropene	75	4.999	4.999	(0.889)	377065	50.0000	45.78
	93 1,2,3-Trichlorobenzene	180	12.331	12.331	(1.205)	373073	50.0000	45.46
	71 1,2,3-Trichloropropane	75	9.422	9.426	(0.921)	524870	50.0000	53.16
	90 1,2,4-Trichlorobenzene	180	11.919	11.919	(1.165)	388332	50.0000	44.53
	79 1,2,4-Trimethylbenzene	105	9.940	9.940	(0.971)	1063703	50.0000	45.82
	89 1,2-Dibromo-3-Chloropropane	155	11.229	11.229	(1.097)	84219	50.0000	47.10
	57 1,2-Dibromoethane	107	7.848	7.848	(0.952)	339909	50.0000	51.69
	88 1,2-Dichlorobenzene	146	10.566	10.569	(1.033)	657375	50.0000	47.53
	33 1,2-Dichloroethane	62	5.246	5.250	(0.933)	432085	50.0000	48.02

Data File: \\nahstws005\Target\chem\voa9.i\U191227.b\U122708.D Page 2
Report Date: 17-Jan-2020 15:02

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42	1,2-Dichloropropane	63	6.078	6.078	(1.081)	342284	50.0000	50.32
75	1,3,5-Trimethylbenzene	105	9.621	9.625	(0.940)	994119	50.0000	45.22
83	1,3-Dichlorobenzene	146	10.176	10.176	(0.995)	647014	50.0000	46.49
54	1,3-Dichloropropane	76	7.559	7.563	(0.917)	579670	50.0000	49.92
84	1,4-Dichlorobenzene	146	10.251	10.254	(1.002)	661719	50.0000	46.90
26	2,2-Dichloropropane	77	4.268	4.268	(0.873)	327125	50.0000	49.85
24	2-Butanone	43	4.332	4.335	(0.886)	400418	100.000	101.70
76	2-Chlorotoluene	91	9.542	9.546	(0.933)	883916	50.0000	45.28
52	2-Hexanone	43	7.645	7.649	(0.927)	631456	100.000	108.78
77	4-Chlorotoluene	91	9.636	9.636	(0.942)	1023505	50.0000	45.97
82	p-Isopropyltoluene	119	10.206	10.210	(0.997)	963877	50.0000	43.38
45	4-Methyl-2-Pentanone	43	6.911	6.911	(0.838)	878406	100.000	106.12
10	Acetone	43	2.476	2.480	(0.506)	263902	100.000	102.50
37	Benzene	78	5.212	5.213	(0.927)	1310778	50.0000	48.54
74	Bromobenzene	156	9.377	9.381	(0.916)	399177	50.0000	48.17
29	Bromochloromethane	128	4.549	4.553	(0.930)	182377	50.0000	51.00
39	Bromodichloromethane	83	6.345	6.345	(1.129)	403460	50.0000	53.15
66	Bromoform	173	8.980	8.980	(1.089)	251576	50.0000	46.80
6	Bromomethane	94	1.659	1.655	(0.339)	199087	50.0000	44.92
19	Carbon Disulfide	76	2.581	2.585	(0.528)	1607992	100.000	96.96
34	Carbon Tetrachloride	117	4.991	4.991	(0.888)	330603	50.0000	47.04
59	Chlorobenzene	112	8.271	8.271	(1.003)	866729	50.0000	47.49
7	Chloroethane	64	1.745	1.737	(0.357)	234842	50.0000	48.86
28	Chloroform	83	4.650	4.654	(0.951)	560672	50.0000	48.50
3	Chloromethane	50	1.336	1.336	(0.273)	423285	50.0000	51.46
27	cis-1,2-Dichloroethene	96	4.279	4.283	(0.875)	366753	50.0000	48.63
46	cis-1,3-Dichloropropene	75	6.753	6.757	(1.201)	507893	50.0000	47.70
55	Dibromochloromethane	129	7.754	7.754	(0.940)	332096	50.0000	48.42
44	Dibromomethane	93	6.187	6.187	(1.101)	218160	50.0000	51.23
2	Dichlorodifluoromethane	85	1.198	1.201	(0.245)	284536	50.0000	45.04
61	Ethylbenzene	106	8.369	8.369	(1.015)	435991	50.0000	46.36
91	Hexachlorobutadiene	225	12.061	12.061	(1.179)	127976	50.0000	41.31
67	Isopropylbenzene	105	9.122	9.122	(1.106)	1195042	50.0000	45.08
62	m,p-Xylenes	106	8.470	8.470	(1.027)	1069090	100.000	94.49
17	Methylene Chloride	84	2.866	2.866	(0.586)	341072	50.0000	49.96
87	n-Butylbenzene	91	10.554	10.554	(1.032)	769951	50.0000	43.60
73	n-Propylbenzene	91	9.471	9.475	(0.926)	1333350	50.0000	43.46
92	Naphthalene	128	12.129	12.129	(1.185)	1152319	50.0000	48.20
63	o-Xylene	106	8.807	8.807	(1.068)	539266	50.0000	47.61
81	sec-Butylbenzene	105	10.082	10.086	(0.985)	1046702	50.0000	42.91
64	Styrene	104	8.822	8.822	(1.070)	994126	50.0000	49.91
78	tert-Butylbenzene	119	9.898	9.898	(0.967)	795702	50.0000	42.89
56	Tetrachloroethene	166	7.522	7.522	(0.912)	316543	50.0000	44.21
50	Toluene	91	7.046	7.046	(0.855)	1330052	50.0000	47.56
20	trans-1,2-Dichloroethene	96	3.136	3.136	(0.641)	296615	50.0000	47.45
51	trans-1,3-Dichloropropene	75	7.255	7.259	(1.291)	455644	50.0000	47.55
38	Trichloroethene	130	5.857	5.857	(1.042)	329040	50.0000	46.39
8	Trichlorofluoromethane	101	1.947	1.947	(0.398)	406634	50.0000	44.88
5	Vinyl Chloride	62	1.415	1.415	(0.289)	373473	50.0000	45.21



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Date : 27-DEC-2019 14:17
Client ID: VSTD050
Sample Info: VSTD050;VSTD050;1;7;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

\\nahstws005\Target\chem\voa9.i\U191227.b\U122708.D

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U191227.b\U122709.D
Lab Smp Id: VSTD100 Client Smp ID: VSTD100
Inj Date : 27-DEC-2019 14:41
Operator : PC Inst ID: VOA9.i
Smp Info : VSTD100;VSTD100;1;8;
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U191227.b\8260C.m
Meth Date : 17-Jan-2020 15:01 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 14:41 Cal File: U122709.D
Als bottle: 10 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

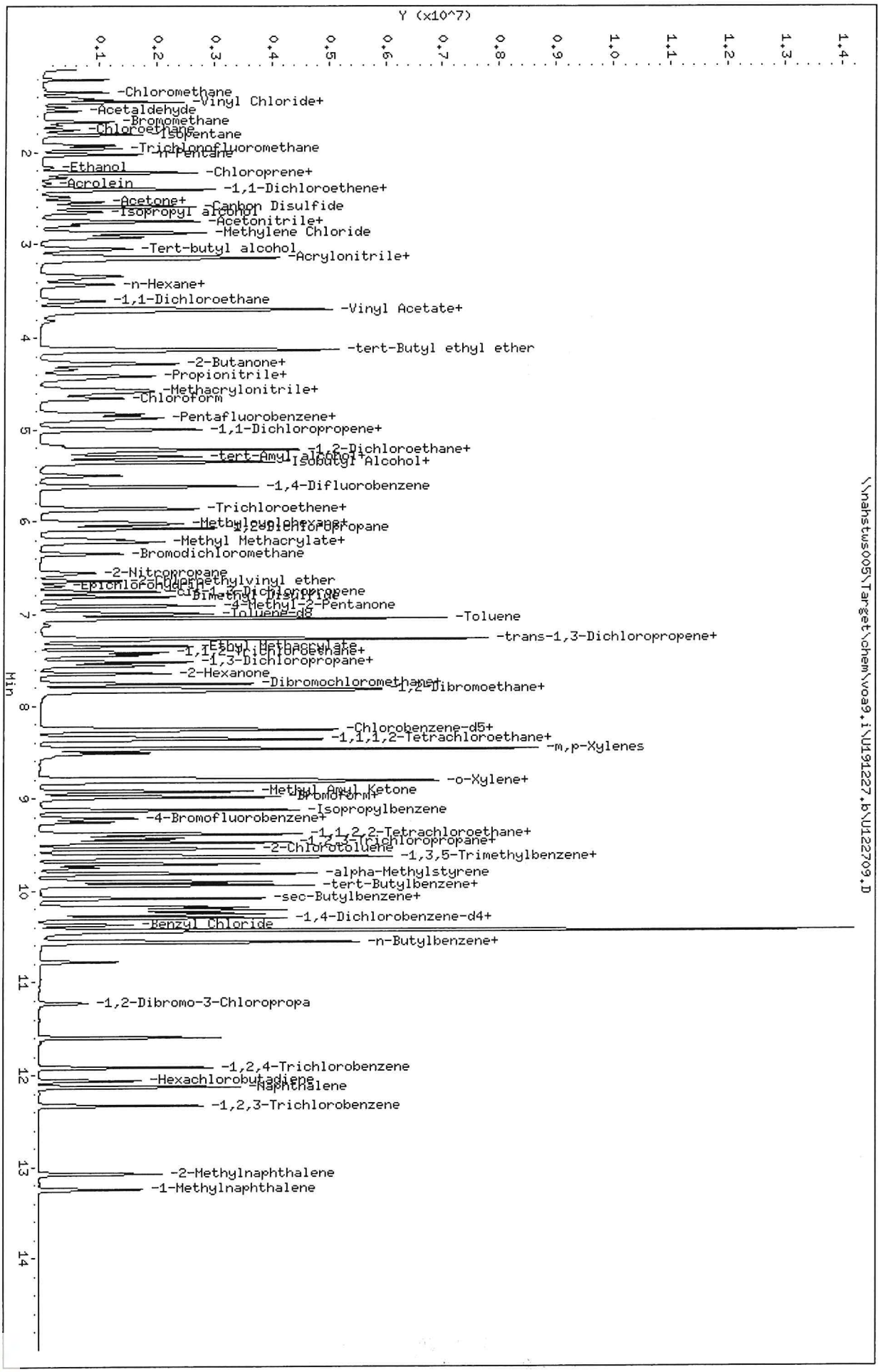
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.894	4.890	(1.000)	551949	50.0000	
* 36 1,4-Difluorobenzene	114	5.625	5.621	(1.000)	824350	50.0000	
* 47 Chlorobenzene-d5	117	8.249	8.249	(1.000)	766567	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	423269	50.0000	
$ 30 Dibromofluoromethane	113	4.830	4.826	(0.987)	241434	50.0000	51.08
$ 35 1,2-Dichloroethane-d4	65	5.175	5.171	(1.057)	265459	50.0000	49.98
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	971926	50.0000	49.33
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	366029	50.0000	50.81
60 1,1,1,2-Tetrachloroethane	131	8.347	8.346	(1.012)	650783	100.000	110.95
31 1,1,1-Trichloroethane	97	4.827	4.823	(0.986)	920128	100.000	112.11
68 1,1,2,2-Tetrachloroethane	83	9.389	9.389	(0.918)	969339	100.000	98.79
53 1,1,2-Trichloroethane	83	7.417	7.417	(0.899)	538670	100.000	99.11
22 1,1-Dichloroethane	63	3.604	3.597	(0.737)	1144639	100.000	103.73
11 1,1-Dichloroethene	96	2.401	2.393	(0.491)	550140	100.000	103.07
32 1,1-Dichloropropene	75	5.003	4.999	(0.889)	850066	100.000	105.57
93 1,2,3-Trichlorobenzene	180	12.331	12.331	(1.205)	850358	100.000	101.00
71 1,2,3-Trichloropropane	75	9.426	9.426	(0.921)	1084444	100.000	108.50
90 1,2,4-Trichlorobenzene	180	11.919	11.919	(1.165)	904377	100.000	100.63
79 1,2,4-Trimethylbenzene	105	9.940	9.940	(0.971)	2366290	100.000	100.69
89 1,2-Dibromo-3-Chloropropane	155	11.229	11.229	(1.097)	182822	100.000	99.23
57 1,2-Dibromoethane	107	7.848	7.848	(0.951)	683177	100.000	104.89
88 1,2-Dichlorobenzene	146	10.566	10.569	(1.033)	1373836	100.000	98.12
33 1,2-Dichloroethane	62	5.254	5.250	(0.934)	845172	100.000	96.07

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42	1,2-Dichloropropane	63	6.079	6.078	(1.081)	682930	100.000	102.70
75	1,3,5-Trimethylbenzene	105	9.621	9.625	(0.940)	2237107	100.000	100.51
83	1,3-Dichlorobenzene	146	10.176	10.176	(0.995)	1388173	100.000	98.53
54	1,3-Dichloropropane	76	7.563	7.563	(0.917)	1146160	100.000	99.66
84	1,4-Dichlorobenzene	146	10.251	10.254	(1.002)	1431171	100.000	100.19
26	2,2-Dichloropropane	77	4.276	4.268	(0.874)	730932	100.000	115.88
24	2-Butanone	43	4.339	4.335	(0.887)	785026	200.000	207.40(A)
76	2-Chlorotoluene	91	9.542	9.546	(0.933)	1912021	100.000	96.75
52	2-Hexanone	43	7.649	7.649	(0.927)	1237892	200.000	215.27(A)
77	4-Chlorotoluene	91	9.636	9.636	(0.942)	2206383	100.000	97.88
82	p-Isopropyltoluene	119	10.206	10.210	(0.997)	2299132	100.000	102.22
45	4-Methyl-2-Pentanone	43	6.911	6.911	(0.838)	1730803	200.000	211.08(A)
10	Acetone	43	2.487	2.480	(0.508)	504619	200.000	206.98(A)
37	Benzene	78	5.216	5.213	(0.927)	2658661	100.000	100.71
74	Bromobenzene	156	9.381	9.381	(0.917)	832060	100.000	99.19
29	Bromochloromethane	128	4.557	4.553	(0.931)	334289	100.000	97.24
39	Bromodichloromethane	83	6.345	6.345	(1.128)	822341	100.000	110.81
66	Bromoform	173	8.980	8.980	(1.089)	538200	100.000	98.86
6	Bromomethane	94	1.666	1.655	(0.341)	445962	100.000	104.90
19	Carbon Disulfide	76	2.592	2.585	(0.530)	3479328	200.000	218.24(A)
34	Carbon Tetrachloride	117	4.995	4.991	(0.888)	788556	100.000	114.77
59	Chlorobenzene	112	8.272	8.271	(1.003)	1796175	100.000	99.36
7	Chloroethane	64	1.753	1.737	(0.358)	482879	100.000	105.61
28	Chloroform	83	4.658	4.654	(0.952)	1121911	100.000	100.96
3	Chloromethane	50	1.344	1.336	(0.275)	820443	100.000	106.07
27	cis-1,2-Dichloroethene	96	4.287	4.283	(0.876)	736625	100.000	101.62
46	cis-1,3-Dichloropropene	75	6.757	6.757	(1.201)	1068215	100.000	101.36
55	Dibromochloromethane	129	7.754	7.754	(0.940)	685386	100.000	99.73
44	Dibromomethane	93	6.187	6.187	(1.100)	428155	100.000	102.85
2	Dichlorodifluoromethane	85	1.209	1.201	(0.247)	652253	100.000	107.39
61	Ethylbenzene	106	8.369	8.369	(1.015)	955035	100.000	102.53
91	Hexachlorobutadiene	225	12.062	12.061	(1.179)	333011	100.000	102.54
67	Isopropylbenzene	105	9.123	9.122	(1.106)	2728620	100.000	103.91
62	m,p-Xylenes	106	8.470	8.470	(1.027)	2304805	200.000	205.65(A)
17	Methylene Chloride	84	2.874	2.866	(0.587)	672930	100.000	103.78
87	n-Butylbenzene	91	10.555	10.554	(1.032)	1873986	100.000	104.82
73	n-Propylbenzene	91	9.471	9.475	(0.926)	3102408	100.000	99.89
92	Naphthalene	128	12.129	12.129	(1.185)	2504281	100.000	101.80
63	o-Xylene	106	8.808	8.807	(1.068)	1141367	100.000	101.73
81	sec-Butylbenzene	105	10.082	10.086	(0.985)	2530958	100.000	102.50
64	Styrene	104	8.823	8.822	(1.070)	2072117	100.000	105.01
78	tert-Butylbenzene	119	9.899	9.898	(0.967)	1890669	100.000	100.66
56	Tetrachloroethene	166	7.522	7.522	(0.912)	725785	100.000	102.56
50	Toluene	91	7.046	7.046	(0.854)	2770457	100.000	100.02
20	trans-1,2-Dichloroethene	96	3.143	3.136	(0.642)	619966	100.000	103.18
51	trans-1,3-Dichloropropene	75	7.259	7.259	(1.291)	958698	100.000	100.66
38	Trichloroethene	130	5.861	5.857	(1.042)	699196	100.000	100.83
8	Trichlorofluoromethane	101	1.959	1.947	(0.400)	941746	100.000	108.12
5	Vinyl Chloride	62	1.423	1.415	(0.291)	807606	100.000	101.69

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.



Data File: \\nahstws005\Target\chem\voa9.i\U191227.b\U122709.D
Date : 27-DEC-2019 14:41
Client ID: VSTD100
Sample Info: VSTD100;VSTD100;1;8;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa9.i\U191227.b\U122710.D Page 1
Report Date: 17-Jan-2020 15:02

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U191227.b\U122710.D
Lab Smp Id: VSTD150 Client Smp ID: VSTD150
Inj Date : 27-DEC-2019 15:06
Operator : PC Inst ID: VOA9.i
Smp Info : VSTD150;VSTD150;1;9;
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U191227.b\8260C.m
Meth Date : 17-Jan-2020 15:01 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 15:06 Cal File: U122710.D
Als bottle: 11 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

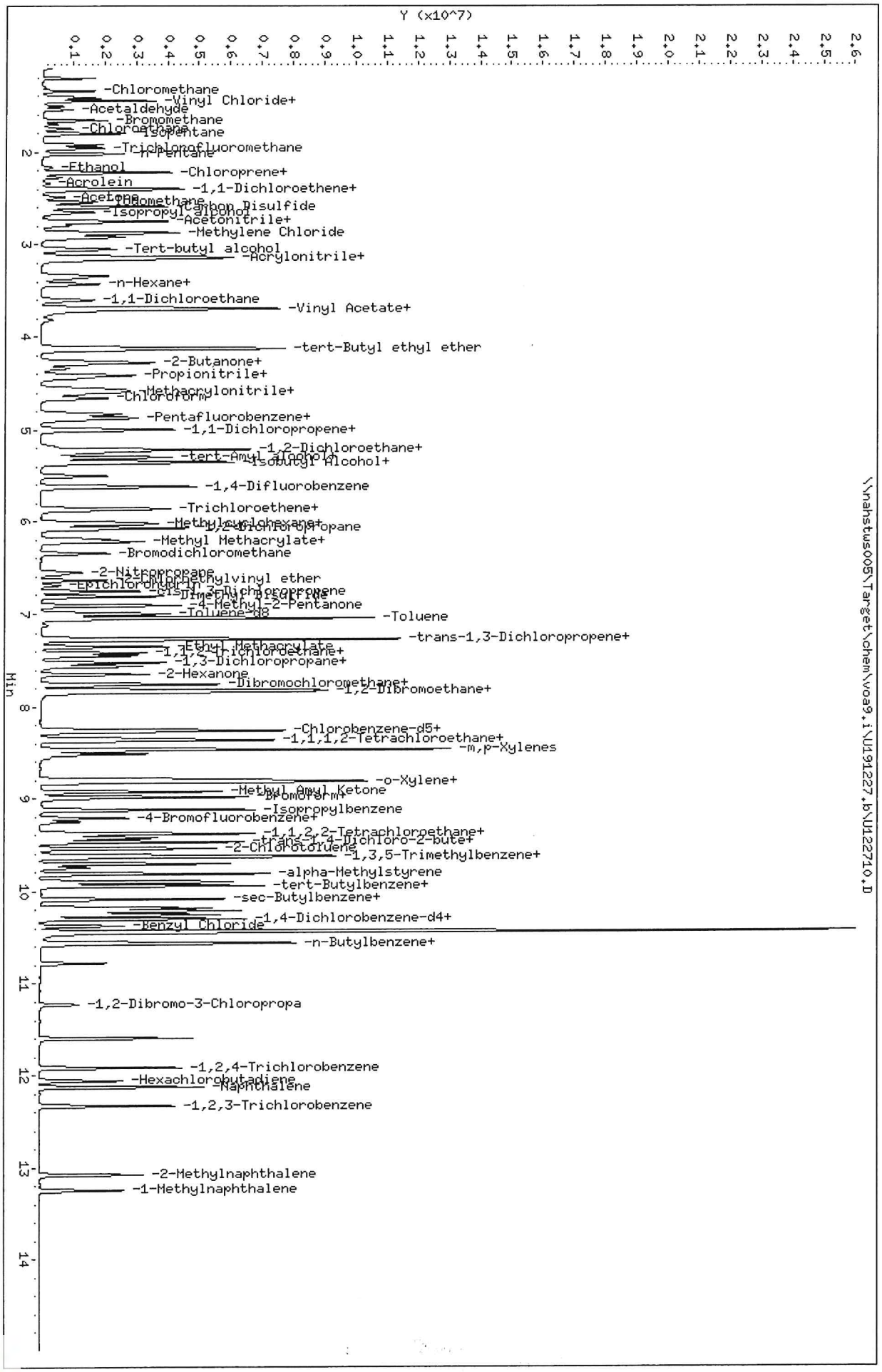
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.894	4.890	(1.000)	570201	50.0000	
* 36 1,4-Difluorobenzene	114	5.625	5.621	(1.000)	837709	50.0000	
* 47 Chlorobenzene-d5	117	8.249	8.249	(1.000)	779342	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	426041	50.0000	
$ 30 Dibromofluoromethane	113	4.826	4.826	(0.986)	244628	50.0000	50.10
$ 35 1,2-Dichloroethane-d4	65	5.175	5.171	(1.057)	265216	50.0000	48.34
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	979425	50.0000	48.90
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	369914	50.0000	50.51
60 1,1,1,2-Tetrachloroethane	131	8.346	8.346	(1.012)	1007763	150.000	169.00
31 1,1,1-Trichloroethane	97	4.826	4.823	(0.986)	1396131	150.000	164.66
68 1,1,2,2-Tetrachloroethane	83	9.388	9.389	(0.918)	1446352	150.000	146.44
53 1,1,2-Trichloroethane	83	7.417	7.417	(0.899)	812259	150.000	147.00
22 1,1-Dichloroethane	63	3.604	3.597	(0.737)	1719581	150.000	150.85
11 1,1-Dichloroethene	96	2.397	2.393	(0.490)	827603	150.000	150.09
32 1,1-Dichloropropene	75	5.003	4.999	(0.889)	1276658	150.000	156.02
93 1,2,3-Trichlorobenzene	180	12.331	12.331	(1.205)	1278036	150.000	150.27
71 1,2,3-Trichloropropane	75	9.426	9.426	(0.921)	1652904	150.000	164.30
90 1,2,4-Trichlorobenzene	180	11.919	11.919	(1.165)	1368829	150.000	150.61
79 1,2,4-Trimethylbenzene	105	9.940	9.940	(0.971)	3526122	150.000	149.06
89 1,2-Dibromo-3-Chloropropane	155	11.229	11.229	(1.097)	277295	150.000	148.75
57 1,2-Dibromoethane	107	7.848	7.848	(0.951)	1032423	150.000	155.91
88 1,2-Dichlorobenzene	146	10.566	10.569	(1.033)	2063573	150.000	146.43
33 1,2-Dichloroethane	62	5.250	5.250	(0.933)	1256046	150.000	140.50

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42 1,2-Dichloropropane	63	6.078	6.078	(1.081)	1030080	150.000	152.43
75 1,3,5-Trimethylbenzene	105	9.625	9.625	(0.941)	3360989	150.000	150.03
83 1,3-Dichlorobenzene	146	10.176	10.176	(0.995)	2103898	150.000	148.37
54 1,3-Dichloropropane	76	7.563	7.563	(0.917)	1731370	150.000	148.07
84 1,4-Dichlorobenzene	146	10.251	10.254	(1.002)	2161089	150.000	150.31
26 2,2-Dichloropropane	77	4.272	4.268	(0.873)	1108012	150.000	170.04
24 2-Butanone	43	4.339	4.335	(0.887)	1146282	300.000	293.15(A)
76 2-Chlorotoluene	91	9.546	9.546	(0.933)	2866597	150.000	144.12
52 2-Hexanone	43	7.649	7.649	(0.927)	1856815	300.000	317.61(A)
77 4-Chlorotoluene	91	9.636	9.636	(0.942)	3320583	150.000	146.36
82 p-Isopropyltoluene	119	10.206	10.210	(0.997)	3428668	150.000	151.45
45 4-Methyl-2-Pentanone	43	6.911	6.911	(0.838)	2584860	300.000	310.07(A)
10 Acetone	43	2.483	2.480	(0.508)	756970	300.000	301.96(A)
37 Benzene	78	5.216	5.213	(0.927)	3987309	150.000	148.63
74 Bromobenzene	156	9.381	9.381	(0.917)	1270298	150.000	150.45
29 Bromochloromethane	128	4.553	4.553	(0.930)	489394	150.000	137.80
39 Bromodichloromethane	83	6.345	6.345	(1.128)	1262662	150.000	167.43
66 Bromoform	173	8.980	8.980	(1.089)	839814	150.000	150.71
6 Bromomethane	94	1.659	1.655	(0.339)	659261	150.000	150.18
19 Carbon Disulfide	76	2.588	2.585	(0.529)	5255404	300.000	319.10(A)
34 Carbon Tetrachloride	117	4.991	4.991	(0.887)	1205663	150.000	172.68
59 Chlorobenzene	112	8.271	8.271	(1.003)	2717932	150.000	147.89
7 Chloroethane	64	1.745	1.737	(0.357)	714112	150.000	151.60
28 Chloroform	83	4.654	4.654	(0.951)	1678386	150.000	146.21
3 Chloromethane	50	1.340	1.336	(0.274)	1192994	150.000	150.23
27 cis-1,2-Dichloroethene	96	4.283	4.283	(0.875)	1108213	150.000	147.98
46 cis-1,3-Dichloropropene	75	6.757	6.757	(1.201)	1624540	150.000	151.14
55 Dibromochloromethane	129	7.754	7.754	(0.940)	1052068	150.000	150.04
44 Dibromomethane	93	6.187	6.187	(1.100)	656538	150.000	155.19
2 Dichlorodifluoromethane	85	1.205	1.201	(0.246)	977829	150.000	155.85
61 Ethylbenzene	106	8.369	8.369	(1.015)	1457585	150.000	153.91
91 Hexachlorobutadiene	225	12.061	12.061	(1.179)	509971	150.000	152.52
67 Isopropylbenzene	105	9.122	9.122	(1.106)	4092244	150.000	153.29
62 m,p-Xylenes	106	8.470	8.470	(1.027)	3487954	300.000	306.13(A)
17 Methylene Chloride	84	2.869	2.866	(0.586)	1005600	150.000	150.65
87 n-Butylbenzene	91	10.554	10.554	(1.032)	2813974	150.000	156.38
73 n-Propylbenzene	91	9.475	9.475	(0.926)	4701901	150.000	150.41
92 Naphthalene	128	12.129	12.129	(1.185)	3728115	150.000	149.35
63 o-Xylene	106	8.807	8.807	(1.068)	1733541	150.000	151.97
81 sec-Butylbenzene	105	10.082	10.086	(0.985)	3757595	150.000	151.18
64 Styrene	104	8.822	8.822	(1.070)	3126350	150.000	155.85
78 tert-Butylbenzene	119	9.898	9.898	(0.967)	2844726	150.000	150.47
56 Tetrachloroethene	166	7.522	7.522	(0.912)	1090489	150.000	151.65
50 Toluene	91	7.046	7.046	(0.854)	4183720	150.000	148.56
20 trans-1,2-Dichloroethene	96	3.139	3.136	(0.642)	937319	150.000	151.00
51 trans-1,3-Dichloropropene	75	7.259	7.259	(1.291)	1470268	150.000	151.16
38 Trichloroethene	130	5.861	5.857	(1.042)	1065372	150.000	151.19
8 Trichlorofluoromethane	101	1.951	1.947	(0.399)	1409357	150.000	156.63
5 Vinyl Chloride	62	1.419	1.415	(0.290)	1213020	150.000	147.85

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.



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Date : 27-DEC-2019 15:06
Client ID: VSTD150
Sample Info: VSTD150;VSTD150;1;9;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa9.i\U191227.b\U122711.D Page 1
Report Date: 17-Jan-2020 15:02

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U191227.b\U122711.D
Lab Smp Id: VSTD200 Client Smp ID: VSTD200
Inj Date : 27-DEC-2019 15:30
Operator : PC Inst ID: VOA9.i
Smp Info : VSTD200;VSTD200;1;10;
Misc Info : 180315V9;WATER;0;1;
Comment :
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Meth Date : 17-Jan-2020 15:01 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 15:30 Cal File: U122711.D
Als bottle: 12 Calibration Sample, Level: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

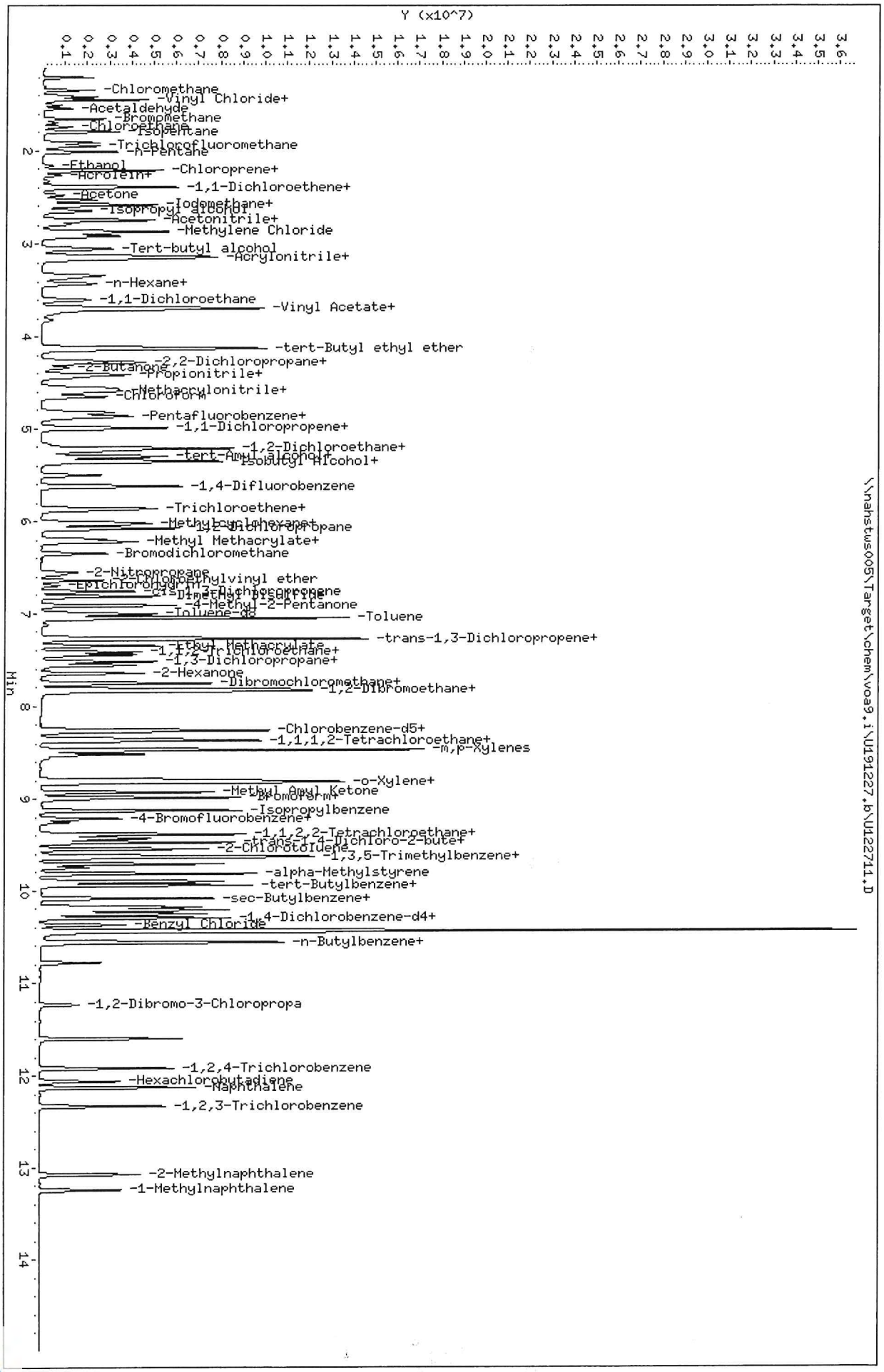
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.890	4.890	(1.000)	581444	50.0000	
*	36 1,4-Difluorobenzene	114	5.621	5.621	(1.000)	855975	50.0000	
*	47 Chlorobenzene-d5	117	8.249	8.249	(1.000)	795313	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	431533	50.0000	
$	30 Dibromofluoromethane	113	4.826	4.826	(0.987)	247587	50.0000	49.72
$	35 1,2-Dichloroethane-d4	65	5.171	5.171	(1.057)	267771	50.0000	47.86
$	48 Toluene-d8	98	6.986	6.986	(0.847)	1006444	50.0000	49.24
$	69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	375834	50.0000	50.29
	60 1,1,1,2-Tetrachloroethane	131	8.346	8.346	(1.012)	1349513	200.000	221.76(A)
	31 1,1,1-Trichloroethane	97	4.823	4.823	(0.986)	1876228	200.000	217.00(A)
	68 1,1,2,2-Tetrachloroethane	83	9.389	9.389	(0.918)	1932947	200.000	193.22
	53 1,1,2-Trichloroethane	83	7.417	7.417	(0.899)	1089654	200.000	193.24
	22 1,1-Dichloroethane	63	3.597	3.597	(0.736)	2281927	200.000	196.31
	11 1,1-Dichloroethene	96	2.393	2.393	(0.490)	1096343	200.000	194.98
	32 1,1-Dichloropropene	75	4.999	4.999	(0.889)	1691959	200.000	202.36(A)
	93 1,2,3-Trichlorobenzene	180	12.331	12.331	(1.205)	1727964	200.000	200.23(A)
	71 1,2,3-Trichloropropane	75	9.426	9.426	(0.921)	2196693	200.000	215.58(A)
	90 1,2,4-Trichlorobenzene	180	11.919	11.919	(1.165)	1848777	200.000	200.36(A)
	79 1,2,4-Trimethylbenzene	105	9.940	9.940	(0.971)	4679906	200.000	195.32
	89 1,2-Dibromo-3-Chloropropane	155	11.229	11.229	(1.097)	382445	200.000	201.99(A)
	57 1,2-Dibromoethane	107	7.848	7.848	(0.951)	1376635	200.000	203.71(A)
	88 1,2-Dichlorobenzene	146	10.569	10.569	(1.033)	2747870	200.000	192.50
	33 1,2-Dichloroethane	62	5.250	5.250	(0.934)	1658656	200.000	181.58

Data File: \\nahstws005\Target\chem\voa9.i\U191227.b\U122711.D Page 2
Report Date: 17-Jan-2020 15:02

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42	1,2-Dichloropropane	63	6.078	6.078	(1.081)	1376917	200.000	199.41
75	1,3,5-Trimethylbenzene	105	9.625	9.625	(0.941)	4468055	200.000	196.91
83	1,3-Dichlorobenzene	146	10.176	10.176	(0.995)	2797295	200.000	194.76
54	1,3-Dichloropropane	76	7.563	7.563	(0.917)	2297139	200.000	192.52
84	1,4-Dichlorobenzene	146	10.254	10.254	(1.002)	2873913	200.000	197.35
26	2,2-Dichloropropane	77	4.268	4.268	(0.873)	1481332	200.000	222.94(A)
24	2-Butanone	43	4.335	4.335	(0.887)	1524220	400.000	382.27(A)
76	2-Chlorotoluene	91	9.546	9.546	(0.933)	3816260	200.000	189.42
52	2-Hexanone	43	7.649	7.649	(0.927)	2523670	400.000	423.01(A)
77	4-Chlorotoluene	91	9.636	9.636	(0.942)	4409261	200.000	191.87
82	p-Isopropyltoluene	119	10.210	10.210	(0.998)	4529145	200.000	197.52
45	4-Methyl-2-Pentanone	43	6.911	6.911	(0.838)	3475646	400.000	408.56(A)
10	Acetone	43	2.480	2.480	(0.507)	1005031	400.000	394.11(A)
37	Benzene	78	5.213	5.213	(0.927)	5263686	200.000	192.03
74	Bromobenzene	156	9.381	9.381	(0.917)	1699351	200.000	198.70
29	Bromochloromethane	128	4.553	4.553	(0.931)	642535	200.000	177.42
39	Bromodichloromethane	83	6.345	6.345	(1.129)	1689711	200.000	219.28(A)
66	Bromoform	173	8.980	8.980	(1.089)	1145836	200.000	200.86(A)
6	Bromomethane	94	1.655	1.655	(0.339)	887677	200.000	198.36
19	Carbon Disulfide	76	2.585	2.585	(0.529)	6926857	400.000	412.46(A)
34	Carbon Tetrachloride	117	4.991	4.991	(0.888)	1620913	200.000	227.20(A)
59	Chlorobenzene	112	8.271	8.271	(1.003)	3601192	200.000	192.02
7	Chloroethane	64	1.737	1.737	(0.355)	939942	200.000	195.96
28	Chloroform	83	4.654	4.654	(0.952)	2221840	200.000	189.81
3	Chloromethane	50	1.336	1.336	(0.273)	1581098	200.000	195.94
27	cis-1,2-Dichloroethene	96	4.283	4.283	(0.876)	1482530	200.000	194.14
46	cis-1,3-Dichloropropene	75	6.757	6.757	(1.202)	2190361	200.000	199.08
55	Dibromochloromethane	129	7.754	7.754	(0.940)	1437540	200.000	200.54(A)
44	Dibromomethane	93	6.187	6.187	(1.101)	873297	200.000	202.03(A)
2	Dichlorodifluoromethane	85	1.201	1.201	(0.246)	1306864	200.000	204.27(A)
61	Ethylbenzene	106	8.369	8.369	(1.015)	1934663	200.000	200.19(A)
91	Hexachlorobutadiene	225	12.061	12.061	(1.179)	685421	200.000	198.23
67	Isopropylbenzene	105	9.122	9.122	(1.106)	5417820	200.000	198.86
62	m,p-Xylenes	106	8.470	8.470	(1.027)	4590065	400.000	394.76(A)
17	Methylene Chloride	84	2.866	2.866	(0.586)	1341737	200.000	197.49
87	n-Butylbenzene	91	10.554	10.554	(1.032)	3745843	200.000	205.52(A)
73	n-Propylbenzene	91	9.475	9.475	(0.926)	6102530	200.000	192.73
92	Naphthalene	128	12.129	12.129	(1.185)	5026244	200.000	197.43
63	o-Xylene	106	8.807	8.807	(1.068)	2301969	200.000	197.75
81	sec-Butylbenzene	105	10.086	10.086	(0.986)	5006770	200.000	198.88
64	Styrene	104	8.822	8.822	(1.070)	4134816	200.000	201.98(A)
78	tert-Butylbenzene	119	9.898	9.898	(0.967)	3774583	200.000	197.11
56	Tetrachloroethene	166	7.522	7.522	(0.912)	1456251	200.000	198.51
50	Toluene	91	7.046	7.046	(0.854)	5497219	200.000	191.29
20	trans-1,2-Dichloroethene	96	3.136	3.136	(0.641)	1246009	200.000	196.85
51	trans-1,3-Dichloropropene	75	7.259	7.259	(1.291)	1987271	200.000	199.49
38	Trichloroethene	130	5.857	5.857	(1.042)	1427654	200.000	198.28
8	Trichlorofluoromethane	101	1.947	1.947	(0.398)	1867441	200.000	203.52(A)
5	Vinyl Chloride	62	1.415	1.415	(0.289)	1599695	200.000	191.21

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.



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Client ID: VSTD200
Sample Info: VSTD200;VSTD200;1;10;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

\\nahstws005\Target\chem\voa9.i\U191227.b\U122711.D

Data File: \\nahstws005\Target\chem\voa9.i\U191227.b\U122714.D Page 1
Report Date: 17-Jan-2020 15:02

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U191227.b\U122714.D
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 27-DEC-2019 16:43
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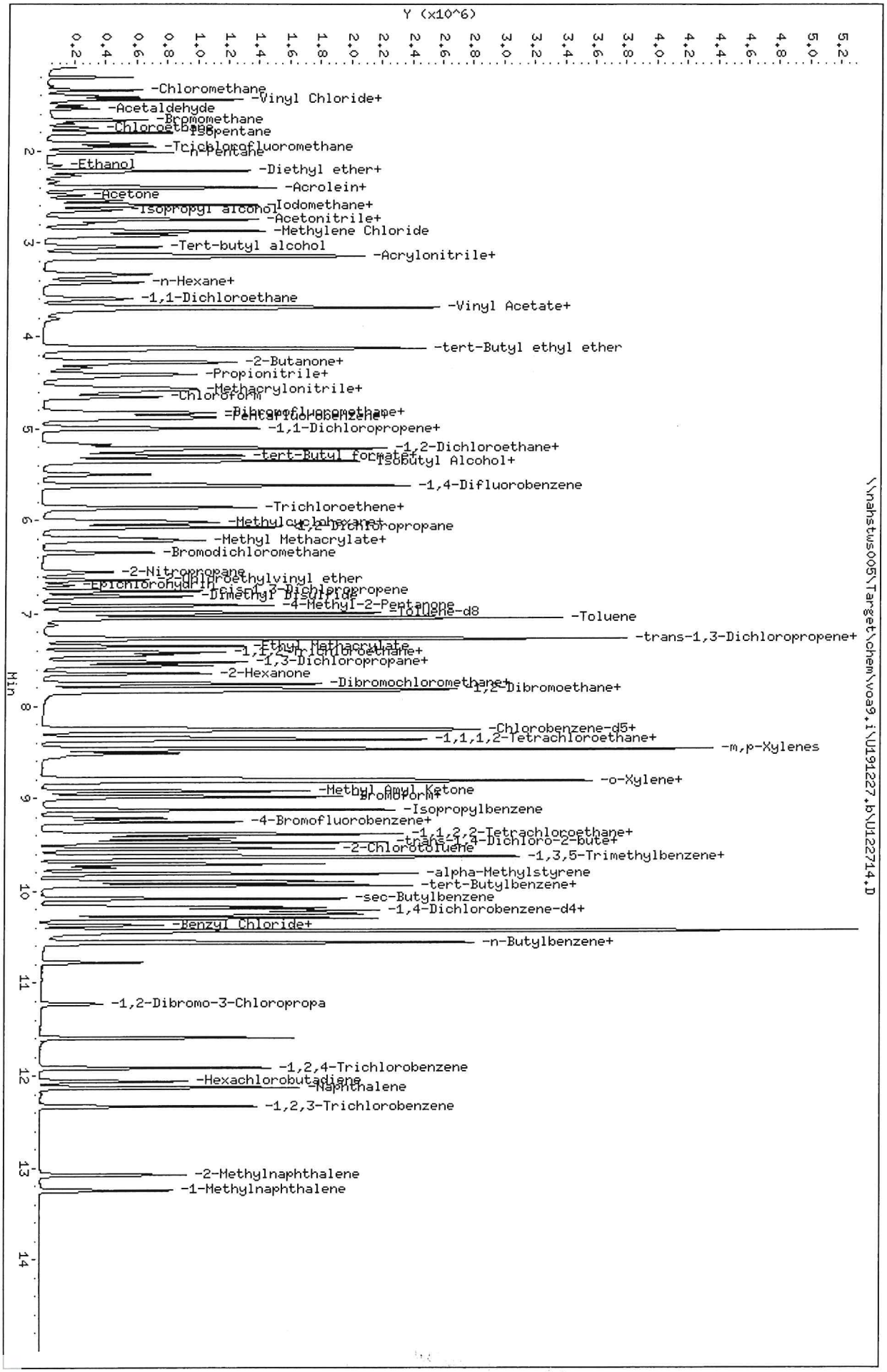
Meth Date : 17-Jan-2020 15:01 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 15:30 Cal File: U122711.D
Als bottle: 15 QC Sample: METHSPIKE
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.890	4.890	(1.000)	577079	50.0000	
* 36 1,4-Difluorobenzene	114	5.621	5.621	(1.000)	851237	50.0000	
* 47 Chlorobenzene-d5	117	8.245	8.249	(1.000)	779598	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	424222	50.0000	
$ 30 Dibromofluoromethane	113	4.826	4.826	(0.987)	248153	50.2169	50.21
$ 35 1,2-Dichloroethane-d4	65	5.171	5.171	(1.057)	270216	48.6643	48.66
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	988997	49.3660	49.36
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	365384	49.8801	49.88
60 1,1,1,2-Tetrachloroethane	131	8.346	8.346	(1.012)	323651	54.2580	54.25
31 1,1,1-Trichloroethane	97	4.823	4.823	(0.986)	455121	53.0386	53.03
68 1,1,2,2-Tetrachloroethane	83	9.389	9.389	(0.918)	488262	49.6498	49.64
53 1,1,2-Trichloroethane	83	7.417	7.417	(0.900)	276078	49.9493	49.94
22 1,1-Dichloroethane	63	3.601	3.597	(0.736)	585210	50.7270	50.72
11 1,1-Dichloroethene	96	2.397	2.393	(0.490)	274633	49.2131	49.21
32 1,1-Dichloropropene	75	5.003	4.999	(0.890)	421846	50.7365	50.73
93 1,2,3-Trichlorobenzene	180	12.331	12.331	(1.205)	423099	50.6869	50.68
71 1,2,3-Trichloropropane	75	9.422	9.426	(0.921)	534945	53.4048	53.40
90 1,2,4-Trichlorobenzene	180	11.919	11.919	(1.165)	457247	51.4589	51.45
79 1,2,4-Trimethylbenzene	105	9.940	9.940	(0.971)	1219863	51.7918	51.79
89 1,2-Dibromo-3-Chloropropane	155	11.229	11.229	(1.097)	86859	47.8519	47.85
57 1,2-Dibromoethane	107	7.848	7.848	(0.952)	347403	52.4463	52.44
88 1,2-Dichlorobenzene	146	10.566	10.569	(1.033)	703436	50.1298	50.12
33 1,2-Dichloroethane	62	5.250	5.250	(0.934)	426011	46.8977	46.89

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
42	1,2-Dichloropropane	63	6.078	6.078	(1.081)	352500	51.3365	51.33
75	1,3,5-Trimethylbenzene	105	9.621	9.625	(0.940)	1138548	51.0423	51.04
83	1,3-Dichlorobenzene	146	10.176	10.176	(0.995)	708240	50.1613	50.16
54	1,3-Dichloropropane	76	7.559	7.563	(0.917)	584698	49.9912	49.99
84	1,4-Dichlorobenzene	146	10.251	10.254	(1.002)	730093	51.0006	51.00
26	2,2-Dichloropropane	77	4.272	4.268	(0.874)	393876	59.7275	59.72
24	2-Butanone	43	4.335	4.335	(0.887)	393378	99.4045	99.40
76	2-Chlorotoluene	91	9.542	9.546	(0.933)	970770	49.0163	49.01
52	2-Hexanone	43	7.645	7.649	(0.927)	617950	105.668	105.66
77	4-Chlorotoluene	91	9.636	9.636	(0.942)	1126838	49.8805	49.88
82	p-Isopropyltoluene	119	10.206	10.210	(0.997)	1171715	51.9813	51.98
45	4-Methyl-2-Pentanone	43	6.911	6.911	(0.838)	857357	102.814	102.81
10	Acetone	43	2.480	2.480	(0.507)	257639	99.4711	99.47
37	Benzene	78	5.213	5.213	(0.927)	1356741	49.7728	49.77
74	Bromobenzene	156	9.377	9.381	(0.916)	422486	50.2529	50.25
29	Bromochloromethane	128	4.553	4.553	(0.931)	186990	52.0250	52.02
39	Bromodichloromethane	83	6.345	6.345	(1.129)	412950	53.8893	53.88
66	Bromoform	173	8.980	8.980	(1.089)	253808	46.8702	46.87
6	Bromomethane	94	1.663	1.655	(0.340)	244155	54.8526	54.85
19	Carbon Disulfide	76	2.588	2.585	(0.529)	1791176	107.463	107.46
34	Carbon Tetrachloride	117	4.991	4.991	(0.888)	374678	52.8106	52.81
59	Chlorobenzene	112	8.271	8.271	(1.003)	920237	50.0591	50.05
7	Chloroethane	64	1.749	1.737	(0.358)	242521	50.2322	50.23
28	Chloroform	83	4.654	4.654	(0.952)	574269	49.4308	49.43
3	Chloromethane	50	1.340	1.336	(0.274)	421774	51.0003	51.00
27	cis-1,2-Dichloroethene	96	4.283	4.283	(0.876)	375284	49.5175	49.51
46	cis-1,3-Dichloropropene	75	6.753	6.757	(1.201)	535507	49.7751	49.77
55	Dibromochloromethane	129	7.754	7.754	(0.940)	338808	49.0215	49.02
44	Dibromomethane	93	6.187	6.187	(1.101)	220346	51.2594	51.25
2	Dichlorodifluoromethane	85	1.201	1.201	(0.246)	324771	51.1478	51.14
61	Ethylbenzene	106	8.369	8.369	(1.015)	487763	51.4905	51.49
91	Hexachlorobutadiene	225	12.058	12.061	(1.178)	181725	57.1669	57.16
67	Isopropylbenzene	105	9.122	9.122	(1.106)	1375975	51.5255	51.52
62	m,p-Xylenes	106	8.470	8.470	(1.027)	1178154	103.370	103.37
17	Methylene Chloride	84	2.870	2.866	(0.587)	348585	50.8269	50.82
87	n-Butylbenzene	91	10.554	10.554	(1.032)	970937	54.1899	54.18
73	n-Propylbenzene	91	9.471	9.475	(0.926)	1563088	50.2176	50.21
92	Naphthalene	128	12.129	12.129	(1.185)	1226266	50.4939	50.49
63	o-Xylene	106	8.808	8.807	(1.068)	586017	51.3590	51.35
81	sec-Butylbenzene	105	10.082	10.086	(0.985)	1265032	51.1171	51.11
64	Styrene	104	8.823	8.822	(1.070)	1062118	52.9304	52.93
78	tert-Butylbenzene	119	9.898	9.898	(0.967)	949685	50.4492	50.44
56	Tetrachloroethene	166	7.522	7.522	(0.912)	364023	50.4913	50.49
50	Toluene	91	7.046	7.046	(0.855)	1429578	50.7493	50.74
20	trans-1,2-Dichloroethene	96	3.140	3.136	(0.642)	322677	51.3642	51.36
51	trans-1,3-Dichloropropene	75	7.259	7.259	(1.291)	474439	49.0020	49.00
38	Trichloroethene	130	5.857	5.857	(1.042)	355547	49.6569	49.65
8	Trichlorofluoromethane	101	1.951	1.947	(0.399)	461493	50.6775	50.67
5	Vinyl Chloride	62	1.419	1.415	(0.290)	403558	48.6040	48.60



Data File: \\nahstws005\Target\chem\voa9,i\U191227,b\U122714,D
Date : 27-DEC-2019 16:43
Client ID: ICV
Sample Info: VSTD050;VSTD050;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

MSVOA09 -Logbook

Batch: 38725
Date: 01-01-2020
Method: 8260
Comments:

Analyst: Devak Giga
Reviewer:
Laboratory: Houston

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	01-01-2020 10:35 am	1.00	0.00 mL	0.00 mL	U010101.D	Liquid	Y	NA
2	VSTD050	CCV	01-01-2020 10:59 am	1.00	5.00 mL	0.00 mL	U010102a.D	Liquid	Y	NA
3	VSTD050	CCV	01-01-2020 11:23 am	1.00	5.00 mL	0.00 mL	U010103.D	Liquid	Y	NA
4	CCB	SAMP	01-01-2020 11:48 am	1.00	5.00 mL	0.00 mL	U010104.D	Liquid	Y	NA
5	VLCSW-200101	LCS	01-01-2020 12:12 pm	1.00	5.00 mL	0.00 mL	U010105.D	Liquid	Y	NA
6	BLANK	SAMP	01-01-2020 12:37 pm	1.00	5.00 mL	0.00 mL	U010106.D	Liquid	Y	NA
7	VBLKW-200101	MBLK	01-01-2020 01:01 pm	1.00	5.00 mL	0.00 mL	U010107.D	Liquid	Y	NA
8	HS19121092-12	SAMP	01-01-2020 01:25 pm	1.00	5.00 mL	0.00 mL	U010108.D	Liquid	Y	NA
9	HS19121092-09	SAMP	01-01-2020 01:50 pm	1.00	5.00 mL	0.00 mL	U010109.D	Liquid	Y	NA
10	HS19121092-04	SAMP	01-01-2020 02:14 pm	1.00	5.00 mL	0.00 mL	U010110.D	Liquid	Y	NA
11	HS19121092-05	SAMP	01-01-2020 02:38 pm	1.00	5.00 mL	0.00 mL	U010111.D	Liquid	Y	NA
12	HS19121092-06	SAMP	01-01-2020 03:03 pm	1.00	5.00 mL	0.00 mL	U010112.D	Liquid	Y	NA
13	HS19121092-07	SAMP	01-01-2020 03:27 pm	1.00	5.00 mL	0.00 mL	U010113.D	Liquid	Y	NA
14	HS19121092-08	SAMP	01-01-2020 03:51 pm	1.00	5.00 mL	0.00 mL	U010114.D	Liquid	Y	NA
15	HS19121092-10	SAMP	01-01-2020 04:16 pm	1.00	5.00 mL	0.00 mL	U010115.D	Liquid	Y	NA
16	HS19121092-11	SAMP	01-01-2020 04:40 pm	1.00	5.00 mL	0.00 mL	U010116.D	Liquid	Y	NA
17	HS19121092-02	SAMP	01-01-2020 05:04 pm	10.00	5.00 mL	0.00 mL	U010117.D	Liquid	Y	NA
18	HS19121092-03	SAMP	01-01-2020 05:29 pm	10.00	5.00 mL	0.00 mL	U010118.D	Liquid	Y	NA
19	HS19121092-01	SAMP	01-01-2020 05:53 pm	1.00	5.00 mL	0.00 mL	U010119.D	Liquid	Y	NA
20	HS19121092-01	SAMP	01-01-2020 06:17 pm	25.00	5.00 mL	0.00 mL	U010120.D	Liquid	Y	NA
21	HS19121092-09MS	MS	01-01-2020 06:42 pm	1.00	5.00 mL	0.00 mL	U010121.D	Liquid	Y	NA
22	HS19121092-09MSD	MSD	01-01-2020 07:06 pm	1.00	5.00 mL	0.00 mL	U010122.D	Liquid	Y	NA
23	CCV-END	CCV	01-01-2020 07:31 pm	1.00	5.00 mL	0.00 mL	U010123.D	Liquid	Y	NA
24	HS19121027-24	SAMP	01-01-2020 07:55 pm	5.00	5.00 mL	0.00 mL	U010124.D	Liquid	Y	NA
25	HS19121048-01	SAMP	01-01-2020 08:19 pm	50.00	5.00 mL	0.00 mL	U010125.D	Liquid	Y	NA
26	HS19121048-03	SAMP	01-01-2020 08:44 pm	50.00	5.00 mL	0.00 mL	U010126.D	Liquid	Y	NA
27	HS19121048-04	SAMP	01-01-2020 09:08 pm	50.00	5.00 mL	0.00 mL	U010127.D	Liquid	Y	NA
28	HS19121424-03	SAMP	01-01-2020 09:32 pm	1.00	5.00 mL	0.00 mL	U010128.D	Liquid	Y	NA
29	HS19121424-08	SAMP	01-01-2020 09:57 pm	1.00	5.00 mL	0.00 mL	U010129.D	Liquid	Y	NA
30	HS19121424-09	SAMP	01-01-2020 10:21 pm	1.00	5.00 mL	0.00 mL	U010130.D	Liquid	Y	NA
31	BFB	TUNE	01-01-2020 10:45 pm	1.00	0.00 mL	0.00 mL	V010101.D	Liquid	Y	NA
32	VSTD050	CCV	01-01-2020 11:10 pm	1.00	5.00 mL	0.00 mL	V010102.D	Liquid	Y	NA
33	VLCSW-200101	LCS	01-01-2020 11:34 pm	1.00	5.00 mL	0.00 mL	V010103.D	Liquid	Y	NA
34	CCB	SAMP	01-01-2020 11:58 pm	1.00	5.00 mL	0.00 mL	V010104.D	Liquid	Y	NA
35	VLCSW-200102	LCS	01-02-2020 12:22 am	1.00	5.00 mL	0.00 mL	V010104a.D	Liquid	Y	NA
36	BLANK	SAMP	01-02-2020 12:47 am	1.00	5.00 mL	0.00 mL	V010105.D	Liquid	Y	NA
37	VBLKW-200102	MBLK	01-02-2020 01:11 am	1.00	5.00 mL	0.00 mL	V010106.D	Liquid	Y	NA
38	HS19121213-01	SAMP	01-02-2020 01:35 am	1.00	5.00 mL	0.00 mL	V010107.D	Liquid	Y	NA
39	HS19121213-02	SAMP	01-02-2020 02:00 am	1.00	5.00 mL	0.00 mL	V010108.D	Liquid	Y	NA
40	HS19121213-03	SAMP	01-02-2020 02:27 am	10.00	5.00 mL	0.00 mL	V010109.D	Liquid	Y	NA
41	HS19121213-03	SAMP	01-02-2020 02:54 am	100.0(	5.00 mL	0.00 mL	V010110.D	Liquid	Y	NA

MSVOA09 -Logbook

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
42	HS19121213-04	SAMP	01-02-2020 03:18 am	1000.0	5.00 mL	0.00 mL	V010111.D	Liquid	Y	NA
43	HS19121213-04n/r	SAMP	01-02-2020 03:45 am	10000.(	5.00 mL	0.00 mL	V010112.D	Liquid	Y	NA
44	HS19121213-05	SAMP	01-02-2020 04:09 am	1000.0	5.00 mL	0.00 mL	V010113.D	Liquid	Y	NA
45	HS19121213-05n/r	SAMP	01-02-2020 04:36 am	10000.(	5.00 mL	0.00 mL	V010114.D	Liquid	Y	NA
46	HS19121213-06	SAMP	01-02-2020 05:00 am	1.00	5.00 mL	0.00 mL	V010115.D	Liquid	Y	NA
47	HS19121213-07	SAMP	01-02-2020 05:25 am	100.0(	5.00 mL	0.00 mL	V010116.D	Liquid	Y	NA
48	HS19121213-07	SAMP	01-02-2020 05:52 am	1000.0	5.00 mL	0.00 mL	V010117.D	Liquid	Y	NA
49	HS19121213-07MS	MS	01-02-2020 06:16 am	1000.0	5.00 mL	0.00 mL	V010118.D	Liquid	Y	NA
50	HS19121213-07MSD	MSD	01-02-2020 06:40 am	1000.0	5.00 mL	0.00 mL	V010119.D	Liquid	Y	NA
51	HS19121213-08	SAMP	01-02-2020 07:05 am	1.00	5.00 mL	0.00 mL	V010120.D	Liquid	Y	NA
52	HS19121213-09	SAMP	01-02-2020 07:29 am	1.00	5.00 mL	0.00 mL	V010121.D	Liquid	Y	NA
53	HS19121213-10	SAMP	01-02-2020 07:53 am	1.00	5.00 mL	0.00 mL	V010122.D	Liquid	Y	NA
54	HS19121232-01	SAMP	01-02-2020 08:18 am	1.00	5.00 mL	0.00 mL	V010123.D	Liquid	Y	NA
55	HS19121232-02	SAMP	01-02-2020 08:42 am	1.00	5.00 mL	0.00 mL	V010124.D	Liquid	Y	NA
56	HS19121232-03	SAMP	01-02-2020 09:06 am	1.00	5.00 mL	0.00 mL	V010125.D	Liquid	Y	NA
57	HS19121232-04	SAMP	01-02-2020 09:31 am	1.00	5.00 mL	0.00 mL	V010126.D	Liquid	Y	NA
58	HS19121232-05	SAMP	01-02-2020 09:55 am	1.00	5.00 mL	0.00 mL	V010127.D	Liquid	Y	NA
59	HS19121232-06	SAMP	01-02-2020 10:19 am	1.00	5.00 mL	0.00 mL	V010128.D	Liquid	Y	NA

Chemical	Value
SURR SPK ID	31108-03-04
IS ID	31108-03-04
ICV STD ID	30603-93-01
LCS/MS ID	30603-93-01
CAL STD ID	31108-03-01/02
BFB ID	31108-04-03
pH Paper	634-64-11

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121092

	CLIENT SAMPLE NO.	SMC1 (DCE)#	SMC2 #	SMC3 (TOL)#	OTHER #	TOT OUT
01	VLCSW-200101	89	96	102	99	0
02	VBLKW-200101	92	94	100	94	0
03	HS19121092-12	93	92	100	95	0
04	HS19121092-09	93	94	101	96	0
05	HS19121092-04	93	95	100	96	0
06	HS19121092-05	92	95	99	98	0
07	HS19121092-06	92	93	100	95	0
08	HS19121092-07	92	93	101	96	0
09	HS19121092-08	92	94	101	96	0
10	HS19121092-10	92	94	100	96	0
11	HS19121092-11	93	94	101	95	0
12	HS19121092-02	92	93	101	95	0
13	HS19121092-03	93	92	102	96	0
14	HS19121092-01	92	92	101	96	0
15	HS19121092-01	92	93	100	96	0
16						
17						
18						
19						
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23						
24						
25						
26						
27						
28						

		QC LIMITS
SMC1 (DCE)	= 1,2-Dichloroethane-d4	(0-130)
SMC2	= Dibromofluoromethane	(0-130)
SMC3 (TOL)	= Toluene-d8	(0-130)
OTHER	= 4-Bromofluorobenzene	(0-130)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKW-200101

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121092

Lab File ID: U010107 Lab Sample ID: VBLKW-200101

Date Analyzed: 01/01/20 Time Analyzed: 1301

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

Instrument ID: VOA9

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VLCSW-200101	VLCSW-200101	U010105	1212
02	HS19121092-1	HS19121092-12	U010108	1325
03	HS19121092-0	HS19121092-09	U010109	1350
04	HS19121092-0	HS19121092-04	U010110	1414
05	HS19121092-0	HS19121092-05	U010111	1438
06	HS19121092-0	HS19121092-06	U010112	1503
07	HS19121092-0	HS19121092-07	U010113	1527
08	HS19121092-0	HS19121092-08	U010114	1551
09	HS19121092-1	HS19121092-10	U010115	1616
10	HS19121092-1	HS19121092-11	U010116	1640
11	HS19121092-0	HS19121092-02	U010117	1704
12	HS19121092-0	HS19121092-03	U010118	1729
13	HS19121092-0	HS19121092-01	U010119	1753
14	HS19121092-0	HS19121092-01	U010120	1817
15	HS19121092-0	HS19121092-09M	U010121	1842
16	HS19121092-0	HS19121092-09M	U010122	1906
17				
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30				

COMMENTS:

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121092

Lab File ID: U010101 BFB Injection Date: 01/01/20

Instrument ID: VOA9 BFB Injection Time: 1035

GC Column: DB624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.0
75	30.0 - 60.0% of mass 95	44.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	1.6 (1.8)1
174	Greater than 50.0% of mass 95	88.1
175	5.0 - 9.0% of mass 174	7.7 (8.7)1
176	95.0 - 101.0% of mass 174	84.6 (96.0)1
177	5.0 - 9.0% of mass 176	6.1 (7.2)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV	CCV	U010103	01/01/20	1123
02	VLCSW-200101	VLCSW-200101	U010105	01/01/20	1212
03	VBLKW-200101	VBLKW-200101	U010107	01/01/20	1301
04	HS19121092-1	HS19121092-12	U010108	01/01/20	1325
05	HS19121092-0	HS19121092-09	U010109	01/01/20	1350
06	HS19121092-0	HS19121092-04	U010110	01/01/20	1414
07	HS19121092-0	HS19121092-05	U010111	01/01/20	1438
08	HS19121092-0	HS19121092-06	U010112	01/01/20	1503
09	HS19121092-0	HS19121092-07	U010113	01/01/20	1527
10	HS19121092-0	HS19121092-08	U010114	01/01/20	1551
11	HS19121092-1	HS19121092-10	U010115	01/01/20	1616
12	HS19121092-1	HS19121092-11	U010116	01/01/20	1640
13	HS19121092-0	HS19121092-02	U010117	01/01/20	1704
14	HS19121092-0	HS19121092-03	U010118	01/01/20	1729
15	HS19121092-0	HS19121092-01	U010119	01/01/20	1753
16	HS19121092-0	HS19121092-01	U010120	01/01/20	1817
17	HS19121092-0	HS19121092-09M	U010121	01/01/20	1842
18	HS19121092-0	HS19121092-09M	U010122	01/01/20	1906
19	CCV-END	CCV-END	U010123	01/01/20	1931
20					
21					
22					

FORM V VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121092

Instrument ID: VOA9 Calibration Date: 01/01/20 Time: 1123

Lab File ID: U010103 Init. Calib. Date(s): 12/27/19 12/27/19

Init. Calib. Times: 1127 1530

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
cis-1,3-Dichloropropene	47.913929	50.000000	0.6050369	0.2	4.17	20.00	LINR
trans-1,3-Dichloropropene	46.381235	50.000000	0.5266283	0.1	7.24	20.00	LINR
1,3-Dichlorobenzene	1.6640000	1.7167943	1.7167943	0.6	-3.17	20.00	AVRG
2,2-Dichloropropane	0.5720000	0.6179082	0.6179082	0.1	-8.02	20.00	AVRG
1,1-Dichloropropene	0.4880000	0.4859497	0.4859497	0.1	0.42	20.00	AVRG
Dibromomethane	0.2520000	0.2487880	0.2487880	0.1	1.27	20.00	AVRG
1,2-Dibromoethane	0.4250000	0.4498096	0.4498096	0.1	-5.84	20.00	AVRG
trans-1,2-Dichloroethene	0.5440000	0.5221105	0.5221105	0.1	4.02	20.00	AVRG
1,1,1,2-Tetrachloroethane	0.3820000	0.4181925	0.4181925	0.1	-9.47	20.00	AVRG
1,1,1-Trichloroethane	0.7430000	0.7314826	0.7314826	0.1	1.55	20.00	AVRG
1,1,2,2-Tetrachloroethane	1.1590000	1.1925747	1.1925747	0.3	-2.90	20.00	AVRG
1,1,2-Trichloroethane	0.3540000	0.3531605	0.3531605	0.1	0.24	20.00	AVRG
1,1-Dichloroethane	0.9990000	0.9276942	0.9276942	0.2	7.14	20.00	AVRG
1,1-Dichloroethene	0.4830000	0.4570944	0.4570944	0.1	5.36	20.00	AVRG
Trichloroethene	0.4200000	0.4163866	0.4163866	0.2	0.86	20.00	AVRG
1,2,3-Trichlorobenzene	50.709098	50.000000	0.9977987	0.1	-1.42	20.00	LINR
Trichlorofluoromethane	0.7890000	0.7576820	0.7576820	0.1	3.97	20.00	AVRG
1,2,4-Trichlorobenzene	50.010407	50.000000	1.0466577	0.2	-0.02	20.00	LINR
1,2,4-Trimethylbenzene	2.7760000	2.8190548	2.8190548	0.1	-1.55	20.00	AVRG
Tetrachloroethene	54.468164	50.000000	0.5035850	0.2	-8.94	20.00	LINR
1,2-Dichlorobenzene	1.6540000	1.6834131	1.6834131	0.4	-1.78	20.00	AVRG
1,2-Dichloroethane	0.5330000	0.4670565	0.4670565	0.1	12.37	20.00	AVRG
1,2-Dichloropropane	0.4030000	0.3945336	0.3945336	0.1	2.10	20.00	AVRG
1,3,5-Trimethylbenzene	2.6290000	2.7027841	2.7027841	0.1	-2.81	20.00	AVRG
1,3-Dichloropropane	0.7500000	0.7502768	0.7502768	0.1	-0.04	20.00	AVRG
1,4-Dichlorobenzene	1.6870000	1.7549424	1.7549424	0.4	-4.03	20.00	AVRG
Toluene	1.8060000	1.8374348	1.8374348	0.4	-1.74	20.00	AVRG
2-Butanone	0.3430000	0.3196626	0.3196626	0.1	6.80	20.00	AVRG
2-Chlorotoluene	2.3340000	2.3119942	2.3119942	0.1	0.94	20.00	AVRG
2-Hexanone	0.3750000	0.3928093	0.3928093	0.1	-4.75	20.00	AVRG
4-Chlorotoluene	2.6620000	2.6665945	2.6665945	0.1	-0.17	20.00	AVRG
tert-Butylbenzene	2.2190000	2.2553013	2.2553013	0.1	-1.64	20.00	AVRG
4-Methyl-2-Pentanone	0.5350000	0.5458574	0.5458574	0.1	-2.03	20.00	AVRG
Acetone	104.43848	100.00000	0.2340337	0.1	-4.44	20.00	LINR
Benzene	1.6010000	1.5605897	1.5605897	0.5	2.52	20.00	AVRG
Bromobenzene	0.9910000	1.0276245	1.0276245	0.1	-3.70	20.00	AVRG
Bromochloromethane	0.3110000	0.2987576	0.2987576	0.1	3.94	20.00	AVRG
Bromodichloromethane	0.4500000	0.4600025	0.4600025	0.2	-2.22	20.00	AVRG
Bromoform	46.701565	50.000000	0.3243418	0.1	6.60	20.00	LINR
Bromomethane	59.916702	50.000000	0.4620287	0.1	-19.83	20.00	LINR
Carbon Disulfide	1.4440000	1.3915154	1.3915154	0.1	3.63	20.00	AVRG
Carbon Tetrachloride	0.4160000	0.4341555	0.4341555	0.1	-4.36	20.00	AVRG

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1912109

Instrument ID: VOA9 Calibration Date: 01/01/20 Time: 1123

Lab File ID: U010103 Init. Calib. Date(s): 12/27/19 12/27/19

Init. Calib. Times: 1127 1530

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Chlorobenzene	1.1790000	1.1875934	1.1875934	0.5	-0.73	20.00	AVRG	
Chloroethane	45.810425	50.000000	0.3839594	0.1	8.38	20.00	LINR	
Chloroform	1.0060000	0.9189372	0.9189372	0.2	8.65	20.00	AVRG	
Chloromethane	62.754191	50.000000	0.8921177	0.1	-25.51	20.00	LINR	<-
cis-1,2-Dichloroethene	0.6570000	0.6195810	0.6195810	0.1	5.70	20.00	AVRG	
Dibromochloromethane	49.428454	50.000000	0.4382807	0.1	1.14	20.00	LINR	
Dichlorodifluoromethane	0.5500000	0.5209953	0.5209953	0.1	5.27	20.00	AVRG	
Ethylbenzene	0.6070000	0.6278361	0.6278361	0.1	-3.43	20.00	AVRG	
Hexachlorobutadiene	53.888676	50.000000	0.4029657	0.1	-7.78	20.00	2RDR	
Isopropylbenzene	1.7130000	1.8108151	1.8108151	0.1	-5.71	20.00	AVRG	
m,p-Xylenes	0.7310000	0.7578103	0.7578103	0.1	-3.67	20.00	AVRG	
Methylene Chloride	49.015163	50.000000	0.5830072	0.1	1.97	20.00	LINR	
n-Butylbenzene	2.1120000	2.2175677	2.2175677	0.5	-5.00	20.00	AVRG	
n-Propylbenzene	3.6680000	3.7147593	3.7147593	0.1	-1.27	20.00	AVRG	
Naphthalene	49.917934	50.000000	2.8568491	0.2	0.16	20.00	2RDR	
o-Xylene	0.7320000	0.7529938	0.7529938	0.3	-2.87	20.00	AVRG	
sec-Butylbenzene	2.9170000	3.0064482	3.0064482	0.1	-3.07	20.00	AVRG	
Styrene	1.2870000	1.3182061	1.3182061	0.3	-2.42	20.00	AVRG	
Vinyl Chloride	0.7190000	0.6481287	0.6481287	0.1	9.86	20.00	AVRG	
1,2,3-Trichloropropane	1.1800000	1.2134079	1.2134079	0.1	-2.83	20.00	AVRG	
p-Isopropyltoluene	2.6570000	2.7551852	2.7551852	0.1	-3.70	20.00	AVRG	
1,2-Dibromo-3-Chloropropane	49.291577	50.000000	0.2111142	0.05	1.42	20.00	LINR	
1,2-Dichloroethane-d4	0.4810000	0.4314668	0.4314668	0.1	10.30	20.00	AVRG	
Dibromofluoromethane	0.4280000	0.4108004	0.4108004	0.1	4.02	20.00	AVRG	
Toluene-d8	1.2850000	1.2866760	1.2866760	0.1	-0.13	20.00	AVRG	
4-Bromofluorobenzene	0.4700000	0.4507766	0.4507766	0.1	4.09	20.00	AVRG	

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121092

Instrument ID: VOA9 Calibration Date: 01/01/20 Time: 1931

Lab File ID: U010123 Init. Calib. Date(s): 12/27/19 12/27/19

Init. Calib. Times: 1127 1530

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
cis-1,3-Dichloropropene	45.633729	50.000000	0.5755657	0.2	8.73	50.00	LINR
trans-1,3-Dichloropropene	44.428883	50.000000	0.5037400	0.1	11.14	50.00	LINR
1,3-Dichlorobenzene	1.6640000	1.6853394	1.6853394	0.6	-1.28	50.00	AVRG
2,2-Dichloropropane	0.5720000	0.4871322	0.4871322	0.1	14.84	50.00	AVRG
1,1-Dichloropropene	0.4880000	0.4702971	0.4702971	0.1	3.63	50.00	AVRG
Dibromomethane	0.2520000	0.2509789	0.2509789	0.1	0.40	50.00	AVRG
1,2-Dibromoethane	0.4250000	0.4499071	0.4499071	0.1	-5.86	50.00	AVRG
trans-1,2-Dichloroethene	0.5440000	0.5243414	0.5243414	0.1	3.61	50.00	AVRG
1,1,1,2-Tetrachloroethane	0.3820000	0.4152096	0.4152096	0.1	-8.69	50.00	AVRG
1,1,1-Trichloroethane	0.7430000	0.7273460	0.7273460	0.1	2.11	50.00	AVRG
1,1,2,2-Tetrachloroethane	1.1590000	1.1774624	1.1774624	0.3	-1.59	50.00	AVRG
1,1,2-Trichloroethane	0.3540000	0.3538342	0.3538342	0.1	0.05	50.00	AVRG
1,1-Dichloroethane	0.9990000	0.9329348	0.9329348	0.2	6.61	50.00	AVRG
1,1-Dichloroethene	0.4830000	0.4580876	0.4580876	0.1	5.16	50.00	AVRG
Trichloroethene	0.4200000	0.4176704	0.4176704	0.2	0.55	50.00	AVRG
1,2,3-Trichlorobenzene	50.593190	50.000000	0.9954682	0.1	-1.19	50.00	LINR
Trichlorofluoromethane	0.7890000	0.7616457	0.7616457	0.1	3.47	50.00	AVRG
1,2,4-Trichlorobenzene	49.502414	50.000000	1.0357192	0.2	1.00	50.00	LINR
1,2,4-Trimethylbenzene	2.7760000	2.7179968	2.7179968	0.1	2.09	50.00	AVRG
Tetrachloroethene	52.340829	50.000000	0.4839808	0.2	-4.68	50.00	LINR
1,2-Dichlorobenzene	1.6540000	1.6746628	1.6746628	0.4	-1.25	50.00	AVRG
1,2-Dichloroethane	0.5330000	0.4793535	0.4793535	0.1	10.06	50.00	AVRG
1,2-Dichloropropane	0.4030000	0.3924288	0.3924288	0.1	2.62	50.00	AVRG
1,3,5-Trimethylbenzene	2.6290000	2.6123595	2.6123595	0.1	0.63	50.00	AVRG
1,3-Dichloropropane	0.7500000	0.7555507	0.7555507	0.1	-0.74	50.00	AVRG
1,4-Dichlorobenzene	1.6870000	1.7383620	1.7383620	0.4	-3.04	50.00	AVRG
Toluene	1.8060000	1.8278734	1.8278734	0.4	-1.21	50.00	AVRG
2-Butanone	0.3430000	0.3306283	0.3306283	0.1	3.61	50.00	AVRG
2-Chlorotoluene	2.3340000	2.2897901	2.2897901	0.1	1.89	50.00	AVRG
2-Hexanone	0.3750000	0.4015390	0.4015390	0.1	-7.08	50.00	AVRG
4-Chlorotoluene	2.6620000	2.6226494	2.6226494	0.1	1.48	50.00	AVRG
tert-Butylbenzene	2.2190000	2.1879006	2.1879006	0.1	1.40	50.00	AVRG
4-Methyl-2-Pentanone	0.5350000	0.5554223	0.5554223	0.1	-3.82	50.00	AVRG
Acetone	107.35890	100.00000	0.2403873	0.1	-7.36	50.00	LINR
Benzene	1.6010000	1.5586681	1.5586681	0.5	2.64	50.00	AVRG
Bromobenzene	0.9910000	1.0182648	1.0182648	0.1	-2.75	50.00	AVRG
Bromochloromethane	0.3110000	0.3013678	0.3013678	0.1	3.10	50.00	AVRG
Bromodichloromethane	0.4500000	0.4635573	0.4635573	0.2	-3.01	50.00	AVRG
Bromoform	46.377734	50.000000	0.3219966	0.1	7.24	50.00	LINR
Bromomethane	59.949413	50.000000	0.4622802	0.1	-19.90	50.00	LINR
Carbon Disulfide	1.4440000	1.3855522	1.3855522	0.1	4.05	50.00	AVRG
Carbon Tetrachloride	0.4160000	0.4173584	0.4173584	0.1	-0.33	50.00	AVRG

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1912109

Instrument ID: VOA9 Calibration Date: 01/01/20 Time: 1931

Lab File ID: U010123 Init. Calib. Date(s): 12/27/19 12/27/19

Init. Calib. Times: 1127 1530

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Chlorobenzene	1.1790000	1.1886154	1.1886154	0.5	-0.82	50.00	AVRG
Chloroethane	45.973645	50.000000	0.3852992	0.1	8.05	50.00	LINR
Chloroform	1.0060000	0.9260586	0.9260586	0.2	7.95	50.00	AVRG
Chloromethane	59.872398	50.000000	0.8525852	0.1	-19.74	50.00	LINR
cis-1,2-Dichloroethene	0.6570000	0.6251172	0.6251172	0.1	4.85	50.00	AVRG
Dibromochloromethane	49.320141	50.000000	0.4372993	0.1	1.36	50.00	LINR
Dichlorodifluoromethane	0.5500000	0.5202555	0.5202555	0.1	5.41	50.00	AVRG
Ethylbenzene	0.6070000	0.6118318	0.6118318	0.1	-0.80	50.00	AVRG
Hexachlorobutadiene	49.025792	50.000000	0.3653922	0.1	1.95	50.00	2RDR
Isopropylbenzene	1.7130000	1.7486047	1.7486047	0.1	-2.08	50.00	AVRG
m,p-Xylenes	0.7310000	0.7379912	0.7379912	0.1	-0.96	50.00	AVRG
Methylene Chloride	49.461677	50.000000	0.5881935	0.1	1.08	50.00	LINR
n-Butylbenzene	2.1120000	2.0804569	2.0804569	0.5	1.49	50.00	AVRG
n-Propylbenzene	3.6680000	3.5849357	3.5849357	0.1	2.26	50.00	AVRG
Naphthalene	49.771973	50.000000	2.8482901	0.2	0.46	50.00	2RDR
o-Xylene	0.7320000	0.7440632	0.7440632	0.3	-1.65	50.00	AVRG
sec-Butylbenzene	2.9170000	2.8784763	2.8784763	0.1	1.32	50.00	AVRG
Styrene	1.2870000	1.3100027	1.3100027	0.3	-1.79	50.00	AVRG
Vinyl Chloride	0.7190000	0.6489644	0.6489644	0.1	9.74	50.00	AVRG
1,2,3-Trichloropropane	1.1800000	1.2173267	1.2173267	0.1	-3.16	50.00	AVRG
p-Isopropyltoluene	2.6570000	2.5975299	2.5975299	0.1	2.24	50.00	AVRG
1,2-Dibromo-3-Chloropropane	49.838263	50.000000	0.2135312	0.05	0.32	50.00	LINR
1,2-Dichloroethane-d4	0.4810000	0.4356103	0.4356103	0.1	9.44	50.00	AVRG
Dibromofluoromethane	0.4280000	0.4083693	0.4083693	0.1	4.59	50.00	AVRG
Toluene-d8	1.2850000	1.2861734	1.2861734	0.1	-0.09	50.00	AVRG
4-Bromofluorobenzene	0.4700000	0.4537924	0.4537924	0.1	3.45	50.00	AVRG

FORM VII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121092

Lab File ID (Standard): U010103 Date Analyzed: 01/01/20

Instrument ID: VOA9 Time Analyzed: 1123

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS1(CBZ) AREA #	IS1(CBZ) RT #	IS2(DFB) AREA #	IS2(DFB) RT #	IS3(DCB) AREA #	IS3(DCB) RT #
	12 HOUR STD	712557	8.25	798700	5.63	378866	10.23
	UPPER LIMIT	1425114	8.75	1597400	6.13	757732	10.73
	LOWER LIMIT	356279	7.75	399350	5.13	189433	9.73
	CLIENT SAMPLE NO.						
01	VLCSW-200101	719865	8.25	813885	5.62	382011	10.23
02	VBLKW-200101	738744	8.25	845245	5.62	361061	10.23
03	HS19121092-12	710202	8.25	804563	5.62	349727	10.23
04	HS19121092-09	740174	8.25	852307	5.63	366987	10.23
05	HS19121092-04	705614	8.25	806091	5.63	359878	10.23
06	HS19121092-05	744671	8.25	829113	5.62	394033	10.23
07	HS19121092-06	708783	8.25	816784	5.62	360555	10.23
08	HS19121092-07	720017	8.25	824994	5.63	357155	10.23
09	HS19121092-08	714436	8.25	823455	5.62	358589	10.23
10	HS19121092-10	709955	8.25	808416	5.62	356107	10.23
11	HS19121092-11	719869	8.25	826774	5.63	365963	10.23
12	HS19121092-02	698904	8.25	794961	5.62	341067	10.23
13	HS19121092-03	718488	8.25	828283	5.62	359394	10.23
14	HS19121092-01	690834	8.25	796916	5.63	347115	10.23
15	HS19121092-01	718502	8.25	818579	5.62	358189	10.23
16	HS19121092-09	700046	8.25	789146	5.62	372762	10.23
17	HS19121092-09	715221	8.25	808507	5.63	381058	10.23
18							
19							
20							

IS1 (CBZ) = Chlorobenzene-d5
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (DCB) = 1,4-Dichlorobenzene-d4

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

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121092

Lab File ID (Standard): U010103 Date Analyzed: 01/01/20

Instrument ID: VOA9 Time Analyzed: 1123

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS4 AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	559554	4.89				
	UPPER LIMIT	1119108	5.39				
	LOWER LIMIT	279777	4.39				
	CLIENT SAMPLE NO.						
01	VLCSW-200101	571773	4.89				
02	VBLKW-200101	582694	4.89				
03	HS19121092-12	563430	4.89				
04	HS19121092-09	591514	4.90				
05	HS19121092-04	557511	4.89				
06	HS19121092-05	578684	4.89				
07	HS19121092-06	567048	4.89				
08	HS19121092-07	581110	4.89				
09	HS19121092-08	568751	4.89				
10	HS19121092-10	563140	4.89				
11	HS19121092-11	565769	4.89				
12	HS19121092-02	558033	4.89				
13	HS19121092-03	579427	4.89				
14	HS19121092-01	551624	4.90				
15	HS19121092-01	569599	4.89				
16	HS19121092-09	554059	4.89				
17	HS19121092-09	563931	4.89				
18							
19							
20							

IS4 = Pentafluorobenzene

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

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM VIII VOA

Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010101.D

Date : 01-JAN-2020 10:35

Client ID: BFB

Instrument: VOA9.i

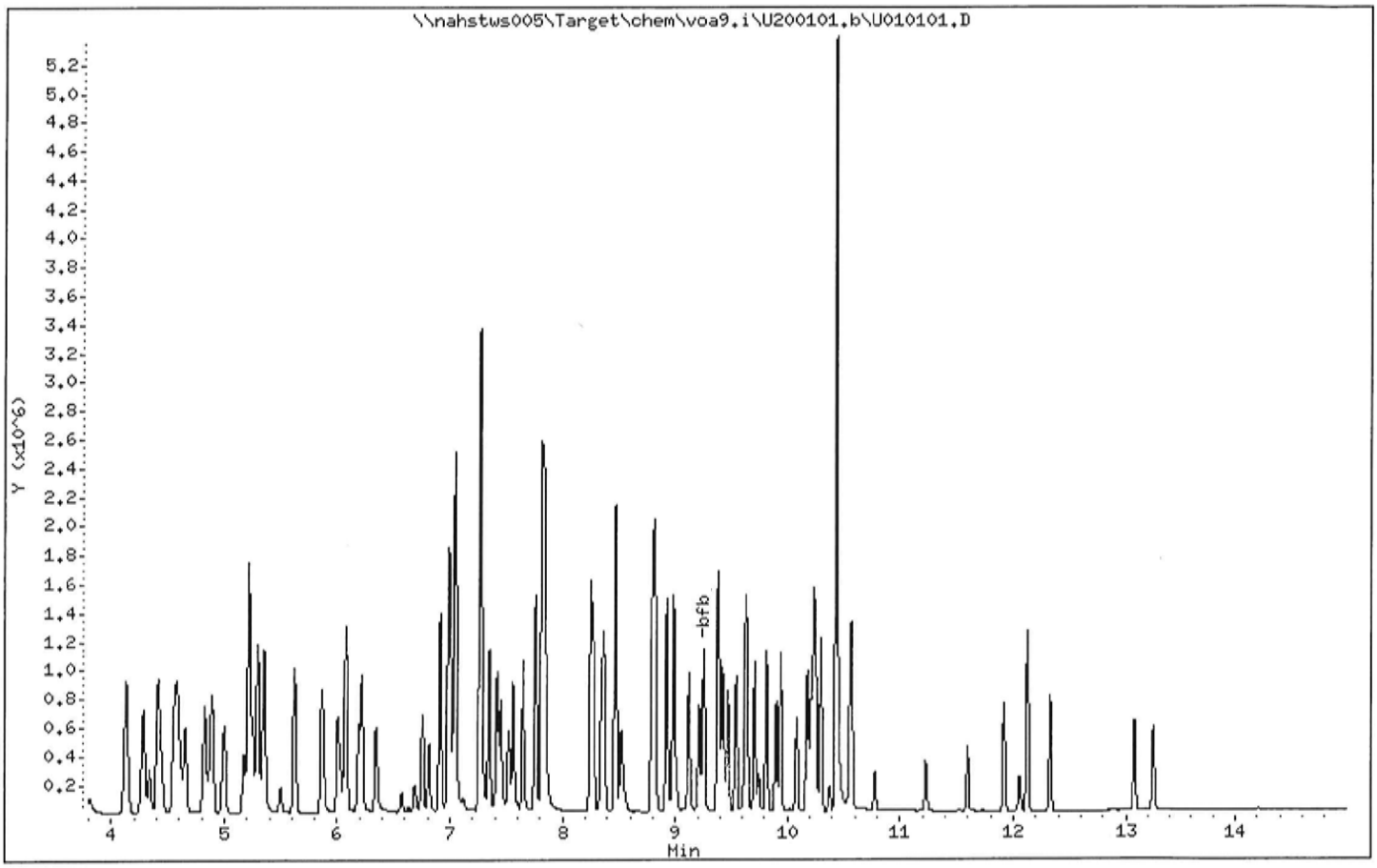
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010101.D

Date : 01-JAN-2020 10:35

Client ID: BFB

Instrument: VOA9.i

Sample Info: BFB;BFB;3;;BFB

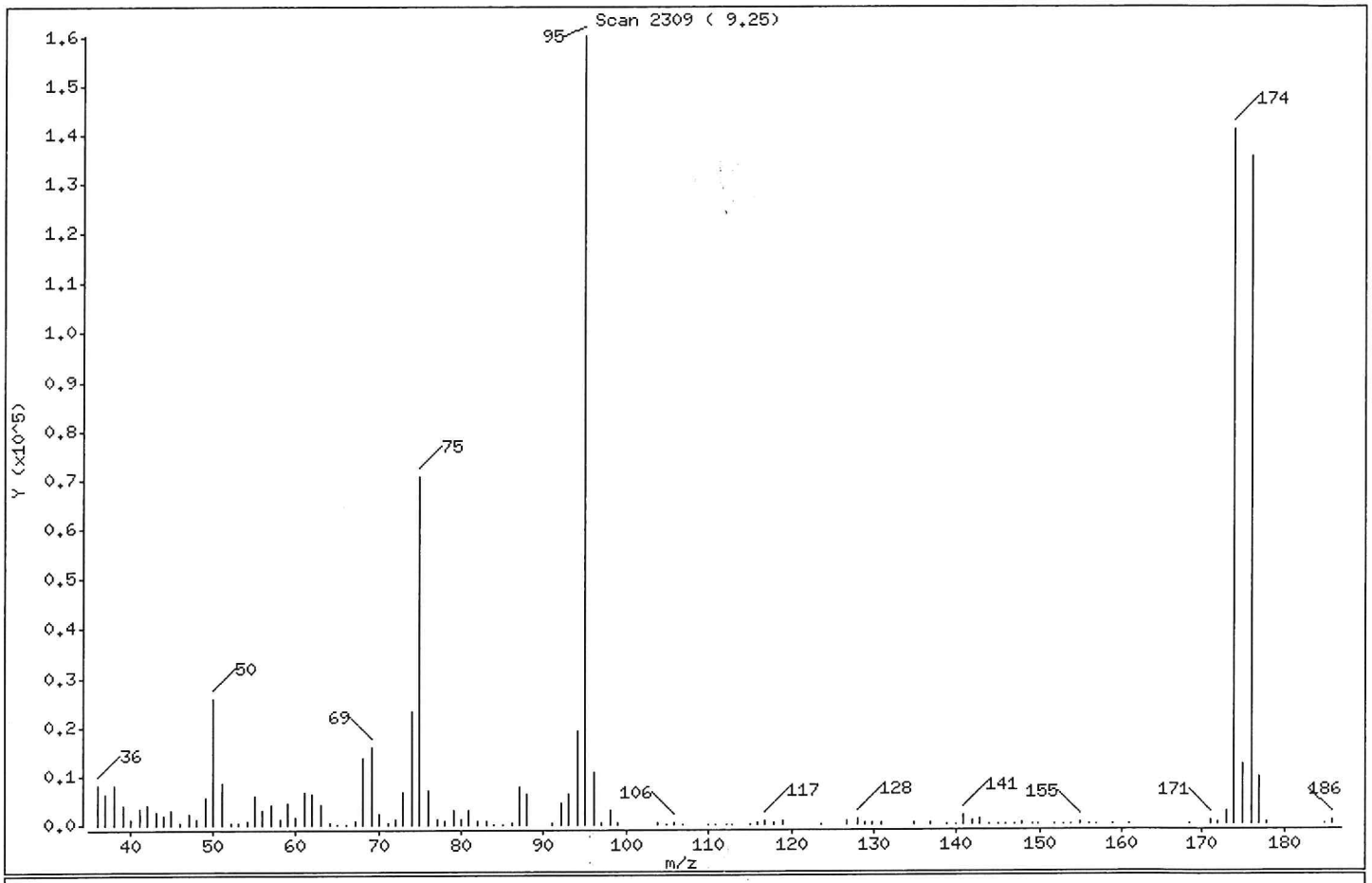
Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	16.03
75	30.00 - 60.00% of mass 95	44.03
96	5.00 - 9.00% of mass 95	6.76
173	Less than 2.00% of mass 174	1.60 (1.81)
174	Greater than 50.00% of mass 95	88.13
175	5.00 - 9.00% of mass 174	7.69 (8.73)
176	95.00 - 101.00% of mass 174	84.62 (96.01)
177	5.00 - 9.00% of mass 176	6.05 (7.16)

Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010101.D

Date : 01-JAN-2020 10:35

Client ID: BFB

Instrument: VOA9.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

Data File: U010101.D
Spectrum: Scan 2309 (9.25)
Location of Maximum: 95.05
Number of points: 114

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	8099	65.00	156	96.00	10831	142.90	1159
37.00	6260	66.00	66	97.00	549	143.90	79
38.10	8073	67.10	747	98.10	2852	145.00	75
39.10	4082	68.00	13679	99.00	197	146.00	129
40.00	1184	69.10	16010	103.80	480	146.90	86
41.10	3167	70.10	2253	104.90	183	147.90	453
42.10	4122	71.10	237	105.80	522	149.10	126
43.10	2740	72.00	979	106.90	104	149.90	110
44.00	1759	73.00	6742	109.90	82	151.80	54
45.00	3067	74.00	23320	110.90	89	153.00	104
46.00	215	75.00	70528	112.10	58	153.90	72
47.10	2168	76.10	7025	112.90	92	154.90	327
48.00	993	77.00	1129	115.00	153	156.00	81
49.00	5602	77.90	654	115.90	532	157.00	161
50.00	25672	79.00	2927	116.90	848	158.90	141
51.00	8375	79.90	1169	117.90	449	160.90	165
52.10	457	80.90	3092	118.90	733	168.40	54
53.00	328	81.90	905	123.70	102	171.00	611
54.10	717	83.00	840	126.80	829	171.90	190
55.00	6063	83.90	122	128.00	1011	173.10	2558
56.00	2782	85.00	70	129.00	305	174.00	141184
57.00	4221	86.10	197	129.90	526	175.00	12324
58.10	1181	87.00	7626	130.90	330	176.00	135552
59.10	4283	88.00	6365	134.90	221	176.90	9699
60.00	1474	91.00	547	136.90	256	177.90	265
61.00	6631	92.00	4278	138.90	95	184.90	156
62.00	6374	93.00	6308	139.90	175	185.90	871
63.10	4218	94.00	19032	140.90	1667		
64.00	468	95.00	160192	141.90	903		

Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010103.D Page 1
Report Date: 17-Jan-2020 15:21

ALS Laboratory Group

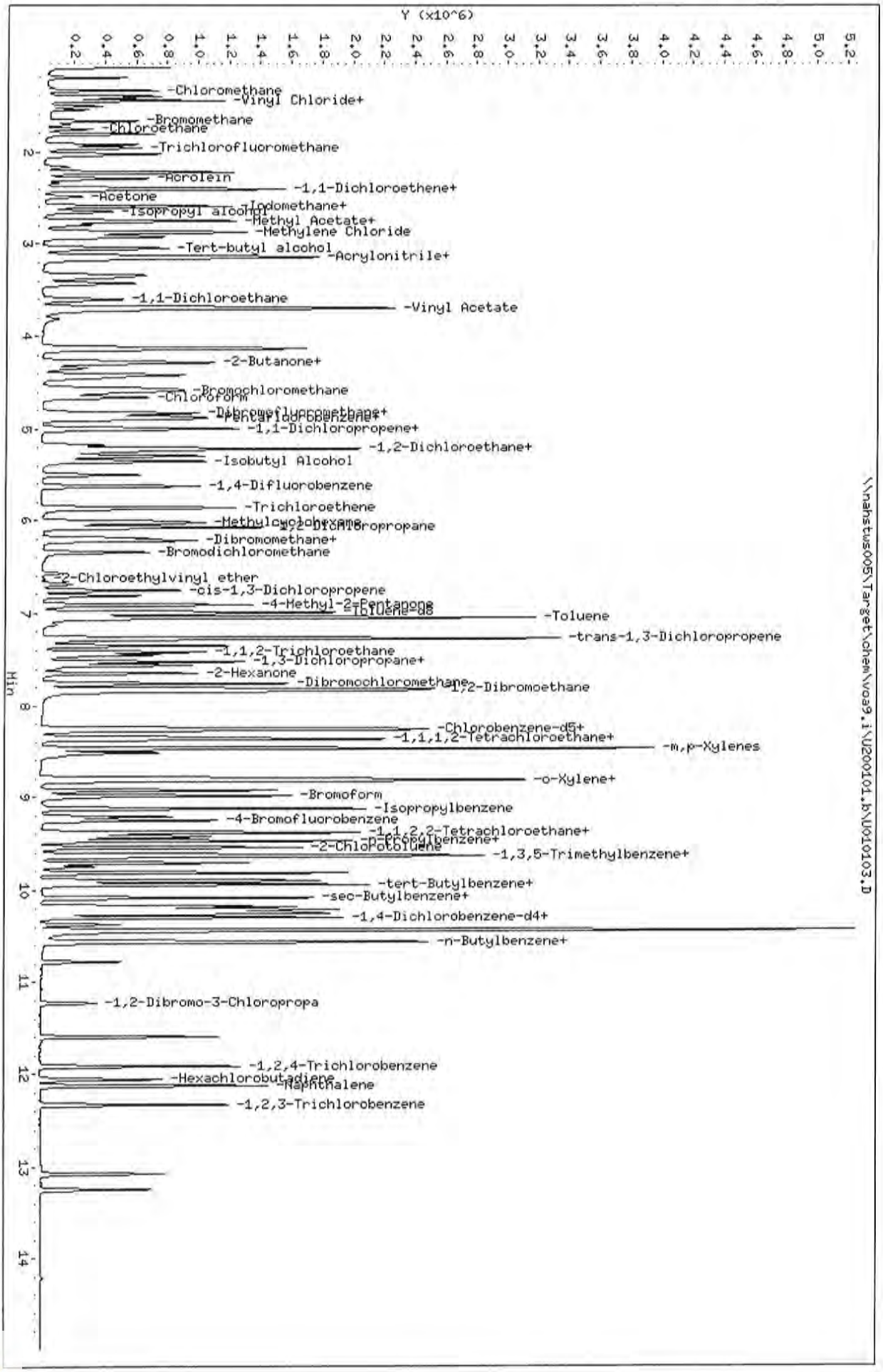
Data file : \\nahstws005\Target\chem\voa9.i\U200101.b\U010103.D
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 01-JAN-2020 11:23
Operator : PC Inst ID: VOA9.i
Smp Info : VSTD050;VSTD050;2;;
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200101.b\8260C.m
Meth Date : 17-Jan-2020 15:21 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.894	4.894	(1.000)	559554	50.0000	
*	36 1,4-Difluorobenzene	114	5.625	5.625	(1.000)	798700	50.0000	
*	47 Chlorobenzene-d5	117	8.245	8.245	(1.000)	712557	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	378866	50.0000	
$	30 Dibromofluoromethane	113	4.830	4.826	(0.987)	229865	50.0000	47.97
$	35 1,2-Dichloroethane-d4	65	5.175	5.175	(1.057)	241429	50.0000	44.84
$	48 Toluene-d8	98	6.986	6.985	(0.847)	916830	50.0000	50.06
$	69 4-Bromofluorobenzene	95	9.254	9.253	(1.122)	321204	50.0000	47.97
	60 1,1,1,2-Tetrachloroethane	131	8.346	8.346	(1.012)	297986	50.0000	54.65
	31 1,1,1-Trichloroethane	97	4.826	4.826	(0.986)	409304	50.0000	49.19
	68 1,1,2,2-Tetrachloroethane	83	9.389	9.388	(0.918)	451826	50.0000	51.44
	53 1,1,2-Trichloroethane	83	7.417	7.417	(0.900)	251647	50.0000	49.81
	22 1,1-Dichloroethane	63	3.604	3.604	(0.737)	519095	50.0000	46.40
	11 1,1-Dichloroethene	96	2.401	2.401	(0.491)	255769	50.0000	47.26
	32 1,1-Dichloropropene	75	5.003	5.002	(0.889)	388128	50.0000	49.75
	93 1,2,3-Trichlorobenzene	180	12.331	12.331	(1.205)	378032	50.0000	50.70
	71 1,2,3-Trichloropropane	75	9.422	9.422	(0.921)	459719	50.0000	51.38
	90 1,2,4-Trichlorobenzene	180	11.919	11.919	(1.165)	396543	50.0000	50.01
	79 1,2,4-Trimethylbenzene	105	9.940	9.939	(0.971)	1068044	50.0000	50.77
	89 1,2-Dibromo-3-Chloropropane	155	11.229	11.229	(1.097)	79984	50.0000	49.29
	57 1,2-Dibromoethane	107	7.848	7.848	(0.952)	320515	50.0000	52.93
	88 1,2-Dichlorobenzene	146	10.566	10.565	(1.033)	637788	50.0000	50.89
	33 1,2-Dichloroethane	62	5.250	5.250	(0.933)	373038	50.0000	43.76

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42	1,2-Dichloropropane	63	6.079	6.078	(1.081)	315114	50.0000	48.91
75	1,3,5-Trimethylbenzene	105	9.621	9.621	(0.940)	1023993	50.0000	51.40
83	1,3-Dichlorobenzene	146	10.176	10.176	(0.995)	650435	50.0000	51.58
54	1,3-Dichloropropane	76	7.563	7.559	(0.917)	534615	50.0000	50.00
84	1,4-Dichlorobenzene	146	10.251	10.254	(1.002)	664888	50.0000	52.00
26	2,2-Dichloropropane	77	4.275	4.275	(0.874)	345753	50.0000	54.07
24	2-Butanone	43	4.339	4.339	(0.887)	357737	100.000	93.22
76	2-Chlorotoluene	91	9.542	9.542	(0.933)	875936	50.0000	49.52
52	2-Hexanone	43	7.649	7.649	(0.928)	559798	100.000	104.72
77	4-Chlorotoluene	91	9.636	9.636	(0.942)	1010282	50.0000	50.07
82	p-Isopropyltoluene	119	10.206	10.206	(0.997)	1043846	50.0000	51.85
45	4-Methyl-2-Pentanone	43	6.911	6.910	(0.838)	777909	100.000	102.06
10	Acetone	43	2.484	2.483	(0.508)	261909	100.000	104.43
37	Benzene	78	5.216	5.216	(0.927)	1246443	50.0000	48.73
74	Bromobenzene	156	9.377	9.377	(0.916)	389332	50.0000	51.85
29	Bromochloromethane	128	4.553	4.553	(0.930)	167171	50.0000	47.96
39	Bromodichloromethane	83	6.345	6.344	(1.128)	367404	50.0000	51.09
66	Bromoform	173	8.980	8.980	(1.089)	231112	50.0000	46.70
6	Bromomethane	94	1.666	1.666	(0.341)	258530	50.0000	59.91
19	Carbon Disulfide	76	2.592	2.588	(0.530)	1557256	100.000	96.35
34	Carbon Tetrachloride	117	4.995	4.995	(0.888)	346760	50.0000	52.09
59	Chlorobenzene	112	8.272	8.271	(1.003)	846228	50.0000	50.36
7	Chloroethane	64	1.753	1.752	(0.358)	214846	50.0000	45.81
28	Chloroform	83	4.658	4.658	(0.952)	514195	50.0000	45.64
3	Chloromethane	50	1.344	1.344	(0.275)	499188	50.0000	62.75
27	cis-1,2-Dichloroethene	96	4.287	4.286	(0.876)	346689	50.0000	47.17
46	cis-1,3-Dichloropropene	75	6.757	6.757	(1.201)	483243	50.0000	47.91
55	Dibromochloromethane	129	7.754	7.754	(0.940)	312300	50.0000	49.42
44	Dibromomethane	93	6.187	6.187	(1.100)	198707	50.0000	49.26
2	Dichlorodifluoromethane	85	1.209	1.205	(0.247)	291525	50.0000	47.34
61	Ethylbenzene	106	8.369	8.369	(1.015)	447369	50.0000	51.66
91	Hexachlorobutadiene	225	12.061	12.061	(1.179)	152670	50.0000	53.88
67	Isopropylbenzene	105	9.122	9.122	(1.106)	1290309	50.0000	52.86
62	m,p-Xylenes	106	8.470	8.470	(1.027)	1079966	100.000	103.67
17	Methylene Chloride	84	2.873	2.869	(0.587)	326224	50.0000	49.01
87	n-Butylbenzene	91	10.554	10.554	(1.032)	840161	50.0000	52.50
73	n-Propylbenzene	91	9.471	9.471	(0.926)	1407396	50.0000	50.62
92	Naphthalene	128	12.129	12.129	(1.185)	1082363	50.0000	49.91
63	o-Xylene	106	8.808	8.807	(1.068)	536551	50.0000	51.44
81	sec-Butylbenzene	105	10.082	10.082	(0.985)	1139041	50.0000	51.53
64	Styrene	104	8.823	8.822	(1.070)	939297	50.0000	51.21
78	tert-Butylbenzene	119	9.898	9.898	(0.967)	854457	50.0000	50.82
56	Tetrachloroethene	166	7.522	7.522	(0.912)	358833	50.0000	54.46
50	Toluene	91	7.046	7.045	(0.855)	1309277	50.0000	50.85
20	trans-1,2-Dichloroethene	96	3.143	3.143	(0.642)	292149	50.0000	47.96
51	trans-1,3-Dichloropropene	75	7.259	7.259	(1.291)	420618	50.0000	46.38
38	Trichloroethene	130	5.861	5.861	(1.042)	332568	50.0000	49.50
8	Trichlorofluoromethane	101	1.955	1.955	(0.400)	423964	50.0000	48.01
5	Vinyl Chloride	62	1.423	1.422	(0.291)	362663	50.0000	45.04



Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010103.D
Date : 01-JAN-2020 11:23
Client ID: CCV
Sample Info: VSTD050;VSTD050;2;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

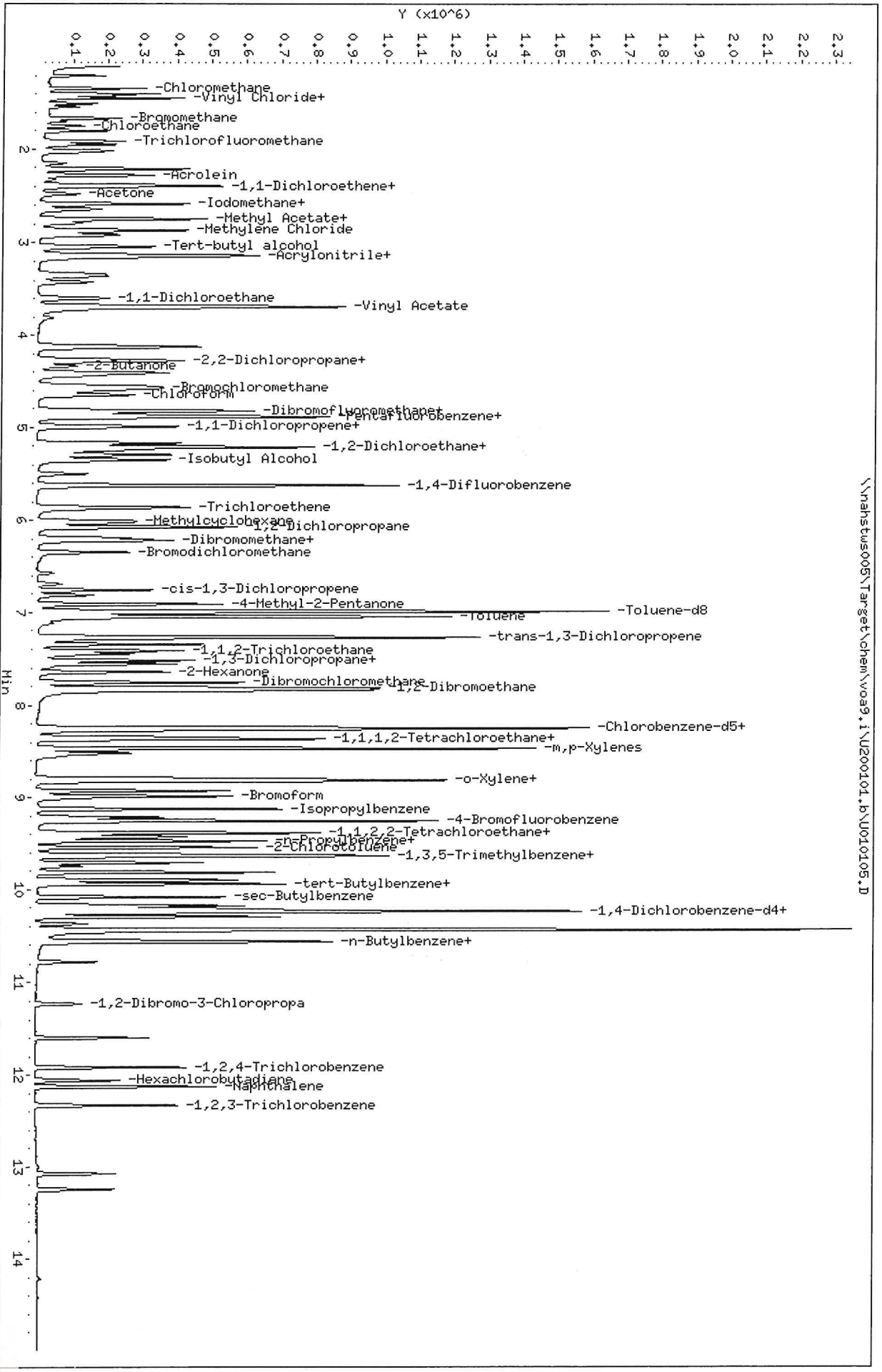
Data file : \\nahstws005\Target\chem\voa9.i\U200101.b\U010105.D
Lab Smp Id: VLCSW-200101 Client Smp ID: VLCSW-200101
Inj Date : 01-JAN-2020 12:12
Operator : PC Inst ID: VOA9.i
Smp Info : VLCSW-200101;VLCSW-200101;3;;LCS
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200101.b\8260C.m
Meth Date : 17-Jan-2020 15:21 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 5 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.890	4.894	(1.000)	571773	50.0000	
*	36 1,4-Difluorobenzene	114	5.621	5.625	(1.000)	813885	50.0000	
*	47 Chlorobenzene-d5	117	8.245	8.245	(1.000)	719865	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	382011	50.0000	
$	30 Dibromofluoromethane	113	4.823	4.826	(0.986)	234301	47.8538	47.85
$	35 1,2-Dichloroethane-d4	65	5.171	5.175	(1.057)	246124	44.7368	44.73
$	48 Toluene-d8	98	6.986	6.985	(0.847)	939109	50.7655	50.76
$	69 4-Bromofluorobenzene	95	9.254	9.253	(1.122)	334561	49.4621	49.46
	60 1,1,1,2-Tetrachloroethane	131	8.347	8.346	(1.012)	113991	20.6956	20.69
	31 1,1,1-Trichloroethane	97	4.823	4.826	(0.986)	142229	16.7288	16.72
	68 1,1,2,2-Tetrachloroethane	83	9.389	9.388	(0.918)	181588	20.5054	20.50
	53 1,1,2-Trichloroethane	83	7.417	7.417	(0.900)	99538	19.5032	19.50
	22 1,1-Dichloroethane	63	3.597	3.604	(0.736)	205655	17.9920	17.99
	11 1,1-Dichloroethene	96	2.394	2.401	(0.490)	90699	16.4037	16.40
	32 1,1-Dichloropropene	75	4.999	5.002	(0.889)	131332	16.5206	16.52
	93 1,2,3-Trichlorobenzene	180	12.331	12.331	(1.205)	126284	17.5243	17.52
	71 1,2,3-Trichloropropane	75	9.422	9.422	(0.921)	180422	20.0022	20.00
	90 1,2,4-Trichlorobenzene	180	11.919	11.919	(1.165)	132242	17.4792	17.47
	79 1,2,4-Trimethylbenzene	105	9.940	9.939	(0.971)	368097	17.3552	17.35
	89 1,2-Dibromo-3-Chloropropane	155	11.229	11.229	(1.097)	28856	18.6265	18.62
	57 1,2-Dibromoethane	107	7.848	7.848	(0.952)	129289	21.1379	21.13
	88 1,2-Dichlorobenzene	146	10.566	10.565	(1.033)	242437	19.1861	19.18
	33 1,2-Dichloroethane	62	5.250	5.250	(0.934)	152504	17.5590	17.55

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
42	1,2-Dichloropropane	63	6.075	6.078	(1.081)	127912	19.4834	19.48
75	1,3,5-Trimethylbenzene	105	9.621	9.621	(0.940)	347957	17.3230	17.32
83	1,3-Dichlorobenzene	146	10.176	10.176	(0.995)	235436	18.5173	18.51
54	1,3-Dichloropropane	76	7.559	7.559	(0.917)	218151	20.1994	20.19
84	1,4-Dichlorobenzene	146	10.251	10.254	(1.002)	246318	19.1078	19.10
26	2,2-Dichloropropane	77	4.268	4.275	(0.873)	120272	18.4073	18.40
24	2-Butanone	43	4.335	4.339	(0.887)	146299	37.3121	37.31
76	2-Chlorotoluene	91	9.542	9.542	(0.933)	325009	18.2237	18.22
52	2-Hexanone	43	7.645	7.649	(0.927)	224383	41.5526	41.55
77	4-Chlorotoluene	91	9.636	9.636	(0.942)	371188	18.2465	18.24
82	p-Isopropyltoluene	119	10.206	10.206	(0.997)	326169	16.0689	16.06
45	4-Methyl-2-Pentanone	43	6.911	6.910	(0.838)	316165	41.0606	41.06
10	Acetone	43	2.476	2.483	(0.506)	116609	43.7364	43.73
37	Benzene	78	5.213	5.216	(0.927)	486283	18.6583	18.65
74	Bromobenzene	156	9.377	9.377	(0.916)	149822	19.7898	19.78
29	Bromochloromethane	128	4.549	4.553	(0.930)	70195	19.7111	19.71
39	Bromodichloromethane	83	6.345	6.344	(1.129)	138576	18.9139	18.91
66	Bromoform	173	8.980	8.980	(1.089)	81621	17.5710	17.57
6	Bromomethane	94	1.663	1.666	(0.340)	98318	22.1937	22.19
19	Carbon Disulfide	76	2.585	2.588	(0.529)	549361	33.2651	33.26
34	Carbon Tetrachloride	117	4.991	4.995	(0.888)	107973	15.9172	15.91
59	Chlorobenzene	112	8.272	8.271	(1.003)	328458	19.3501	19.35
7	Chloroethane	64	1.749	1.752	(0.358)	81990	16.5044	16.50
28	Chloroform	83	4.654	4.658	(0.952)	207126	17.9940	17.99
3	Chloromethane	50	1.336	1.344	(0.273)	201725	23.4400	23.44
27	cis-1,2-Dichloroethene	96	4.279	4.286	(0.875)	137746	18.3438	18.34
46	cis-1,3-Dichloropropene	75	6.753	6.757	(1.201)	176721	17.9016	17.90
55	Dibromochloromethane	129	7.754	7.754	(0.940)	113049	18.3892	18.38
44	Dibromomethane	93	6.187	6.187	(1.101)	79929	19.4473	19.44
2	Dichlorodifluoromethane	85	1.202	1.205	(0.246)	94392	15.0036	15.00
61	Ethylbenzene	106	8.365	8.369	(1.015)	160469	18.3455	18.34
91	Hexachlorobutadiene	225	12.058	12.061	(1.178)	46215	16.9619	16.96
67	Isopropylbenzene	105	9.122	9.122	(1.106)	432941	17.5574	17.55
62	m,p-Xylenes	106	8.470	8.470	(1.027)	398938	37.9068	37.90
17	Methylene Chloride	84	2.866	2.869	(0.586)	130365	18.4512	18.45
87	n-Butylbenzene	91	10.551	10.554	(1.031)	260487	16.1447	16.14
73	n-Propylbenzene	91	9.471	9.471	(0.926)	470715	16.7938	16.79
92	Naphthalene	128	12.129	12.129	(1.185)	379540	18.0353	18.03
63	o-Xylene	106	8.808	8.807	(1.068)	202295	19.2004	19.20
81	sec-Butylbenzene	105	10.082	10.082	(0.985)	351564	15.7756	15.77
64	Styrene	104	8.823	8.822	(1.070)	355757	19.2002	19.20
78	tert-Butylbenzene	119	9.898	9.898	(0.967)	274060	16.1673	16.16
56	Tetrachloroethene	166	7.518	7.522	(0.912)	124798	18.6344	18.63
50	Toluene	91	7.042	7.045	(0.854)	501171	19.2676	19.26
20	trans-1,2-Dichloroethene	96	3.136	3.143	(0.641)	111433	17.9027	17.90
51	trans-1,3-Dichloropropene	75	7.256	7.259	(1.291)	153962	17.5962	17.59
38	Trichloroethene	130	5.857	5.861	(1.042)	121382	17.7306	17.73
8	Trichlorofluoromethane	101	1.947	1.955	(0.398)	135807	15.0516	15.05
5	Vinyl Chloride	62	1.415	1.422	(0.289)	130230	15.8303	15.83



Data File: \\nahstws005\Target\chem\voa9,i\U200101,b\U010105,D
Date : 01-JAN-2020 12:12
Client ID: VLCSW-200101
Sample Info: VLCSW-200101;WLCSW-200101;3;;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

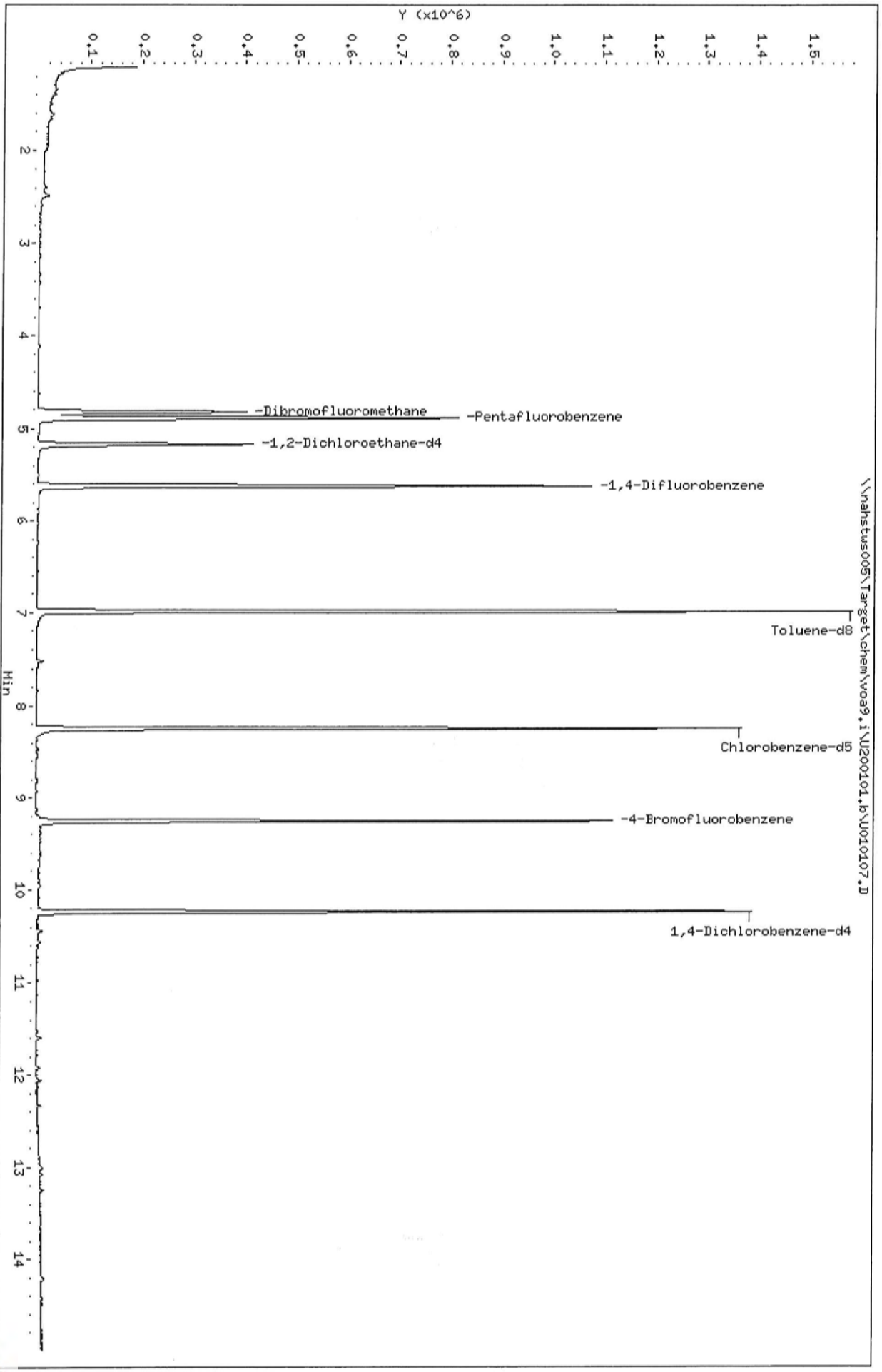
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U200101.b\U010107.D
Lab Smp Id: VBLKW-200101 Client Smp ID: VBLKW-200101
Inj Date : 01-JAN-2020 13:01
Operator : PC Inst ID: VOA9.i
Smp Info : VBLKW-200101;VBLKW-200101;3;;BLANK
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200101.b\8260C.m
Meth Date : 17-Jan-2020 15:21 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 7 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.890	4.894	(1.000)	582694	50.0000	
* 36 1,4-Difluorobenzene	114	5.621	5.625	(1.000)	845245	50.0000	
* 47 Chlorobenzene-d5	117	8.245	8.245	(1.000)	738744	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	361061	50.0000	
$ 30 Dibromofluoromethane	113	4.826	4.826	(0.987)	235744	47.2461	47.24
$ 35 1,2-Dichloroethane-d4	65	5.171	5.175	(1.057)	257807	45.9821	45.98
$ 48 Toluene-d8	98	6.986	6.985	(0.847)	950030	50.0434	50.04
$ 69 4-Bromofluorobenzene	95	9.254	9.253	(1.122)	325981	46.9620	46.96



Data File: \\nahstus005\Target\chem\voa9.i\U200101.b\U010107.D
Date : 01-JAN-2020 13:01
Client ID: VBLKW-200101
Sample Info: VBLKW-200101;VBLKW-200101;3;;BLANK
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010108.D Page 1
Report Date: 17-Jan-2020 15:06

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U200101.b\U010108.D
Lab Smp Id: HS19121092-12 Client Smp ID: HS19121092-12
Inj Date : 01-JAN-2020 13:25
Operator : PC Inst ID: VOA9.i
Smp Info : HS19121092-12;HS19121092-12;;;
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200101.b\8260C.m
Meth Date : 17-Jan-2020 15:06 DevakG Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14
Processing Host: NAHSTW7056

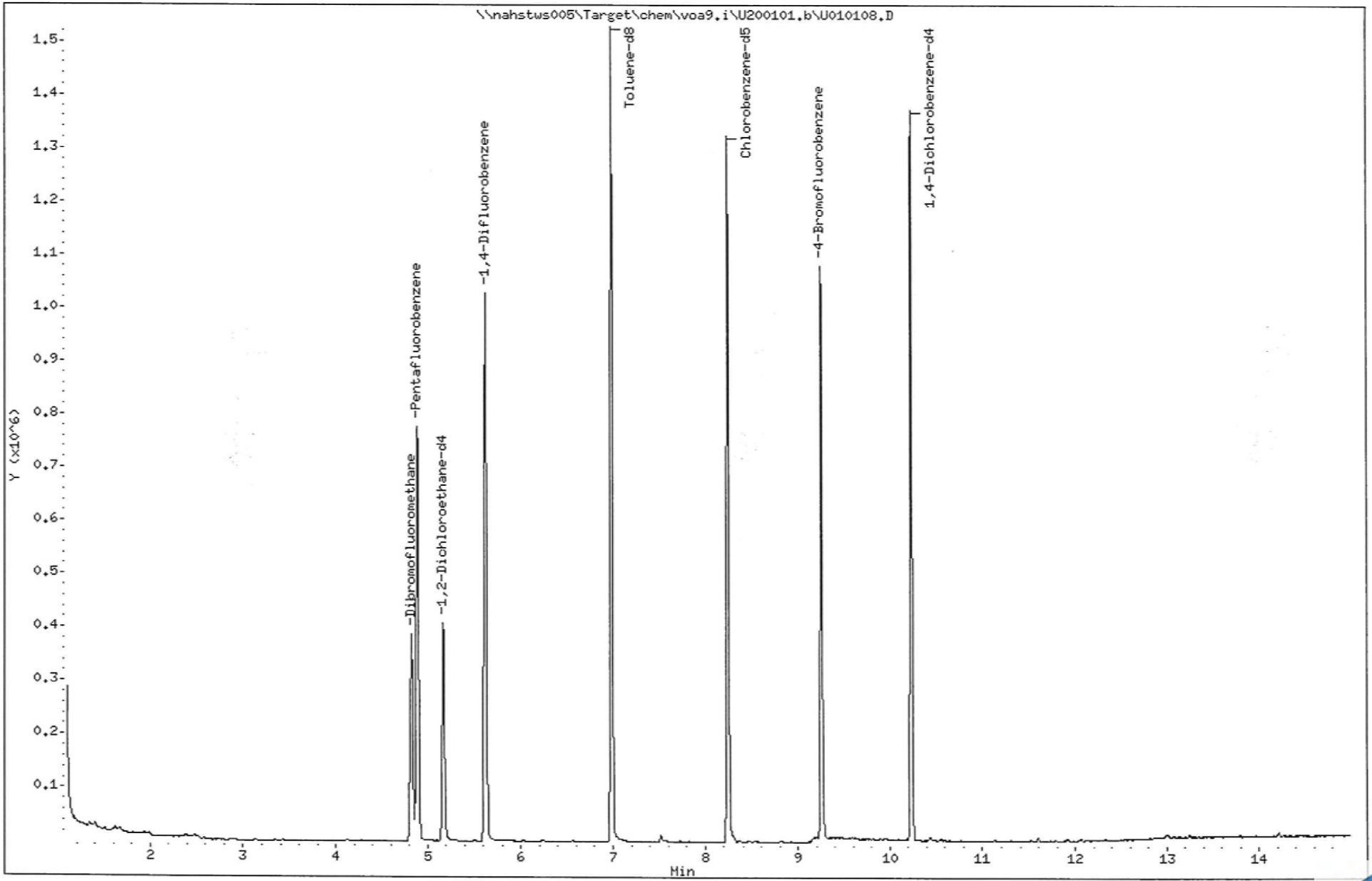
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.890	4.894	(1.000)	563430	50.0000	
* 36 1,4-Difluorobenzene	114	5.621	5.625	(1.000)	804563	50.0000	
* 47 Chlorobenzene-d5	117	8.245	8.249	(1.000)	710202	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	349727	50.0000	
$ 30 Dibromofluoromethane	113	4.826	4.830	(0.987)	221980	46.0086	46.00
$ 35 1,2-Dichloroethane-d4	65	5.171	5.175	(1.057)	251180	46.3319	46.33
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	912068	49.9745	49.97
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	316474	47.4247	47.42

Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010108.D
Date : 01-JAN-2020 13:25
Client ID: HS19121092-12
Sample Info: HS19121092-12;HS19121092-12;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18



ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U200101.b\U010109.D
Lab Smp Id: HS19121092-09 Client Smp ID: HS19121092-09
Inj Date : 01-JAN-2020 13:50
Operator : PC Inst ID: VOA9.i
Smp Info : HS19121092-09;HS19121092-09;;;
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200101.b\8260C.m
Meth Date : 17-Jan-2020 15:06 DevakG Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14
Processing Host: NAHSTW7056

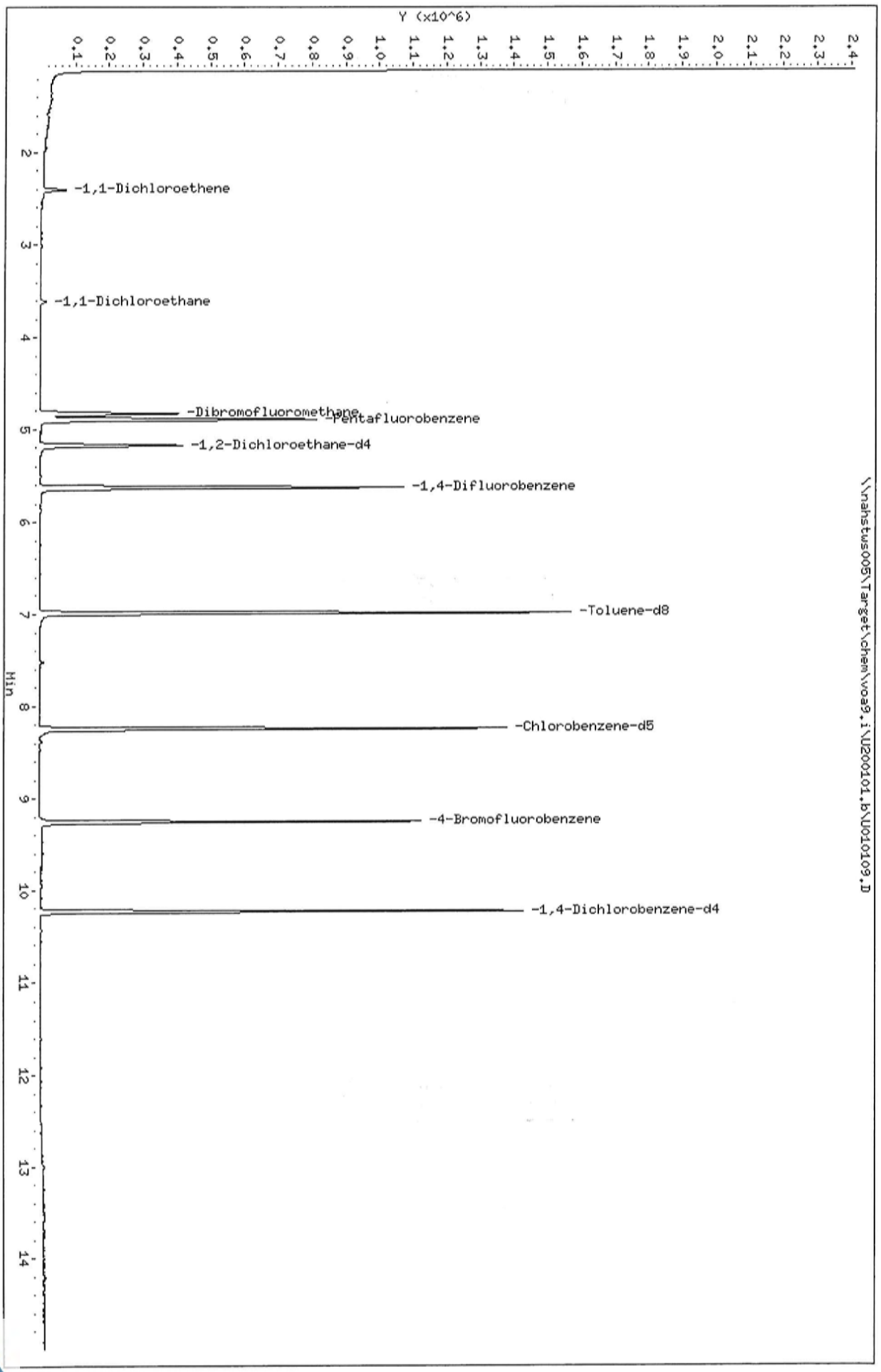
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.898	4.894	(1.000)	591514	50.0000	
* 36 1,4-Difluorobenzene	114	5.625	5.625	(1.000)	852307	50.0000	
* 47 Chlorobenzene-d5	117	8.249	8.249	(1.000)	740174	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	366987	50.0000	
$ 30 Dibromofluoromethane	113	4.830	4.830	(0.986)	238386	47.0632	47.06
$ 35 1,2-Dichloroethane-d4	65	5.175	5.175	(1.057)	263854	46.3590	46.35
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	960359	50.4898	50.48
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	332567	47.8183	47.81
22 1,1-Dichloroethane	63	3.608	3.604	(0.737)	13606	1.15061	1.15(a)
11 1,1-Dichloroethene	96	2.405	2.405	(0.491)	23325	4.07774	4.07(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).



Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010109.D
Date : 01-JAN-2020 13:50
Client ID: HS19121092-09
Sample Info: HS19121092-09;HS19121092-09;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010109.D

Date : 01-JAN-2020 13:50

Client ID: HS19121092-09

Instrument: VOA9.i

Sample Info: HS19121092-09;HS19121092-09;;;

Purge Volume: 5.0

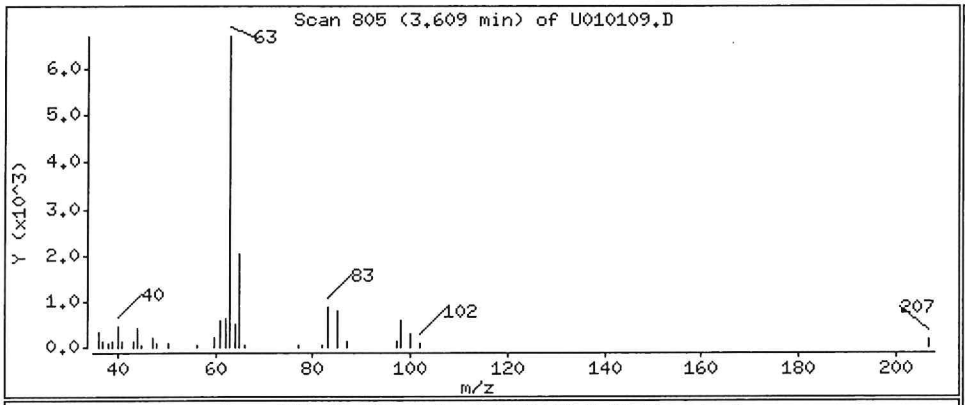
Operator: PC

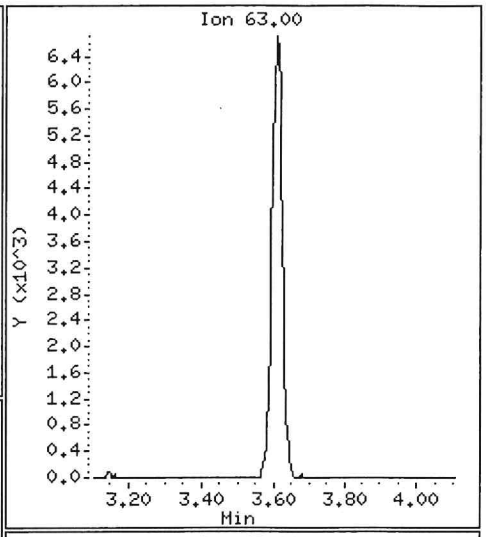
Column phase: DB624

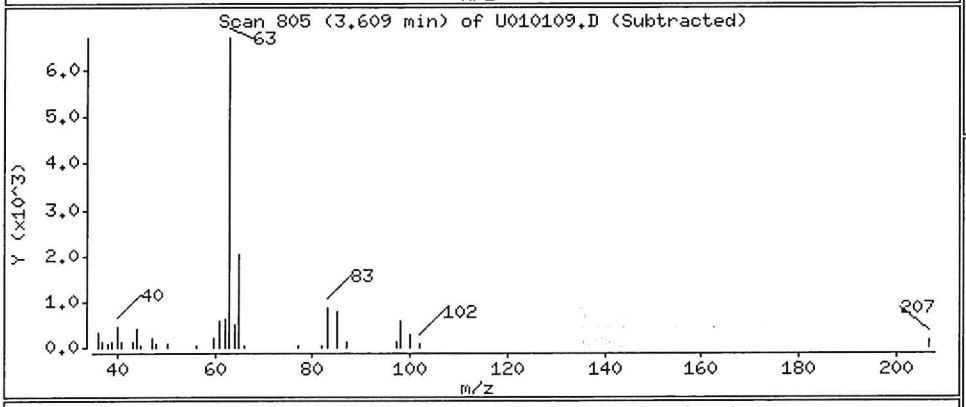
Column diameter: 0.18

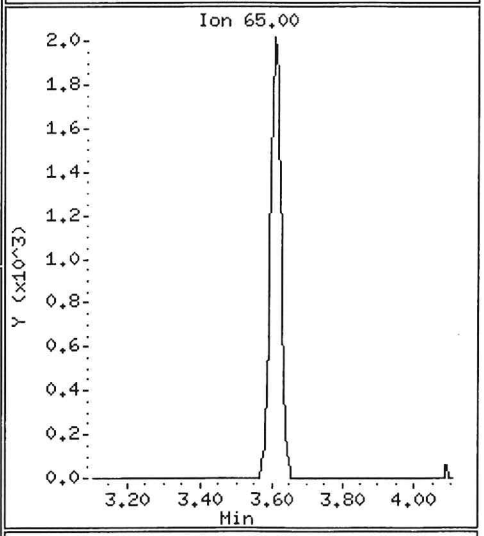
22 1,1-Dichloroethane

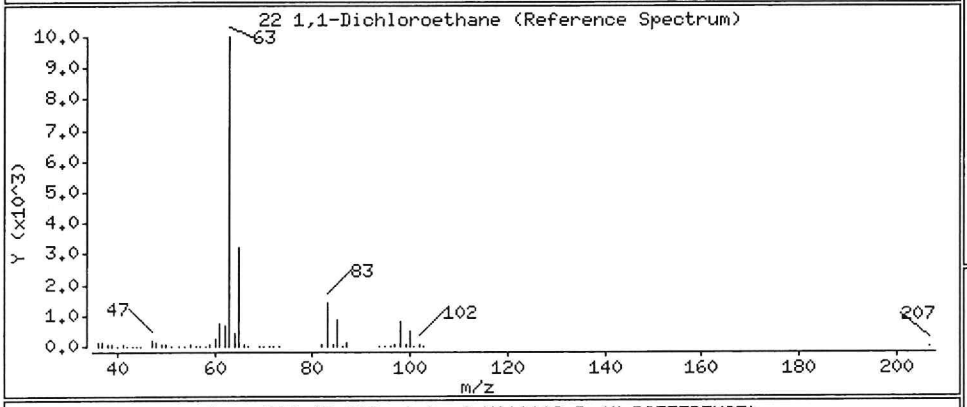
Concentration: 1.15 ug/l

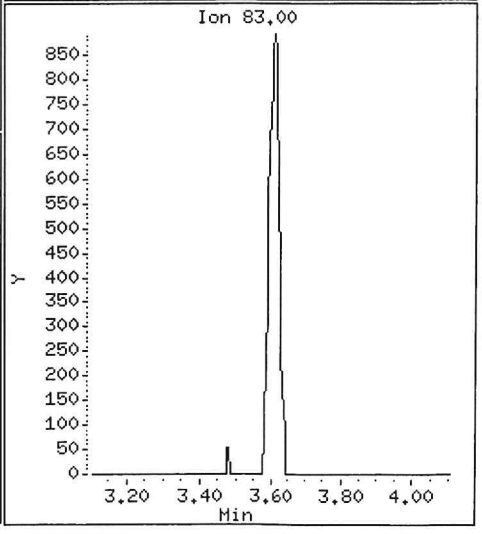


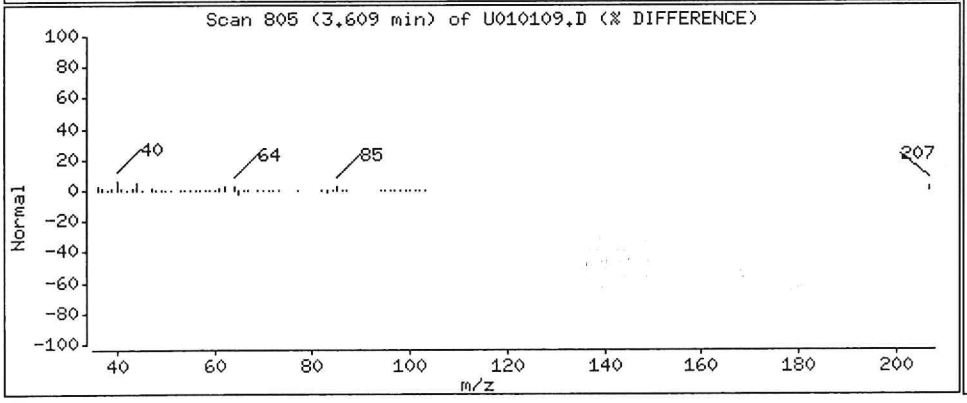












Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010109.D

Date : 01-JAN-2020 13:50

Client ID: HS19121092-09

Instrument: VOA9.i

Sample Info: HS19121092-09;HS19121092-09;;;

Purge Volume: 5.0

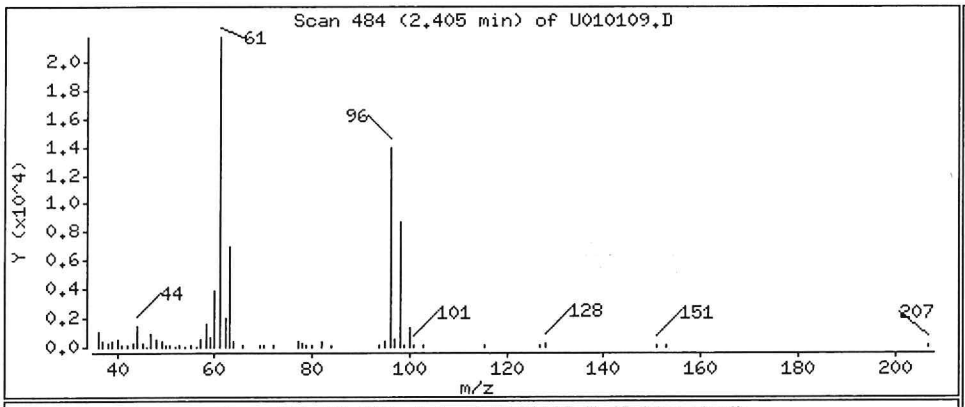
Operator: PC

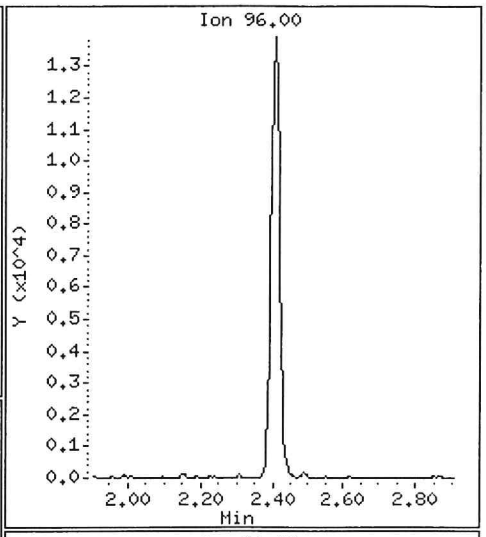
Column phase: DB624

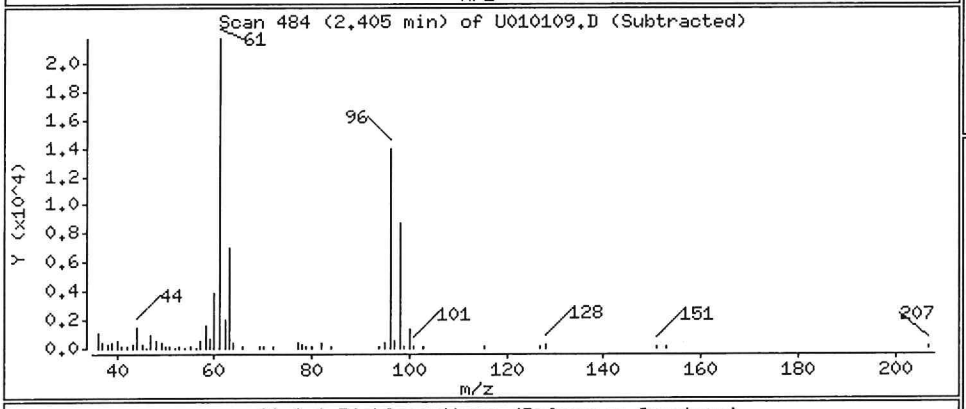
Column diameter: 0.18

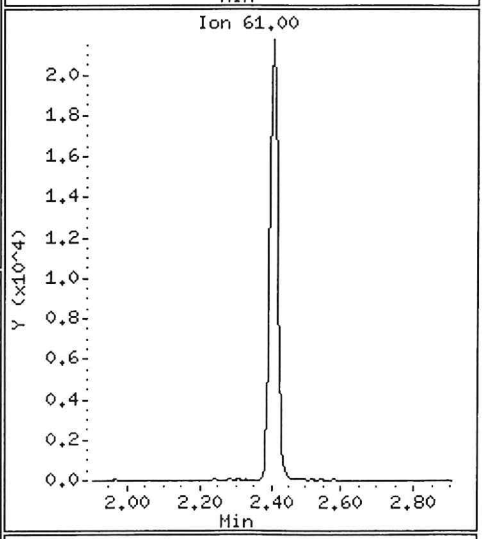
11 1,1-Dichloroethene

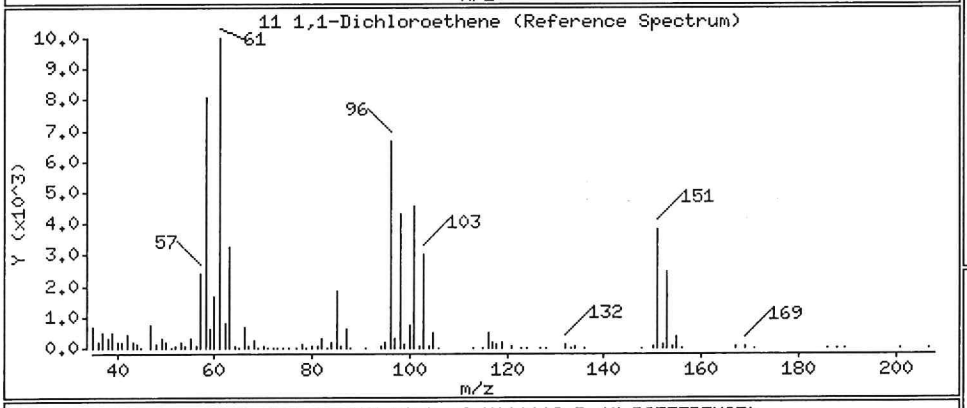
Concentration: 4.07 ug/l

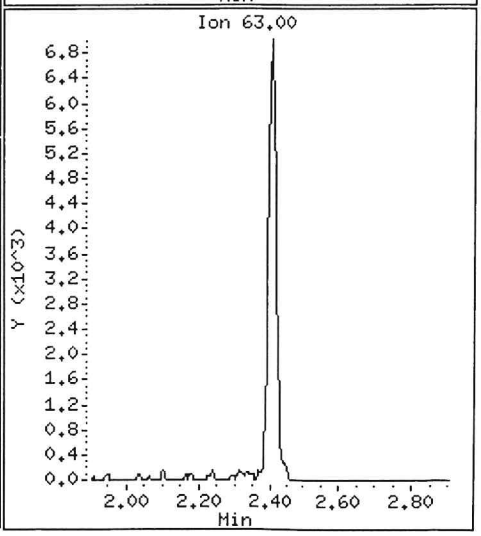


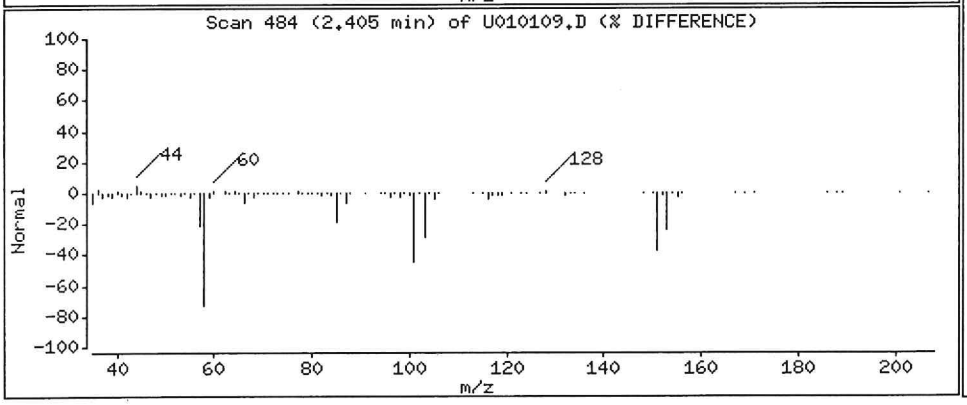












Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010110.D Page 1
Report Date: 17-Jan-2020 15:06

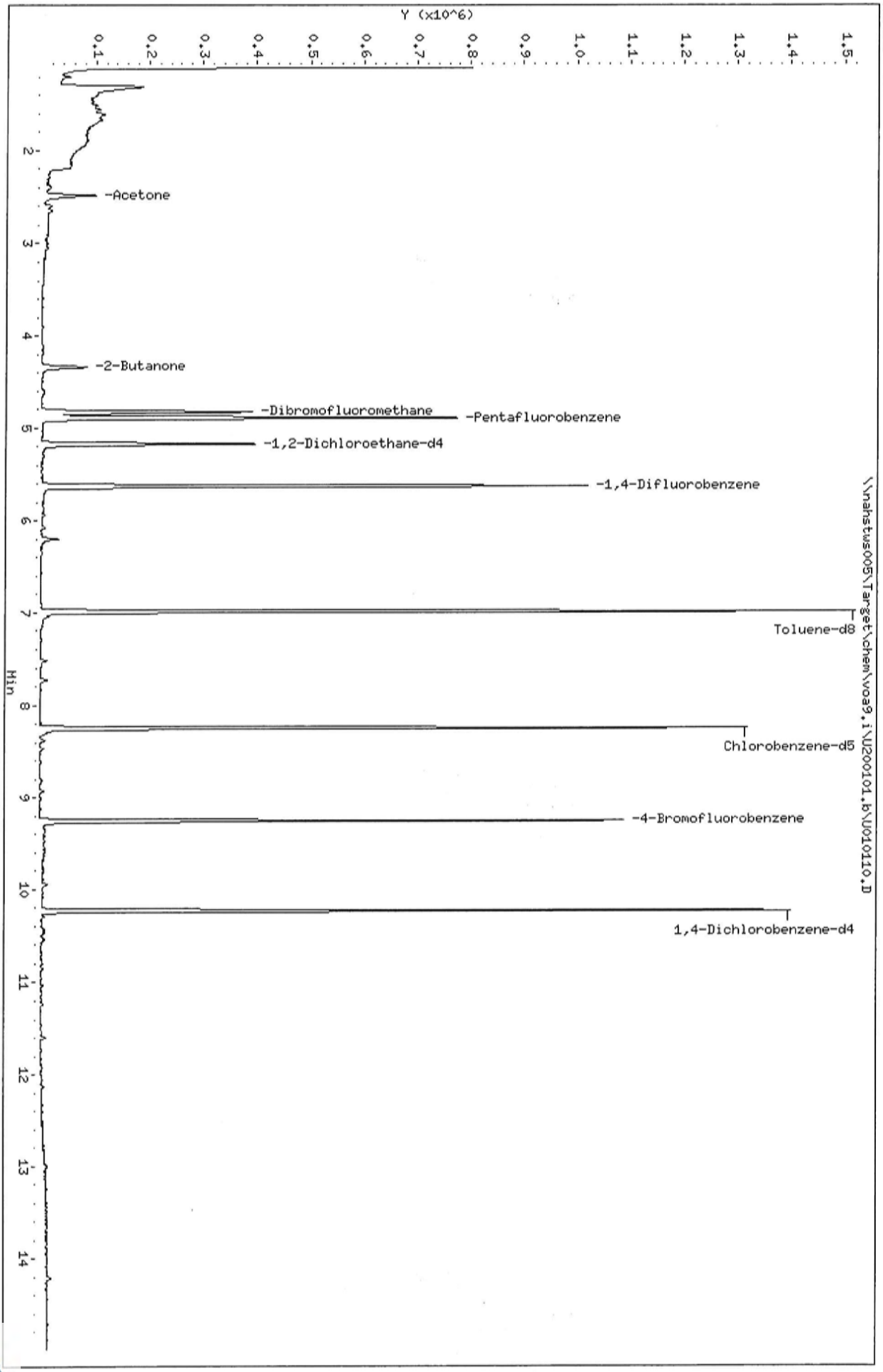
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U200101.b\U010110.D
Lab Smp Id: HS19121092-04 Client Smp ID: HS19121092-04
Inj Date : 01-JAN-2020 14:14
Operator : PC Inst ID: VOA9.i
Smp Info : HS19121092-04;HS19121092-04;;;
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200101.b\8260C.m
Meth Date : 17-Jan-2020 15:06 DevakG Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.894	4.894	(1.000)	557511	50.0000	
*	36 1,4-Difluorobenzene	114	5.625	5.625	(1.000)	806091	50.0000	
*	47 Chlorobenzene-d5	117	8.245	8.249	(1.000)	705614	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	359878	50.0000	
$	30 Dibromofluoromethane	113	4.827	4.830	(0.986)	227861	47.7290	47.72
$	35 1,2-Dichloroethane-d4	65	5.175	5.175	(1.057)	250660	46.7269	46.72
$	48 Toluene-d8	98	6.986	6.986	(0.847)	911338	50.2592	50.25
$	69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	316961	47.8065	47.80
	24 2-Butanone	43	4.339	4.339	(0.887)	110757	28.9700	28.97
	10 Acetone	43	2.484	2.487	(0.508)	99164	37.7441	37.74



Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010110.D
Date : 01-JAN-2020 14:14
Client ID: HS19121092-04
Sample Info: HS19121092-04;HS19121092-04;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010110.D

Date : 01-JAN-2020 14:14

Client ID: HS19121092-04

Instrument: VOA9.i

Sample Info: HS19121092-04;HS19121092-04;;;

Purge Volume: 5.0

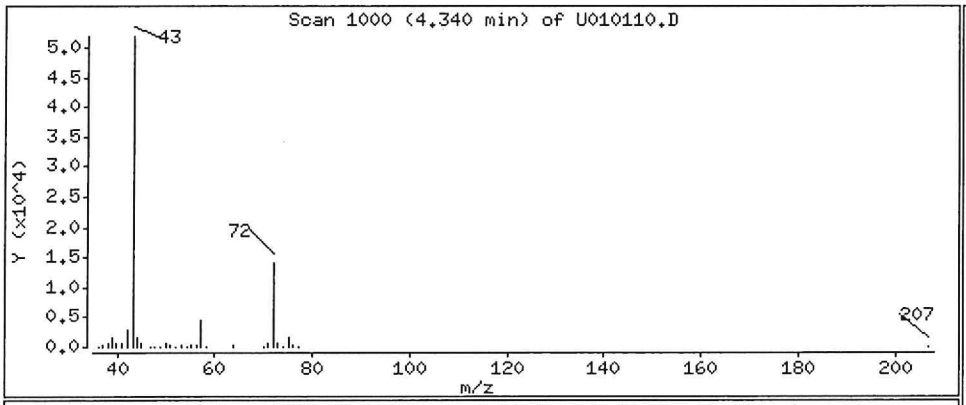
Operator: PC

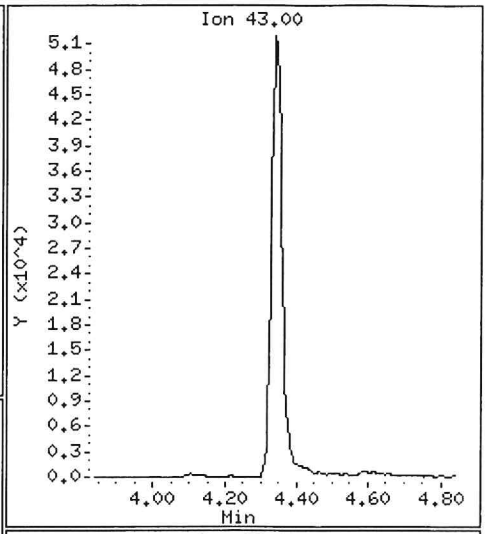
Column phase: DB624

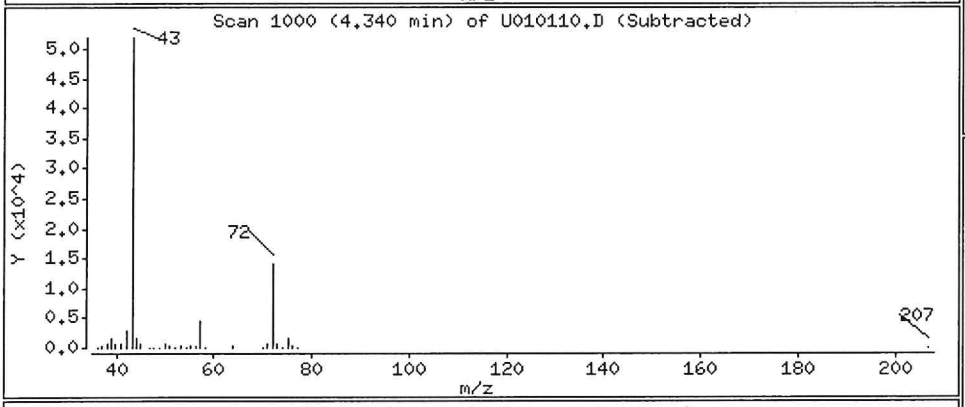
Column diameter: 0.18

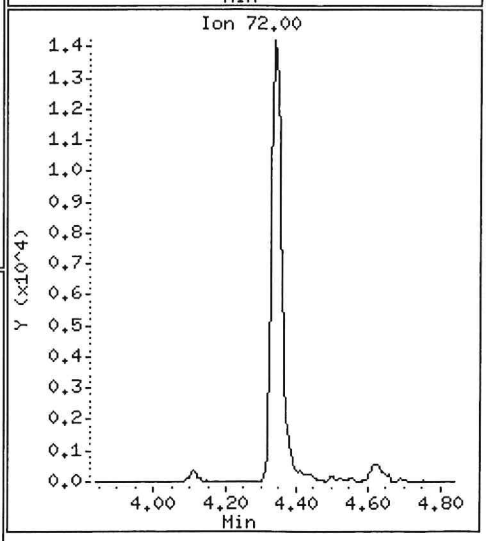
24 2-Butanone

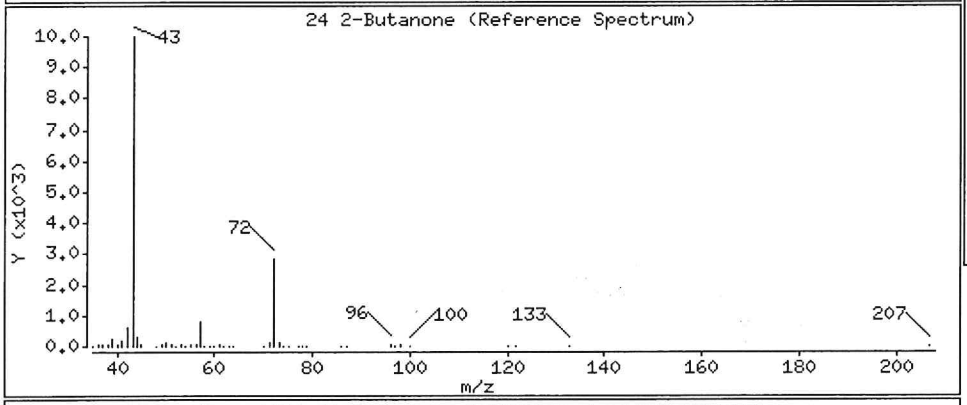
Concentration: 28.97 ug/l

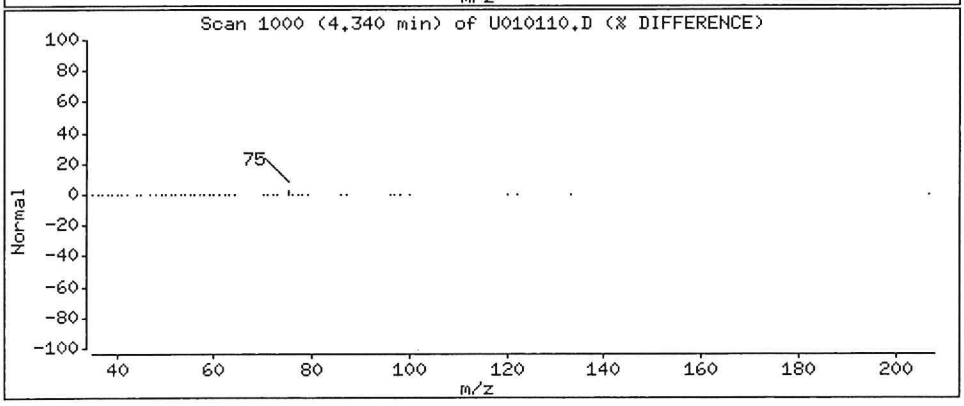












Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010110.D Page 4

Date : 01-JAN-2020 14:14

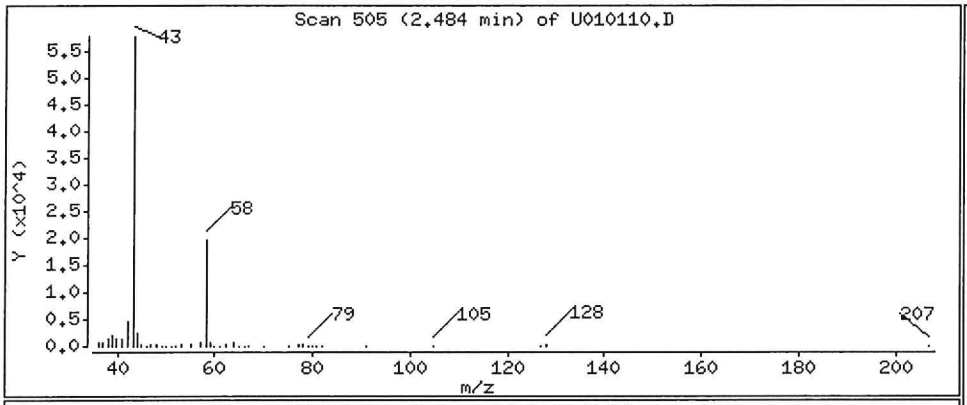
Client ID: HS19121092-04 Instrument: VOA9.i

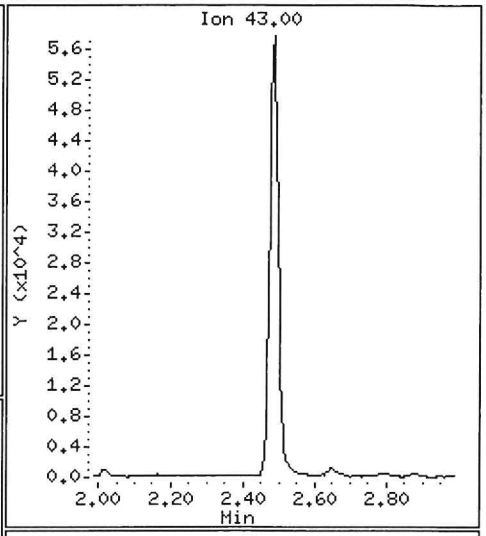
Sample Info: HS19121092-04;HS19121092-04;;;

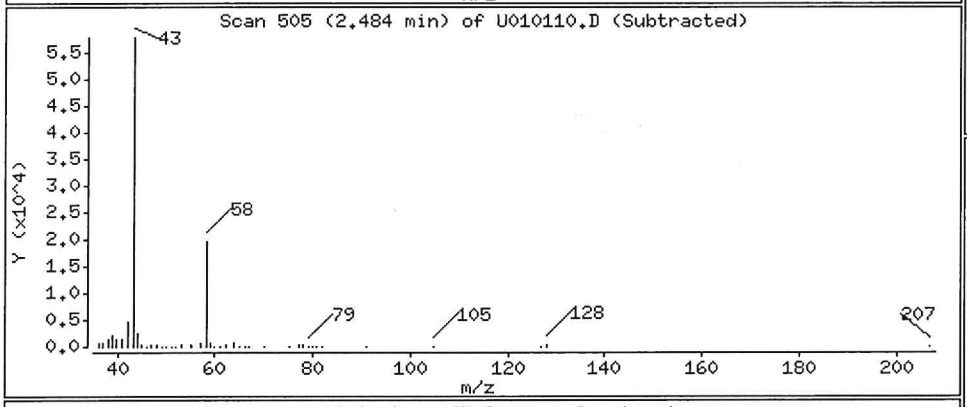
Purge Volume: 5.0 Operator: PC

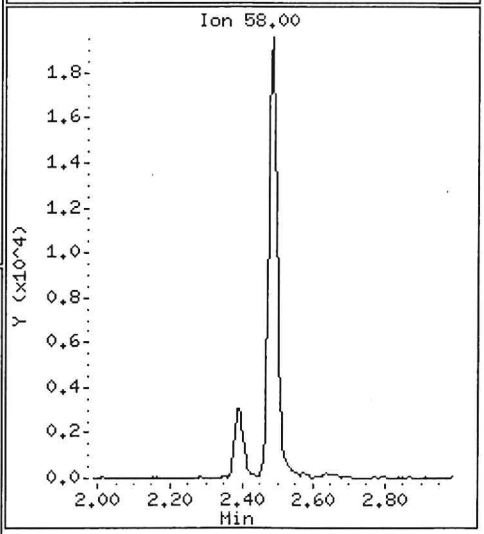
Column phase: DB624 Column diameter: 0.18

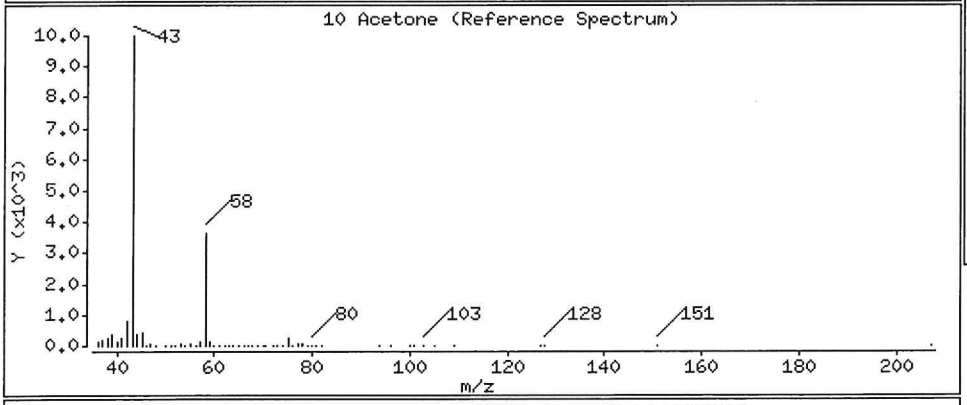
10 Acetone Concentration: 37.74 ug/l

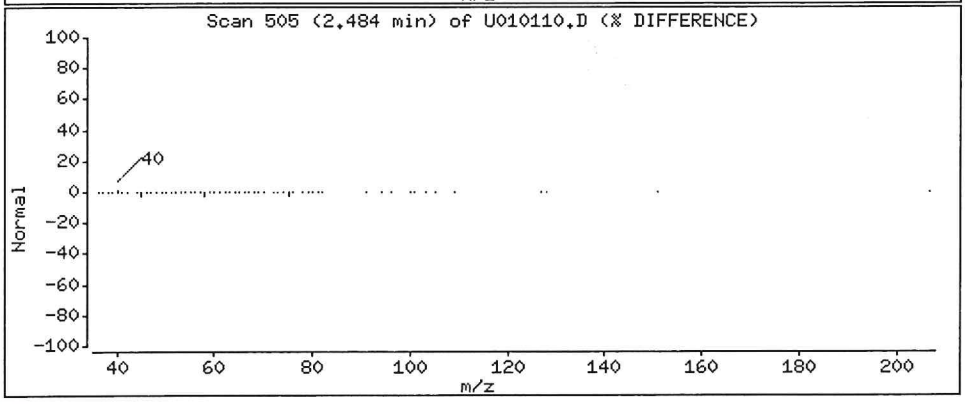












Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010110.D Page 5

Date : 01-JAN-2020 14:14

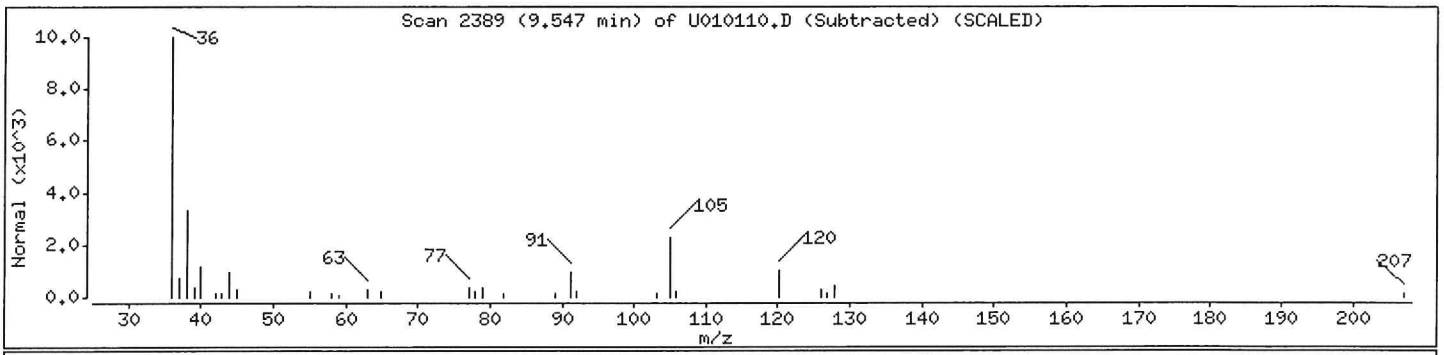
Client ID: HS19121092-04 Instrument: VOA9.i

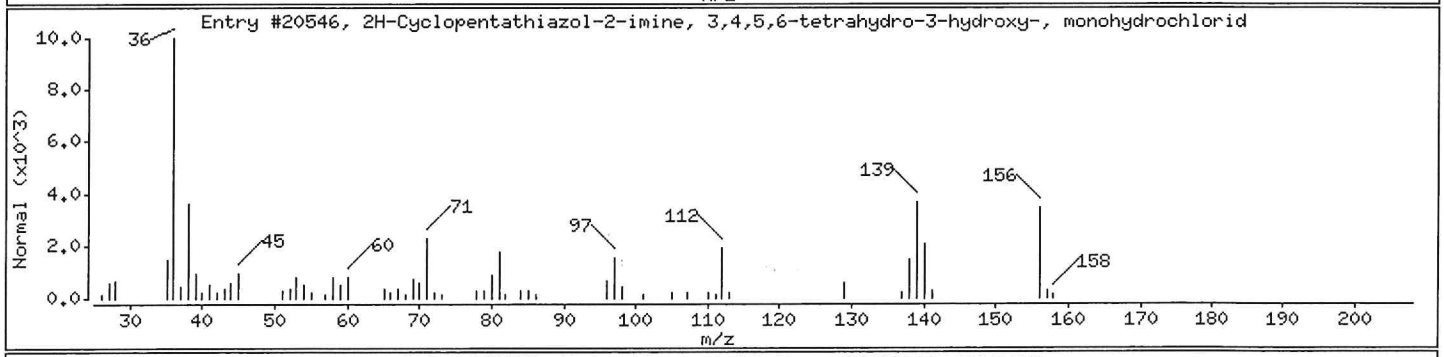
Sample Info: HS19121092-04;HS19121092-04;;;

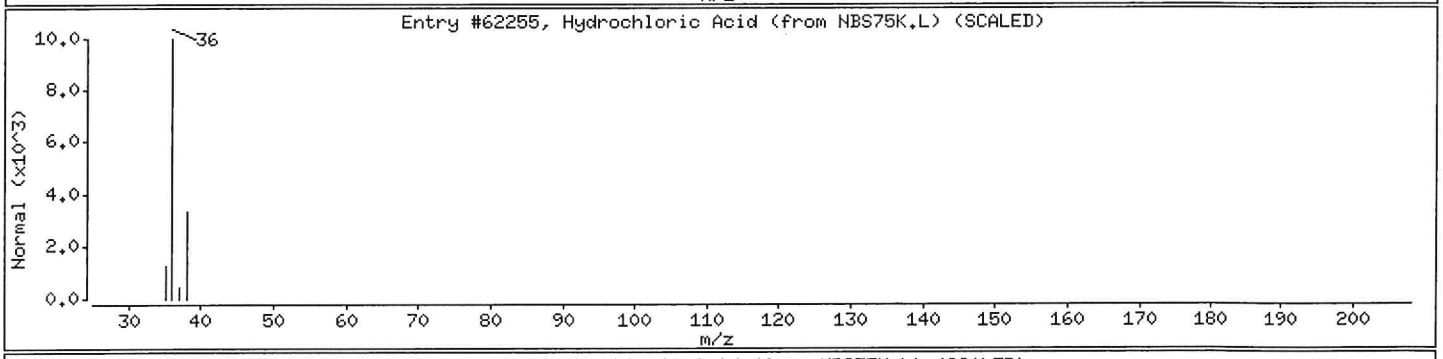
Purge Volume: 5.0 Operator: PC

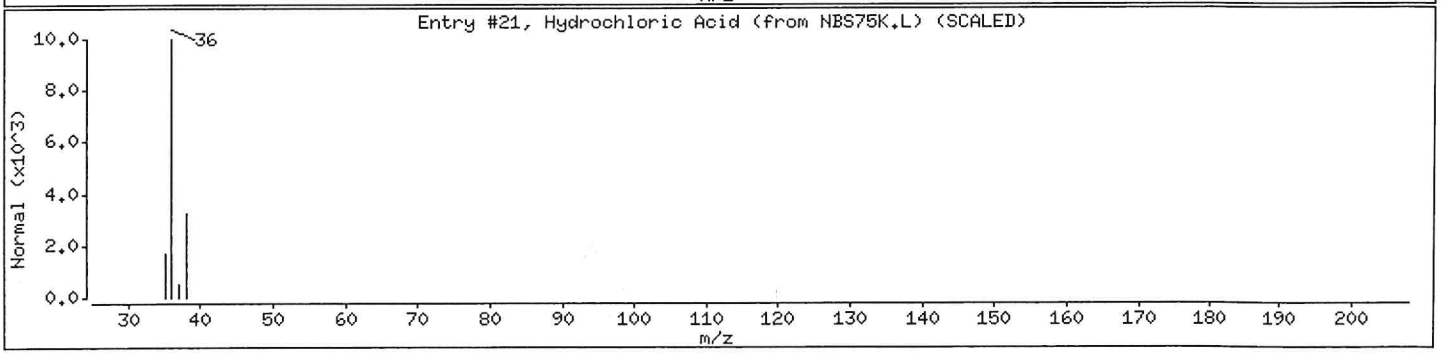
Column phase: DB624 Column diameter: 0.18

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
2H-Cyclopentathiazol-2-imine, 3,4,5,6-te	58275-62-0	NBS75K.L	20546	2	C6H9ClN2OS	192
Hydrochloric Acid	7647-01-0	NBS75K.L	62255	9	HCl	36
Hydrochloric Acid	7647-01-0	NBS75K.L	21	9	HCl	36









ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U200101.b\U010111.D
Lab Smp Id: HS19121092-05 Client Smp ID: HS19121092-05
Inj Date : 01-JAN-2020 14:38
Operator : PC Inst ID: VOA9.i
Smp Info : HS19121092-05;HS19121092-05;;;
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200101.b\8260C.m
Meth Date : 17-Jan-2020 15:06 DevakG Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14
Processing Host: NAHSTW7056

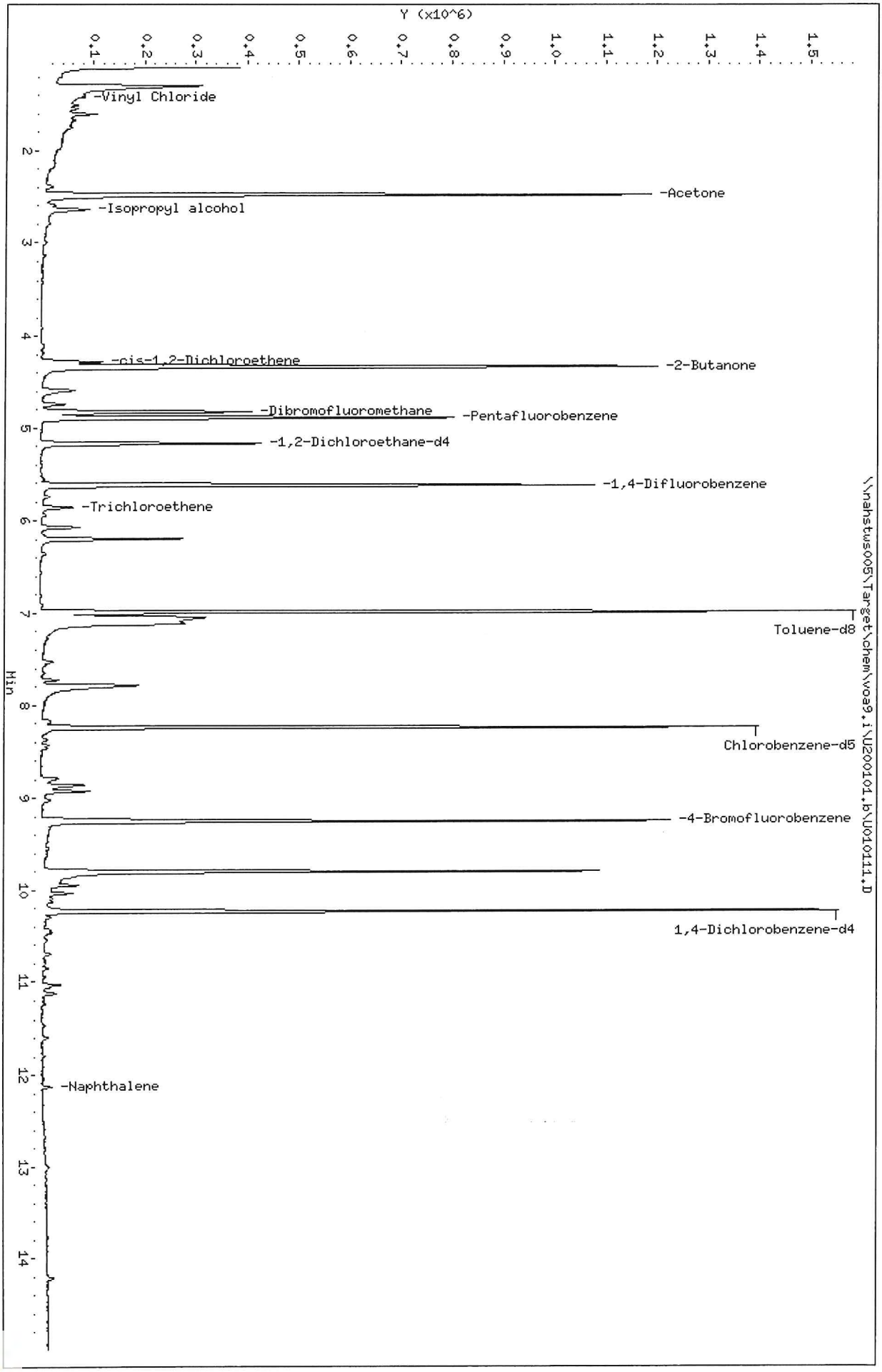
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.890	4.894	(1.000)	578684	50.0000	
* 36 1,4-Difluorobenzene	114	5.621	5.625	(1.000)	829113	50.0000	
* 47 Chlorobenzene-d5	117	8.245	8.249	(1.000)	744671	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	394033	50.0000	
$ 30 Dibromofluoromethane	113	4.826	4.830	(0.987)	234970	47.4173	47.41
$ 35 1,2-Dichloroethane-d4	65	5.171	5.175	(1.057)	255429	45.8737	45.87
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	951495	49.7217	49.72
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	343396	49.0771	49.07
24 2-Butanone	43	4.335	4.339	(0.887)	1544160	389.119	389.11(A)
10 Acetone	43	2.480	2.487	(0.507)	1265699	499.536	499.53(A)
27 cis-1,2-Dichloroethene	96	4.283	4.286	(0.876)	57693	7.59129	7.59
92 Naphthalene	128	12.129	12.129	(1.185)	14192	1.56823	1.56(a)
38 Trichloroethene	130	5.857	5.861	(1.042)	19004	2.72498	2.72(a)
5 Vinyl Chloride	62	1.419	1.426	(0.290)	9501	1.14111	1.14(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.



Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010111.D
Date : 01-JAN-2020 14:38
Client ID: HS19121092-05
Sample Info: HS19121092-05;HS19121092-05;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010111.D

Date : 01-JAN-2020 14:38

Client ID: HS19121092-05

Instrument: VOA9.i

Sample Info: HS19121092-05;HS19121092-05;;;

Purge Volume: 5.0

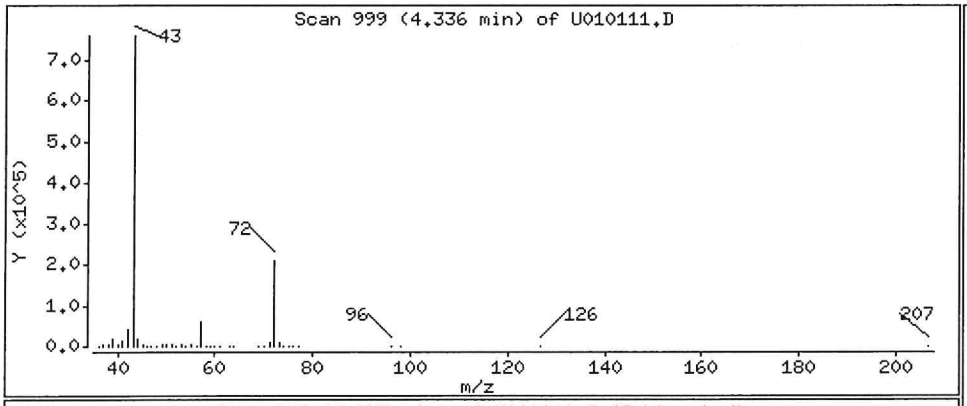
Operator: PC

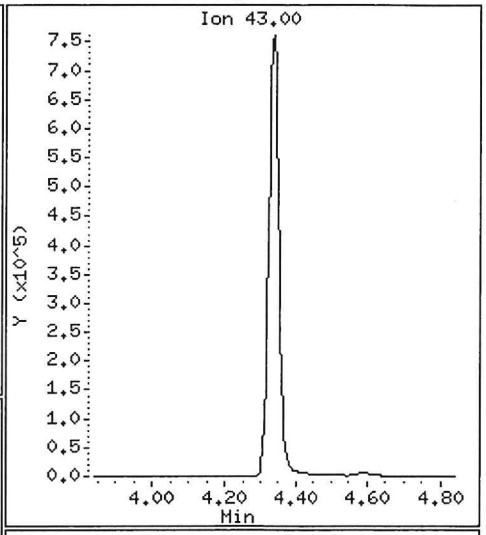
Column phase: DB624

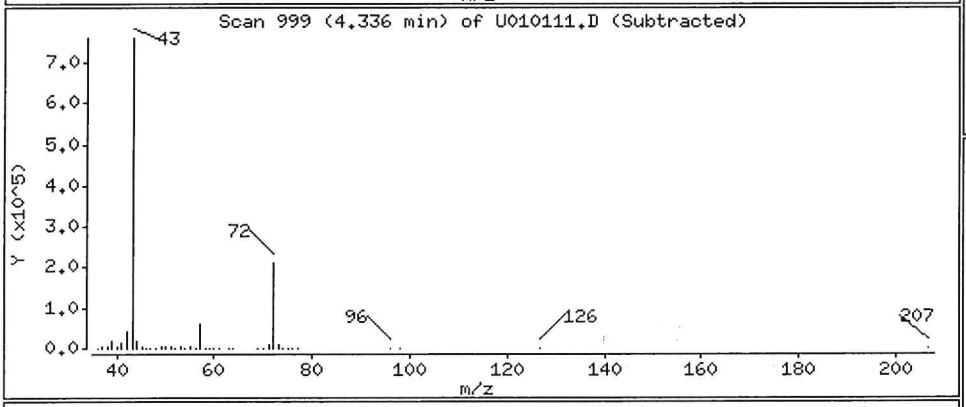
Column diameter: 0.18

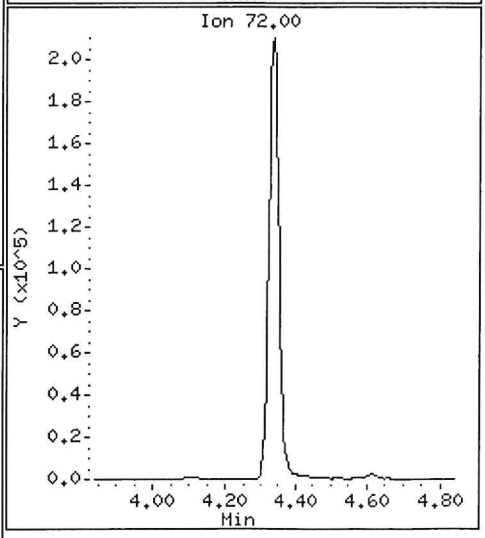
24 2-Butanone

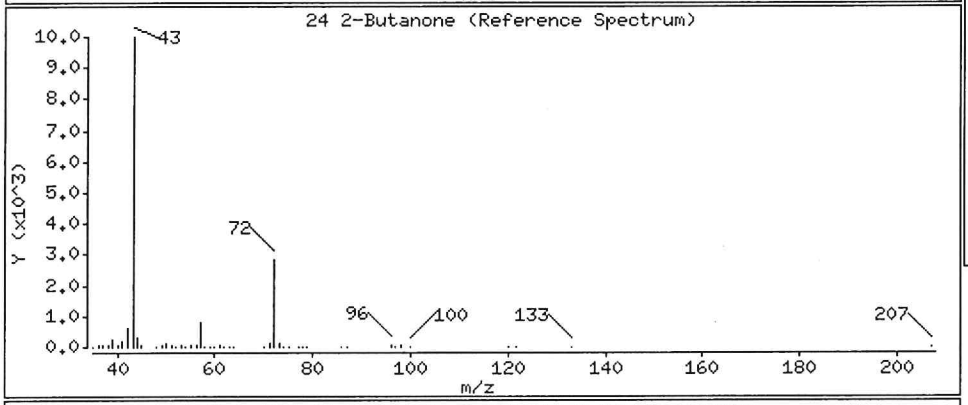
Concentration: 389.11 ug/l

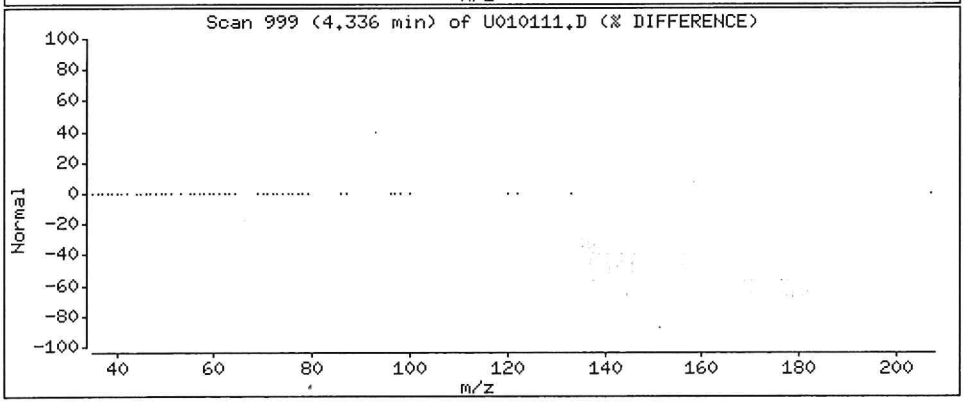












Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010111.D

Date : 01-JAN-2020 14:38

Client ID: HS19121092-05

Instrument: VOA9.i

Sample Info: HS19121092-05;HS19121092-05;;;

Purge Volume: 5.0

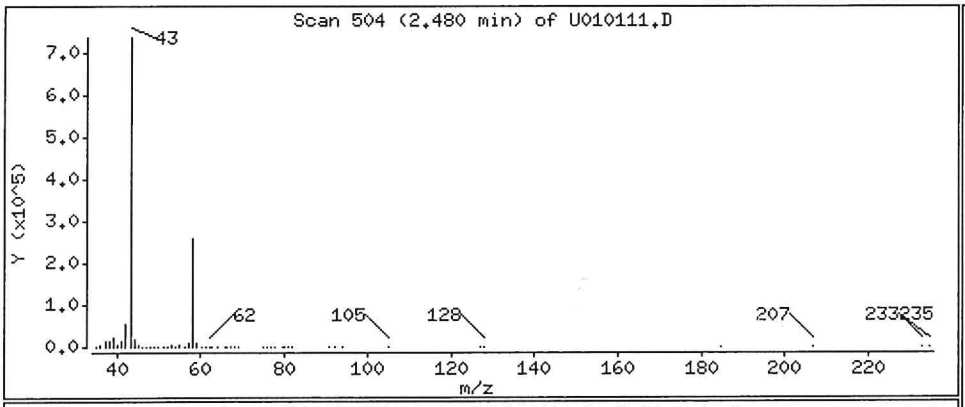
Operator: PC

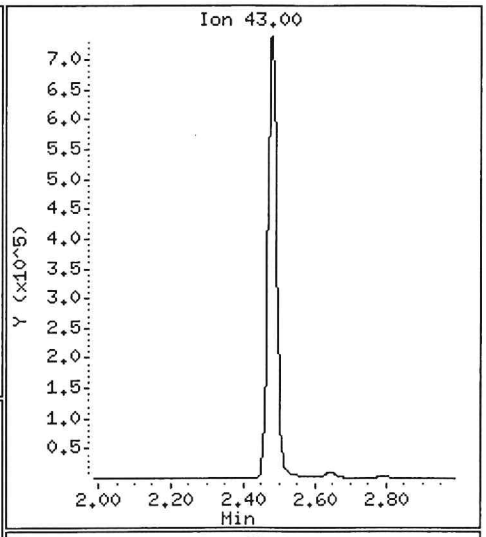
Column phase: DB624

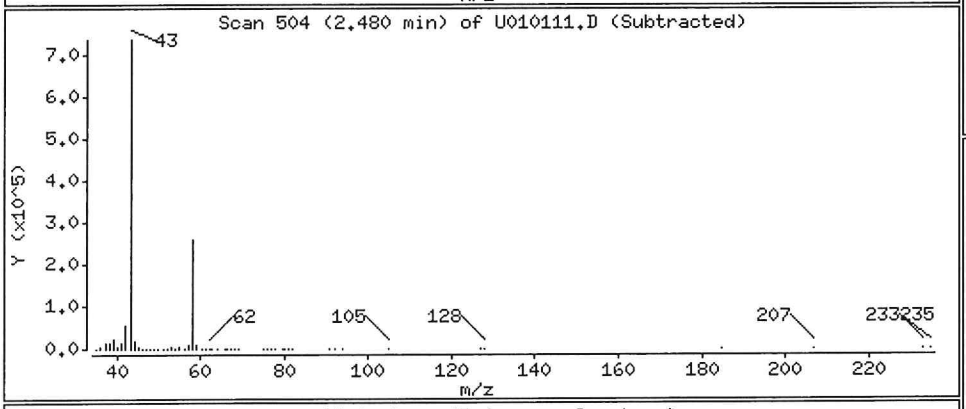
Column diameter: 0.18

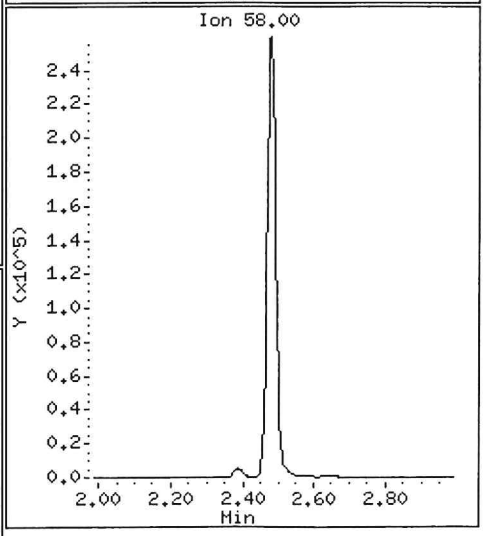
10 Acetone

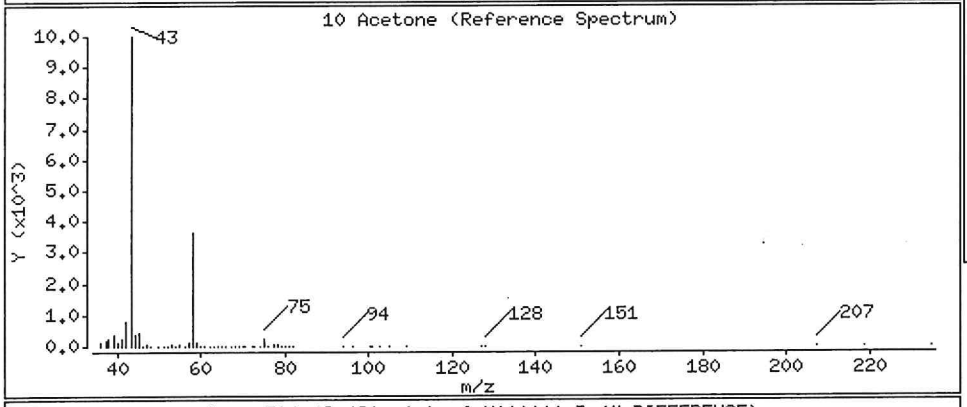
Concentration: 499.53 ug/l

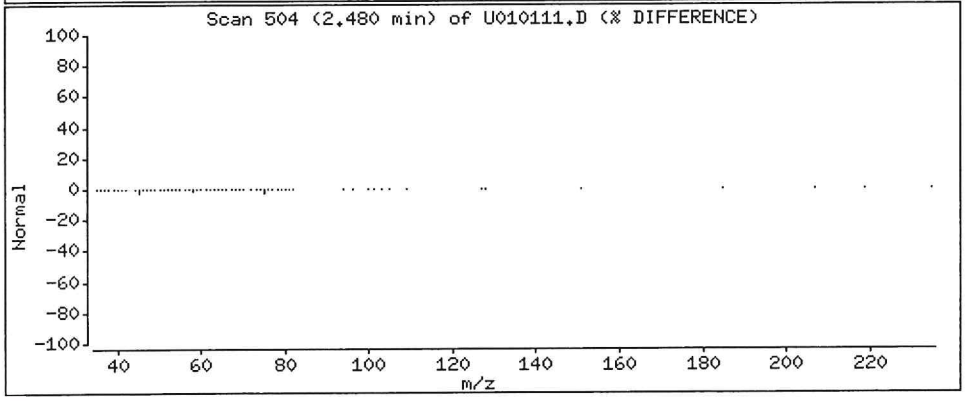












Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010111.D

Date : 01-JAN-2020 14:38

Client ID: HS19121092-05

Instrument: VOA9.i

Sample Info: HS19121092-05;HS19121092-05;;;

Purge Volume: 5.0

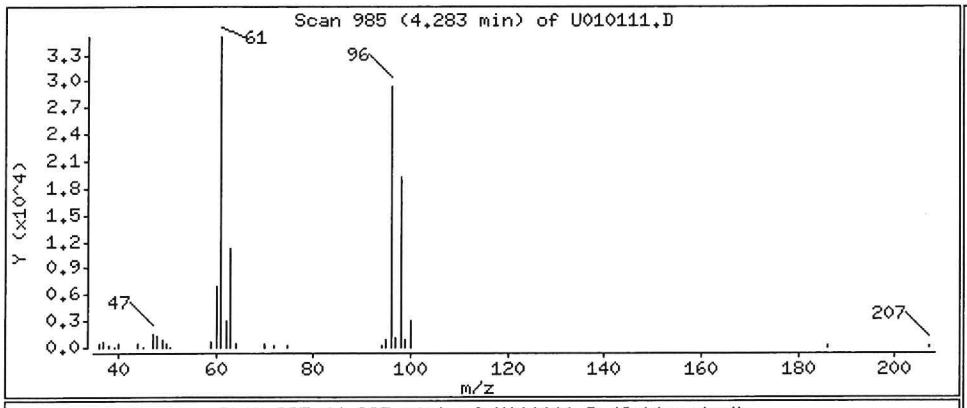
Operator: PC

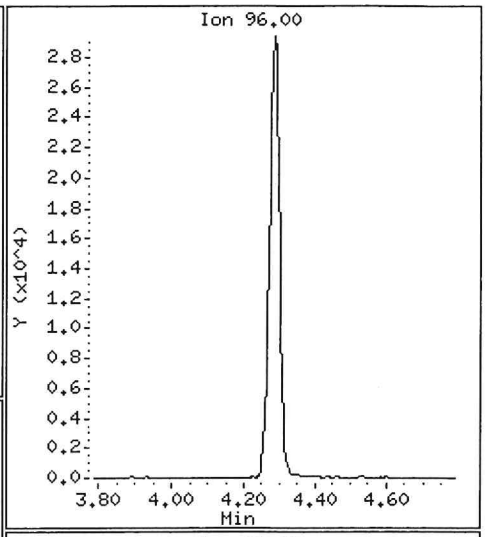
Column phase: DB624

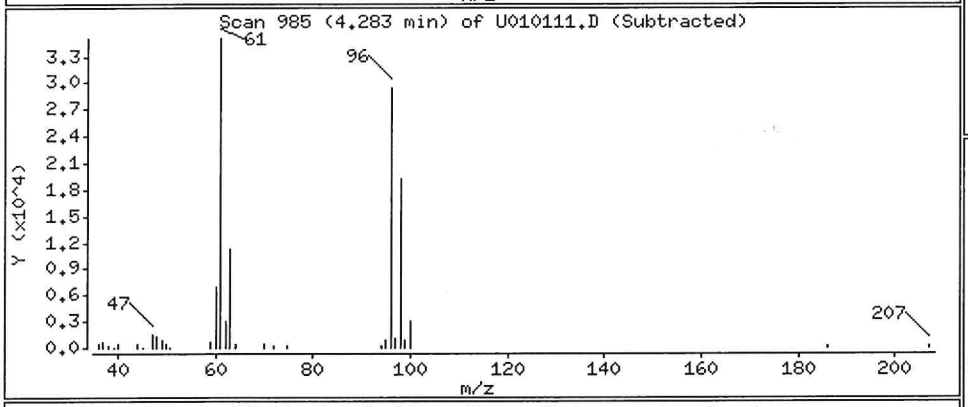
Column diameter: 0.18

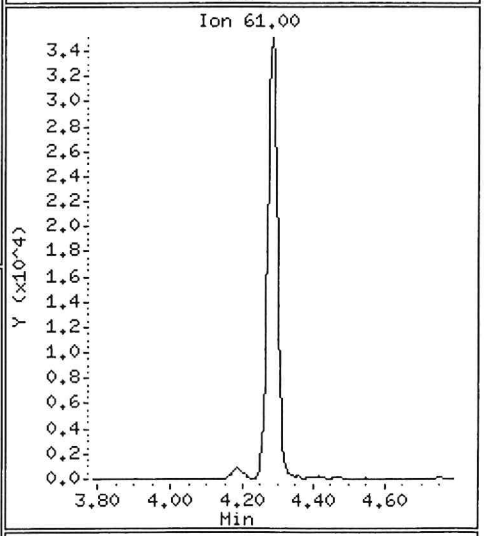
27 cis-1,2-Dichloroethene

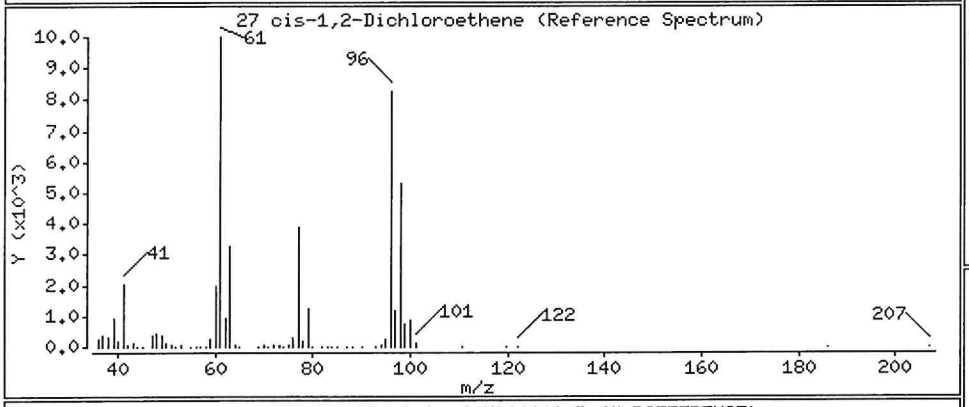
Concentration: 7.59 ug/l

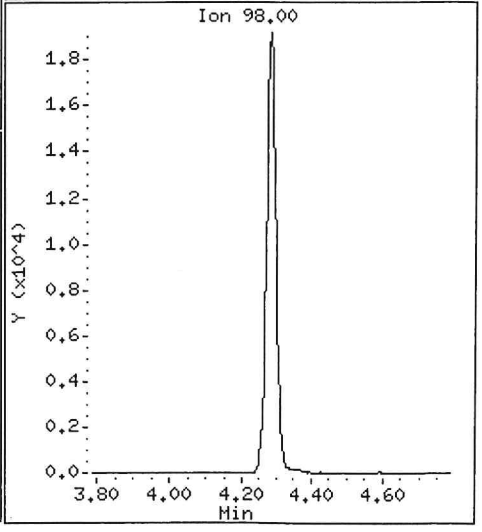


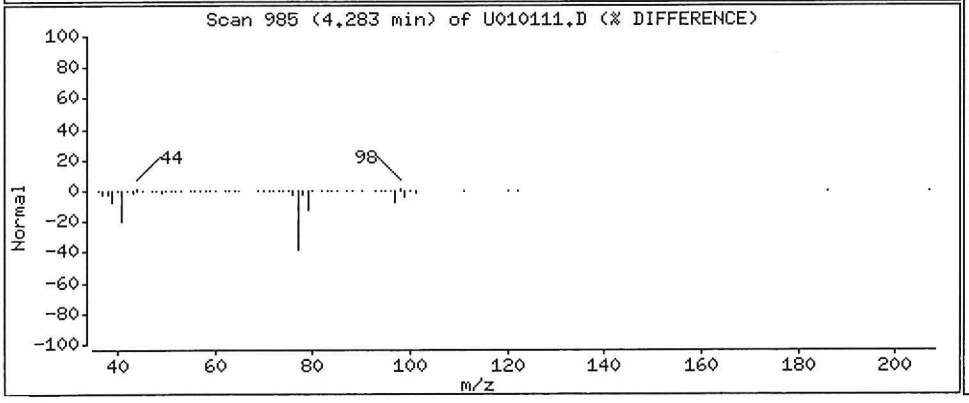












Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010111.D

Date : 01-JAN-2020 14:38

Client ID: HS19121092-05

Instrument: VOA9.i

Sample Info: HS19121092-05;HS19121092-05;;;

Purge Volume: 5.0

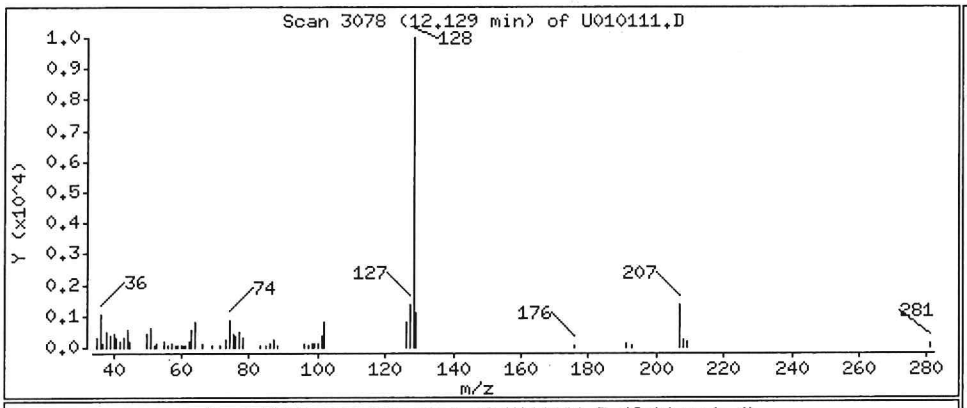
Operator: PC

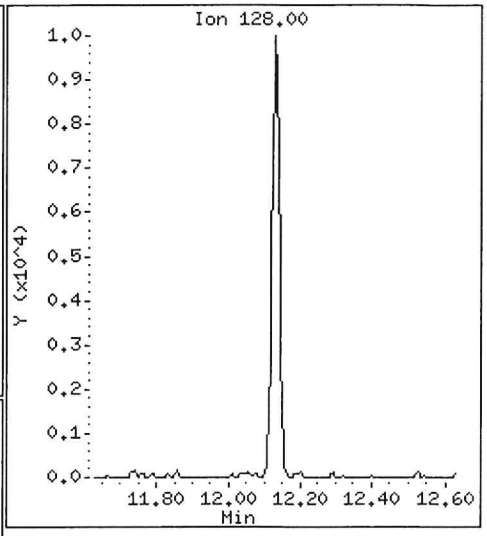
Column phase: DB624

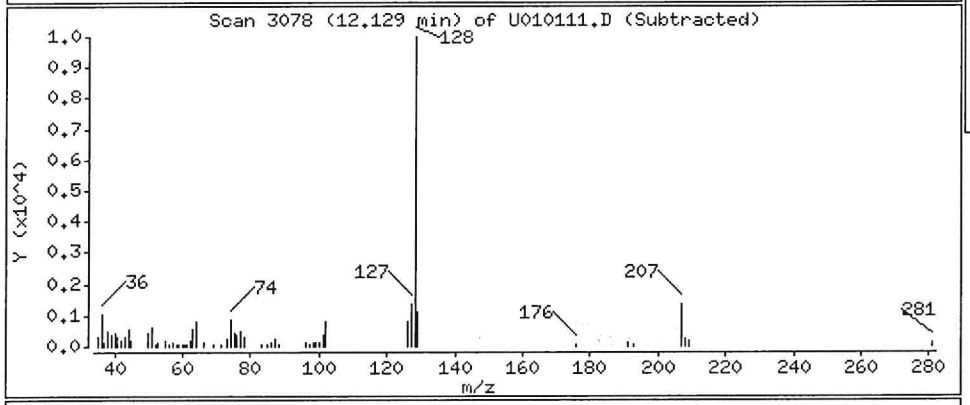
Column diameter: 0.18

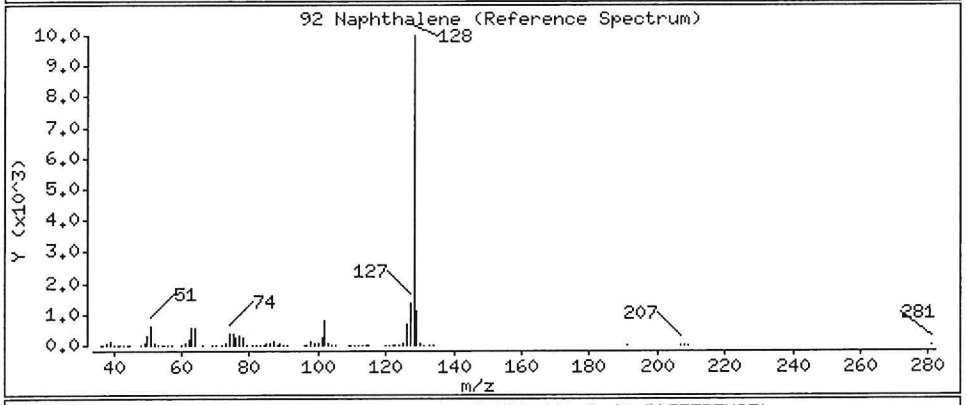
92 Naphthalene

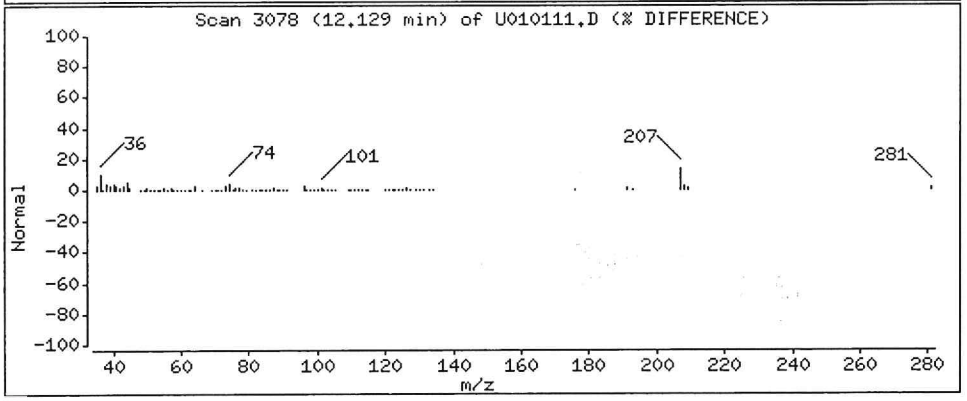
Concentration: 1.56 ug/l











Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010111.D

Date : 01-JAN-2020 14:38

Client ID: HS19121092-05

Instrument: VOA9.i

Sample Info: HS19121092-05;HS19121092-05;;;

Purge Volume: 5.0

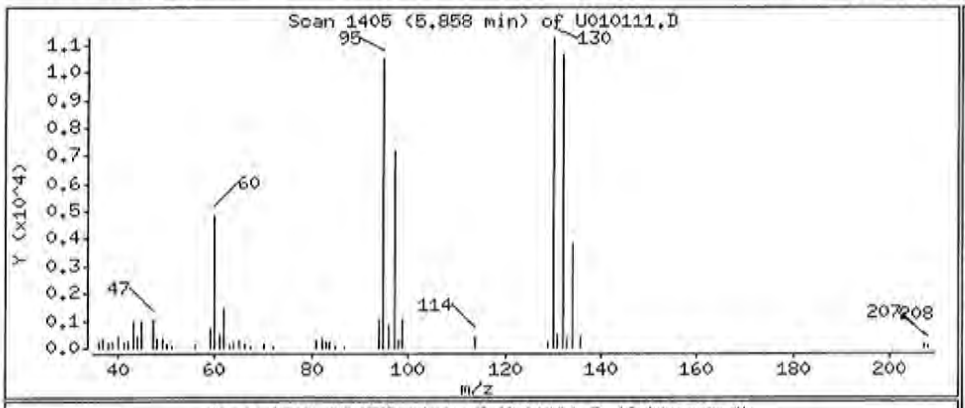
Operator: PC

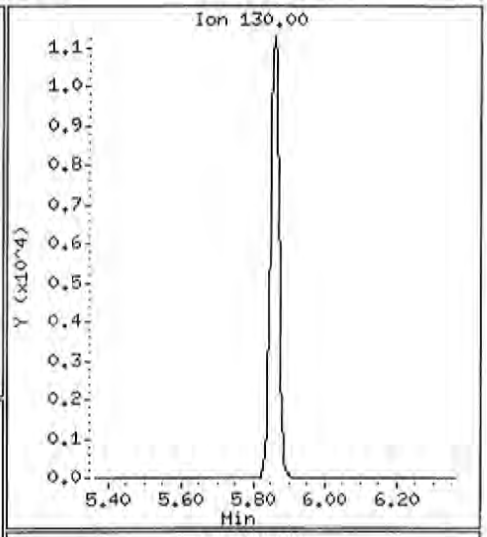
Column phase: DB624

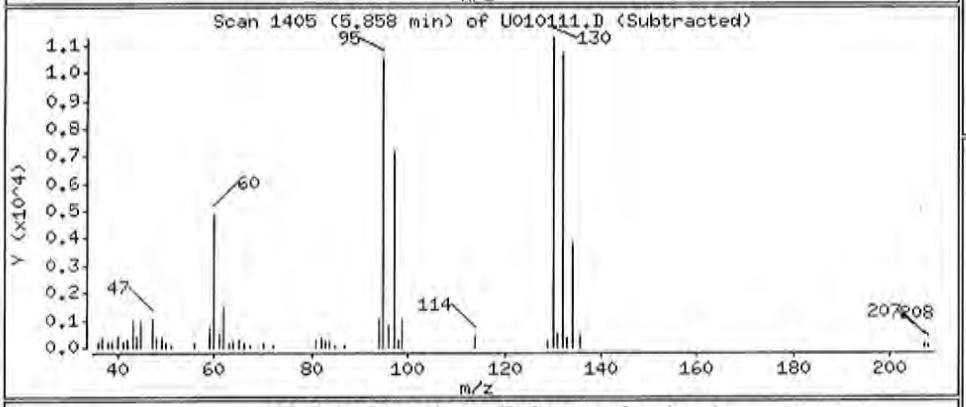
Column diameter: 0.18

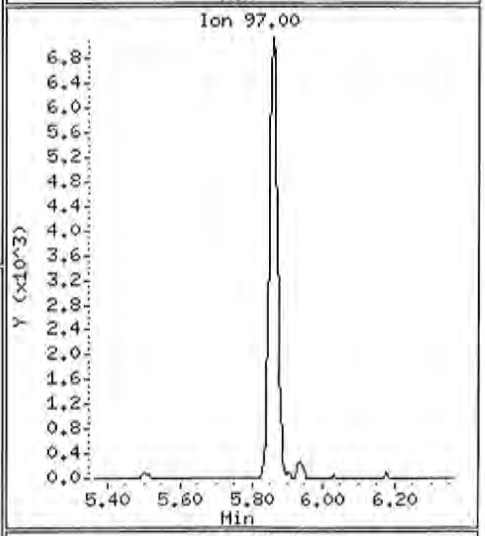
38 Trichloroethene

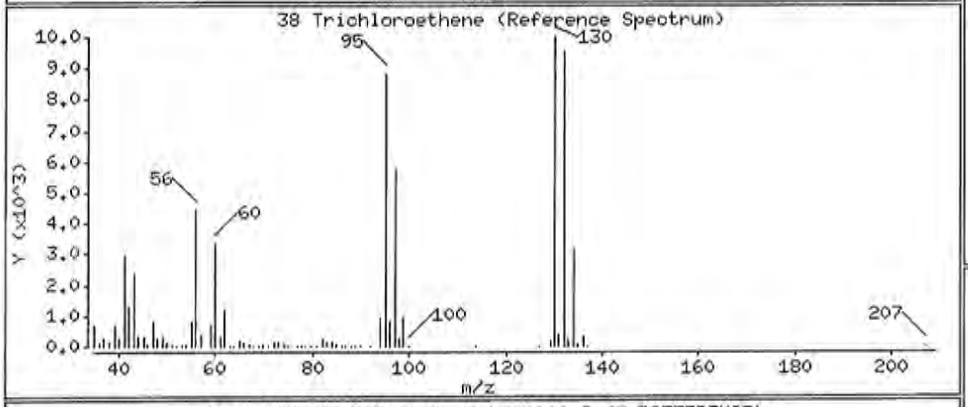
Concentration: 2.72 ug/l

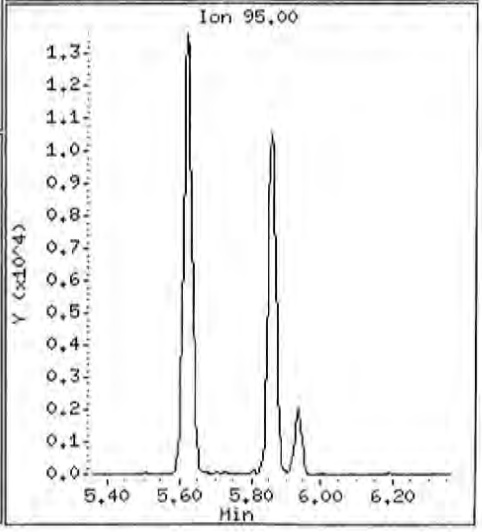


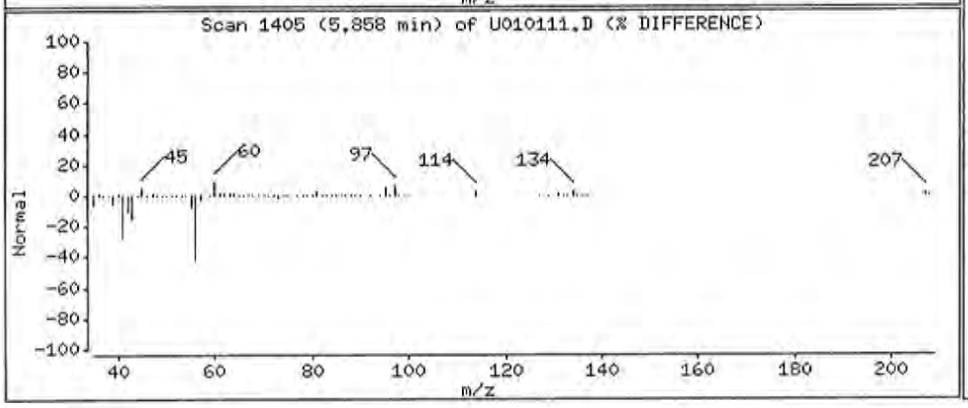












Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010111.D

Date : 01-JAN-2020 14:38

Client ID: HS19121092-05

Instrument: VOA9.i

Sample Info: HS19121092-05;HS19121092-05;;;

Purge Volume: 5.0

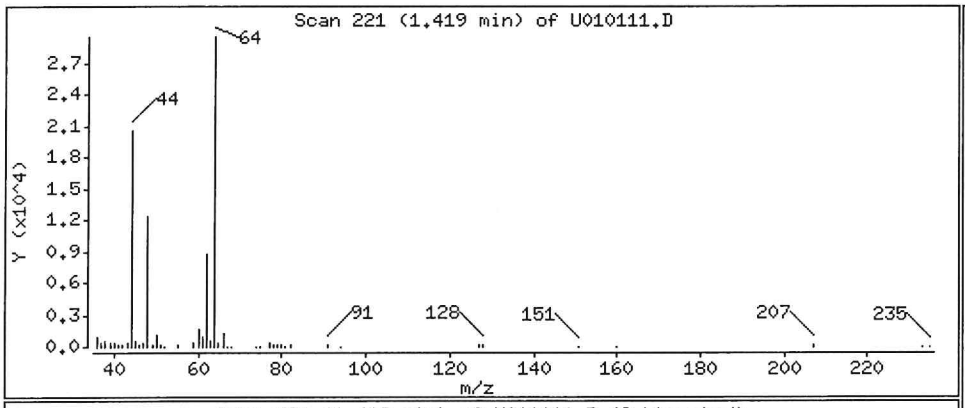
Operator: PC

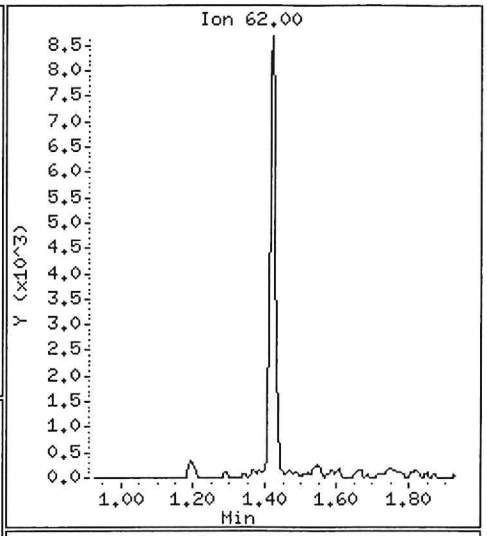
Column phase: DB624

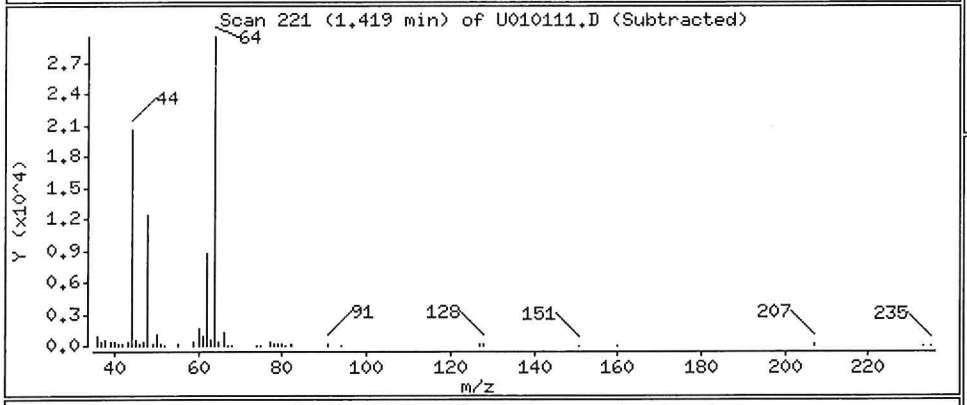
Column diameter: 0.18

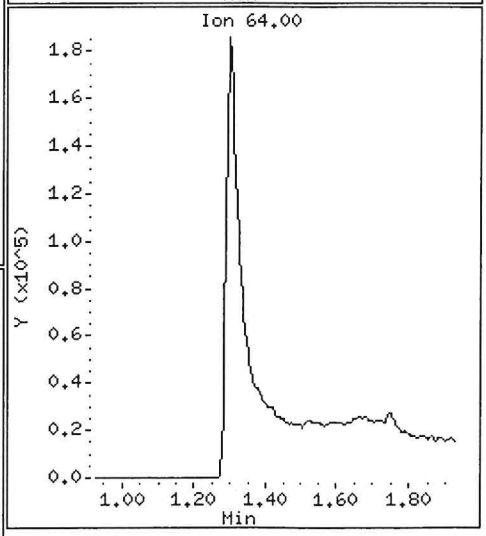
5 Vinyl Chloride

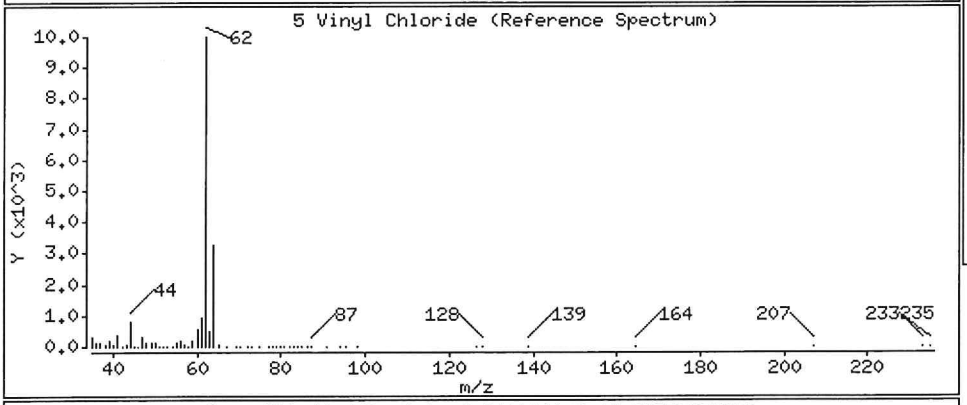
Concentration: 1.14 ug/l

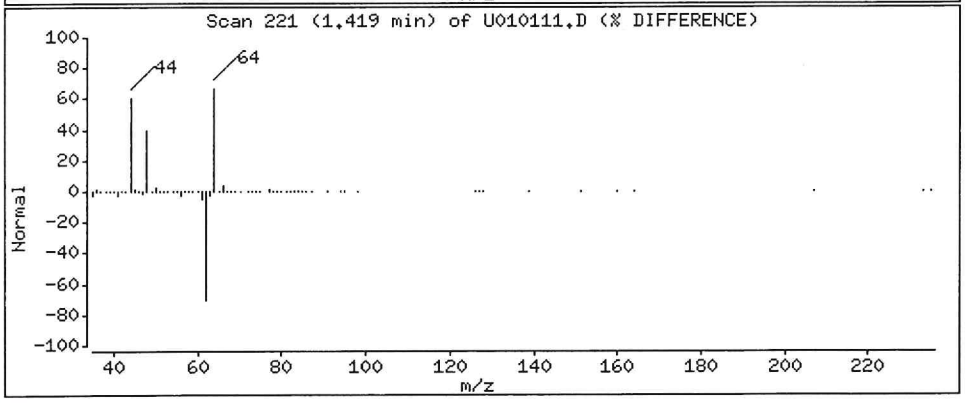












Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010112.D Page 1
Report Date: 17-Jan-2020 15:06

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U200101.b\U010112.D
Lab Smp Id: HS19121092-06 Client Smp ID: HS19121092-06
Inj Date : 01-JAN-2020 15:03
Operator : PC Inst ID: VOA9.i
Smp Info : HS19121092-06;HS19121092-06;;;
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200101.b\8260C.m
Meth Date : 17-Jan-2020 15:06 DevakG Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14
Processing Host: NAHSTW7056

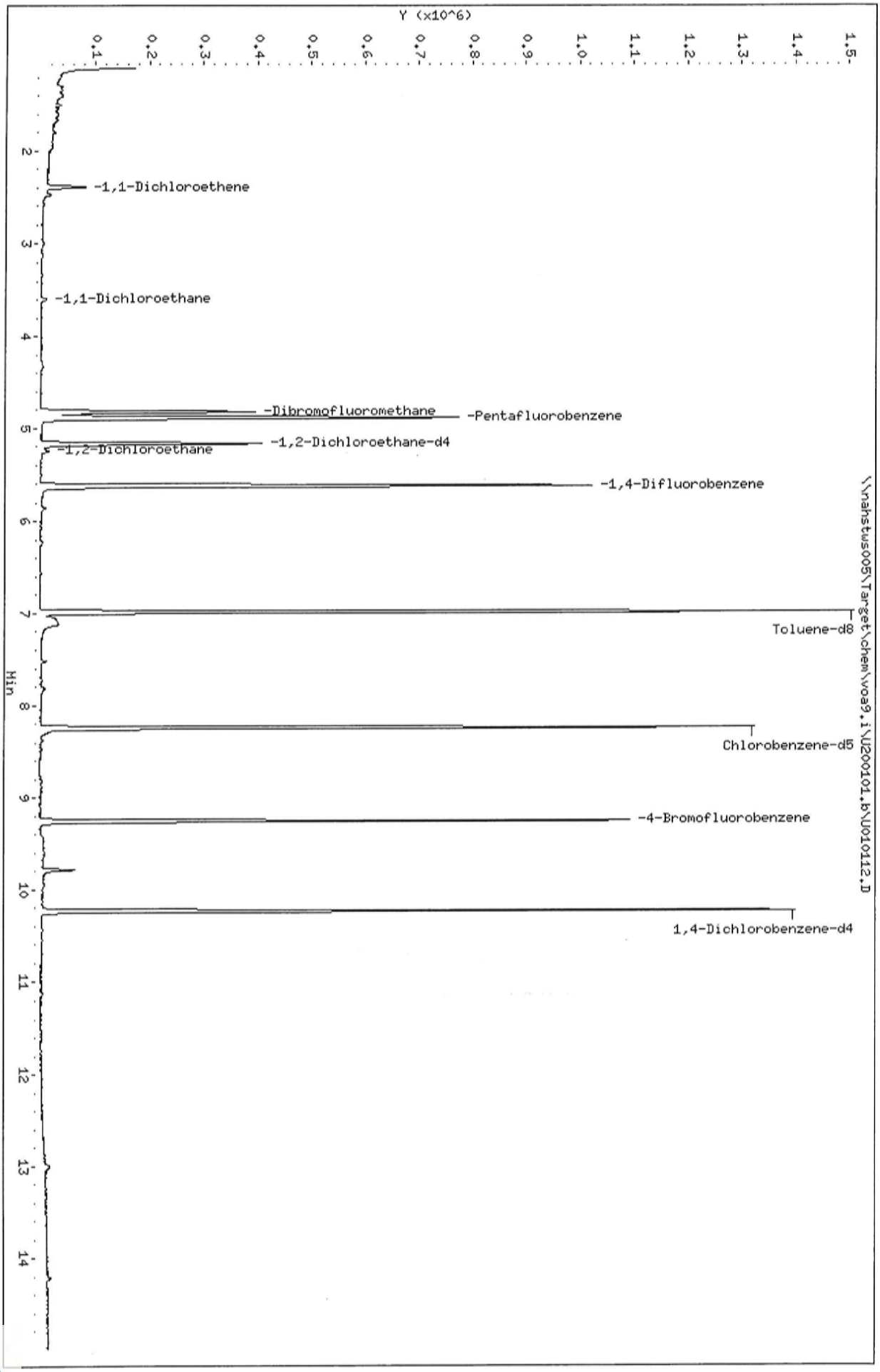
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.890	4.894	(1.000)	567048	50.0000	
* 36 1,4-Difluorobenzene	114	5.621	5.625	(1.000)	816784	50.0000	
* 47 Chlorobenzene-d5	117	8.245	8.249	(1.000)	708783	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	360555	50.0000	
$ 30 Dibromofluoromethane	113	4.823	4.830	(0.986)	225607	46.4620	46.46
$ 35 1,2-Dichloroethane-d4	65	5.168	5.175	(1.057)	252477	46.2740	46.27
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	909178	49.9159	49.91
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	317507	47.6747	47.67
22 1,1-Dichloroethane	63	3.597	3.604	(0.736)	11065	0.97610	0.97(a)
11 1,1-Dichloroethene	96	2.394	2.405	(0.490)	24846	4.53106	4.53(a)
33 1,2-Dichloroethane	62	5.246	5.254	(0.933)	9150	1.04977	1.04(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).



Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010112.D

Date : 01-JAN-2020 15:03

Client ID: HS19121092-06

Sample Info: HS19121092-06;HS19121092-06;;;

Purge Volume: 5.0

Column phase: DB624

Instrument: VOA9.i

Operator: PC

Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010112.D

Date : 01-JAN-2020 15:03

Client ID: HS19121092-06

Instrument: VOA9.i

Sample Info: HS19121092-06;HS19121092-06;;;

Purge Volume: 5.0

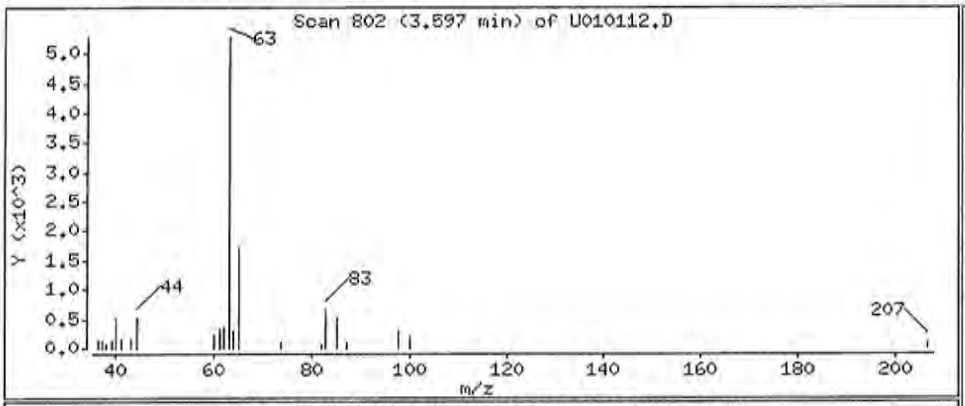
Operator: PC

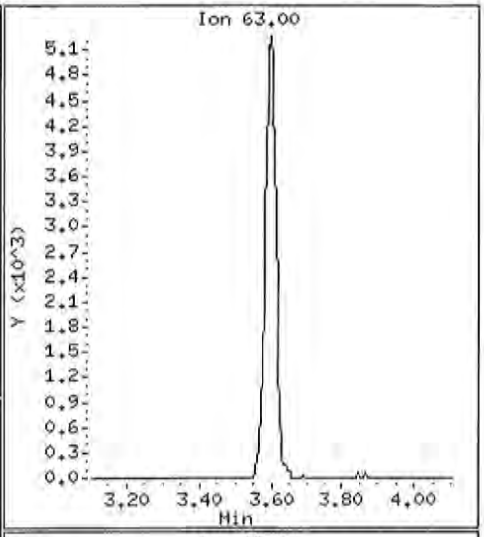
Column phase: DB624

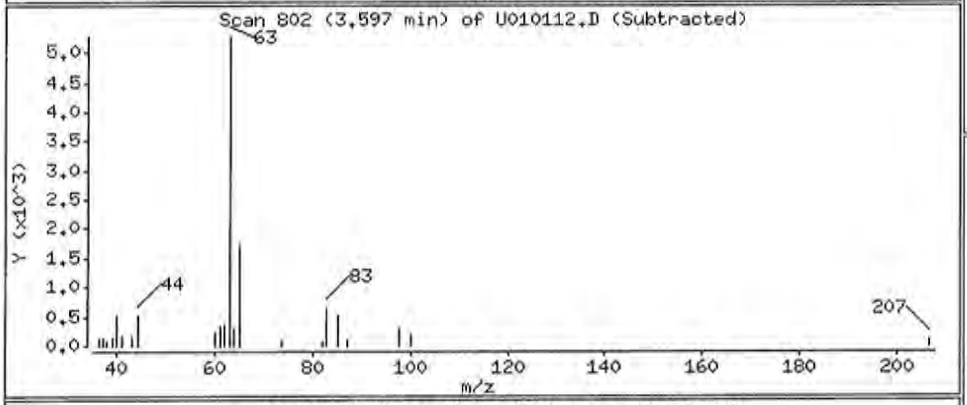
Column diameter: 0.18

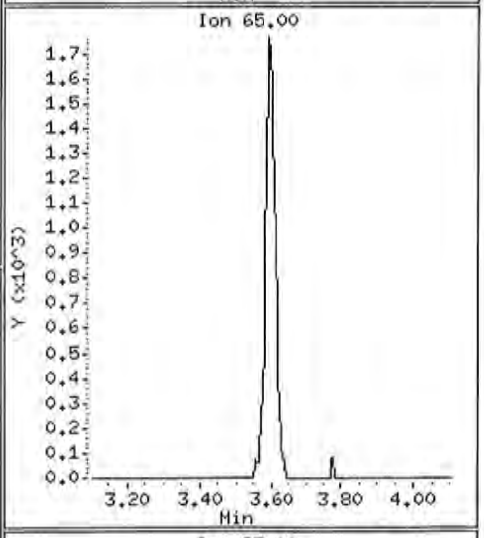
22 1,1-Dichloroethane

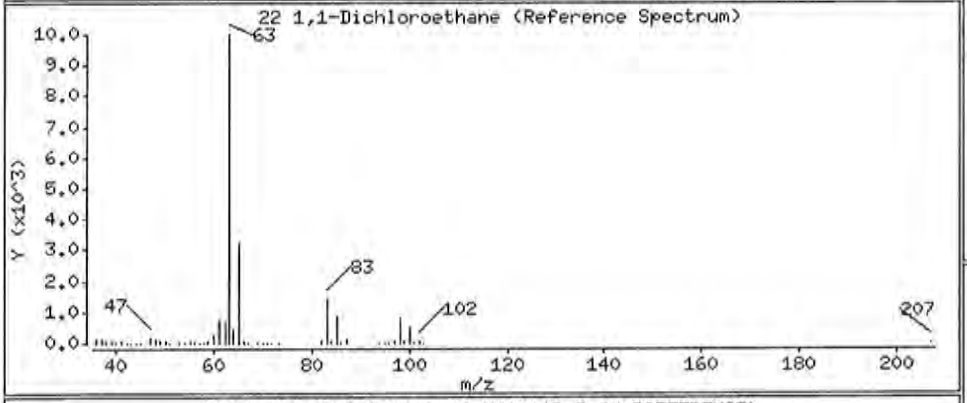
Concentration: 0.97 ug/l

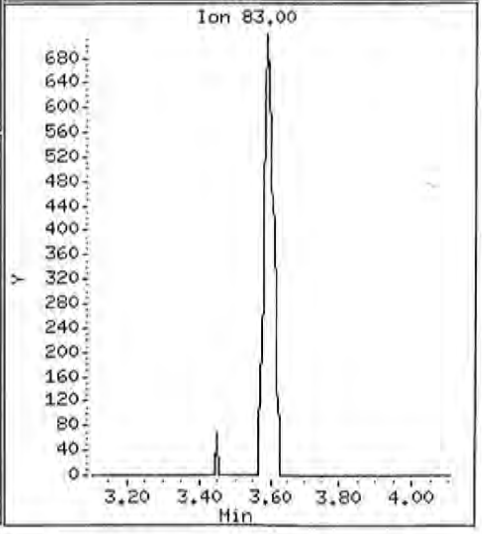


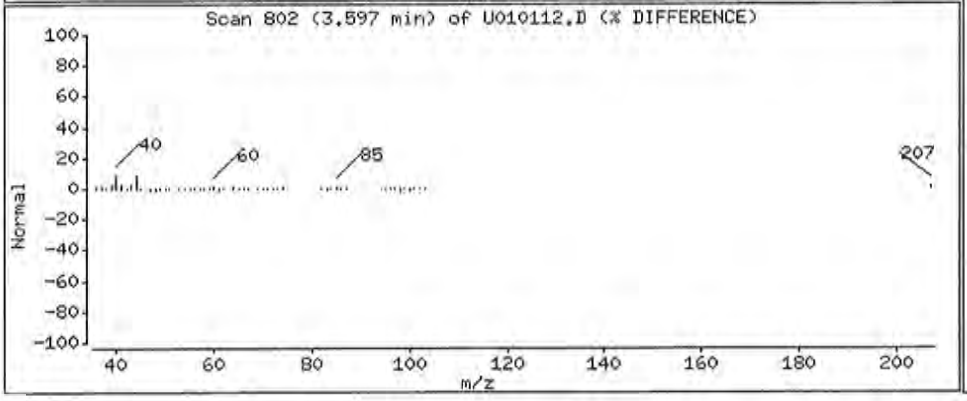












Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010112.D

Date : 01-JAN-2020 15:03

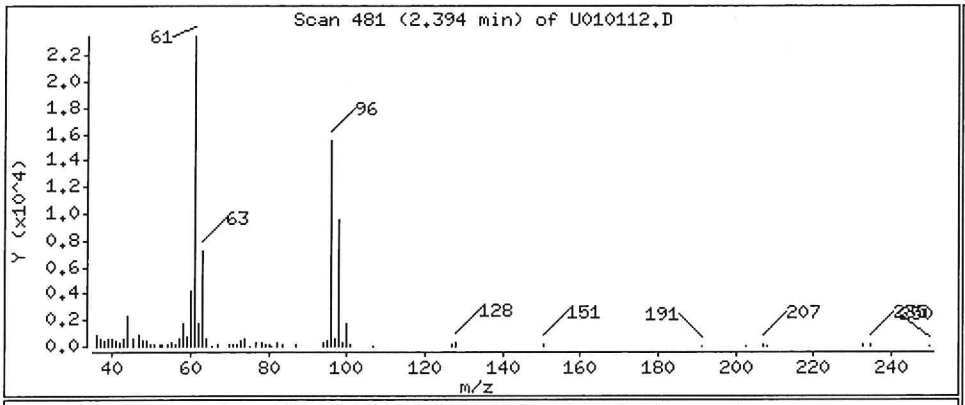
Client ID: HS19121092-06 Instrument: VOA9.i

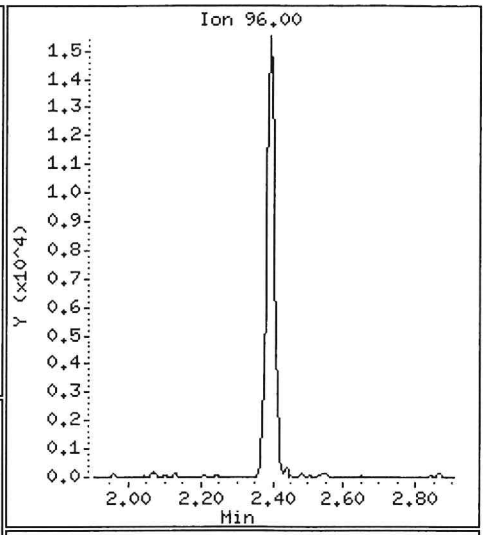
Sample Info: HS19121092-06;HS19121092-06;;;

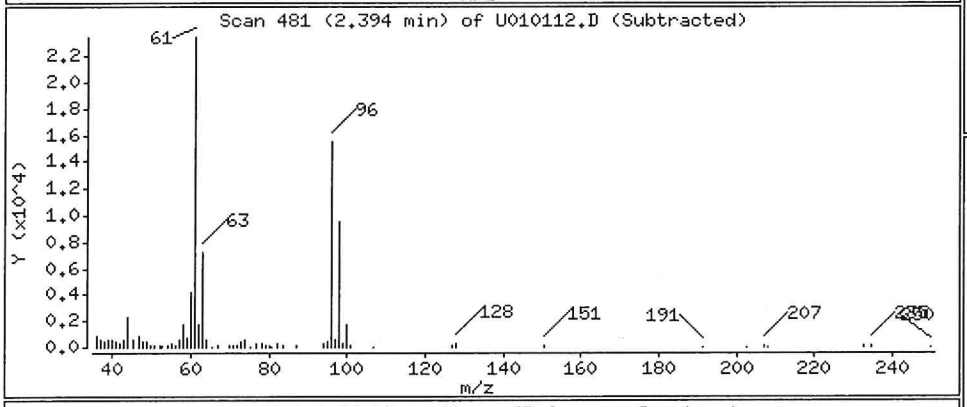
Purge Volume: 5.0 Operator: PC

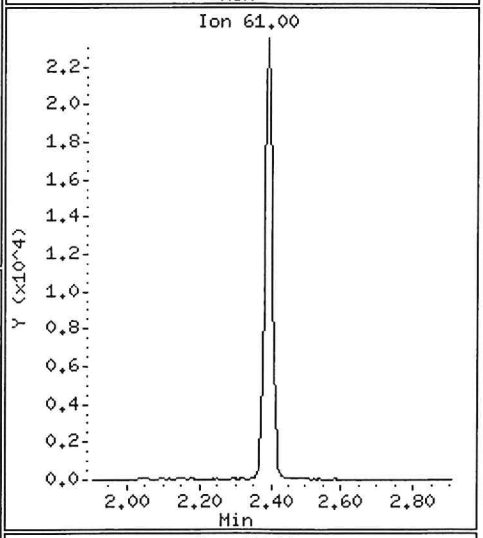
Column phase: DB624 Column diameter: 0.18

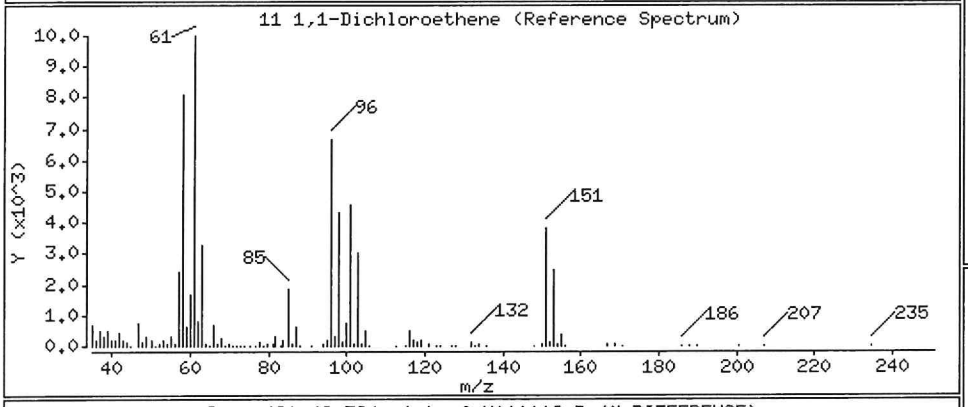
11 1,1-Dichloroethene Concentration: 4.53 ug/l

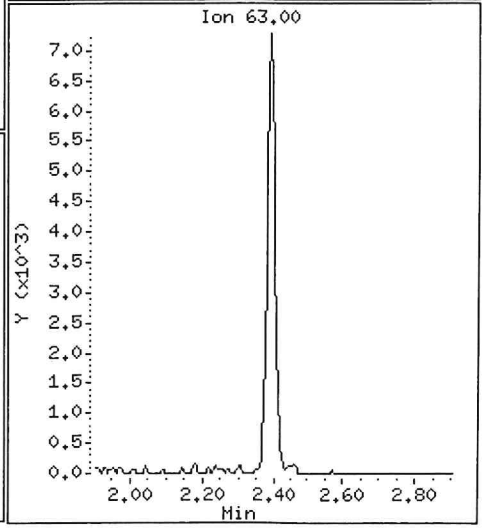


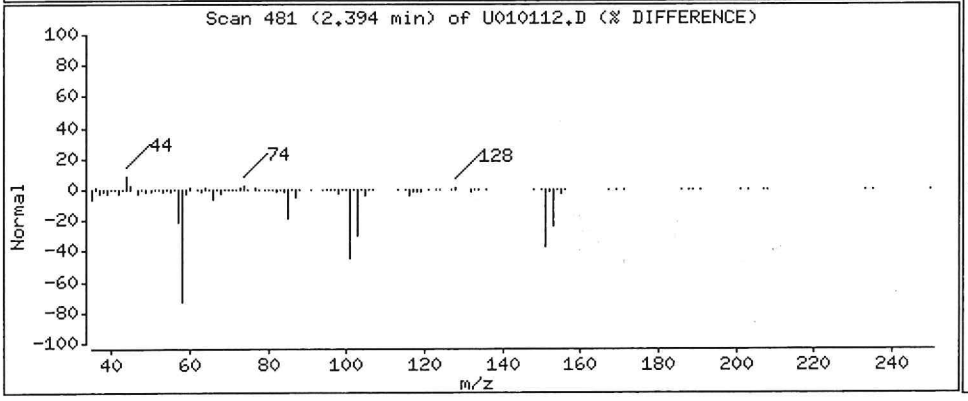












Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010112.D

Date : 01-JAN-2020 15:03

Client ID: HS19121092-06

Instrument: VOA9.i

Sample Info: HS19121092-06;HS19121092-06;;;

Purge Volume: 5.0

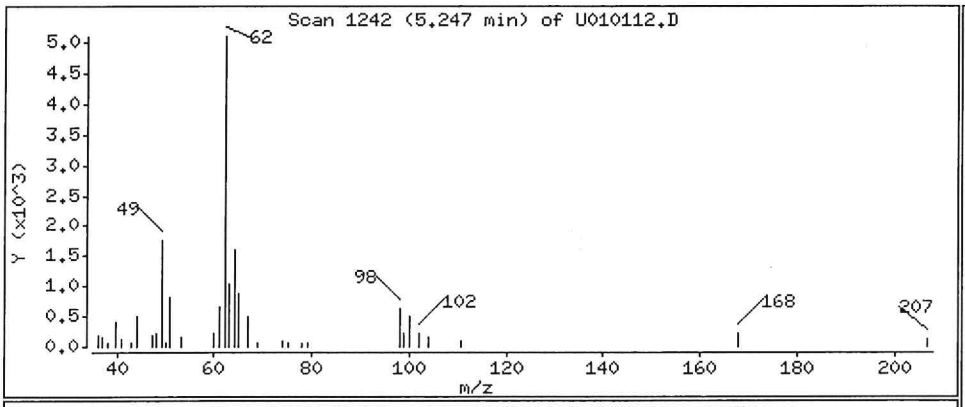
Operator: PC

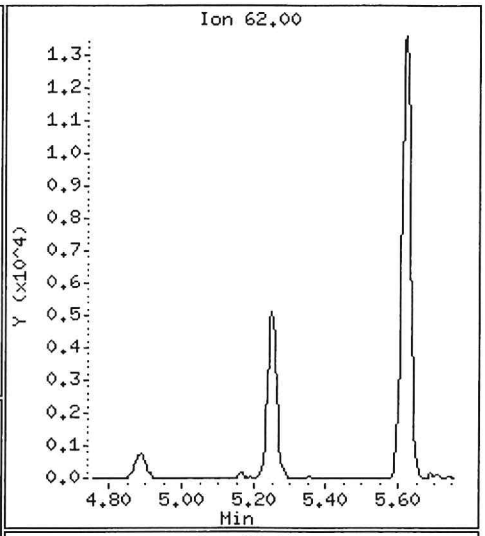
Column phase: DB624

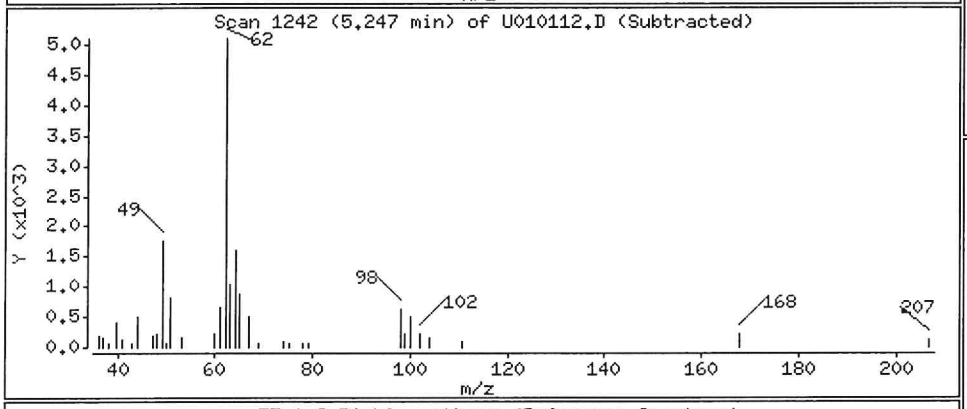
Column diameter: 0.18

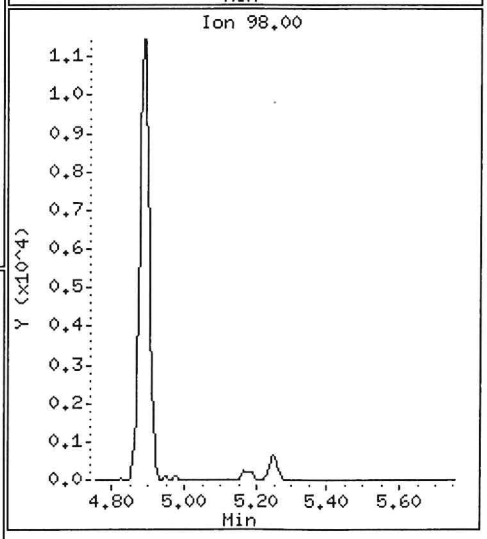
33 1,2-Dichloroethane

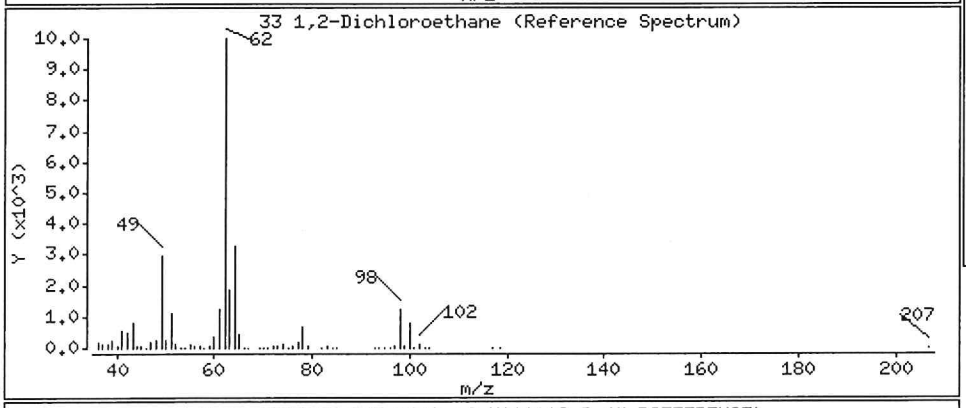
Concentration: 1.04 ug/l

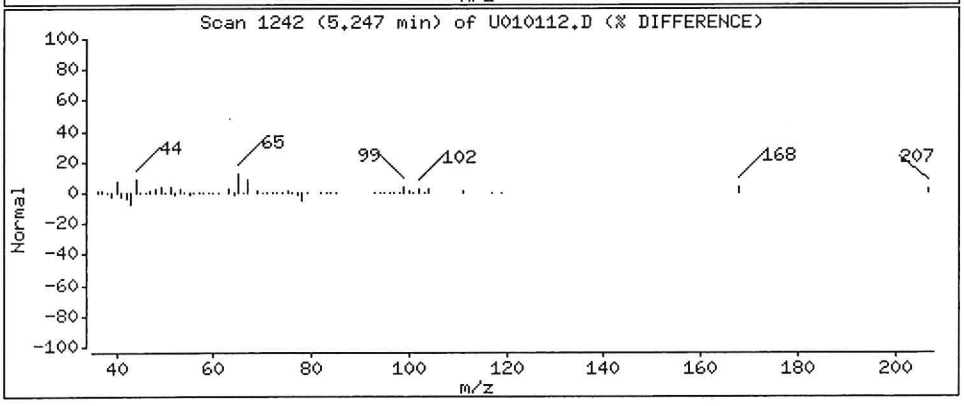












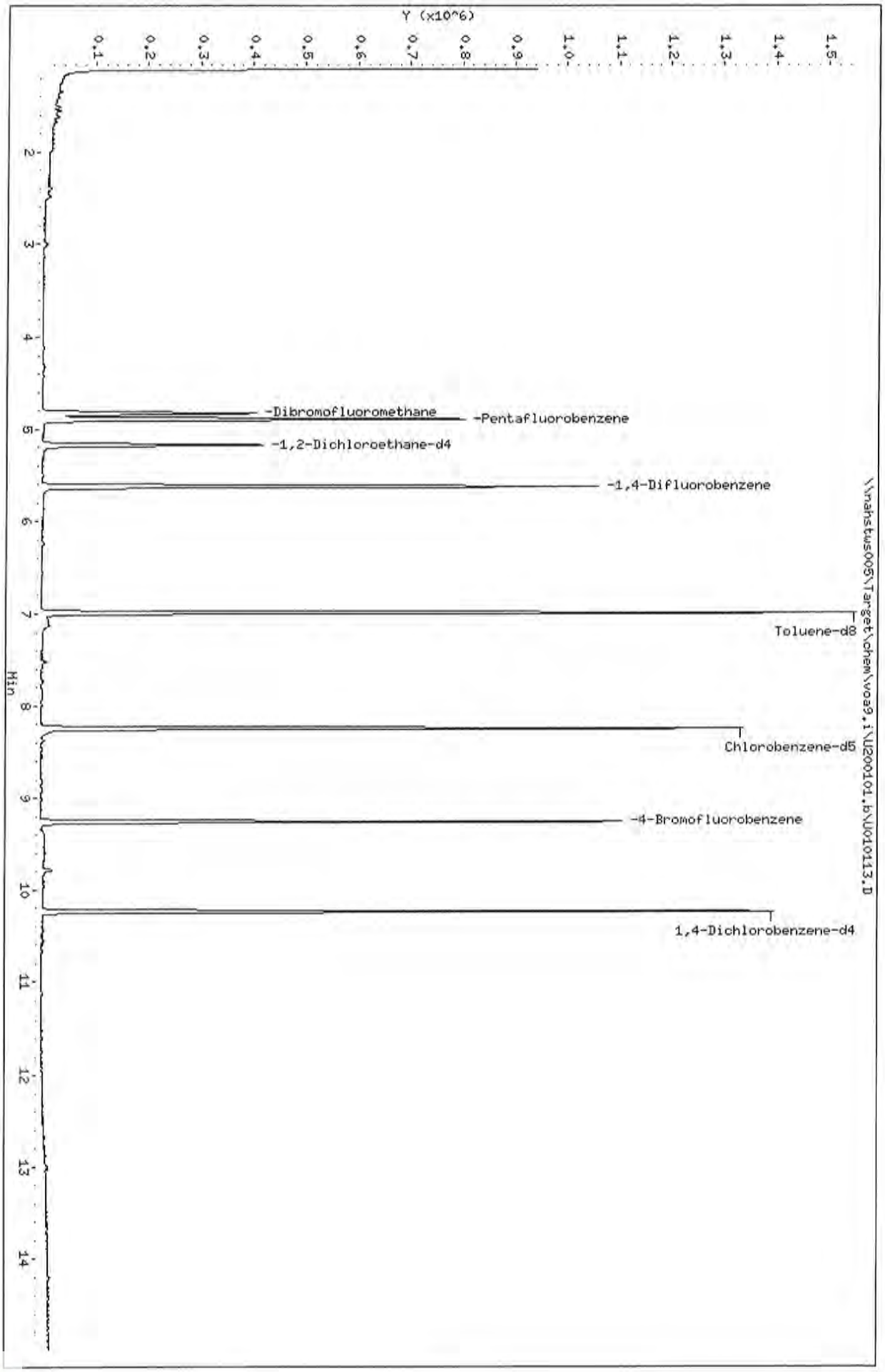
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U200101.b\U010113.D
Lab Smp Id: HS19121092-07 Client Smp ID: HS19121092-07
Inj Date : 01-JAN-2020 15:27
Operator : PC Inst ID: VOA9.i
Smp Info : HS19121092-07;HS19121092-07;;;
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200101.b\8260C.m
Meth Date : 17-Jan-2020 15:06 DevakG Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.894	4.894	(1.000)	581110	50.0000	
* 36 1,4-Difluorobenzene	114	5.625	5.625	(1.000)	824994	50.0000	
* 47 Chlorobenzene-d5	117	8.245	8.249	(1.000)	720017	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	357155	50.0000	
$ 30 Dibromofluoromethane	113	4.830	4.830	(0.987)	231209	46.4635	46.46
$ 35 1,2-Dichloroethane-d4	65	5.175	5.175	(1.057)	257453	46.0442	46.04
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	936237	50.5995	50.59
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	326339	48.2364	48.23



Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010113.D
Date : 01-JAN-2020 15:27
Client ID: HS19121092-07
Sample Info: HS19121092-07;HS19121092-07;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010114.D Page 1
Report Date: 17-Jan-2020 15:06

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U200101.b\U010114.D
Lab Smp Id: HS19121092-08 Client Smp ID: HS19121092-08
Inj Date : 01-JAN-2020 15:51
Operator : PC Inst ID: VOA9.i
Smp Info : HS19121092-08;HS19121092-08;;;
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200101.b\8260C.m
Meth Date : 17-Jan-2020 15:06 DevakG Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 14
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14
Processing Host: NAHSTW7056

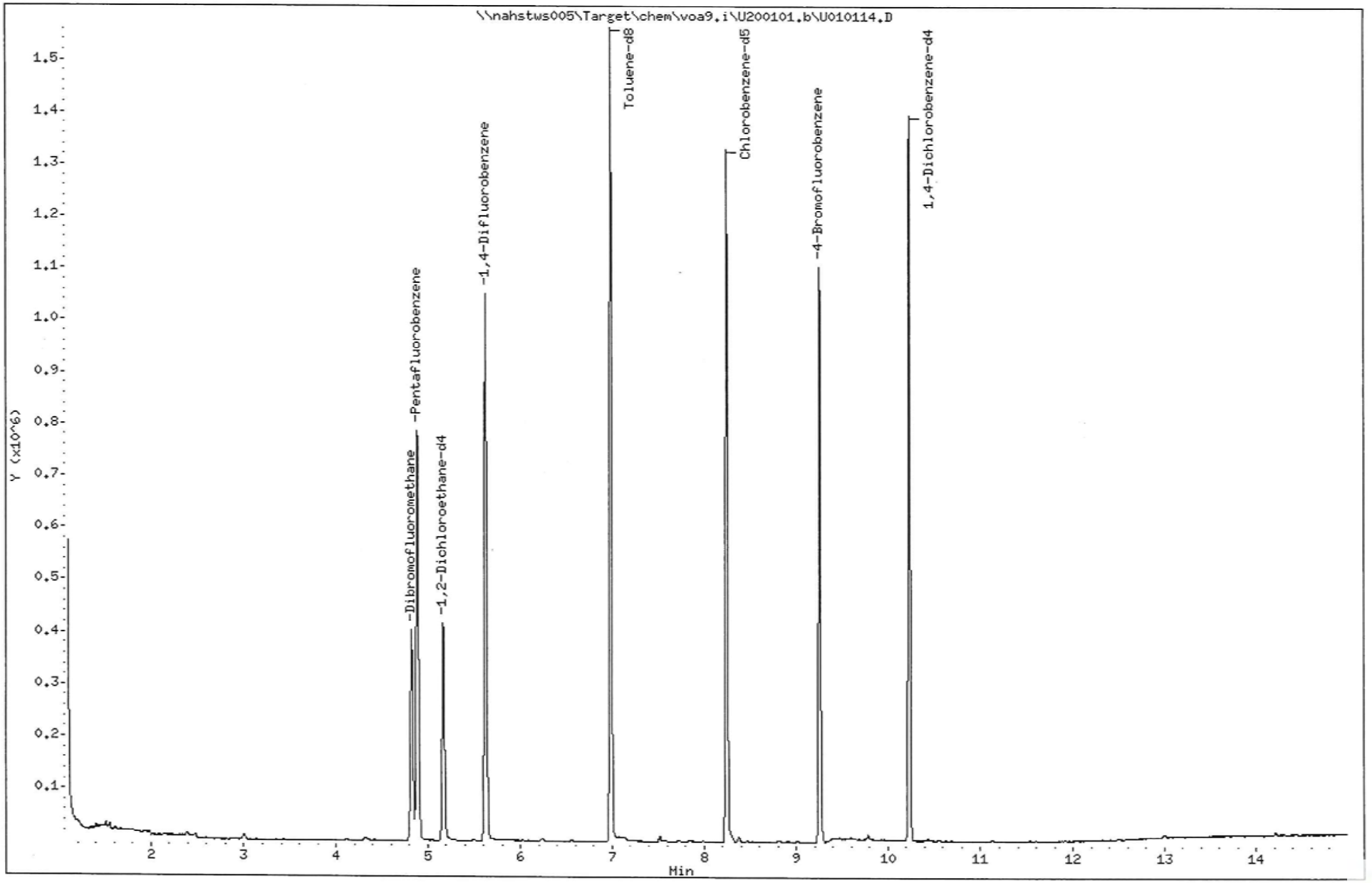
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.890	4.894	(1.000)	568751	50.0000	
* 36 1,4-Difluorobenzene	114	5.621	5.625	(1.000)	823455	50.0000	
* 47 Chlorobenzene-d5	117	8.245	8.249	(1.000)	714436	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	358589	50.0000	
$ 30 Dibromofluoromethane	113	4.827	4.830	(0.987)	229501	47.1225	47.12
$ 35 1,2-Dichloroethane-d4	65	5.171	5.175	(1.057)	252400	46.1214	46.12
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	929538	50.6299	50.62
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	323927	48.2539	48.25

Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010114.D
Date : 01-JAN-2020 15:51
Client ID: HS19121092-08
Sample Info: HS19121092-08;HS19121092-08;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18



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Data file : \\nahstws005\Target\chem\voa9.i\U200101.b\U010115.D
Lab Smp Id: HS19121092-10 Client Smp ID: HS19121092-10
Inj Date : 01-JAN-2020 16:16
Operator : PC Inst ID: VOA9.i
Smp Info : HS19121092-10;HS19121092-10;;;
Misc Info : 180315V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U200101.b\8260C.m
Meth Date : 17-Jan-2020 15:06 DevakG Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14
Processing Host: NAHSTW7056

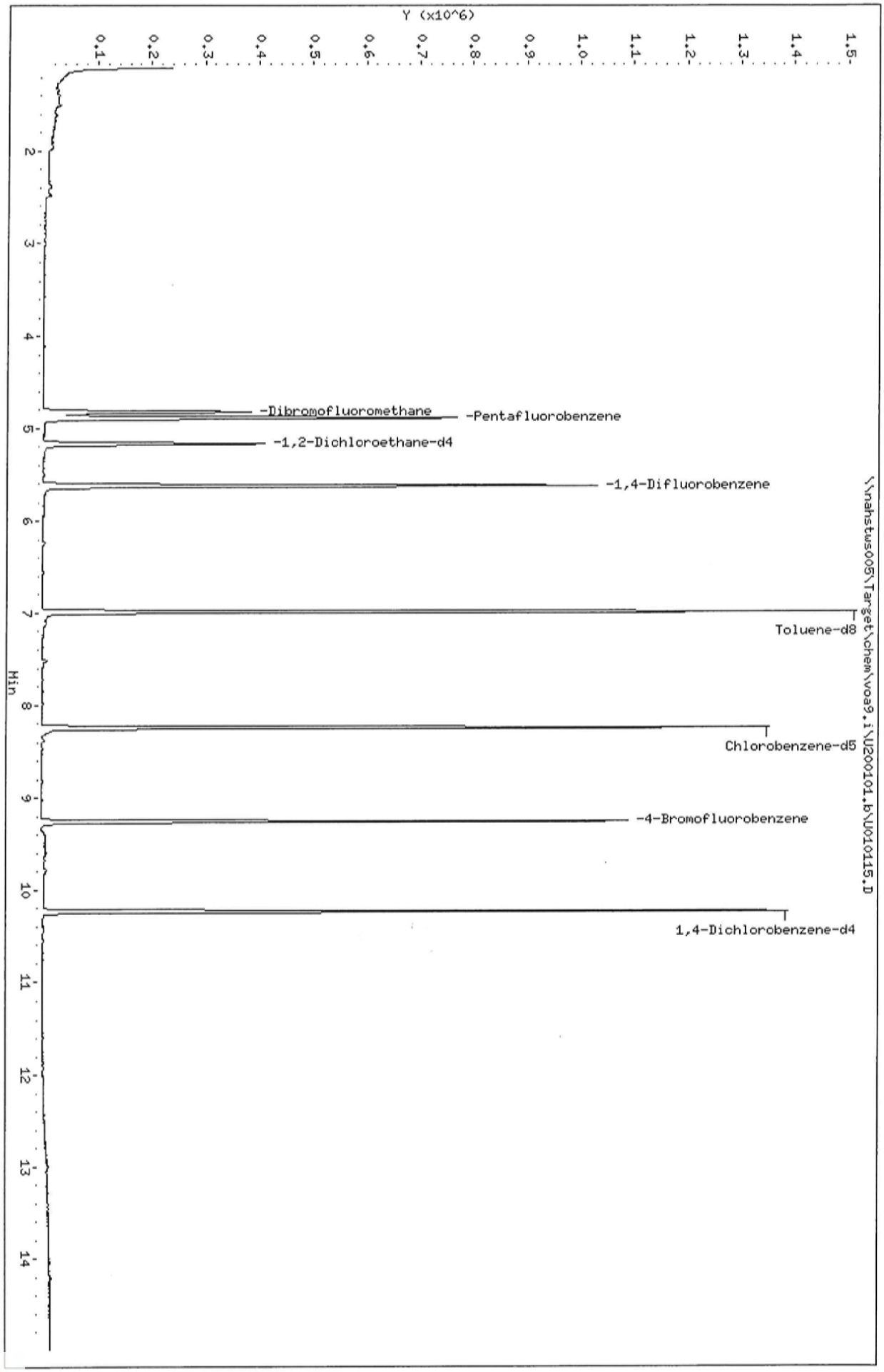
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.890	4.894	(1.000)	563140	50.0000	
* 36 1,4-Difluorobenzene	114	5.621	5.625	(1.000)	808416	50.0000	
* 47 Chlorobenzene-d5	117	8.245	8.249	(1.000)	709955	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	356107	50.0000	
$ 30 Dibromofluoromethane	113	4.823	4.830	(0.986)	226391	46.9470	46.94
$ 35 1,2-Dichloroethane-d4	65	5.171	5.175	(1.057)	250043	46.1459	46.14
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	915970	50.2058	50.20
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	322175	48.2958	48.29

Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010115.D
Date : 01-JAN-2020 16:16
Client ID: HS19121092-10
Sample Info: HS19121092-10;HS19121092-10;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18



ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U200101.b\U010116.D
Lab Smp Id: HS19121092-11 Client Smp ID: HS19121092-11
Inj Date : 01-JAN-2020 16:40
Operator : PC Inst ID: VOA9.i
Smp Info : HS19121092-11;HS19121092-11;;;
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200101.b\8260C.m
Meth Date : 17-Jan-2020 15:06 DevakG Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 16
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14
Processing Host: NAHSTW7056

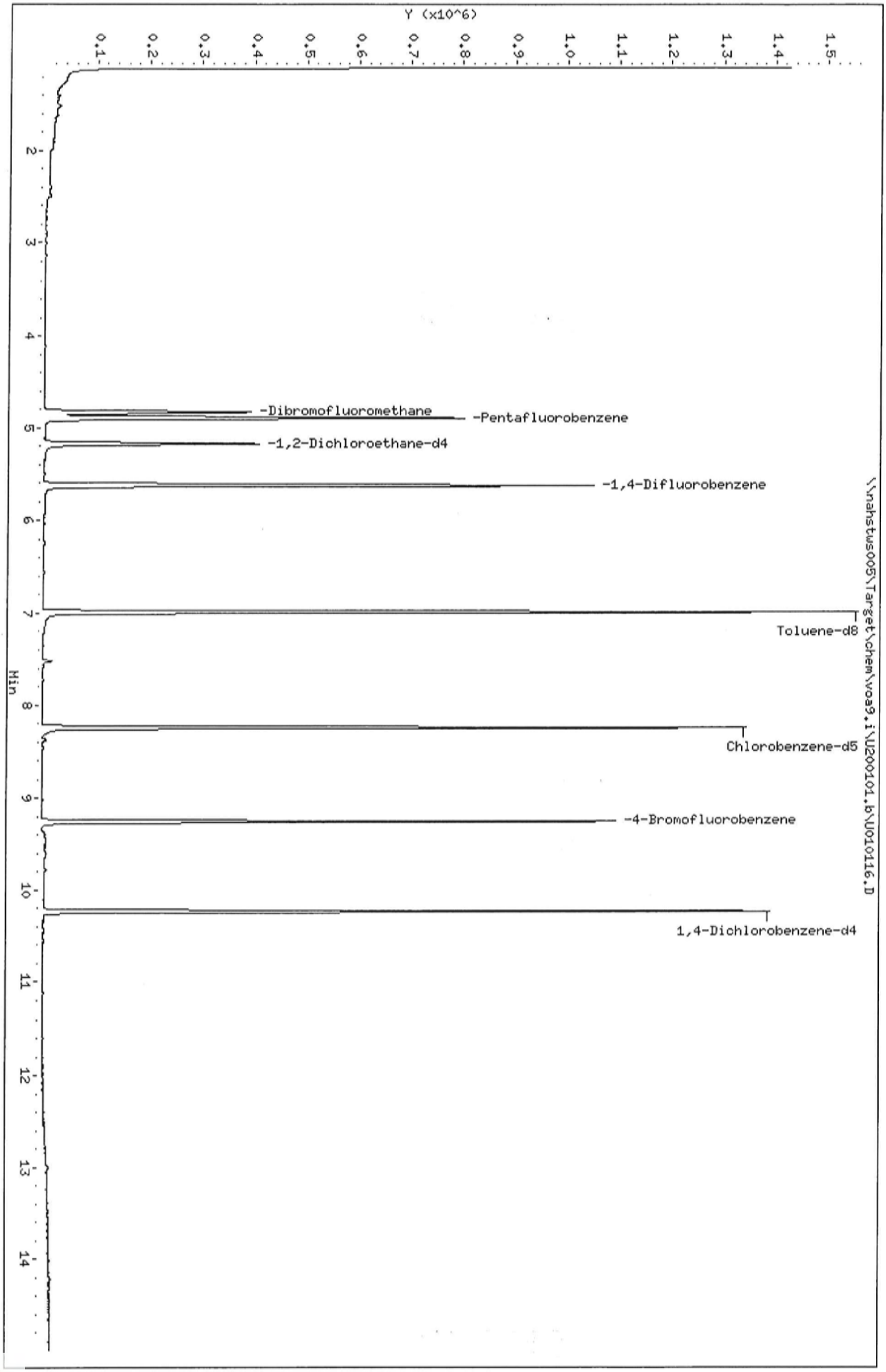
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.894	4.894	(1.000)	565769	50.0000	
* 36 1,4-Difluorobenzene	114	5.625	5.625	(1.000)	826774	50.0000	
* 47 Chlorobenzene-d5	117	8.245	8.249	(1.000)	719869	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	365963	50.0000	
$ 30 Dibromofluoromethane	113	4.830	4.830	(0.987)	228498	47.1638	47.16
$ 35 1,2-Dichloroethane-d4	65	5.175	5.175	(1.057)	252133	46.3154	46.31
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	931576	50.3580	50.35
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	321743	47.5668	47.56

Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010116.D
Date : 01-JAN-2020 16:40
Client ID: HS191210921-11
Sample Info: HS191210921-11;HS191210921-11;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010117.D Page 1
Report Date: 17-Jan-2020 15:06

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U200101.b\U010117.D
Lab Smp Id: HS19121092-02 Client Smp ID: HS19121092-02
Inj Date : 01-JAN-2020 17:04
Operator : PC Inst ID: VOA9.i
Smp Info : HS19121092-02;HS19121092-02;;;
Misc Info : 180315V9;WATER;0;10;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200101.b\8260C.m
Meth Date : 17-Jan-2020 15:06 DevakG Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 17
Dil Factor: 10.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14
Processing Host: NAHSTW7056

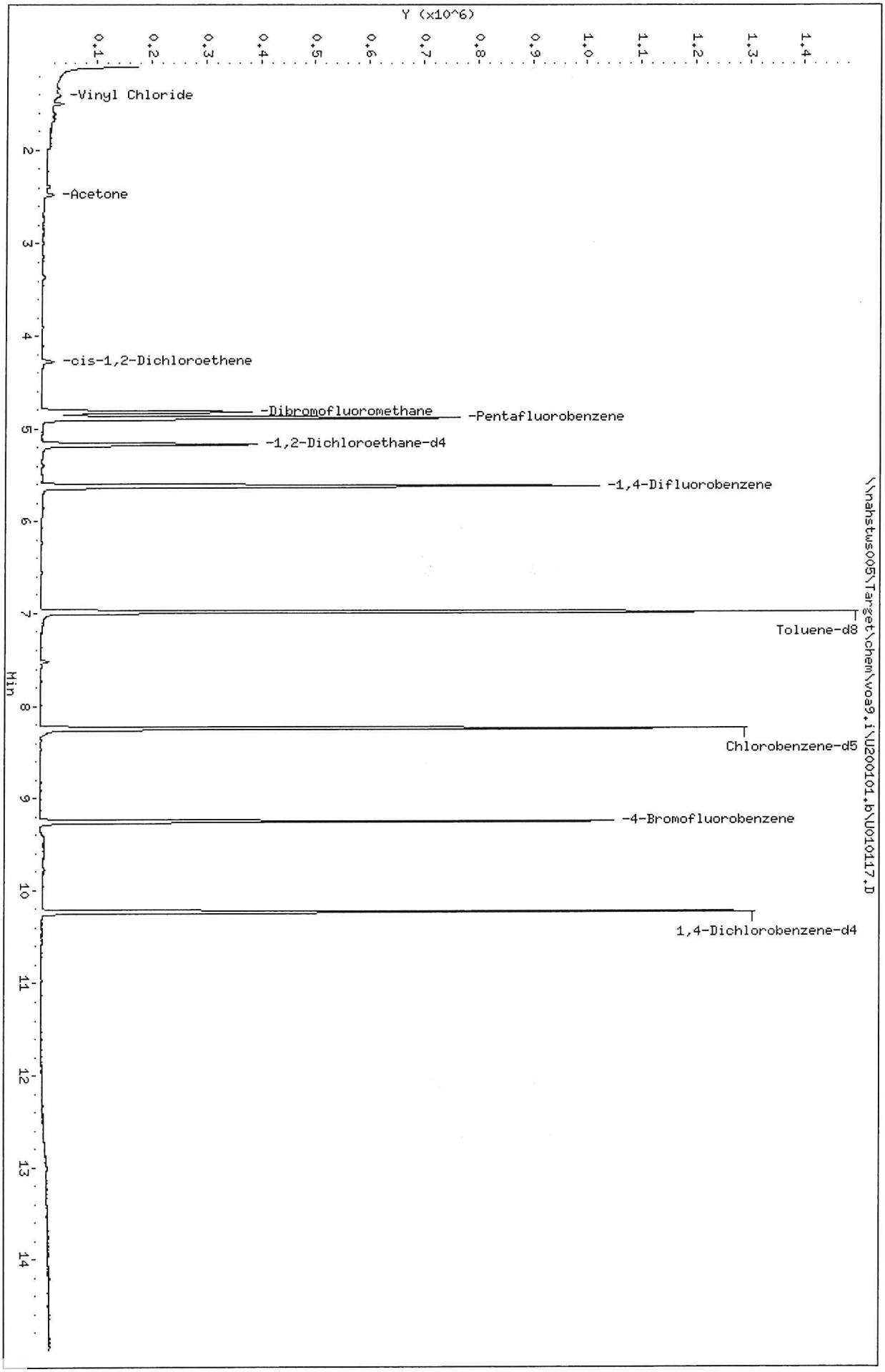
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	10.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.890	4.894	(1.000)	558033	50.0000	
* 36 1,4-Difluorobenzene	114	5.621	5.625	(1.000)	794961	50.0000	
* 47 Chlorobenzene-d5	117	8.245	8.249	(1.000)	698904	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	341067	50.0000	
$ 30 Dibromofluoromethane	113	4.823	4.830	(0.986)	222510	46.5645	46.56
$ 35 1,2-Dichloroethane-d4	65	5.171	5.175	(1.057)	248054	46.1978	46.19
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	907757	50.5424	50.54
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	311336	47.4089	47.40
10 Acetone	43	2.476	2.487	(0.506)	17497	4.07166	40.71(a)
27 cis-1,2-Dichloroethene	96	4.279	4.286	(0.875)	10569	1.44214	14.42(a)
5 Vinyl Chloride	62	1.415	1.426	(0.289)	4368	0.54403	5.44(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).



Data File: \\nahstws005\Target\chem\woa9_i\U200101_b\U010117.D
Date : 01-JAN-2020 17:04
Client ID: HS191210902-02
Sample Info: HS191210902-02;HS191210902-02;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9_i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010117.D

Date : 01-JAN-2020 17:04

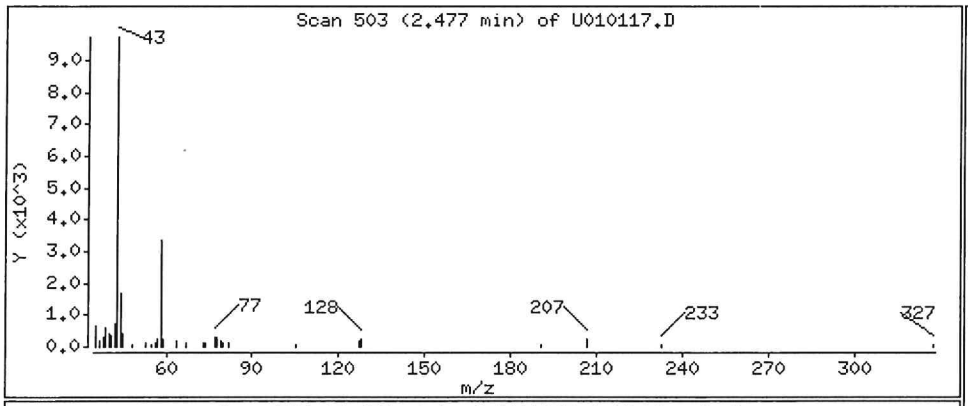
Client ID: HS19121092-02 Instrument: VOA9.i

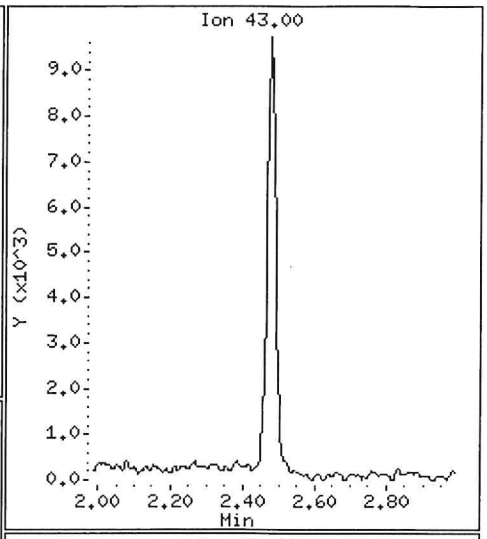
Sample Info: HS19121092-02;HS19121092-02;;;

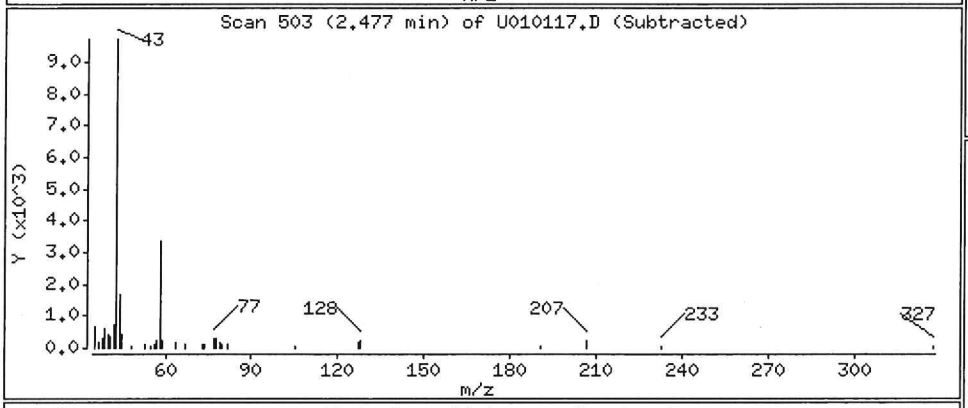
Purge Volume: 5.0 Operator: PC

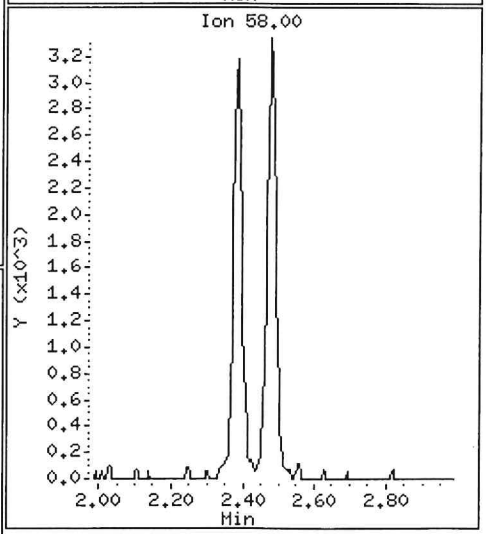
Column phase: DB624 Column diameter: 0.18

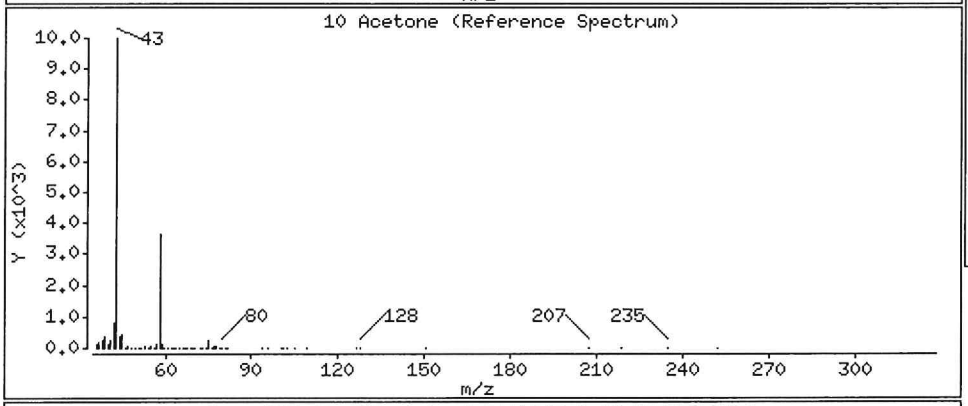
10 Acetone Concentration: 40.71 ug/l

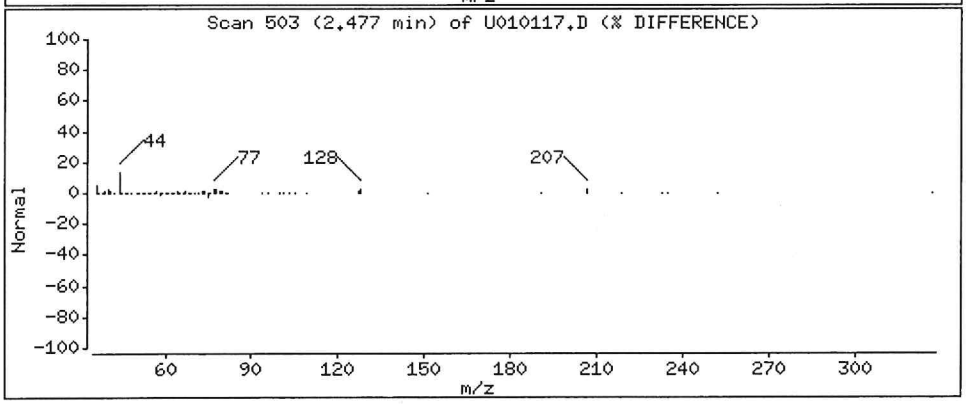












Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010117.D

Date : 01-JAN-2020 17:04

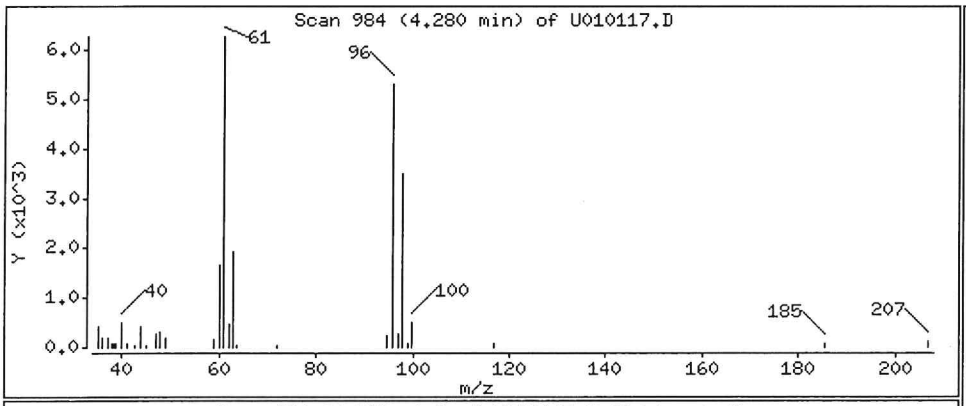
Client ID: HS19121092-02 Instrument: VOA9.i

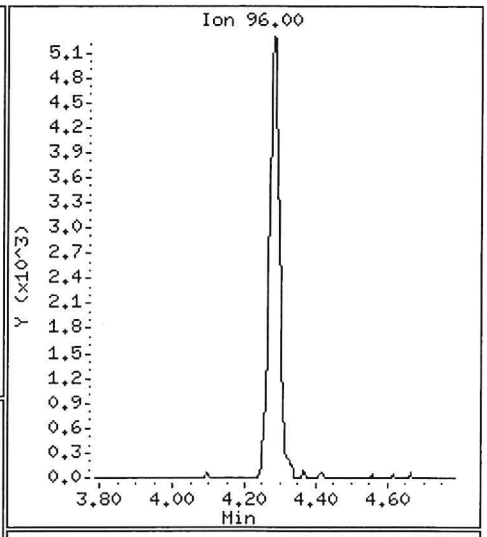
Sample Info: HS19121092-02;HS19121092-02;;;

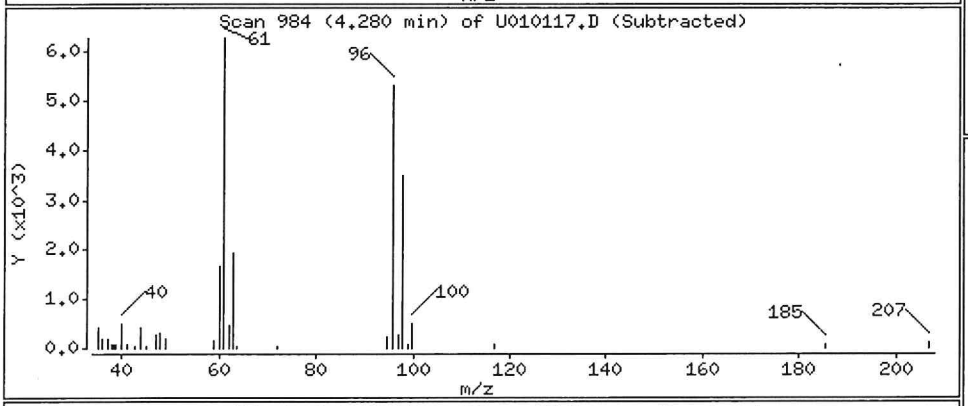
Purge Volume: 5.0 Operator: PC

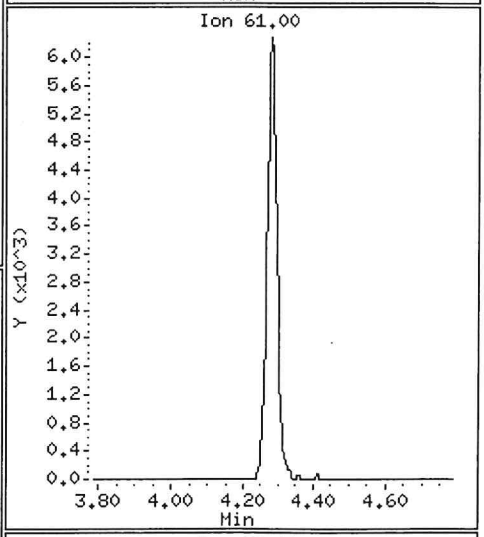
Column phase: DB624 Column diameter: 0.18

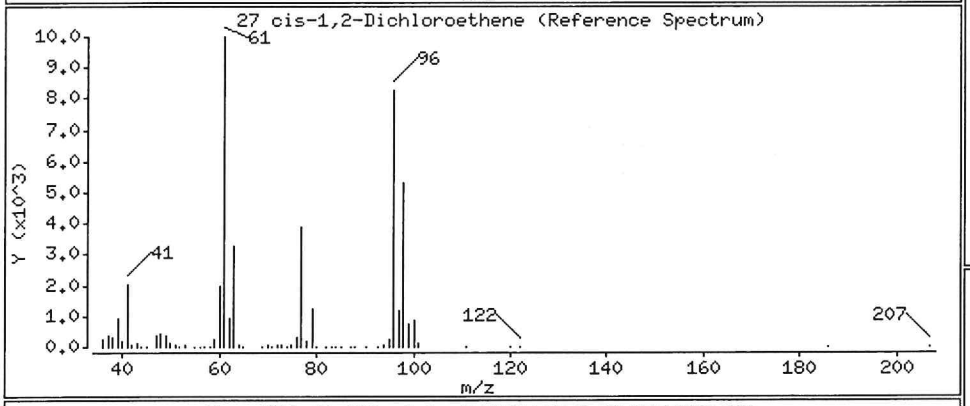
27 cis-1,2-Dichloroethene Concentration: 14.42 ug/l

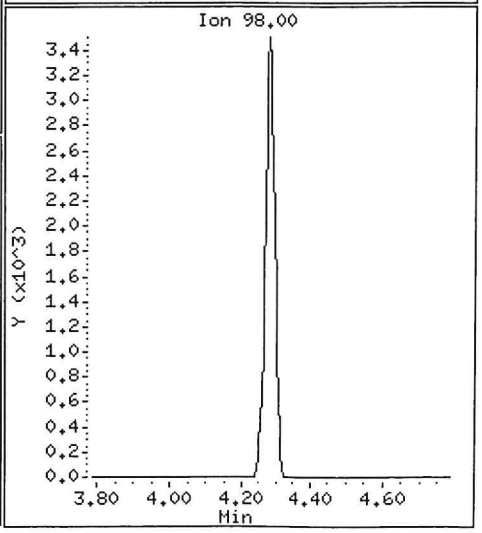


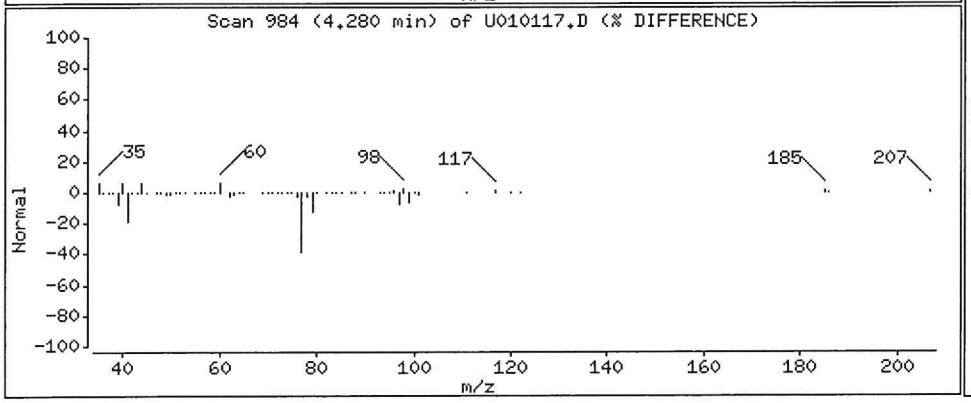












Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010117.D

Date : 01-JAN-2020 17:04

Client ID: HS19121092-02

Instrument: VOA9.i

Sample Info: HS19121092-02;HS19121092-02;;;

Purge Volume: 5.0

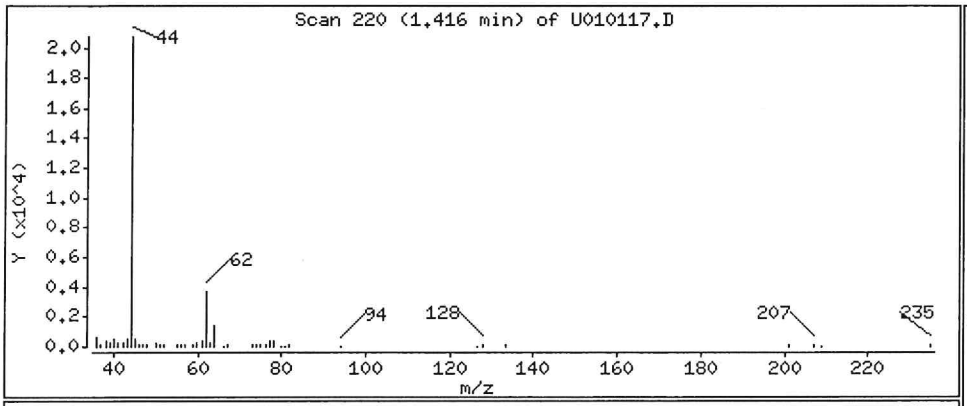
Operator: PC

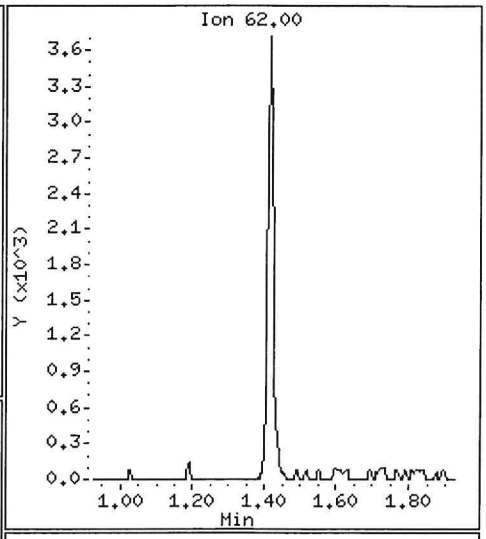
Column phase: DB624

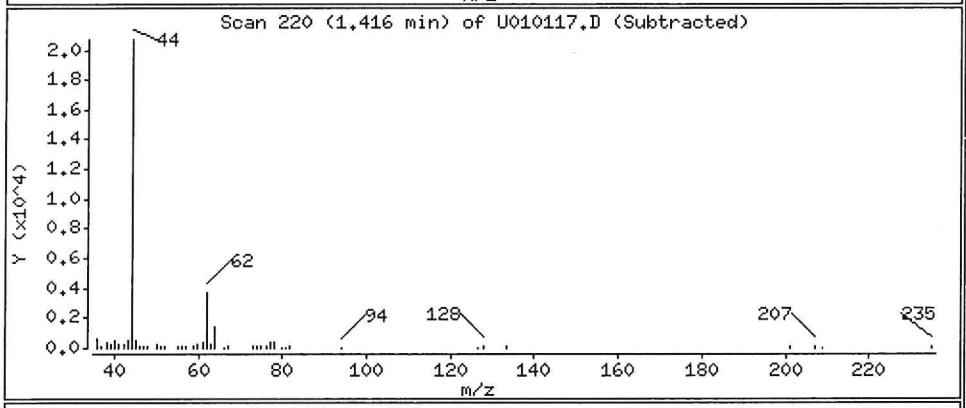
Column diameter: 0.18

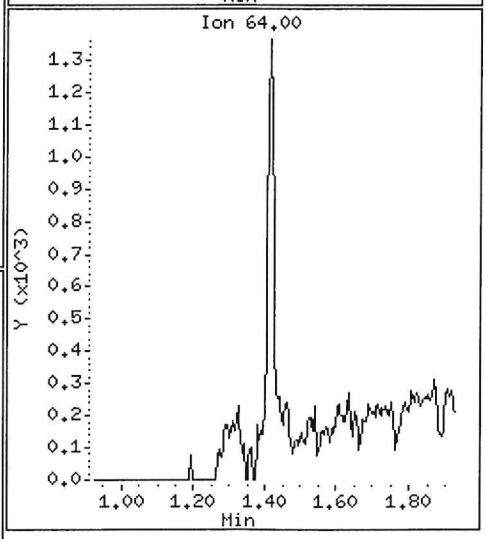
5 Vinyl Chloride

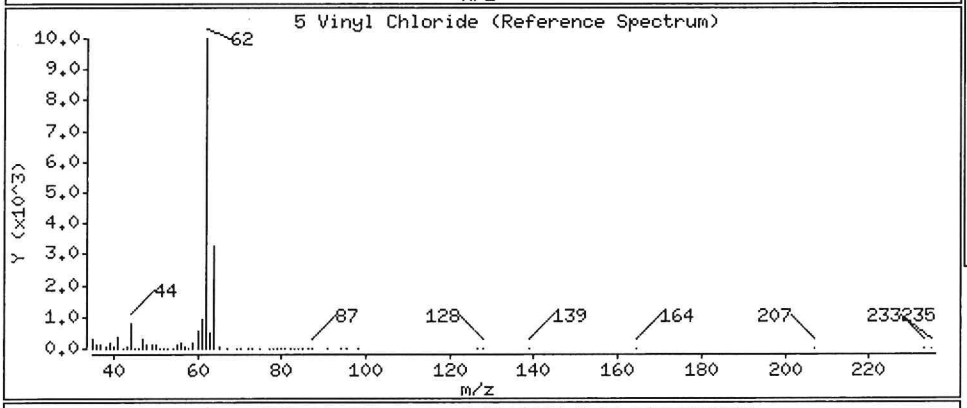
Concentration: 5.44 ug/l

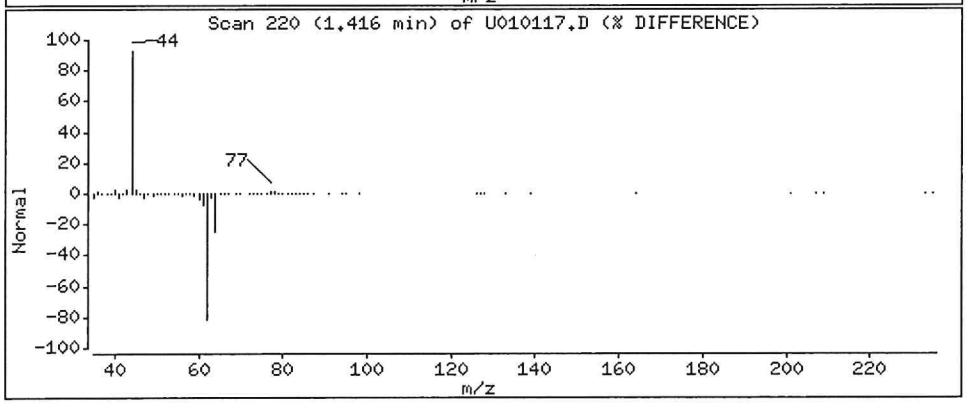












Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010118.D Page 1
Report Date: 17-Jan-2020 15:06

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U200101.b\U010118.D
Lab Smp Id: HS19121092-03 Client Smp ID: HS19121092-03
Inj Date : 01-JAN-2020 17:29
Operator : PC Inst ID: VOA9.i
Smp Info : HS19121092-03;HS19121092-03;;;
Misc Info : 180315V9;WATER;0;10;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U200101.b\8260C.m
Meth Date : 17-Jan-2020 15:06 DevakG Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 18
Dil Factor: 10.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14
Processing Host: NAHSTW7056

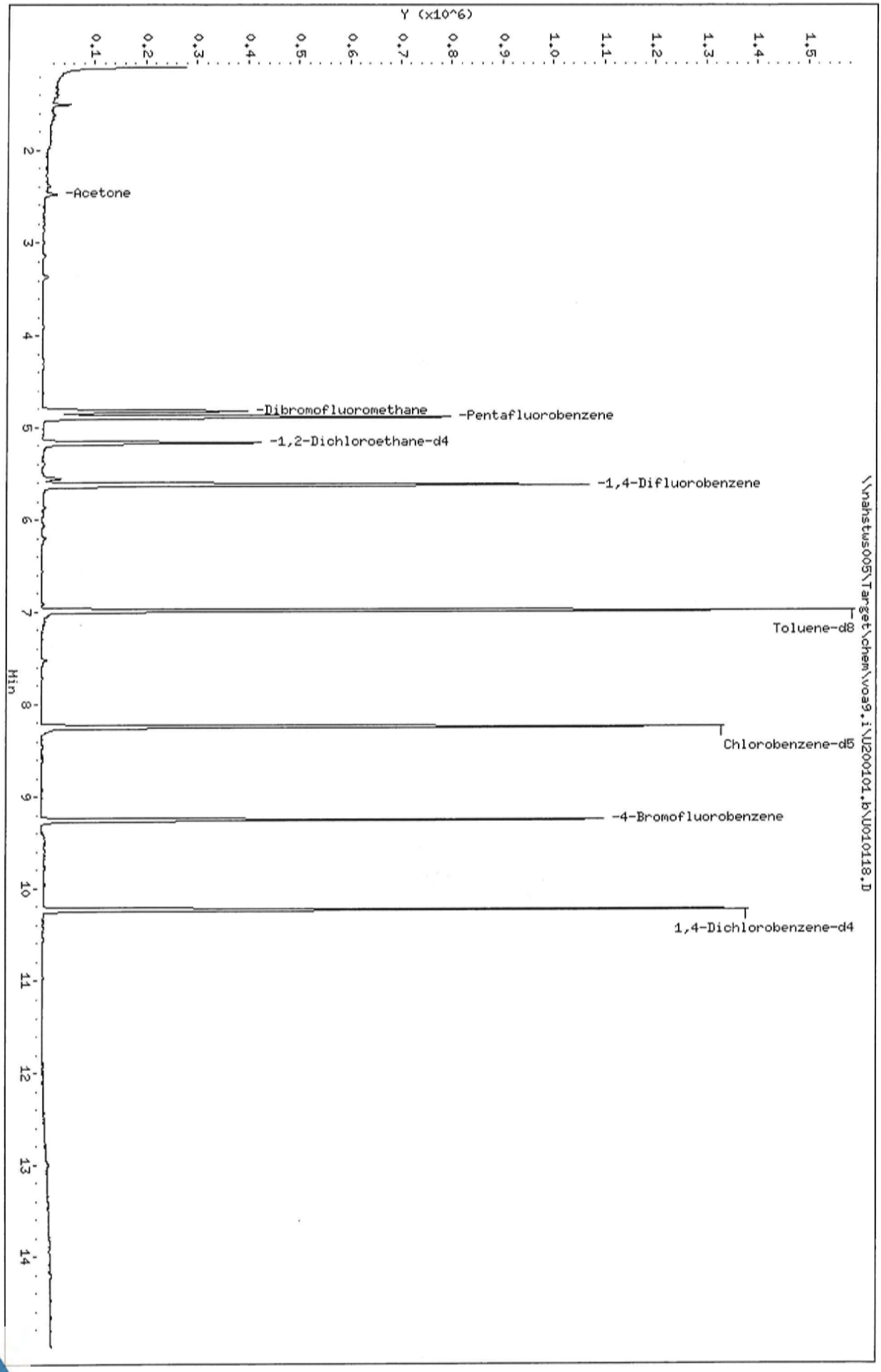
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	10.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.890	4.894	(1.000)	579427	50.0000	
* 36 1,4-Difluorobenzene	114	5.621	5.625	(1.000)	828283	50.0000	
* 47 Chlorobenzene-d5	117	8.245	8.249	(1.000)	718488	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	359394	50.0000	
$ 30 Dibromofluoromethane	113	4.826	4.830	(0.987)	229521	46.2582	46.25
$ 35 1,2-Dichloroethane-d4	65	5.171	5.175	(1.057)	259703	46.5815	46.58
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	945228	51.1942	51.19
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	324013	47.9945	47.99
10 Acetone	43	2.480	2.487	(0.507)	21770	5.50044	55.00

Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010118.D
Date : 01-JAN-2020 17:29
Client ID: HS19121092-03
Sample Info: HS19121092-03;HS19121092-03;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18



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Date : 01-JAN-2020 17:29

Client ID: HS19121092-03

Instrument: VOA9.i

Sample Info: HS19121092-03;HS19121092-03;;;

Purge Volume: 5.0

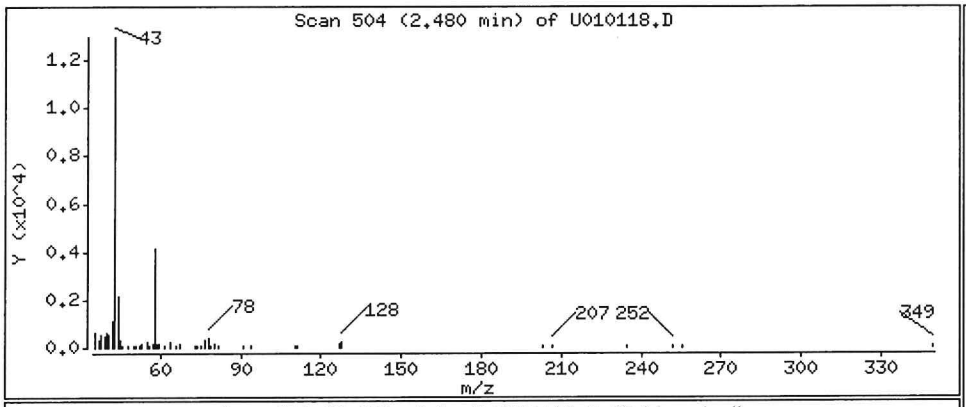
Operator: PC

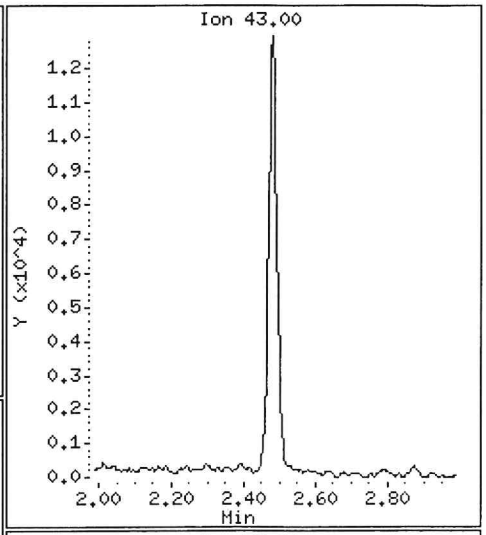
Column phase: DB624

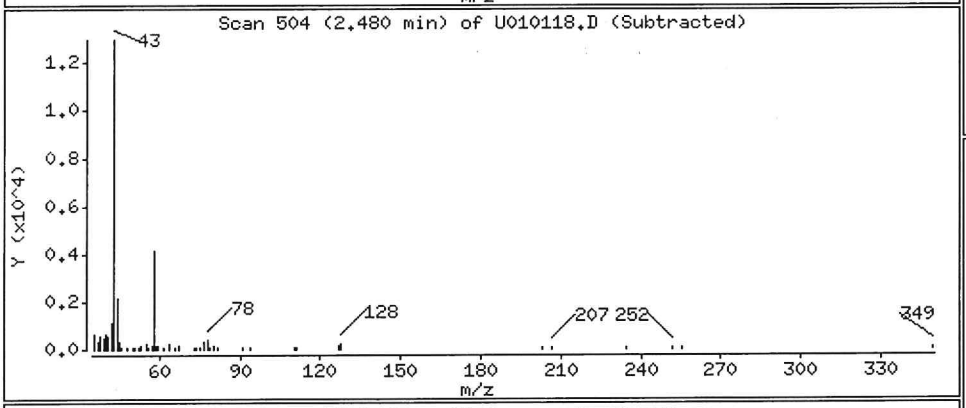
Column diameter: 0.18

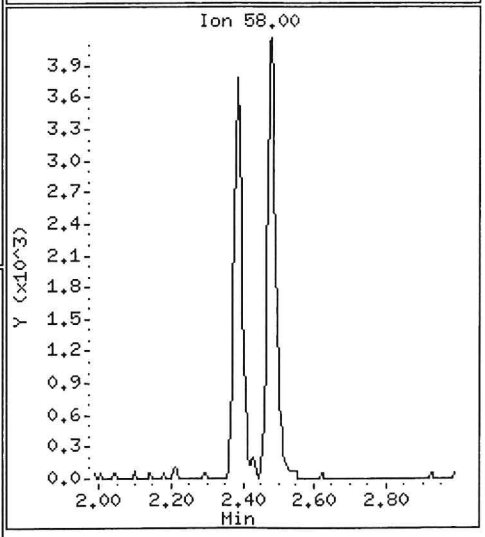
10 Acetone

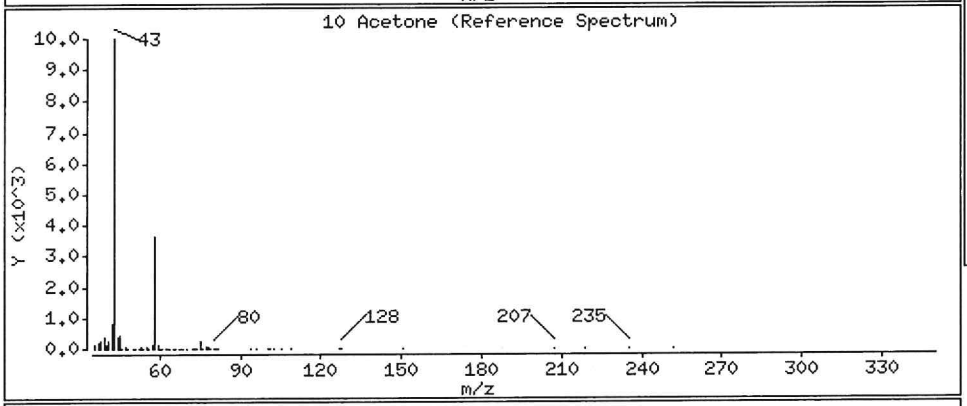
Concentration: 55.00 ug/l

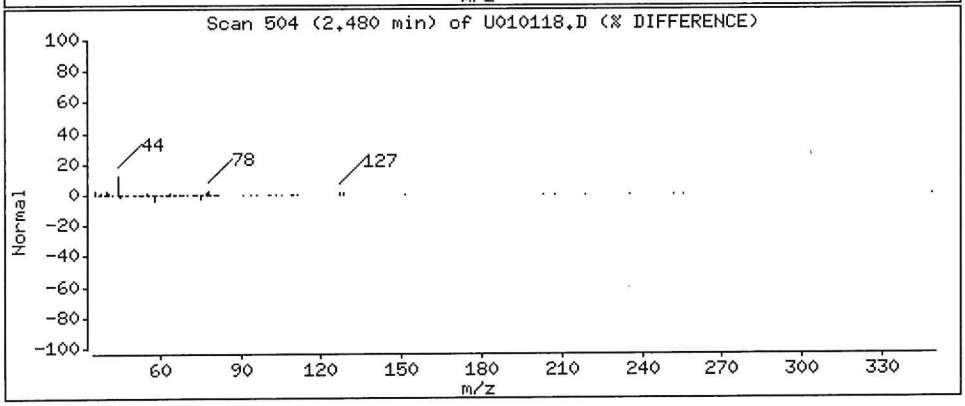












ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U200101.b\U010119.D
Lab Smp Id: HS19121092-01 Client Smp ID: HS19121092-01
Inj Date : 01-JAN-2020 17:53
Operator : PC Inst ID: VOA9.i
Smp Info : HS19121092-01;HS19121092-01;;;
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200101.b\8260C.m
Meth Date : 17-Jan-2020 15:06 DevakG Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 19
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14
Processing Host: NAHSTW7056

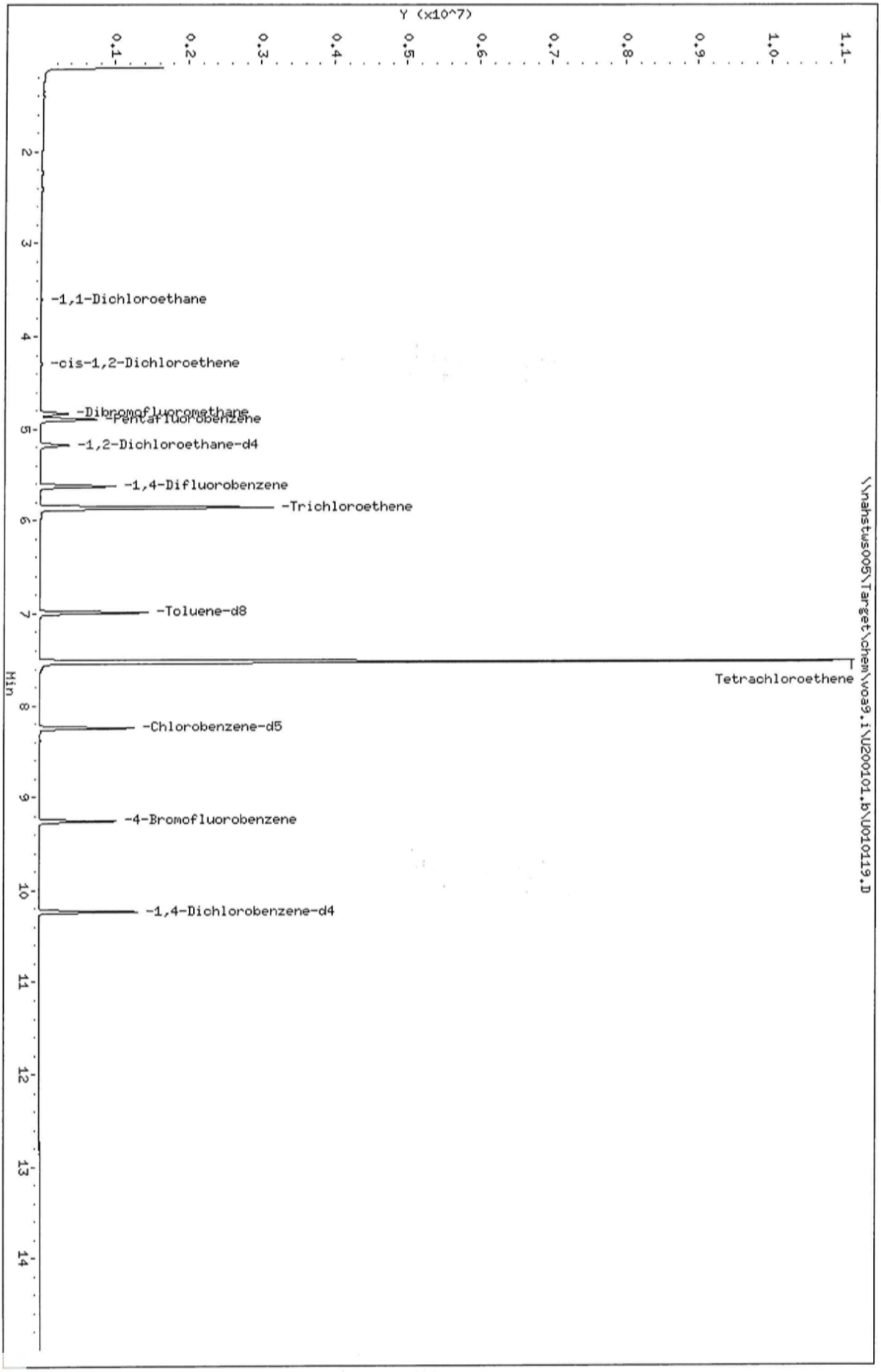
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.898	4.894	(1.000)	551624	50.0000	
* 36 1,4-Difluorobenzene	114	5.625	5.625	(1.000)	796916	50.0000	
* 47 Chlorobenzene-d5	117	8.249	8.249	(1.000)	690834	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	347115	50.0000	
$ 30 Dibromofluoromethane	113	4.830	4.830	(0.986)	217528	46.0508	46.05
$ 35 1,2-Dichloroethane-d4	65	5.175	5.175	(1.057)	245742	46.2990	46.29
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	900234	50.7090	50.70
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	312290	48.1097	48.10
22 1,1-Dichloroethane	63	3.608	3.604	(0.737)	11169	1.01282	1.01(a)
27 cis-1,2-Dichloroethene	96	4.287	4.286	(0.875)	8000	1.10428	1.10(a)
56 Tetrachloroethene	166	7.522	7.522	(0.912)	3117513	489.512	489.51(A)
38 Trichloroethene	130	5.861	5.861	(1.042)	1060359	158.188	158.18

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.



Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010119.D
Date : 01-JAN-2020 17:53
Client ID: HS191121092-01
Sample Info: HS191121092-01;HS191121092-01;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010119.D

Date : 01-JAN-2020 17:53

Client ID: HS19121092-01

Instrument: VOA9.i

Sample Info: HS19121092-01;HS19121092-01;;;

Purge Volume: 5.0

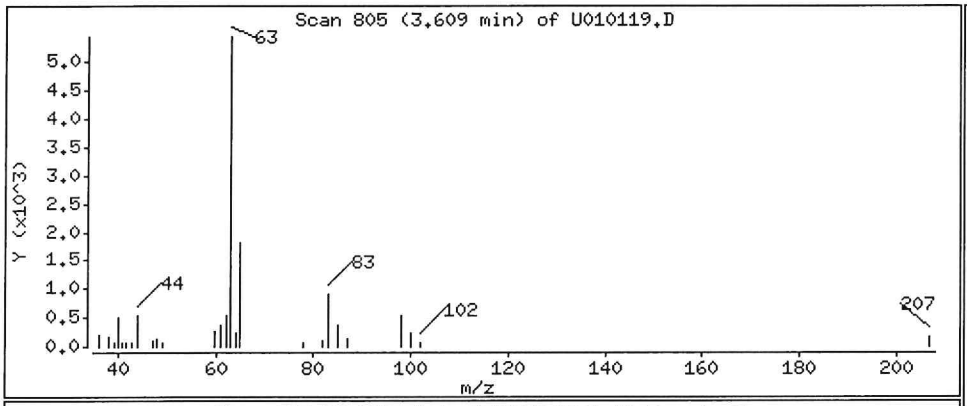
Operator: PC

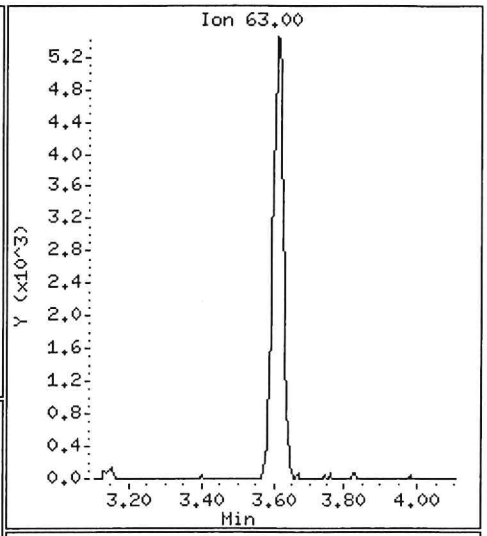
Column phase: DB624

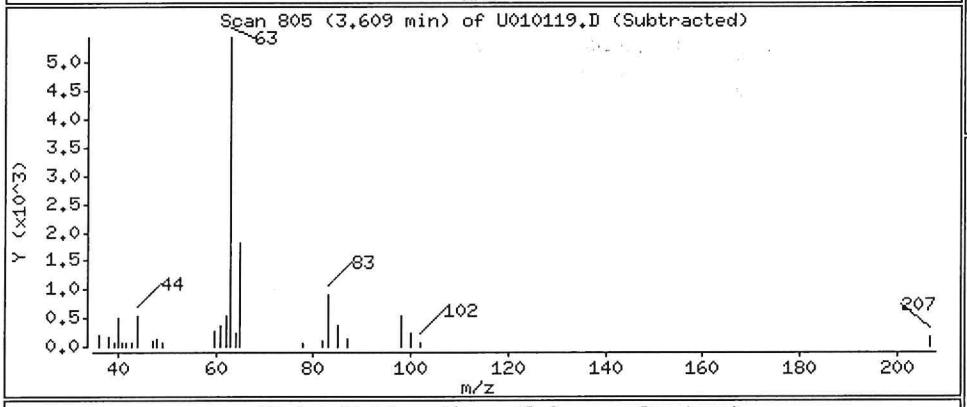
Column diameter: 0.18

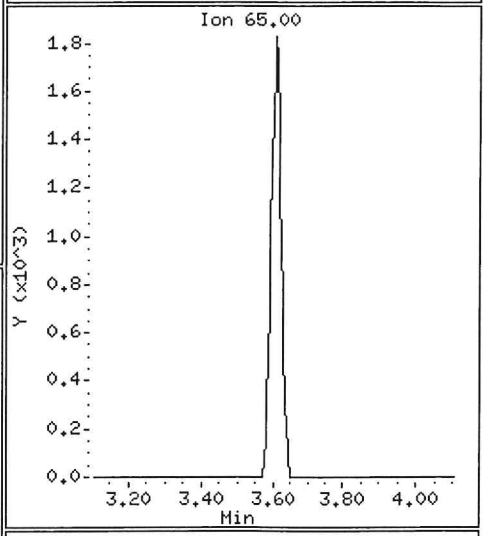
22 1,1-Dichloroethane

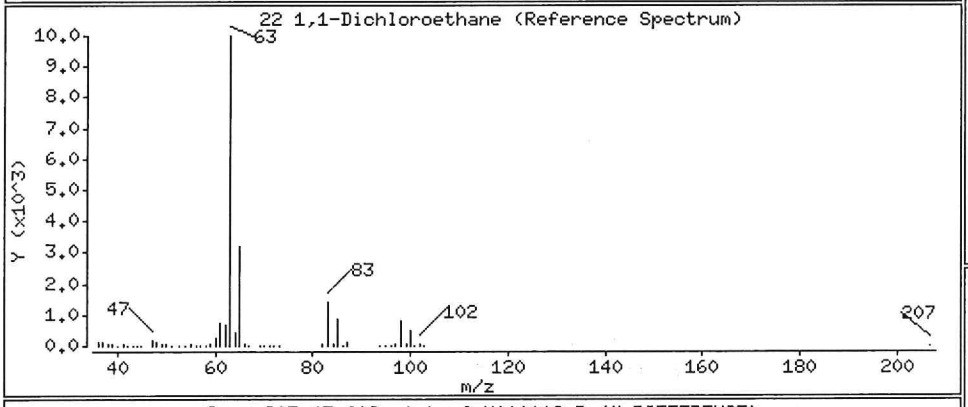
Concentration: 1.01 ug/l

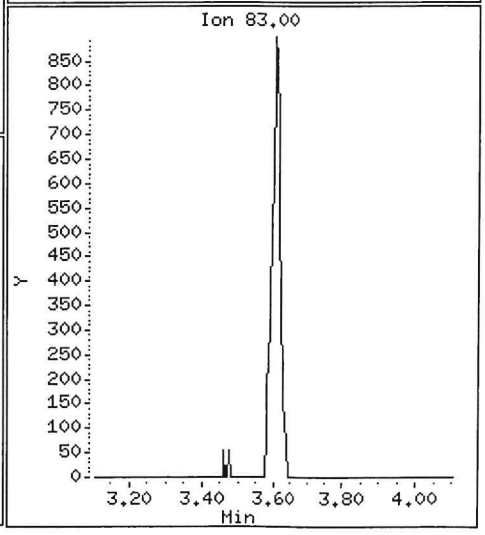


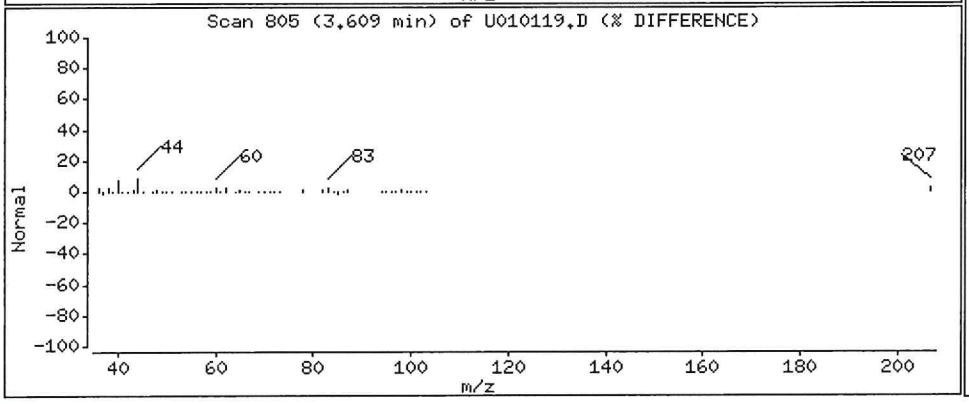












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Date : 01-JAN-2020 17:53

Client ID: HS19121092-01

Instrument: VOA9.i

Sample Info: HS19121092-01;HS19121092-01;;;

Purge Volume: 5.0

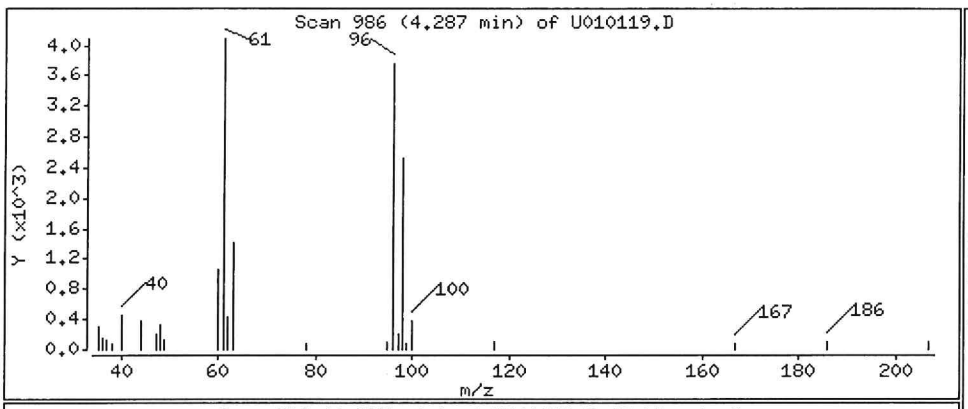
Operator: PC

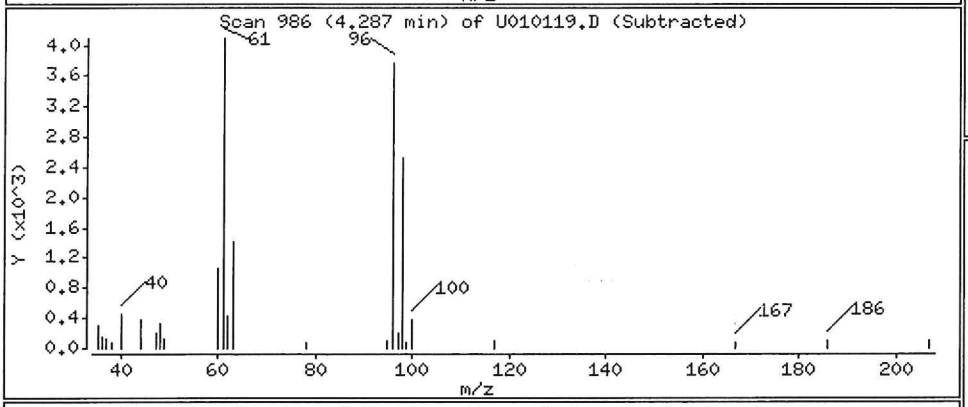
Column phase: DB624

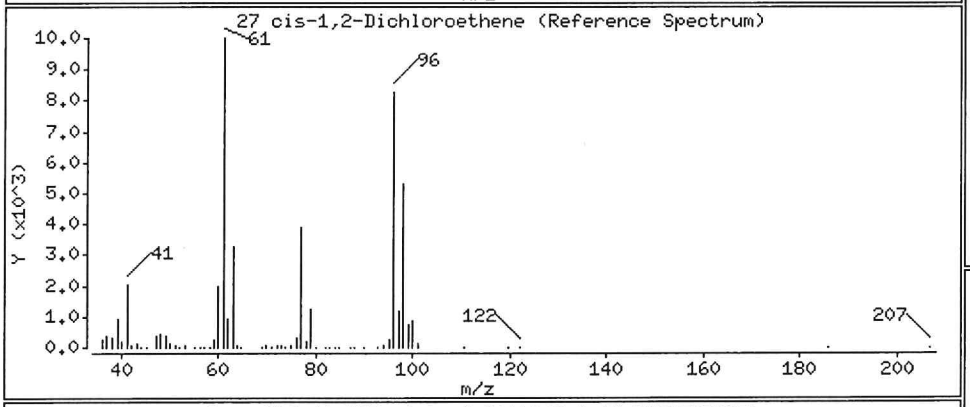
Column diameter: 0.18

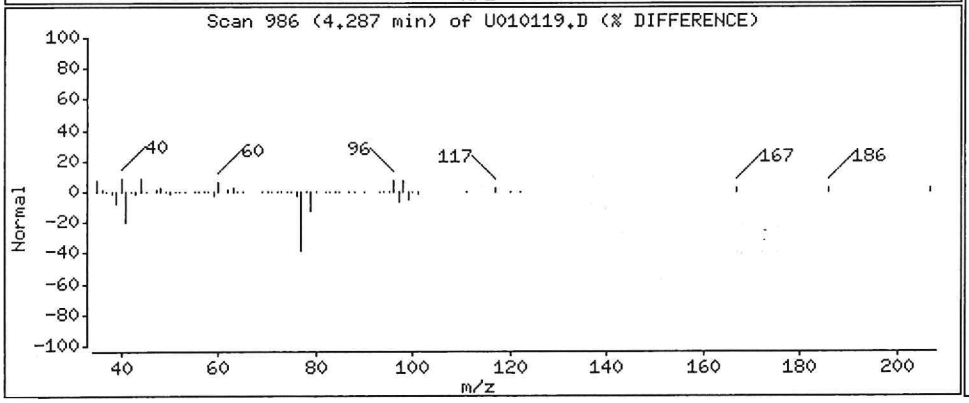
27 cis-1,2-Dichloroethene

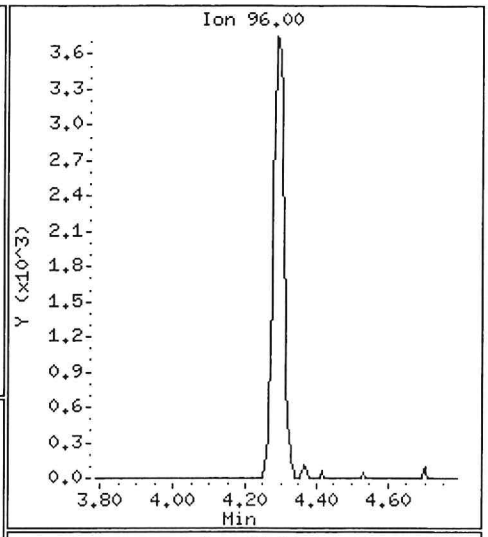
Concentration: 1.10 ug/l

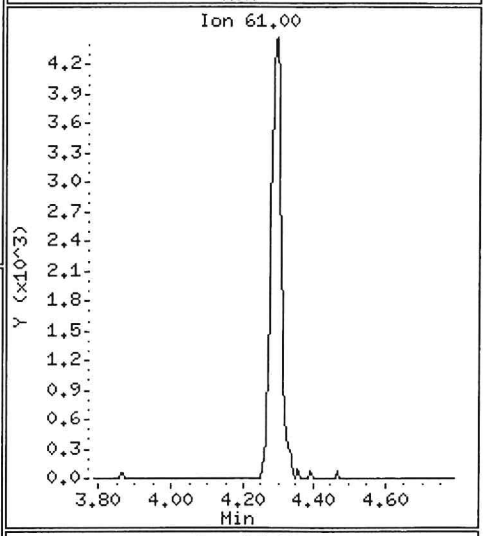


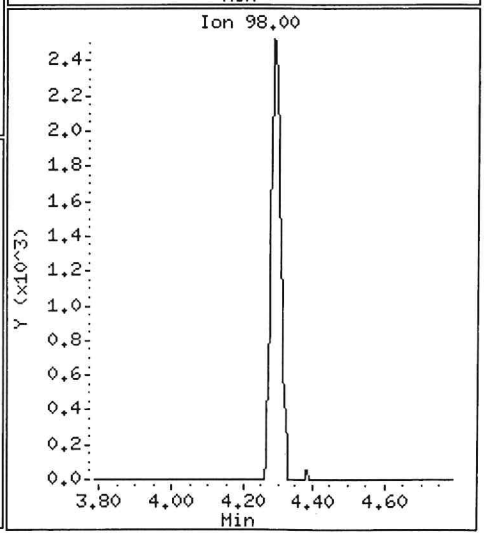












Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010119.D Page 5

Date : 01-JAN-2020 17:53

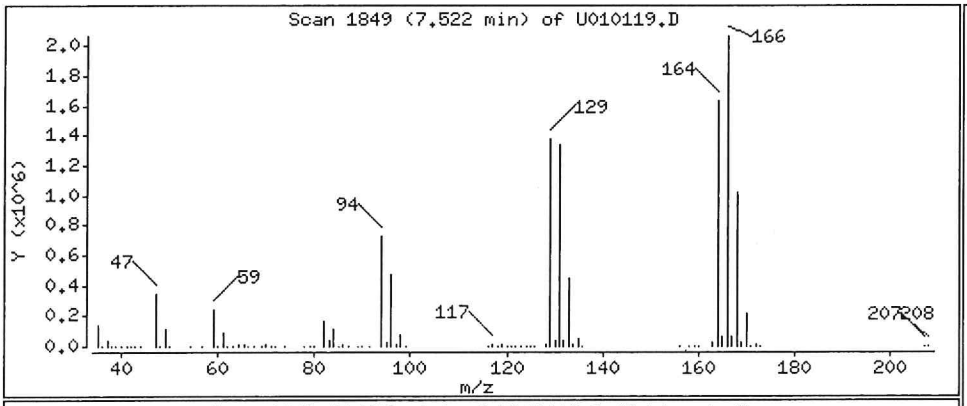
Client ID: HS19121092-01 Instrument: VOA9.i

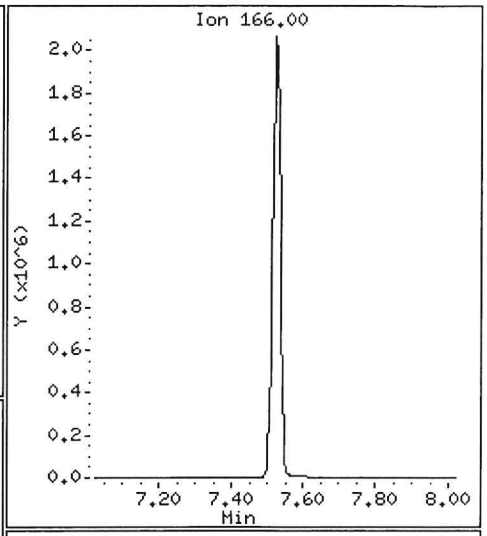
Sample Info: HS19121092-01;HS19121092-01;;;

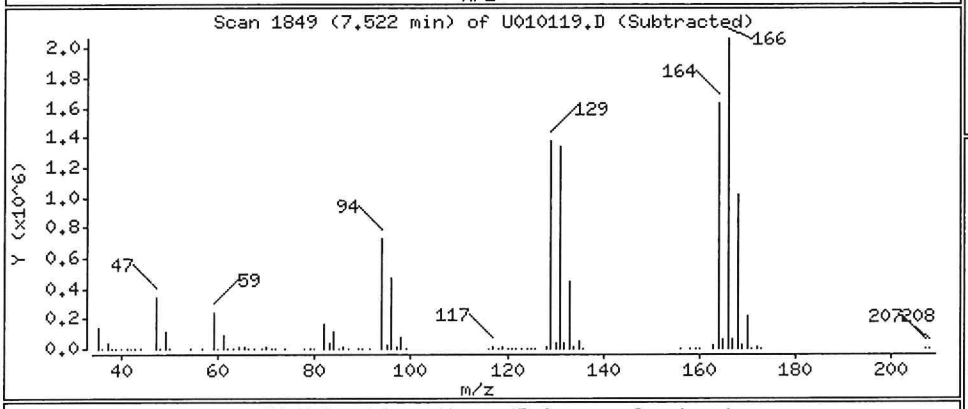
Purge Volume: 5.0 Operator: PC

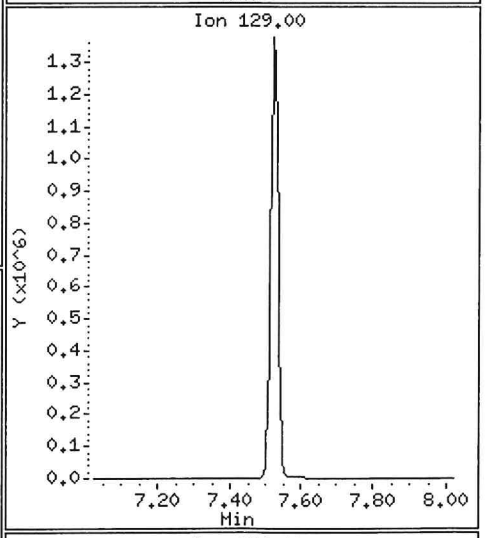
Column phase: DB624 Column diameter: 0.18

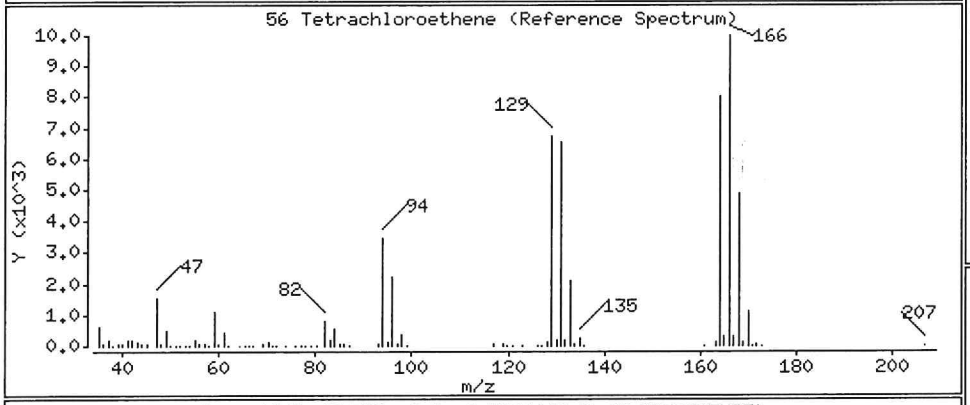
56 Tetrachloroethene Concentration: 489.51 ug/l

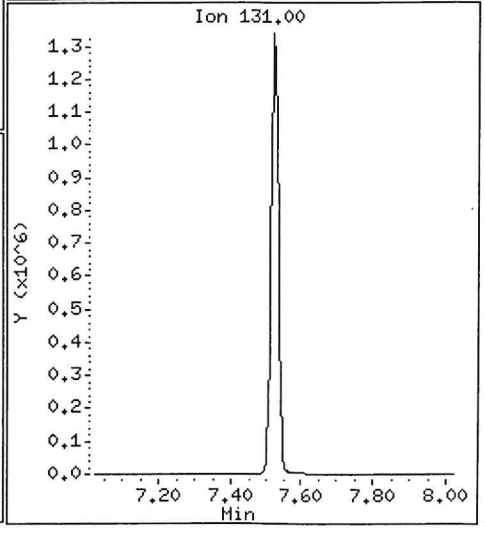


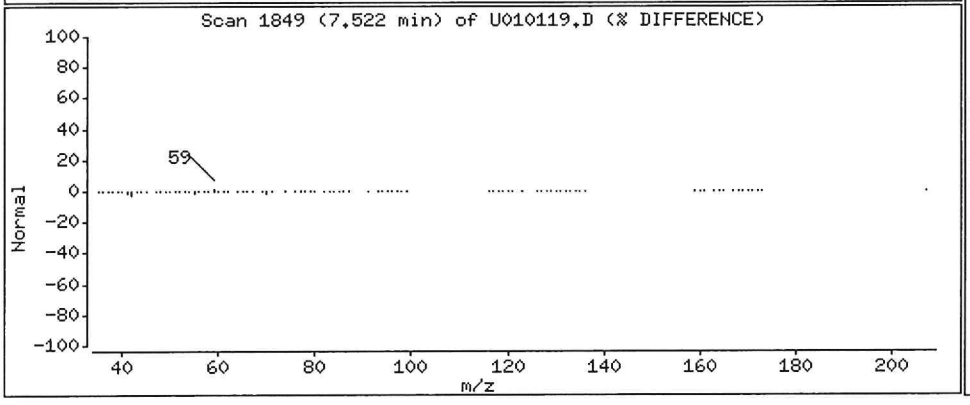












Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010119.D

Date : 01-JAN-2020 17:53

Client ID: HS19121092-01

Instrument: VOA9.i

Sample Info: HS19121092-01;HS19121092-01;;;

Purge Volume: 5.0

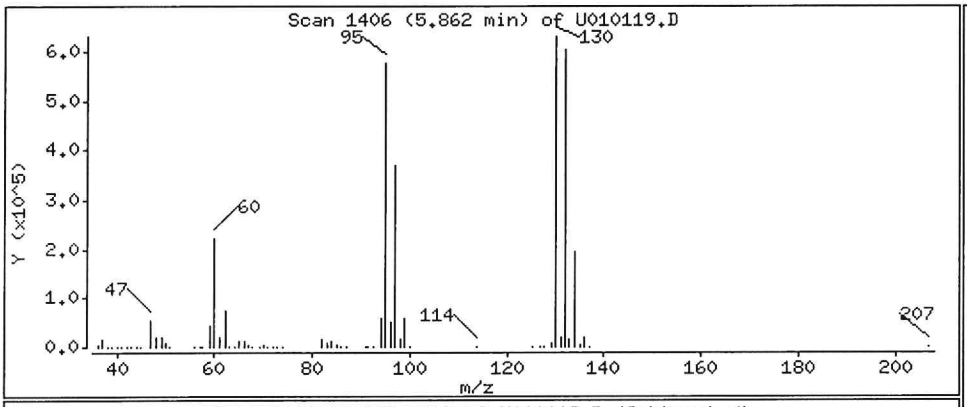
Operator: PC

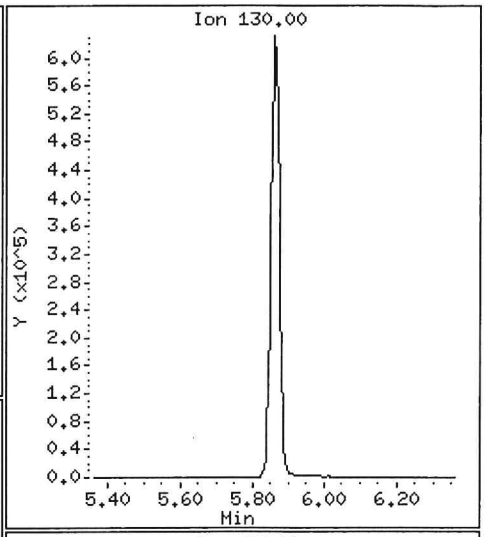
Column phase: DB624

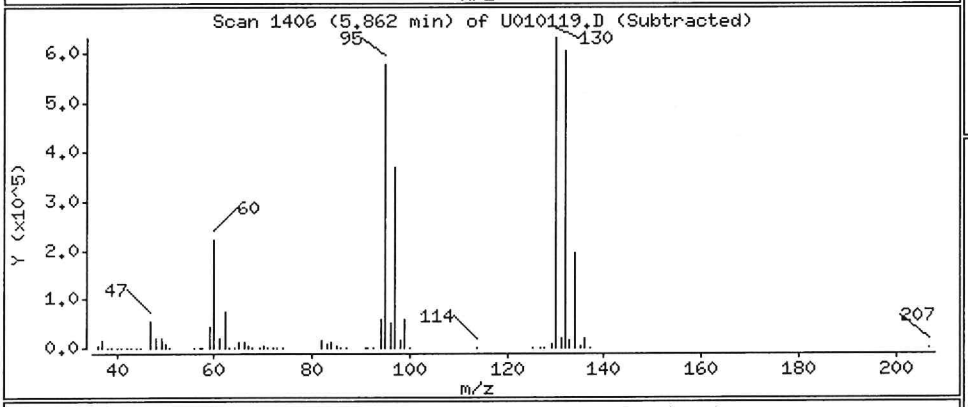
Column diameter: 0.18

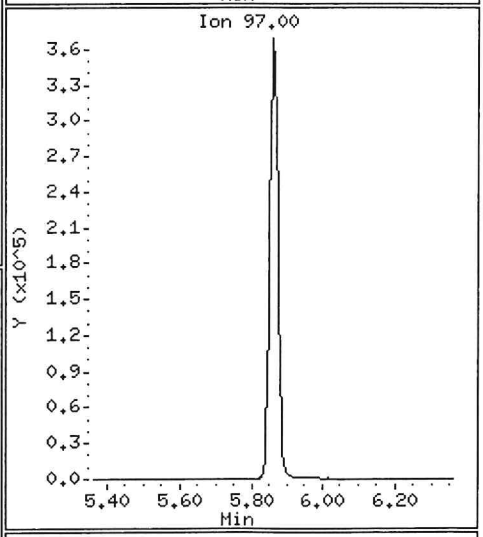
38 Trichloroethene

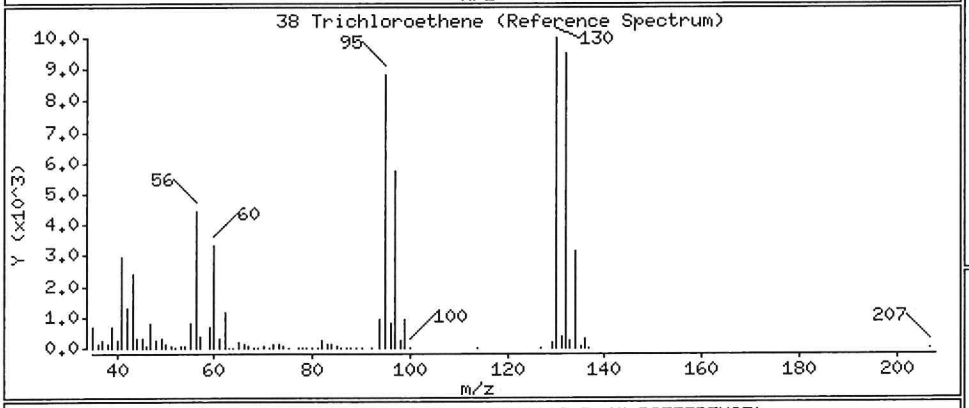
Concentration: 158.18 ug/l

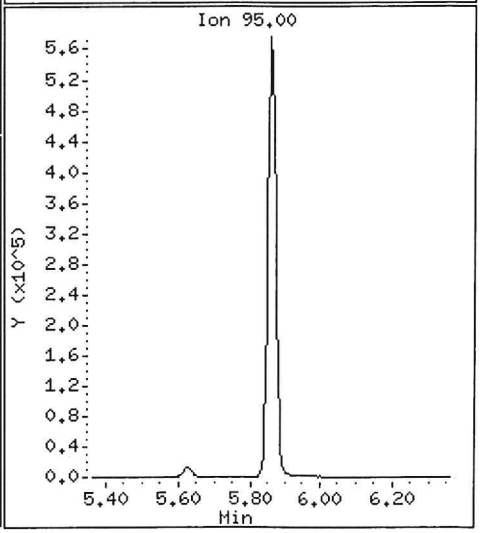


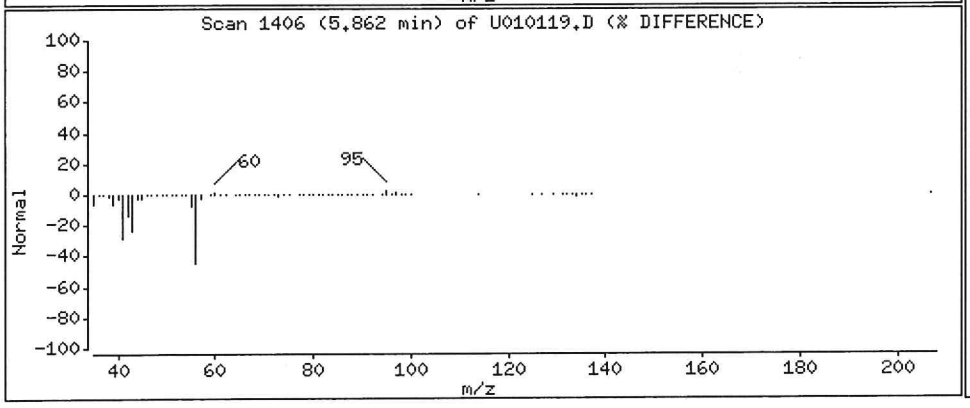












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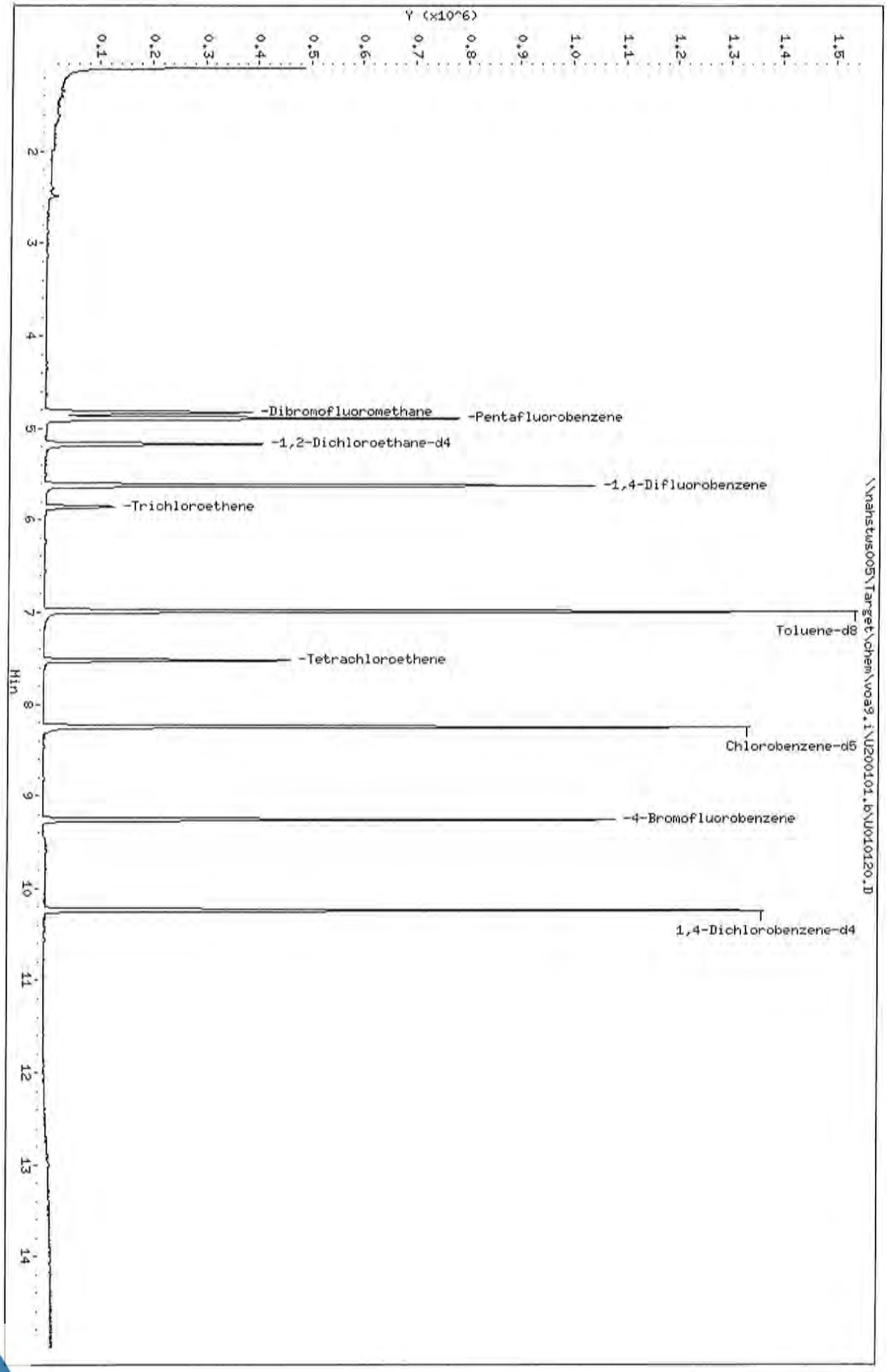
Data file : \\nahstws005\Target\chem\voa9.i\U200101.b\U010120.D
Lab Smp Id: HS19121092-01 Client Smp ID: HS19121092-01
Inj Date : 01-JAN-2020 18:17
Operator : PC Inst ID: VOA9.i
Smp Info : HS19121092-01;HS19121092-01;;;
Misc Info : 180315V9;WATER;0;25;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200101.b\8260C.m
Meth Date : 17-Jan-2020 15:06 DevakG Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 20
Dil Factor: 25.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	25.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.894	4.894	(1.000)	569599	50.0000	
* 36 1,4-Difluorobenzene	114	5.621	5.625	(1.000)	818579	50.0000	
* 47 Chlorobenzene-d5	117	8.245	8.249	(1.000)	718502	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	358189	50.0000	
$ 30 Dibromofluoromethane	113	4.827	4.830	(0.986)	227948	46.7339	46.73
$ 35 1,2-Dichloroethane-d4	65	5.171	5.175	(1.057)	251823	45.9474	45.94
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	924528	50.0721	50.07
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	322873	47.8247	47.82
56 Tetrachloroethene	166	7.522	7.522	(0.912)	134145	20.0817	502.04
38 Trichloroethene	130	5.861	5.861	(1.043)	43335	6.29377	157.34



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Date : 01-JAN-2020 18:17
Client ID: HS19121092-01
Sample Info: HS19121092-01;HS19121092-01;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010120.D

Date : 01-JAN-2020 18:17

Client ID: HS19121092-01

Instrument: VOA9.i

Sample Info: HS19121092-01;HS19121092-01;;;

Purge Volume: 5.0

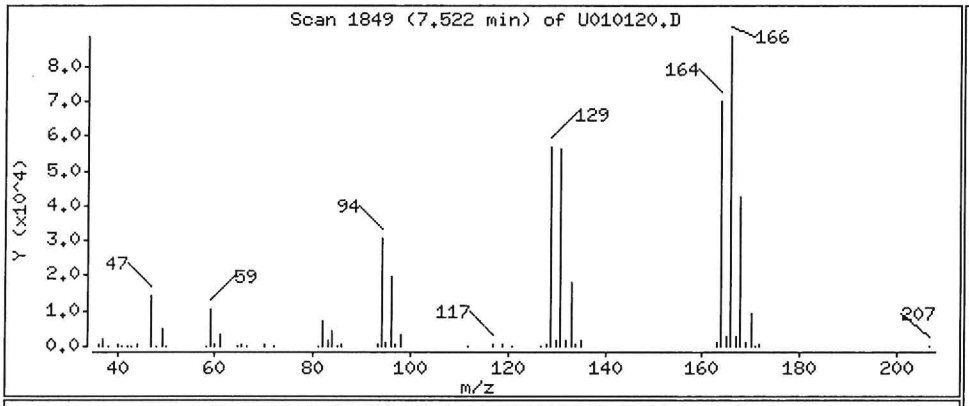
Operator: PC

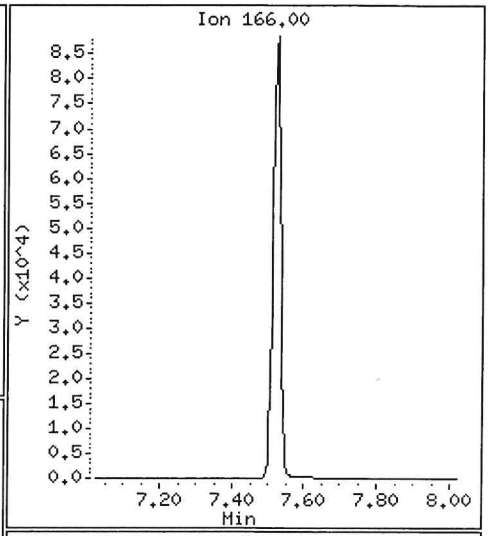
Column phase: DB624

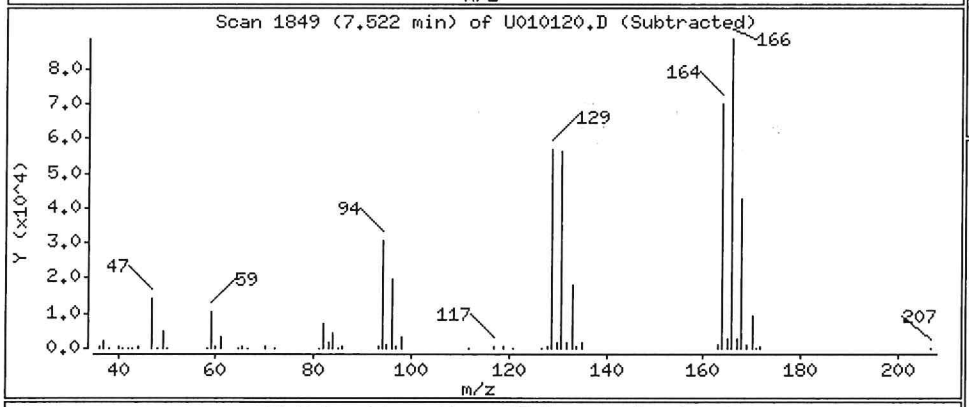
Column diameter: 0.18

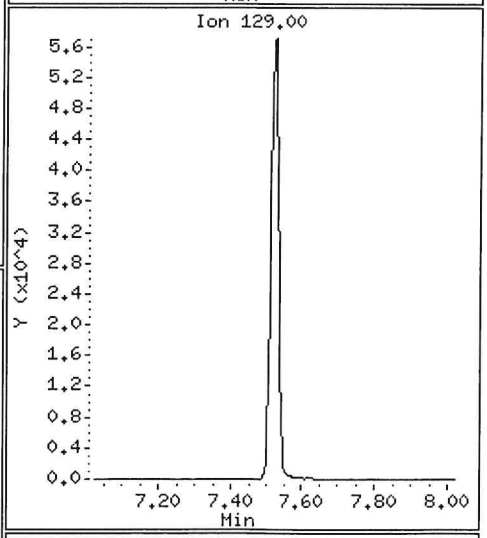
56 Tetrachloroethene

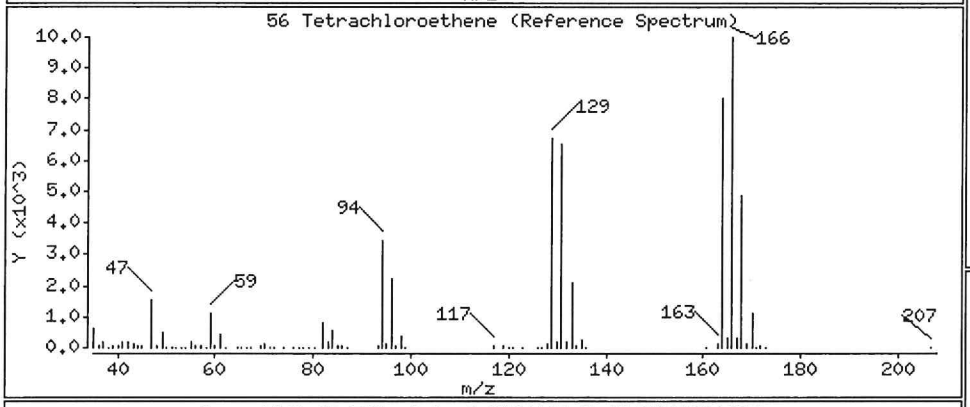
Concentration: 502.04 ug/l

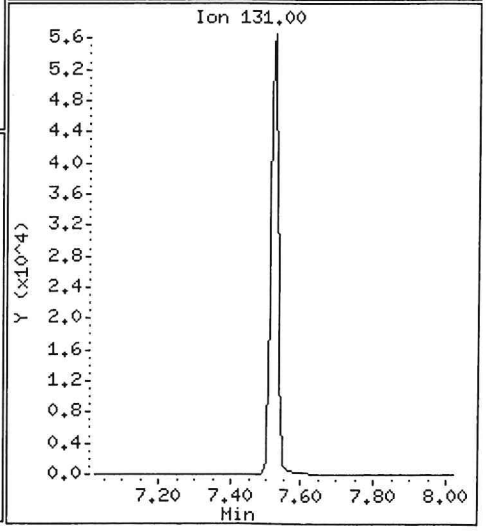


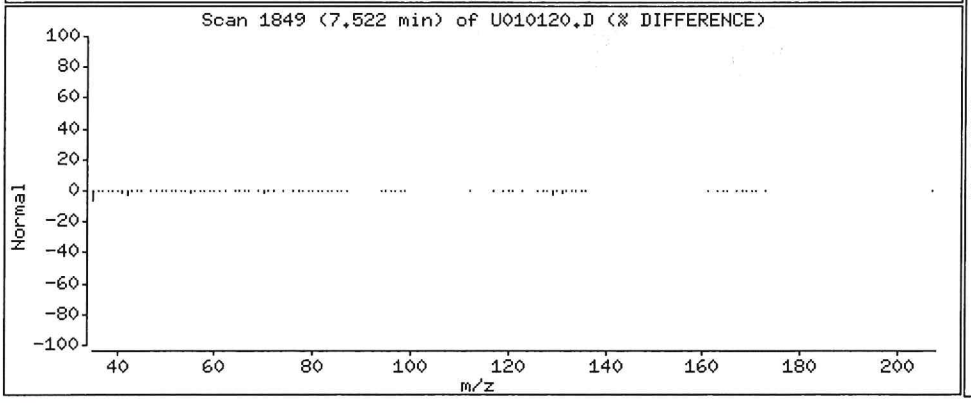












Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010120.D

Date : 01-JAN-2020 18:17

Client ID: HS19121092-01

Instrument: VOA9.i

Sample Info: HS19121092-01;HS19121092-01;;;

Purge Volume: 5.0

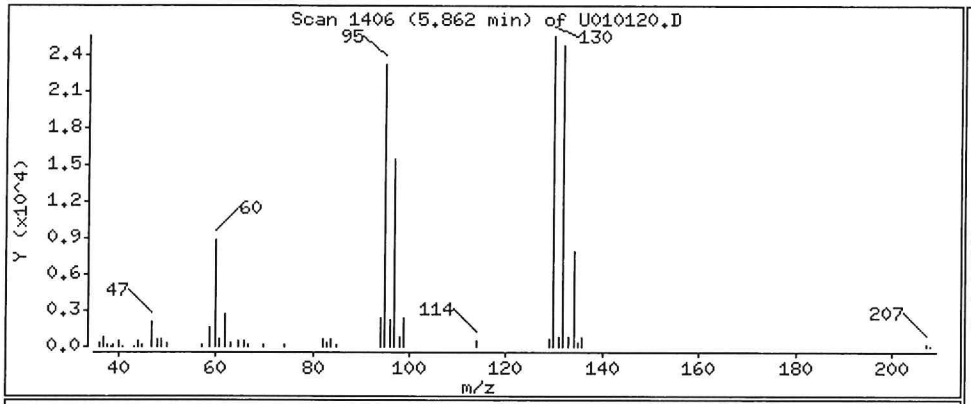
Operator: PC

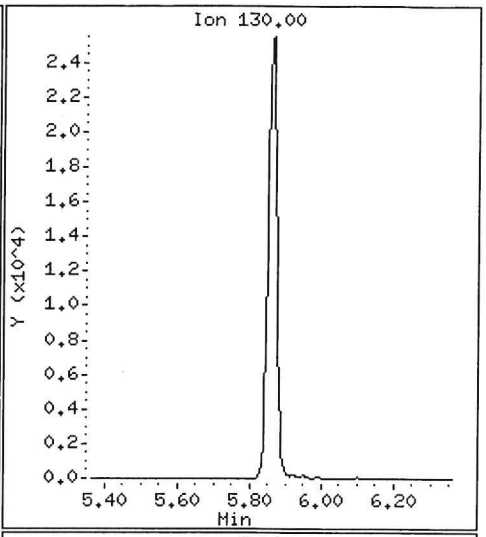
Column phase: DB624

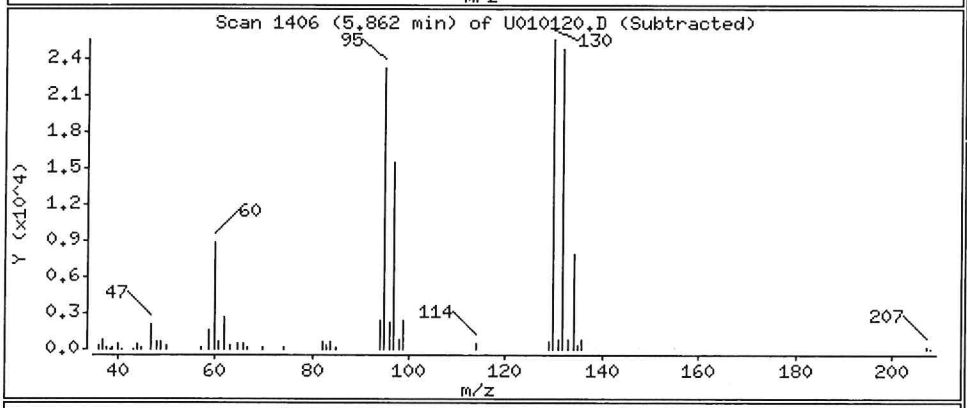
Column diameter: 0.18

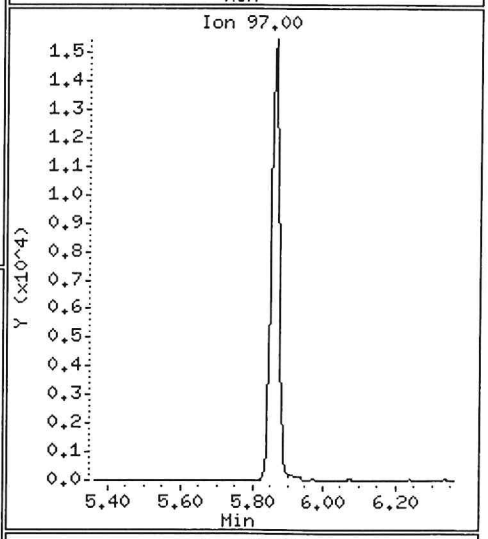
38 Trichloroethene

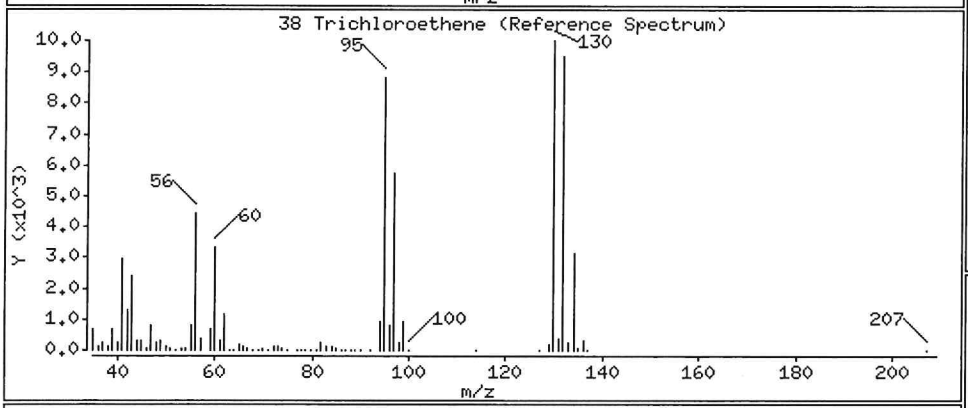
Concentration: 157.34 ug/l

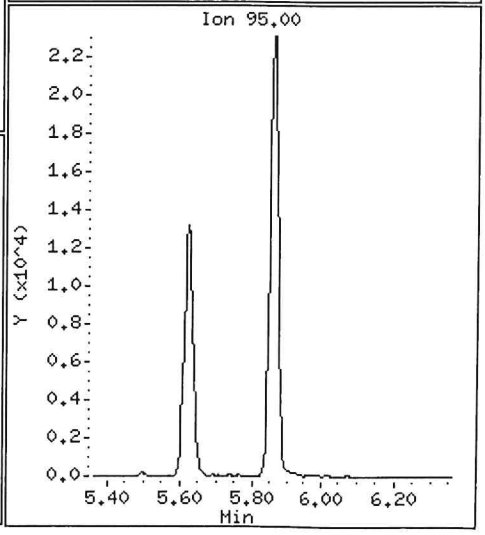


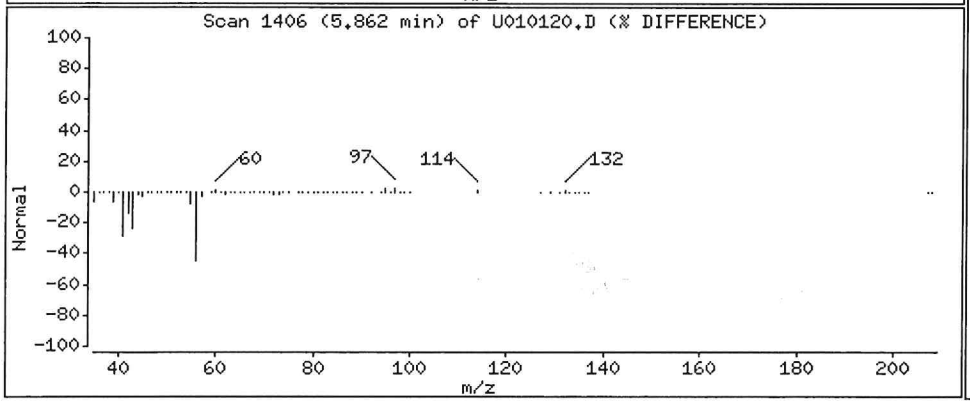












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Report Date: 17-Jan-2020 15:21

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U200101.b\U010121.D
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Inj Date : 01-JAN-2020 18:42
Operator : PC Inst ID: VOA9.i
Smp Info : HS19121092-09MS;HS19121092-09MS;3;;MS
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200101.b\8260C.m
Meth Date : 17-Jan-2020 15:21 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 21 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

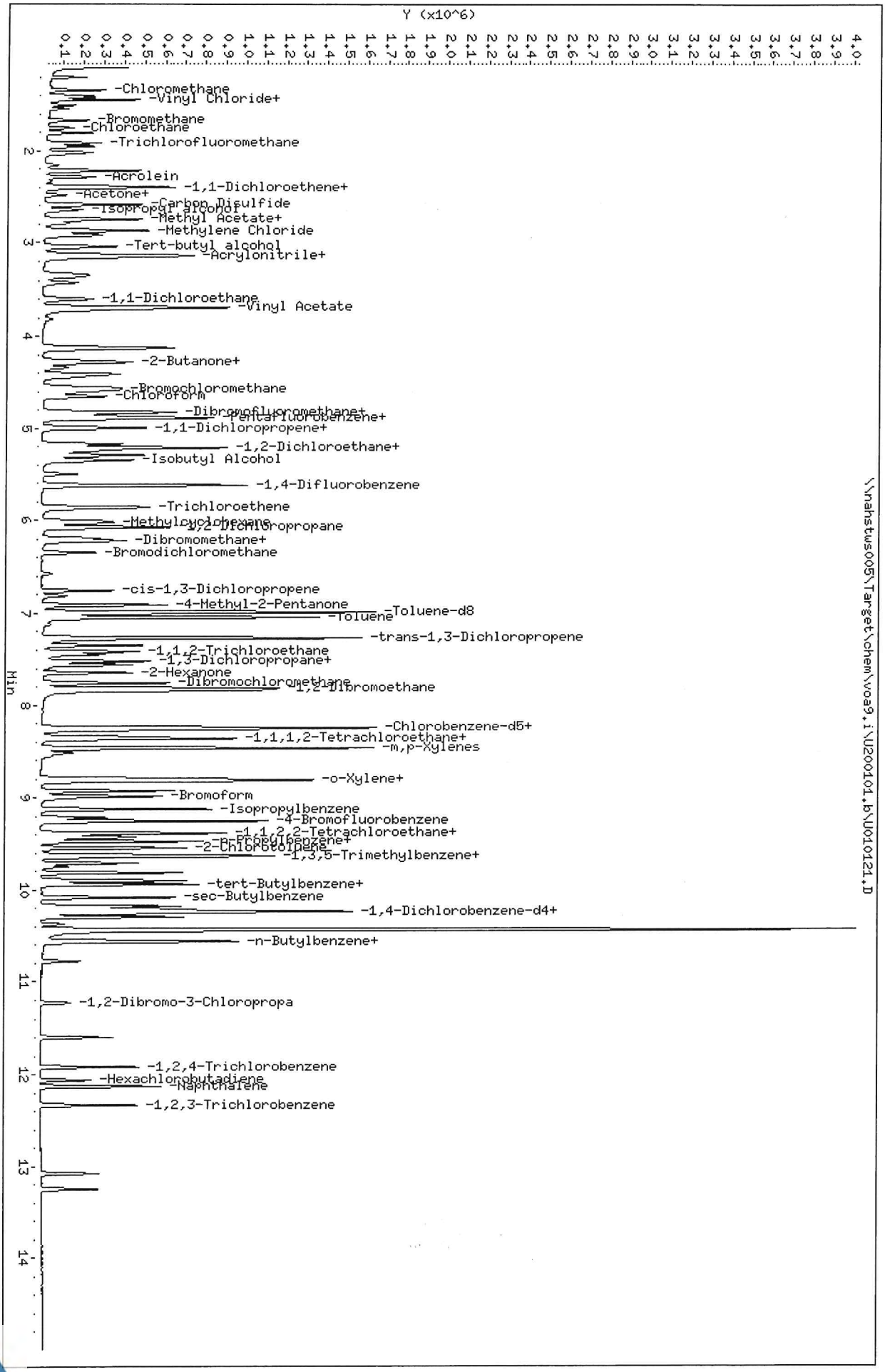
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.890	4.894	(1.000)	554059	50.0000	
*	36 1,4-Difluorobenzene	114	5.621	5.625	(1.000)	789146	50.0000	
*	47 Chlorobenzene-d5	117	8.245	8.245	(1.000)	700046	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	372762	50.0000	
$	30 Dibromofluoromethane	113	4.827	4.826	(0.987)	228437	48.1477	48.14
$	35 1,2-Dichloroethane-d4	65	5.171	5.175	(1.057)	240377	45.0891	45.08
$	48 Toluene-d8	98	6.986	6.985	(0.847)	902256	50.1541	50.15
$	69 4-Bromofluorobenzene	95	9.254	9.253	(1.122)	323455	49.1740	49.17
	60 1,1,1,2-Tetrachloroethane	131	8.347	8.346	(1.012)	128561	24.0016	24.00
	31 1,1,1-Trichloroethane	97	4.823	4.826	(0.986)	170725	20.7225	20.72
	68 1,1,2,2-Tetrachloroethane	83	9.389	9.388	(0.918)	201124	23.2750	23.27
	53 1,1,2-Trichloroethane	83	7.417	7.417	(0.900)	114991	23.1689	23.16
	22 1,1-Dichloroethane	63	3.601	3.604	(0.736)	247259	22.3233	22.32
	11 1,1-Dichloroethene	96	2.397	2.401	(0.490)	129492	24.1685	24.16
	32 1,1-Dichloropropene	75	4.999	5.002	(0.889)	158724	20.5922	20.59
	93 1,2,3-Trichlorobenzene	180	12.331	12.331	(1.205)	146842	20.6752	20.67
	71 1,2,3-Trichloropropane	75	9.422	9.422	(0.921)	195579	22.2206	22.22
	90 1,2,4-Trichlorobenzene	180	11.919	11.919	(1.165)	149195	19.9902	19.99
	79 1,2,4-Trimethylbenzene	105	9.940	9.939	(0.971)	402004	19.4241	19.42
	89 1,2-Dibromo-3-Chloropropane	155	11.229	11.229	(1.097)	32332	21.1596	21.15
	57 1,2-Dibromoethane	107	7.848	7.848	(0.952)	141400	23.7725	23.77
	88 1,2-Dichlorobenzene	146	10.566	10.565	(1.033)	273429	22.1757	22.17
	33 1,2-Dichloroethane	62	5.250	5.250	(0.934)	171971	20.4211	20.42

Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010121.D Page 2
Report Date: 17-Jan-2020 15:21

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
42	1,2-Dichloropropane	63	6.079	6.078	(1.081)	140238	22.0306	22.03
75	1,3,5-Trimethylbenzene	105	9.621	9.621	(0.940)	406064	20.7174	20.71
83	1,3-Dichlorobenzene	146	10.176	10.176	(0.995)	268588	21.6489	21.64
54	1,3-Dichloropropane	76	7.559	7.559	(0.917)	244161	23.2478	23.24
84	1,4-Dichlorobenzene	146	10.251	10.254	(1.002)	272805	21.6876	21.68
26	2,2-Dichloropropane	77	4.272	4.275	(0.874)	113193	17.8778	17.87
24	2-Butanone	43	4.335	4.339	(0.887)	159808	42.0605	42.06
76	2-Chlorotoluene	91	9.542	9.542	(0.933)	373325	21.4523	21.45
52	2-Hexanone	43	7.646	7.649	(0.927)	252670	48.1156	48.11
77	4-Chlorotoluene	91	9.636	9.636	(0.942)	421699	21.2439	21.24
82	p-Isopropyltoluene	119	10.206	10.206	(0.997)	383795	19.3770	19.37
45	4-Methyl-2-Pentanone	43	6.911	6.910	(0.838)	363237	48.5095	48.50
10	Acetone	43	2.480	2.483	(0.507)	110324	42.6280	42.62
37	Benzene	78	5.213	5.216	(0.927)	558223	22.0900	22.09
74	Bromobenzene	156	9.377	9.377	(0.916)	166643	22.5578	22.55
29	Bromochloromethane	128	4.553	4.553	(0.931)	79790	23.1218	23.12
39	Bromodichloromethane	83	6.345	6.344	(1.129)	154895	21.8040	21.80
66	Bromoform	173	8.980	8.980	(1.089)	89075	19.4846	19.48
6	Bromomethane	94	1.666	1.666	(0.341)	102818	23.9648	23.96
19	Carbon Disulfide	76	2.585	2.588	(0.529)	618044	38.6205	38.62
34	Carbon Tetrachloride	117	4.992	4.995	(0.888)	136095	20.6918	20.69
59	Chlorobenzene	112	8.272	8.271	(1.003)	370955	22.4724	22.47
7	Chloroethane	64	1.749	1.752	(0.358)	96110	20.1675	20.16
28	Chloroform	83	4.654	4.658	(0.952)	232021	20.8012	20.80
3	Chloromethane	50	1.340	1.344	(0.274)	206892	24.9421	24.94
27	cis-1,2-Dichloroethene	96	4.283	4.286	(0.876)	157125	21.5935	21.59
46	cis-1,3-Dichloropropene	75	6.753	6.757	(1.201)	187820	19.5164	19.51
55	Dibromochloromethane	129	7.754	7.754	(0.940)	123804	20.5754	20.57
44	Dibromomethane	93	6.187	6.187	(1.101)	84679	21.2489	21.24
2	Dichlorodifluoromethane	85	1.202	1.205	(0.246)	99873	16.3824	16.38
61	Ethylbenzene	106	8.369	8.369	(1.015)	186655	21.9433	21.94
91	Hexachlorobutadiene	225	12.058	12.061	(1.178)	47796	17.9229	17.92
67	Isopropylbenzene	105	9.123	9.122	(1.106)	520584	21.7093	21.70
62	m,p-Xylenes	106	8.470	8.470	(1.027)	455048	44.4625	44.46
17	Methylene Chloride	84	2.866	2.869	(0.586)	149435	22.0421	22.04
87	n-Butylbenzene	91	10.555	10.554	(1.032)	289839	18.4097	18.40
73	n-Propylbenzene	91	9.471	9.471	(0.926)	555811	20.3218	20.32
92	Naphthalene	128	12.129	12.129	(1.185)	435681	21.0433	21.04
63	o-Xylene	106	8.808	8.807	(1.068)	228571	22.3086	22.30
81	sec-Butylbenzene	105	10.082	10.082	(0.985)	424522	19.5221	19.52
64	Styrene	104	8.823	8.822	(1.070)	398490	22.1154	22.11
78	tert-Butylbenzene	119	9.899	9.898	(0.967)	344623	20.8344	20.83
56	Tetrachloroethene	166	7.522	7.522	(0.912)	153488	23.6142	23.61
50	Toluene	91	7.046	7.045	(0.855)	568524	22.4758	22.47
20	trans-1,2-Dichloroethene	96	3.140	3.143	(0.642)	127096	21.0719	21.07
51	trans-1,3-Dichloropropene	75	7.259	7.259	(1.291)	160952	18.8576	18.85
38	Trichloroethene	130	5.857	5.861	(1.042)	140275	21.1327	21.13
8	Trichlorofluoromethane	101	1.951	1.955	(0.399)	160919	18.4050	18.40
5	Vinyl Chloride	62	1.419	1.422	(0.290)	152486	19.1283	19.12



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Date : 01-JAN-2020 18:42
Client ID: HS19121092-09MS
Sample Info: HS19121092-09MS;HS19121092-09MS;3;;MS
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010122.D Page 1
Report Date: 17-Jan-2020 15:21

ALS Laboratory Group

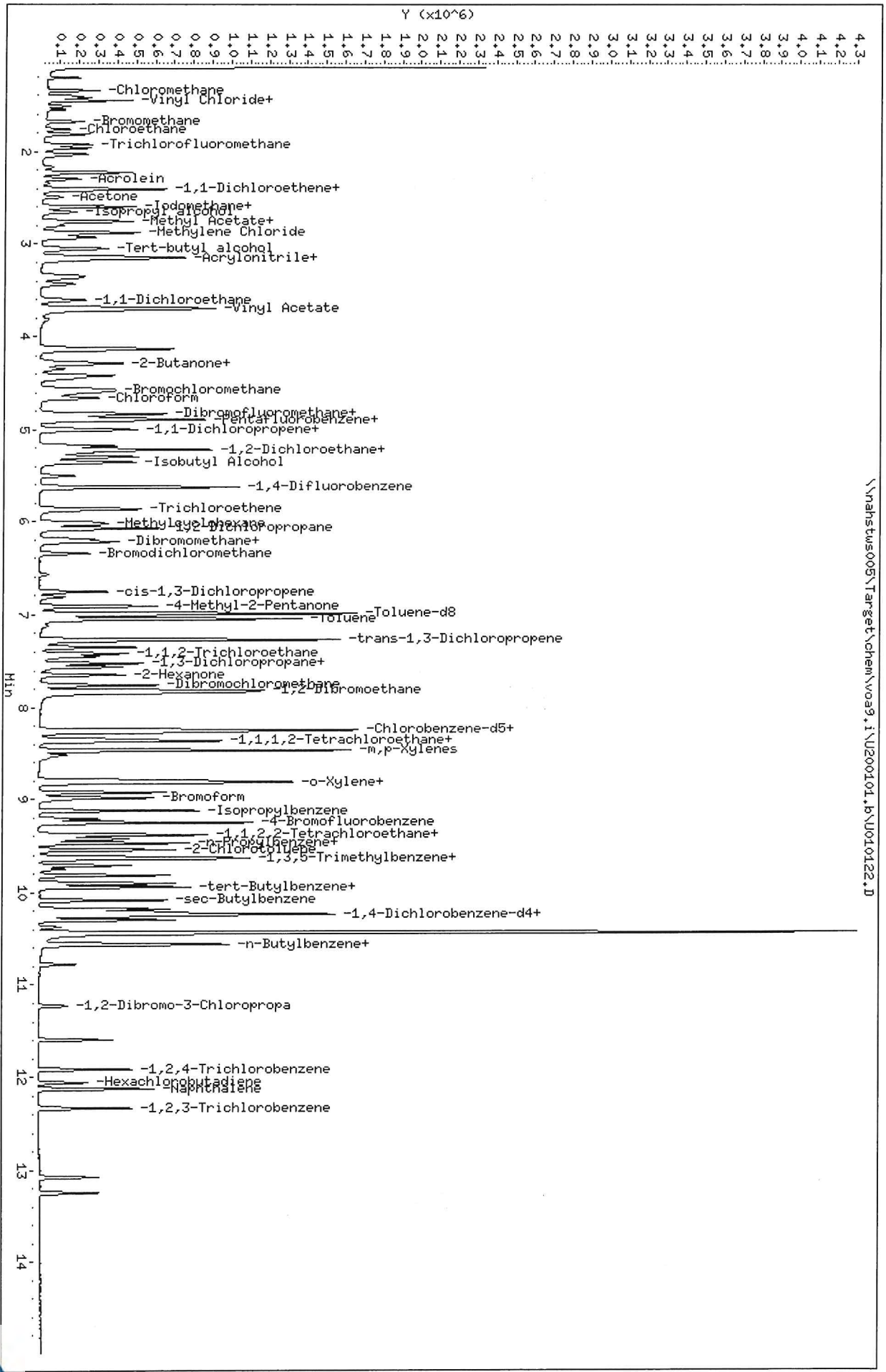
Data file : \\nahstws005\Target\chem\voa9.i\U200101.b\U010122.D
Lab Smp Id: HS19121092-09MSD Client Smp ID: HS19121092-09MSD
Inj Date : 01-JAN-2020 19:06
Operator : PC Inst ID: VOA9.i
Smp Info : HS19121092-09MSD;HS19121092-09MSD;3;;MSD
Misc Info : 180315V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U200101.b\8260C.m
Meth Date : 17-Jan-2020 15:21 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 21 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.894	4.894	(1.000)	563931	50.0000	
*	36 1,4-Difluorobenzene	114	5.625	5.625	(1.000)	808507	50.0000	
*	47 Chlorobenzene-d5	117	8.245	8.245	(1.000)	715221	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	381058	50.0000	
$	30 Dibromofluoromethane	113	4.830	4.826	(0.987)	230943	47.8238	47.82
$	35 1,2-Dichloroethane-d4	65	5.175	5.175	(1.057)	243927	44.9541	44.95
$	48 Toluene-d8	98	6.986	6.985	(0.847)	922116	50.1705	50.17
$	69 4-Bromofluorobenzene	95	9.254	9.253	(1.122)	327265	48.6976	48.69
	60 1,1,1,2-Tetrachloroethane	131	8.347	8.346	(1.012)	123925	22.6452	22.64
	31 1,1,1-Trichloroethane	97	4.830	4.826	(0.987)	169809	20.2505	20.25
	68 1,1,2,2-Tetrachloroethane	83	9.389	9.388	(0.918)	202330	22.9048	22.90
	53 1,1,2-Trichloroethane	83	7.417	7.417	(0.900)	112351	22.1567	22.15
	22 1,1-Dichloroethane	63	3.608	3.604	(0.737)	240907	21.3691	21.36
	11 1,1-Dichloroethene	96	2.409	2.401	(0.492)	126505	23.1977	23.19
	32 1,1-Dichloropropene	75	5.007	5.002	(0.890)	159212	20.1609	20.16
	93 1,2,3-Trichlorobenzene	180	12.331	12.331	(1.205)	152175	20.9447	20.94
	71 1,2,3-Trichloropropane	75	9.423	9.422	(0.921)	195920	21.7747	21.77
	90 1,2,4-Trichlorobenzene	180	11.919	11.919	(1.165)	155281	20.3273	20.32
	79 1,2,4-Trimethylbenzene	105	9.940	9.939	(0.971)	408960	19.3300	19.33
	89 1,2-Dibromo-3-Chloropropane	155	11.229	11.229	(1.097)	32878	21.0565	21.05
	57 1,2-Dibromoethane	107	7.848	7.848	(0.952)	142119	23.3864	23.38
	88 1,2-Dichlorobenzene	146	10.566	10.565	(1.033)	274982	21.8161	21.81
	33 1,2-Dichloroethane	62	5.254	5.250	(0.934)	168133	19.4872	19.48

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
42	1,2-Dichloropropane	63	6.079	6.078	(1.081)	139429	21.3790	21.37
75	1,3,5-Trimethylbenzene	105	9.621	9.621	(0.940)	406279	20.2771	20.27
83	1,3-Dichlorobenzene	146	10.176	10.176	(0.995)	269283	21.2324	21.23
54	1,3-Dichloropropane	76	7.559	7.559	(0.917)	240288	22.3936	22.39
84	1,4-Dichlorobenzene	146	10.251	10.254	(1.002)	279981	21.7735	21.77
26	2,2-Dichloropropane	77	4.279	4.275	(0.874)	108508	16.8378	16.83
24	2-Butanone	43	4.343	4.339	(0.887)	157495	40.7260	40.72
76	2-Chlorotoluene	91	9.542	9.542	(0.933)	372057	20.9139	20.91
52	2-Hexanone	43	7.649	7.649	(0.928)	258902	48.2563	48.25
77	4-Chlorotoluene	91	9.636	9.636	(0.942)	418640	20.6306	20.63
82	p-Isopropyltoluene	119	10.206	10.206	(0.997)	390520	19.2873	19.28
45	4-Methyl-2-Pentanone	43	6.911	6.910	(0.838)	363459	47.5093	47.50
10	Acetone	43	2.487	2.483	(0.508)	111998	42.5091	42.50
37	Benzene	78	5.220	5.216	(0.928)	545327	21.0629	21.06
74	Bromobenzene	156	9.378	9.377	(0.916)	166926	22.1042	22.10
29	Bromochloromethane	128	4.557	4.553	(0.931)	78914	22.4676	22.46
39	Bromodichloromethane	83	6.349	6.344	(1.129)	154194	21.1855	21.18
66	Bromoform	173	8.980	8.980	(1.089)	89976	19.2858	19.28
6	Bromomethane	94	1.678	1.666	(0.343)	104267	23.8765	23.87
19	Carbon Disulfide	76	2.596	2.588	(0.530)	625547	38.4051	38.40
34	Carbon Tetrachloride	117	4.995	4.995	(0.888)	136982	20.3279	20.32
59	Chlorobenzene	112	8.272	8.271	(1.003)	365457	21.6696	21.66
7	Chloroethane	64	1.760	1.752	(0.360)	94382	19.4243	19.42
28	Chloroform	83	4.658	4.658	(0.952)	228367	20.1152	20.11
3	Chloromethane	50	1.348	1.344	(0.275)	205885	24.3354	24.33
27	cis-1,2-Dichloroethene	96	4.291	4.286	(0.877)	148781	20.0889	20.08
46	cis-1,3-Dichloropropene	75	6.757	6.757	(1.201)	188032	19.0958	19.09
55	Dibromochloromethane	129	7.754	7.754	(0.940)	123647	20.1371	20.13
44	Dibromomethane	93	6.187	6.187	(1.100)	84263	20.6382	20.63
2	Dichlorodifluoromethane	85	1.213	1.205	(0.248)	100142	16.1390	16.13
61	Ethylbenzene	106	8.369	8.369	(1.015)	183910	21.1619	21.16
91	Hexachlorobutadiene	225	12.058	12.061	(1.178)	50984	18.6620	18.66
67	Isopropylbenzene	105	9.123	9.122	(1.106)	519977	21.2239	21.22
62	m,p-Xylenes	106	8.470	8.470	(1.027)	451606	43.1899	43.18
17	Methylene Chloride	84	2.877	2.869	(0.588)	143903	20.7910	20.79
87	n-Butylbenzene	91	10.555	10.554	(1.032)	302324	18.7846	18.78
73	n-Propylbenzene	91	9.471	9.471	(0.926)	561851	20.0954	20.09
92	Naphthalene	128	12.129	12.129	(1.185)	450690	21.2825	21.28
63	o-Xylene	106	8.808	8.807	(1.068)	228567	21.8348	21.83
81	sec-Butylbenzene	105	10.082	10.082	(0.985)	435462	19.5892	19.58
64	Styrene	104	8.823	8.822	(1.070)	398433	21.6431	21.64
78	tert-Butylbenzene	119	9.899	9.898	(0.967)	343327	20.3041	20.30
56	Tetrachloroethene	166	7.522	7.522	(0.912)	149564	22.5140	22.51
50	Toluene	91	7.046	7.045	(0.855)	562202	21.7543	21.75
20	trans-1,2-Dichloroethene	96	3.147	3.143	(0.643)	126141	20.5475	20.54
51	trans-1,3-Dichloropropene	75	7.260	7.259	(1.291)	162654	18.6206	18.62
38	Trichloroethene	130	5.861	5.861	(1.042)	141054	20.7412	20.74
8	Trichlorofluoromethane	101	1.963	1.955	(0.401)	159995	17.9790	17.97
5	Vinyl Chloride	62	1.427	1.422	(0.292)	151707	18.6974	18.69



Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010122.D
Date : 01-JAN-2020 19:06
Client ID: HS19121092-09HSD
Sample Info: HS19121092-09HSD;HS19121092-09HSD;3;;HSD
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa9.i\U200101.b\U010123.D Page 1
Report Date: 17-Jan-2020 15:21

ALS Laboratory Group

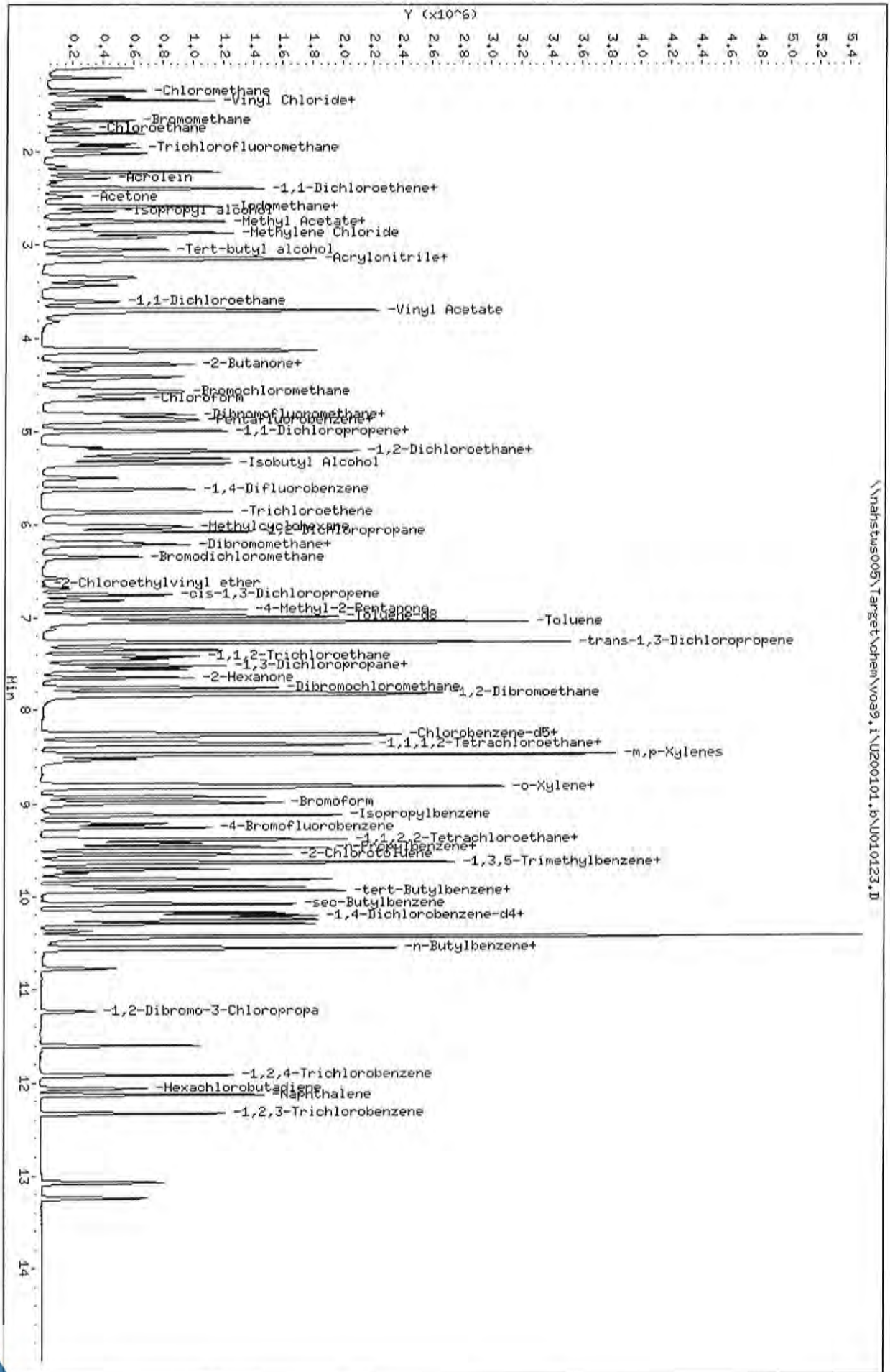
Data file : \\nahstws005\Target\chem\voa9.i\U200101.b\U010123.D
Lab Smp Id: CCV-END Client Smp ID: CCV-END
Inj Date : 01-JAN-2020 19:31
Operator : PC Inst ID: VOA9.i
Smp Info : CCV-END;CCV-END;2;;
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200101.b\8260C.m
Meth Date : 17-Jan-2020 15:21 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 22 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.894	4.894	(1.000)	553357	50.0000	
* 36 1,4-Difluorobenzene	114	5.625	5.625	(1.000)	791708	50.0000	
* 47 Chlorobenzene-d5	117	8.245	8.245	(1.000)	707026	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	377556	50.0000	
$ 30 Dibromofluoromethane	113	4.826	4.826	(0.986)	225974	50.0000	47.68
$ 35 1,2-Dichloroethane-d4	65	5.175	5.175	(1.057)	241048	50.0000	45.27
$ 48 Toluene-d8	98	6.985	6.985	(0.847)	909358	50.0000	50.04
$ 69 4-Bromofluorobenzene	95	9.253	9.253	(1.122)	320843	50.0000	48.29
60 1,1,1,2-Tetrachloroethane	131	8.346	8.346	(1.012)	293564	50.0000	54.26
31 1,1,1-Trichloroethane	97	4.826	4.826	(0.986)	402482	50.0000	48.91
68 1,1,2,2-Tetrachloroethane	83	9.388	9.388	(0.918)	444558	50.0000	50.79
53 1,1,2-Trichloroethane	83	7.417	7.417	(0.900)	250170	50.0000	49.90
22 1,1-Dichloroethane	63	3.604	3.604	(0.737)	516246	50.0000	46.66
11 1,1-Dichloroethene	96	2.401	2.401	(0.491)	253486	50.0000	47.37
32 1,1-Dichloropropene	75	5.002	5.002	(0.889)	372338	50.0000	48.14
93 1,2,3-Trichlorobenzene	180	12.331	12.331	(1.205)	375845	50.0000	50.59
71 1,2,3-Trichloropropane	75	9.422	9.422	(0.921)	459609	50.0000	51.55
90 1,2,4-Trichlorobenzene	180	11.919	11.919	(1.165)	391042	50.0000	49.50
79 1,2,4-Trimethylbenzene	105	9.939	9.939	(0.971)	1026196	50.0000	48.95
89 1,2-Dibromo-3-Chloropropane	155	11.229	11.229	(1.097)	80620	50.0000	49.83
57 1,2-Dibromoethane	107	7.848	7.848	(0.952)	318096	50.0000	52.95
88 1,2-Dichlorobenzene	146	10.565	10.565	(1.033)	632279	50.0000	50.62
33 1,2-Dichloroethane	62	5.250	5.250	(0.933)	379508	50.0000	44.91

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42	1,2-Dichloropropane	63	6.078	6.078	(1.081)	310689	50.0000	48.64
75	1,3,5-Trimethylbenzene	105	9.621	9.621	(0.940)	986312	50.0000	49.68
83	1,3-Dichlorobenzene	146	10.176	10.176	(0.995)	636310	50.0000	50.63
54	1,3-Dichloropropane	76	7.559	7.559	(0.917)	534194	50.0000	50.36
84	1,4-Dichlorobenzene	146	10.254	10.254	(1.002)	656329	50.0000	51.51
26	2,2-Dichloropropane	77	4.275	4.275	(0.874)	269558	50.0000	42.62
24	2-Butanone	43	4.339	4.339	(0.887)	365911	100.000	96.42
76	2-Chlorotoluene	91	9.542	9.542	(0.933)	864524	50.0000	49.04
52	2-Hexanone	43	7.649	7.649	(0.928)	567797	100.000	107.05
77	4-Chlorotoluene	91	9.636	9.636	(0.942)	990197	50.0000	49.24
82	p-Isopropyltoluene	119	10.206	10.206	(0.997)	980713	50.0000	48.88
45	4-Methyl-2-Pentanone	43	6.910	6.910	(0.838)	785396	100.000	103.85
10	Acetone	43	2.483	2.483	(0.507)	266040	100.000	107.35
37	Benzene	78	5.216	5.216	(0.927)	1234010	50.0000	48.67
74	Bromobenzene	156	9.377	9.377	(0.916)	384452	50.0000	51.38
29	Bromochloromethane	128	4.553	4.553	(0.930)	166764	50.0000	48.38
39	Bromodichloromethane	83	6.344	6.344	(1.128)	367002	50.0000	51.49
66	Bromoform	173	8.980	8.980	(1.089)	227660	50.0000	46.37
6	Bromomethane	94	1.666	1.666	(0.341)	255806	50.0000	59.94
19	Carbon Disulfide	76	2.588	2.588	(0.529)	1533410	100.000	95.94
34	Carbon Tetrachloride	117	4.995	4.995	(0.888)	330426	50.0000	50.07
59	Chlorobenzene	112	8.271	8.271	(1.003)	840382	50.0000	50.40
7	Chloroethane	64	1.752	1.752	(0.358)	213208	50.0000	45.97
28	Chloroform	83	4.658	4.658	(0.952)	512441	50.0000	45.99
3	Chloromethane	50	1.344	1.344	(0.275)	471784	50.0000	59.87
27	cis-1,2-Dichloroethene	96	4.286	4.286	(0.876)	345913	50.0000	47.59
46	cis-1,3-Dichloropropene	75	6.757	6.757	(1.201)	455680	50.0000	45.63
55	Dibromochloromethane	129	7.754	7.754	(0.940)	309182	50.0000	49.32
44	Dibromomethane	93	6.187	6.187	(1.100)	198702	50.0000	49.69
2	Dichlorodifluoromethane	85	1.205	1.205	(0.246)	287887	50.0000	47.28
61	Ethylbenzene	106	8.369	8.369	(1.015)	432581	50.0000	50.35
91	Hexachlorobutadiene	225	12.061	12.061	(1.179)	137956	50.0000	49.02
67	Isopropylbenzene	105	9.122	9.122	(1.106)	1236309	50.0000	51.04
62	m,p-Xylenes	106	8.470	8.470	(1.027)	1043558	100.000	100.95
17	Methylene Chloride	84	2.869	2.869	(0.586)	325481	50.0000	49.46
87	n-Butylbenzene	91	10.554	10.554	(1.032)	785489	50.0000	49.25
73	n-Propylbenzene	91	9.471	9.471	(0.926)	1353514	50.0000	48.85
92	Naphthalene	128	12.129	12.129	(1.185)	1075389	50.0000	49.77
63	o-Xylene	106	8.807	8.807	(1.068)	526072	50.0000	50.83
81	sec-Butylbenzene	105	10.082	10.082	(0.985)	1086786	50.0000	49.34
64	Styrene	104	8.822	8.822	(1.070)	926206	50.0000	50.89
78	tert-Butylbenzene	119	9.898	9.898	(0.967)	826055	50.0000	49.30
56	Tetrachloroethene	166	7.522	7.522	(0.912)	342187	50.0000	52.34
50	Toluene	91	7.045	7.045	(0.855)	1292354	50.0000	50.58
20	trans-1,2-Dichloroethene	96	3.143	3.143	(0.642)	290148	50.0000	48.16
51	trans-1,3-Dichloropropene	75	7.259	7.259	(1.291)	398815	50.0000	44.42
38	Trichloroethene	130	5.861	5.861	(1.042)	330673	50.0000	49.65
8	Trichlorofluoromethane	101	1.955	1.955	(0.399)	421462	50.0000	48.26
5	Vinyl Chloride	62	1.422	1.422	(0.291)	359109	50.0000	45.10



Data File: \\nahstus005\Target\chem\voa9.i\U200101.b\U010123.D
Date : 01-JAN-2020 19:31
Client ID: CCV-END
Sample Info: CCV-END;CCV-END;2;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

MSVOA09 -Logbook

Batch: 38724
Date: 01-02-2020
Method: 8260
Comments:

Analyst: Devak Giga
Reviewer:
Laboratory: Houston

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	01-02-2020 10:57 am	1.00	0.00 mL	0.00 mL	U010201a.D	Liquid	Y	NA
2	BFB	TUNE	01-02-2020 11:22 am	1.00	0.00 mL	0.00 mL	U010202.D	Liquid	Y	NA
3	VSTD050	CCV	01-02-2020 11:46 am	1.00	5.00 mL	0.00 mL	U010203.D	Liquid	Y	NA
4	CCB	SAMP	01-02-2020 12:10 pm	1.00	5.00 mL	0.00 mL	U010204.D	Liquid	Y	NA
5	VLCSW-200102	LCS	01-02-2020 12:35 pm	1.00	5.00 mL	0.00 mL	U010205.D	Liquid	Y	NA
6	VBLKW-200102	MBLK	01-02-2020 12:59 pm	1.00	5.00 mL	0.00 mL	U010206.D	Liquid	Y	NA
7	HS19121232-07	SAMP	01-02-2020 01:23 pm	1.00	5.00 mL	0.00 mL	U010207.D	Liquid	Y	NA
8	HS19121232-08	SAMP	01-02-2020 01:48 pm	1.00	5.00 mL	0.00 mL	U010208.D	Liquid	Y	NA
9	HS19121092-05	SAMP	01-02-2020 02:26 pm	5.00	5.00 mL	0.00 mL	U010209.D	Liquid	Y	NA
10	HS19121497-01	SAMP	01-02-2020 02:51 pm	1.00	5.00 mL	0.00 mL	U010210.D	Liquid	Y	NA
11	HS19121137-09	SAMP	01-02-2020 03:15 pm	1.00	5.00 mL	0.00 mL	U010211.D	Liquid	Y	NA
12	HS19121497-01MS	MS	01-02-2020 03:39 pm	1.00	5.00 mL	0.00 mL	U010212.D	Liquid	Y	NA
13	HS19121497-01MSD	MSD	01-02-2020 04:04 pm	1.00	5.00 mL	0.00 mL	U010213.D	Liquid	Y	NA
14	CCV-END	CCV	01-02-2020 04:28 pm	1.00	5.00 mL	0.00 mL	U010214.D	Liquid	Y	NA
15	HS19121137-09	SAMP	01-02-2020 04:52 pm	100.0(	5.00 mL	0.00 mL	U010215.D	Liquid	Y	NA
16	HS19121213-01	SAMP	01-02-2020 05:17 pm	5.00	5.00 mL	0.00 mL	U010216.D	Liquid	Y	NA
17	HS19121213-09	SAMP	01-02-2020 05:41 pm	5.00	5.00 mL	0.00 mL	U010217.D	Liquid	Y	NA
18	HS19121213-06	SAMP	01-02-2020 06:05 pm	25.00	5.00 mL	0.00 mL	U010218.D	Liquid	Y	NA
19	HS19121213-08	SAMP	01-02-2020 06:30 pm	25.00	5.00 mL	0.00 mL	U010219.D	Liquid	Y	NA
20	HS19121497-02	SAMP	01-02-2020 06:54 pm	1.00	5.00 mL	0.00 mL	U010220.D	Liquid	Y	NA
21	HS20010019-01	SAMP	01-02-2020 07:19 pm	1.00	5.00 mL	0.00 mL	U010221.D	Liquid	Y	NA
22	HS20010019-02	SAMP	01-02-2020 07:43 pm	1.00	5.00 mL	0.00 mL	U010222.D	Liquid	Y	NA
23	HS20010019-03	SAMP	01-02-2020 08:07 pm	1.00	5.00 mL	0.00 mL	U010223.D	Liquid	Y	NA
24	HS20010019-04	SAMP	01-02-2020 08:32 pm	1.00	5.00 mL	0.00 mL	U010224.D	Liquid	Y	NA
25	HS19121231-12	SAMP	01-02-2020 08:56 pm	1.00	5.00 mL	0.00 mL	U010225.D	Liquid	Y	NA
26	HS19121231-12	SAMP	01-02-2020 09:20 pm	10.00	5.00 mL	0.00 mL	U010226.D	Liquid	Y	NA
27	HS19121231-01	SAMP	01-02-2020 09:45 pm	5.00	5.00 mL	0.00 mL	U010227.D	Liquid	Y	NA
28	HS19121231-02	SAMP	01-02-2020 10:09 pm	5.00	5.00 mL	0.00 mL	U010228.D	Liquid	Y	NA
29	HS19120997-35	SAMP	01-02-2020 10:33 pm	1.00	5.00 mL	0.00 mL	U010229.D	Liquid	Y	NA
30	BLANK	SAMP	01-02-2020 10:57 pm	1.00	5.00 mL	0.00 mL	U010230.D	Liquid	Y	NA
31	BFB	TUNE	01-02-2020 11:22 pm	1.00	0.00 mL	0.00 mL	V010201.D	Liquid	Y	NA
32	VSTD050	CCV	01-02-2020 11:46 pm	1.00	5.00 mL	0.00 mL	V010202.D	Liquid	Y	NA
33	BLANK	SAMP	01-03-2020 12:11 am	1.00	5.00 mL	0.00 mL	V010203.D	Liquid	Y	NA
34	CCB	SAMP	01-03-2020 12:35 am	1.00	5.00 mL	0.00 mL	V010204.D	Liquid	Y	NA
35	VLCSW-200102	LCS	01-03-2020 12:59 am	1.00	5.00 mL	0.00 mL	V010205.D	Liquid	Y	NA
36	BLANK	SAMP	01-03-2020 01:24 am	1.00	5.00 mL	0.00 mL	V010206.D	Liquid	Y	NA
37	VBLKW-200102	MBLK	01-03-2020 01:48 am	1.00	5.00 mL	0.00 mL	V010207.D	Liquid	Y	NA
38	MBLK-149237	MBLK	01-03-2020 02:12 am	20.00	5.00 mL	0.00 mL	V010208.D	Liquid	Y	NA
39	HS19121409-01	SAMP	01-03-2020 02:37 am	20.00	5.00 mL	0.00 mL	V010209.D	Liquid	Y	NA
40	HS19121411-01	SAMP	01-03-2020 03:01 am	20.00	5.00 mL	0.00 mL	V010210.D	Liquid	Y	NA
41	MBLK-149234	MBLK	01-03-2020 03:26 am	20.00	5.00 mL	0.00 mL	V010211.D	Liquid	Y	NA

MSVOA09 -Logbook

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
42	HS19121072-02	SAMP	01-03-2020 03:50 am	20.00	5.00 mL	0.00 mL	V010212.D	Liquid	Y	NA
43	HS19121072-03	SAMP	01-03-2020 04:14 am	50.00	5.00 mL	0.00 mL	V010213.D	Liquid	Y	NA
44	HS19121409-01MS	MS	01-03-2020 04:39 am	20.00	5.00 mL	0.00 mL	V010214.D	Liquid	Y	NA
45	HS19121409-01MSD	MSD	01-03-2020 05:03 am	20.00	5.00 mL	0.00 mL	V010215.D	Liquid	Y	NA
46	HS19121072-04	SAMP	01-03-2020 05:27 am	20.00	5.00 mL	0.00 mL	V010216.D	Liquid	Y	NA
47	HS19121072-05	SAMP	01-03-2020 05:52 am	20.00	5.00 mL	0.00 mL	V010217.D	Liquid	Y	NA
48	HS19121072-01	SAMP	01-03-2020 06:16 am	20.00	5.00 mL	0.00 mL	V010218.D	Liquid	Y	NA
49	HS19121398-01	SAMP	01-03-2020 06:40 am	20.00	5.00 mL	0.00 mL	V010219.D	Liquid	Y	NA
50	HS19121398-02	SAMP	01-03-2020 07:05 am	20.00	5.00 mL	0.00 mL	V010220.D	Liquid	Y	NA
51	HS19121460-01	SAMP	01-03-2020 07:29 am	100.0(	5.00 mL	0.00 mL	V010221.D	Liquid	Y	NA
52	HS19120997-36	SAMP	01-03-2020 07:53 am	1.00	5.00 mL	0.00 mL	V010222.D	Liquid	Y	NA
53	HS19120997-37	SAMP	01-03-2020 08:18 am	1.00	5.00 mL	0.00 mL	V010223.D	Liquid	Y	NA
54	MBLK-149131	MBLK	01-03-2020 08:42 am	20.00	5.00 mL	0.00 mL	V010224.D	Liquid	Y	NA
55	HS19121175-01	SAMP	01-03-2020 09:07 am	20.00	5.00 mL	0.00 mL	V010225.D	Liquid	Y	NA
56	HS19121356-01	SAMP	01-03-2020 09:31 am	20.00	5.00 mL	0.00 mL	V010226.D	Liquid	Y	NA
57	HS19121288-03	SAMP	01-03-2020 09:55 am	20.00	5.00 mL	0.00 mL	V010227.D	Liquid	Y	NA
58	HS19121407-02	SAMP	01-03-2020 10:20 am	100.0(	5.00 mL	0.00 mL	V010228.D	Liquid	Y	NA
59	HS19121407-03	SAMP	01-03-2020 10:44 am	100.0(	5.00 mL	0.00 mL	V010229.D	Liquid	Y	NA
60	HS19121407-04	SAMP	01-03-2020 11:08 am	25.00	5.00 mL	0.00 mL	V010230.D	Liquid	Y	NA

Chemical	Value
SURR SPK ID	31108-03-04
IS ID	31108-03-04
ICV STD ID	30603-93-01
LCS/MS ID	30603-93-01
CAL STD ID	31108-03-01/02
BFB ID	31108-04-03
pH Paper	634-64-11

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121092

	CLIENT SAMPLE NO.	SMC1 (DCE) #	SMC2 #	SMC3 (TOL) #	OTHER #	TOT OUT
01	VLCSW-200102	89	96	100	98	0
02	VBLKW-200102	91	92	100	95	0
03	HS19121092-05	91	92	98	96	0
04						
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		QC LIMITS
SMC1 (DCE)	= 1,2-Dichloroethane-d4	(0-130)
SMC2	= Dibromofluoromethane	(0-130)
SMC3 (TOL)	= Toluene-d8	(0-130)
OTHER	= 4-Bromofluorobenzene	(0-130)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKW-200102

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121092

Lab File ID: U010206 Lab Sample ID: VBLKW-200102

Date Analyzed: 01/02/20 Time Analyzed: 1259

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

Instrument ID: VOA9

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VLCSW-200102	VLCSW-200102	U010205	1235
02	HS19121092-0	HS19121092-05	U010209	1426
03	HS19121497-0	HS19121497-01M	U010212	1539
04	HS19121497-0	HS19121497-01M	U010213	1604
05				
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COMMENTS:

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121092

Lab File ID: U010202 BFB Injection Date: 01/02/20

Instrument ID: VOA9 BFB Injection Time: 1122

GC Column: DB624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.2
75	30.0 - 60.0% of mass 95	45.1
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.1
173	Less than 2.0% of mass 174	1.7 (1.9)1
174	Greater than 50.0% of mass 95	89.6
175	5.0 - 9.0% of mass 174	7.6 (8.5)1
176	95.0 - 101.0% of mass 174	87.6 (97.7)1
177	5.0 - 9.0% of mass 176	6.1 (6.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV	CCV	U010203	01/02/20	1146
02	VLCSW-200102	VLCSW-200102	U010205	01/02/20	1235
03	VBLKW-200102	VBLKW-200102	U010206	01/02/20	1259
04	HS19121092-0	HS19121092-05	U010209	01/02/20	1426
05	HS19121497-0	HS19121497-01M	U010212	01/02/20	1539
06	HS19121497-0	HS19121497-01M	U010213	01/02/20	1604
07	CCV-END	CCV-END	U010214	01/02/20	1628
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21					
22					

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121092

Instrument ID: VOA9 Calibration Date: 01/02/20 Time: 1146

Lab File ID: U010203 Init. Calib. Date(s): 12/27/19 12/27/19

Init. Calib. Times: 1127 1530

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
cis-1,3-Dichloropropene	48.029160	50.000000	0.6065263	0.2	3.94	20.00	LINR
trans-1,3-Dichloropropene	47.190746	50.000000	0.5361185	0.1	5.62	20.00	LINR
1,3-Dichlorobenzene	1.6640000	1.7036299	1.7036299	0.6	-2.38	20.00	AVRG
2,2-Dichloropropane	0.5720000	0.6544576	0.6544576	0.1	-14.42	20.00	AVRG
1,1-Dichloropropene	0.4880000	0.4803874	0.4803874	0.1	1.56	20.00	AVRG
Dibromomethane	0.2520000	0.2462896	0.2462896	0.1	2.27	20.00	AVRG
1,2-Dibromoethane	0.4250000	0.4440735	0.4440735	0.1	-4.49	20.00	AVRG
trans-1,2-Dichloroethene	0.5440000	0.5266287	0.5266287	0.1	3.19	20.00	AVRG
1,1,1,2-Tetrachloroethane	0.3820000	0.4227641	0.4227641	0.1	-10.67	20.00	AVRG
1,1,1-Trichloroethane	0.7430000	0.7412974	0.7412974	0.1	0.23	20.00	AVRG
1,1,2,2-Tetrachloroethane	1.1590000	1.1564001	1.1564001	0.3	0.22	20.00	AVRG
1,1,2-Trichloroethane	0.3540000	0.3472079	0.3472079	0.1	1.92	20.00	AVRG
1,1-Dichloroethane	0.9990000	0.9182053	0.9182053	0.2	8.09	20.00	AVRG
1,1-Dichloroethene	0.4830000	0.4567269	0.4567269	0.1	5.44	20.00	AVRG
Trichloroethene	0.4200000	0.4167949	0.4167949	0.2	0.76	20.00	AVRG
1,2,3-Trichlorobenzene	51.660105	50.000000	1.0169199	0.1	-3.32	20.00	LINR
Trichlorofluoromethane	0.7890000	0.7473676	0.7473676	0.1	5.28	20.00	AVRG
1,2,4-Trichlorobenzene	51.587599	50.000000	1.0806189	0.2	-3.18	20.00	LINR
1,2,4-Trimethylbenzene	2.7760000	2.7194635	2.7194635	0.1	2.04	20.00	AVRG
Tetrachloroethene	54.848637	50.000000	0.5070912	0.2	-9.70	20.00	LINR
1,2-Dichlorobenzene	1.6540000	1.6782462	1.6782462	0.4	-1.46	20.00	AVRG
1,2-Dichloroethane	0.5330000	0.4667893	0.4667893	0.1	12.42	20.00	AVRG
1,2-Dichloropropane	0.4030000	0.3921124	0.3921124	0.1	2.70	20.00	AVRG
1,3,5-Trimethylbenzene	2.6290000	2.6628633	2.6628633	0.1	-1.29	20.00	AVRG
1,3-Dichloropropane	0.7500000	0.7512930	0.7512930	0.1	-0.17	20.00	AVRG
1,4-Dichlorobenzene	1.6870000	1.7525451	1.7525451	0.4	-3.88	20.00	AVRG
Toluene	1.8060000	1.8372246	1.8372246	0.4	-1.73	20.00	AVRG
2-Butanone	0.3430000	0.3153199	0.3153199	0.1	8.07	20.00	AVRG
2-Chlorotoluene	2.3340000	2.2958022	2.2958022	0.1	1.64	20.00	AVRG
2-Hexanone	0.3750000	0.3839706	0.3839706	0.1	-2.39	20.00	AVRG
4-Chlorotoluene	2.6620000	2.6383444	2.6383444	0.1	0.89	20.00	AVRG
tert-Butylbenzene	2.2190000	2.2516256	2.2516256	0.1	-1.47	20.00	AVRG
4-Methyl-2-Pentanone	0.5350000	0.5382665	0.5382665	0.1	-0.61	20.00	AVRG
Acetone	97.843297	100.00000	0.2196853	0.1	2.16	20.00	LINR
Benzene	1.6010000	1.5455226	1.5455226	0.5	3.46	20.00	AVRG
Bromobenzene	0.9910000	1.0229115	1.0229115	0.1	-3.22	20.00	AVRG
Bromochloromethane	0.3110000	0.2945433	0.2945433	0.1	5.29	20.00	AVRG
Bromodichloromethane	0.4500000	0.4549104	0.4549104	0.2	-1.09	20.00	AVRG
Bromoform	48.189479	50.000000	0.3351170	0.1	3.62	20.00	LINR
Bromomethane	57.969890	50.000000	0.4470584	0.1	-15.94	20.00	LINR
Carbon Disulfide	1.4440000	1.4104152	1.4104152	0.1	2.32	20.00	AVRG
Carbon Tetrachloride	0.4160000	0.4333534	0.4333534	0.1	-4.17	20.00	AVRG

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1912109

Instrument ID: VOA9 Calibration Date: 01/02/20 Time: 1146

Lab File ID: U010203 Init. Calib. Date(s): 12/27/19 12/27/19

Init. Calib. Times: 1127 1530

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Chlorobenzene	1.1790000	1.1897229	1.1897229	0.5	-0.91	20.00	AVRG
Chloroethane	44.744744	50.000000	0.3752115	0.1	10.51	20.00	LINR
Chloroform	1.0060000	0.9101117	0.9101117	0.2	9.53	20.00	AVRG
Chloromethane	59.918312	50.000000	0.8532151	0.1	-19.84	20.00	LINR
cis-1,2-Dichloroethene	0.6570000	0.6108010	0.6108010	0.1	7.03	20.00	AVRG
Dibromochloromethane	49.053638	50.000000	0.4348846	0.1	1.89	20.00	LINR
Dichlorodifluoromethane	0.5500000	0.5073577	0.5073577	0.1	7.75	20.00	AVRG
Ethylbenzene	0.6070000	0.6207217	0.6207217	0.1	-2.26	20.00	AVRG
Hexachlorobutadiene	55.301531	50.000000	0.4139079	0.1	-10.60	20.00	2RDR
Isopropylbenzene	1.7130000	1.8141629	1.8141629	0.1	-5.90	20.00	AVRG
m,p-Xylenes	0.7310000	0.7600696	0.7600696	0.1	-3.98	20.00	AVRG
Methylene Chloride	48.716430	50.000000	0.5795373	0.1	2.57	20.00	LINR
n-Butylbenzene	2.1120000	2.1824742	2.1824742	0.5	-3.34	20.00	AVRG
n-Propylbenzene	3.6680000	3.6959892	3.6959892	0.1	-0.76	20.00	AVRG
Naphthalene	48.242433	50.000000	2.7586149	0.2	3.52	20.00	2RDR
o-Xylene	0.7320000	0.7474649	0.7474649	0.3	-2.11	20.00	AVRG
sec-Butylbenzene	2.9170000	3.0018366	3.0018366	0.1	-2.91	20.00	AVRG
Styrene	1.2870000	1.3138202	1.3138202	0.3	-2.08	20.00	AVRG
Vinyl Chloride	0.7190000	0.6311949	0.6311949	0.1	12.21	20.00	AVRG
1,2,3-Trichloropropane	1.1800000	1.2307173	1.2307173	0.1	-4.30	20.00	AVRG
p-Isopropyltoluene	2.6570000	2.7268931	2.7268931	0.1	-2.63	20.00	AVRG
1,2-Dibromo-3-Chloropropane	49.025255	50.000000	0.2099367	0.05	1.95	20.00	LINR
1,2-Dichloroethane-d4	0.4810000	0.4223063	0.4223063	0.1	12.20	20.00	AVRG
Dibromofluoromethane	0.4280000	0.4025619	0.4025619	0.1	5.94	20.00	AVRG
Toluene-d8	1.2850000	1.2976183	1.2976183	0.1	-0.98	20.00	AVRG
4-Bromofluorobenzene	0.4700000	0.4567584	0.4567584	0.1	2.82	20.00	AVRG

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121092

Instrument ID: VOA9 Calibration Date: 01/02/20 Time: 1628

Lab File ID: U010214 Init. Calib. Date(s): 12/27/19 12/27/19

Init. Calib. Times: 1127 1530

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
cis-1,3-Dichloropropene	46.843409	50.000000	0.5912007	0.2	6.31	50.00	LINR
trans-1,3-Dichloropropene	46.179760	50.000000	0.5242663	0.1	7.64	50.00	LINR
1,3-Dichlorobenzene	1.6640000	1.5422791	1.5422791	0.6	7.31	50.00	AVRG
2,2-Dichloropropane	0.5720000	0.5819595	0.5819595	0.1	-1.74	50.00	AVRG
1,1-Dichloropropene	0.4880000	0.4123114	0.4123114	0.1	15.51	50.00	AVRG
Dibromomethane	0.2520000	0.2418645	0.2418645	0.1	4.02	50.00	AVRG
1,2-Dibromoethane	0.4250000	0.4402586	0.4402586	0.1	-3.59	50.00	AVRG
trans-1,2-Dichloroethene	0.5440000	0.4821396	0.4821396	0.1	11.37	50.00	AVRG
1,1,1,2-Tetrachloroethane	0.3820000	0.4017726	0.4017726	0.1	-5.18	50.00	AVRG
1,1,1-Trichloroethane	0.7430000	0.6402965	0.6402965	0.1	13.82	50.00	AVRG
1,1,2,2-Tetrachloroethane	1.1590000	1.1371512	1.1371512	0.3	1.88	50.00	AVRG
1,1,2-Trichloroethane	0.3540000	0.3431998	0.3431998	0.1	3.05	50.00	AVRG
1,1-Dichloroethane	0.9990000	0.8774234	0.8774234	0.2	12.17	50.00	AVRG
1,1-Dichloroethene	0.4830000	0.3986047	0.3986047	0.1	17.47	50.00	AVRG
Trichloroethene	0.4200000	0.3759304	0.3759304	0.2	10.49	50.00	AVRG
1,2,3-Trichlorobenzene	45.205579	50.000000	0.8871435	0.1	9.59	50.00	LINR
Trichlorofluoromethane	0.7890000	0.6084118	0.6084118	0.1	22.89	50.00	AVRG
1,2,4-Trichlorobenzene	43.902423	50.000000	0.9151363	0.2	12.20	50.00	LINR
1,2,4-Trimethylbenzene	2.7760000	2.3285045	2.3285045	0.1	16.12	50.00	AVRG
Tetrachloroethene	46.264844	50.000000	0.4279883	0.2	7.47	50.00	LINR
1,2-Dichlorobenzene	1.6540000	1.5439447	1.5439447	0.4	6.65	50.00	AVRG
1,2-Dichloroethane	0.5330000	0.4562163	0.4562163	0.1	14.40	50.00	AVRG
1,2-Dichloropropane	0.4030000	0.3746237	0.3746237	0.1	7.04	50.00	AVRG
1,3,5-Trimethylbenzene	2.6290000	2.2451215	2.2451215	0.1	14.60	50.00	AVRG
1,3-Dichloropropane	0.7500000	0.7364633	0.7364633	0.1	1.80	50.00	AVRG
1,4-Dichlorobenzene	1.6870000	1.6105314	1.6105314	0.4	4.53	50.00	AVRG
Toluene	1.8060000	1.6999481	1.6999481	0.4	5.87	50.00	AVRG
2-Butanone	0.3430000	0.3045963	0.3045963	0.1	11.20	50.00	AVRG
2-Chlorotoluene	2.3340000	2.0558547	2.0558547	0.1	11.92	50.00	AVRG
2-Hexanone	0.3750000	0.3733502	0.3733502	0.1	0.44	50.00	AVRG
4-Chlorotoluene	2.6620000	2.3764114	2.3764114	0.1	10.73	50.00	AVRG
tert-Butylbenzene	2.2190000	1.8466787	1.8466787	0.1	16.78	50.00	AVRG
4-Methyl-2-Pentanone	0.5350000	0.5276813	0.5276813	0.1	1.37	50.00	AVRG
Acetone	94.480707	100.00000	0.2123697	0.1	5.52	50.00	LINR
Benzene	1.6010000	1.4700370	1.4700370	0.5	8.18	50.00	AVRG
Bromobenzene	0.9910000	0.9515824	0.9515824	0.1	3.98	50.00	AVRG
Bromochloromethane	0.3110000	0.2849253	0.2849253	0.1	8.38	50.00	AVRG
Bromodichloromethane	0.4500000	0.4440893	0.4440893	0.2	1.31	50.00	AVRG
Bromoform	46.644956	50.000000	0.3239318	0.1	6.71	50.00	LINR
Bromomethane	55.538984	50.000000	0.4283657	0.1	-11.08	50.00	LINR
Carbon Disulfide	1.4440000	1.2376622	1.2376622	0.1	14.29	50.00	AVRG
Carbon Tetrachloride	0.4160000	0.3638229	0.3638229	0.1	12.54	50.00	AVRG

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1912109

Instrument ID: VOA9 Calibration Date: 01/02/20 Time: 1628

Lab File ID: U010214 Init. Calib. Date(s): 12/27/19 12/27/19

Init. Calib. Times: 1127 1530

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Chlorobenzene	1.1790000	1.1228401	1.1228401	0.5	4.76	50.00	AVRG
Chloroethane	40.744817	50.000000	0.3423775	0.1	18.51	50.00	LINR
Chloroform	1.0060000	0.8731882	0.8731882	0.2	13.20	50.00	AVRG
Chloromethane	57.404381	50.000000	0.8187290	0.1	-14.81	50.00	LINR
cis-1,2-Dichloroethene	0.6570000	0.5892084	0.5892084	0.1	10.32	50.00	AVRG
Dibromochloromethane	48.231402	50.000000	0.4274346	0.1	3.54	50.00	LINR
Dichlorodifluoromethane	0.5500000	0.4146017	0.4146017	0.1	24.62	50.00	AVRG
Ethylbenzene	0.6070000	0.5565715	0.5565715	0.1	8.31	50.00	AVRG
Hexachlorobutadiene	43.803337	50.000000	0.3251914	0.1	12.39	50.00	2RDR
Isopropylbenzene	1.7130000	1.5195650	1.5195650	0.1	11.29	50.00	AVRG
m,p-Xylenes	0.7310000	0.6791403	0.6791403	0.1	7.09	50.00	AVRG
Methylene Chloride	47.044465	50.000000	0.5601171	0.1	5.91	50.00	LINR
n-Butylbenzene	2.1120000	1.6504753	1.6504753	0.5	21.85	50.00	AVRG
n-Propylbenzene	3.6680000	3.0875352	3.0875352	0.1	15.82	50.00	AVRG
Naphthalene	44.355192	50.000000	2.5308413	0.2	11.29	50.00	2RDR
o-Xylene	0.7320000	0.6853725	0.6853725	0.3	6.37	50.00	AVRG
sec-Butylbenzene	2.9170000	2.3604442	2.3604442	0.1	19.08	50.00	AVRG
Styrene	1.2870000	1.3241053	1.3241053	0.3	-2.88	50.00	AVRG
Vinyl Chloride	0.7190000	0.5631188	0.5631188	0.1	21.68	50.00	AVRG
1,2,3-Trichloropropane	1.1800000	1.1883866	1.1883866	0.1	-0.71	50.00	AVRG
p-Isopropyltoluene	2.6570000	2.1714545	2.1714545	0.1	18.27	50.00	AVRG
1,2-Dibromo-3-Chloropropane	48.225132	50.000000	0.2063992	0.05	3.55	50.00	LINR
1,2-Dichloroethane-d4	0.4810000	0.4256209	0.4256209	0.1	11.51	50.00	AVRG
Dibromofluoromethane	0.4280000	0.4027549	0.4027549	0.1	5.90	50.00	AVRG
Toluene-d8	1.2850000	1.2973705	1.2973705	0.1	-0.96	50.00	AVRG
4-Bromofluorobenzene	0.4700000	0.4629810	0.4629810	0.1	1.49	50.00	AVRG

FORM VII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121092

Lab File ID (Standard): U010203 Date Analyzed: 01/02/20

Instrument ID: VOA9 Time Analyzed: 1146

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS1(CBZ) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(DCB) AREA #	RT #
	12 HOUR STD	710531	8.25	799230	5.62	383868	10.23
	UPPER LIMIT	1421062	8.75	1598460	6.12	767736	10.73
	LOWER LIMIT	355266	7.75	399615	5.12	191934	9.73
	CLIENT SAMPLE NO.						
01	VLCSW-200102	715055	8.25	811983	5.62	384375	10.23
02	VBLKW-200102	707541	8.25	806055	5.63	345002	10.23
03	HS19121092-05	742835	8.25	841313	5.63	382844	10.23
04	HS19121497-01	730401	8.25	830419	5.62	387589	10.23
05	HS19121497-01	716224	8.25	819057	5.62	385827	10.23
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS1 (CBZ) = Chlorobenzene-d5
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (DCB) = 1,4-Dichlorobenzene-d4

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

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121092

Lab File ID (Standard): U010203 Date Analyzed: 01/02/20

Instrument ID: VOA9 Time Analyzed: 1146

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS4 AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	561931	4.89				
	UPPER LIMIT	1123862	5.39				
	LOWER LIMIT	280966	4.39				
	CLIENT SAMPLE NO.						
01	VLCSW-200102	571207	4.89				
02	VBLKW-200102	563950	4.89				
03	HS19121092-05	580944	4.89				
04	HS19121497-01	591395	4.89				
05	HS19121497-01	578707	4.89				
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS4 = Pentafluorobenzene

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

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM VIII VOA

Data File: \\nahstws005\Target\chem\voa9.i\U200102.b\U010202.D

Date : 02-JAN-2020 11:22

Client ID: BFB

Instrument: VOA9.i

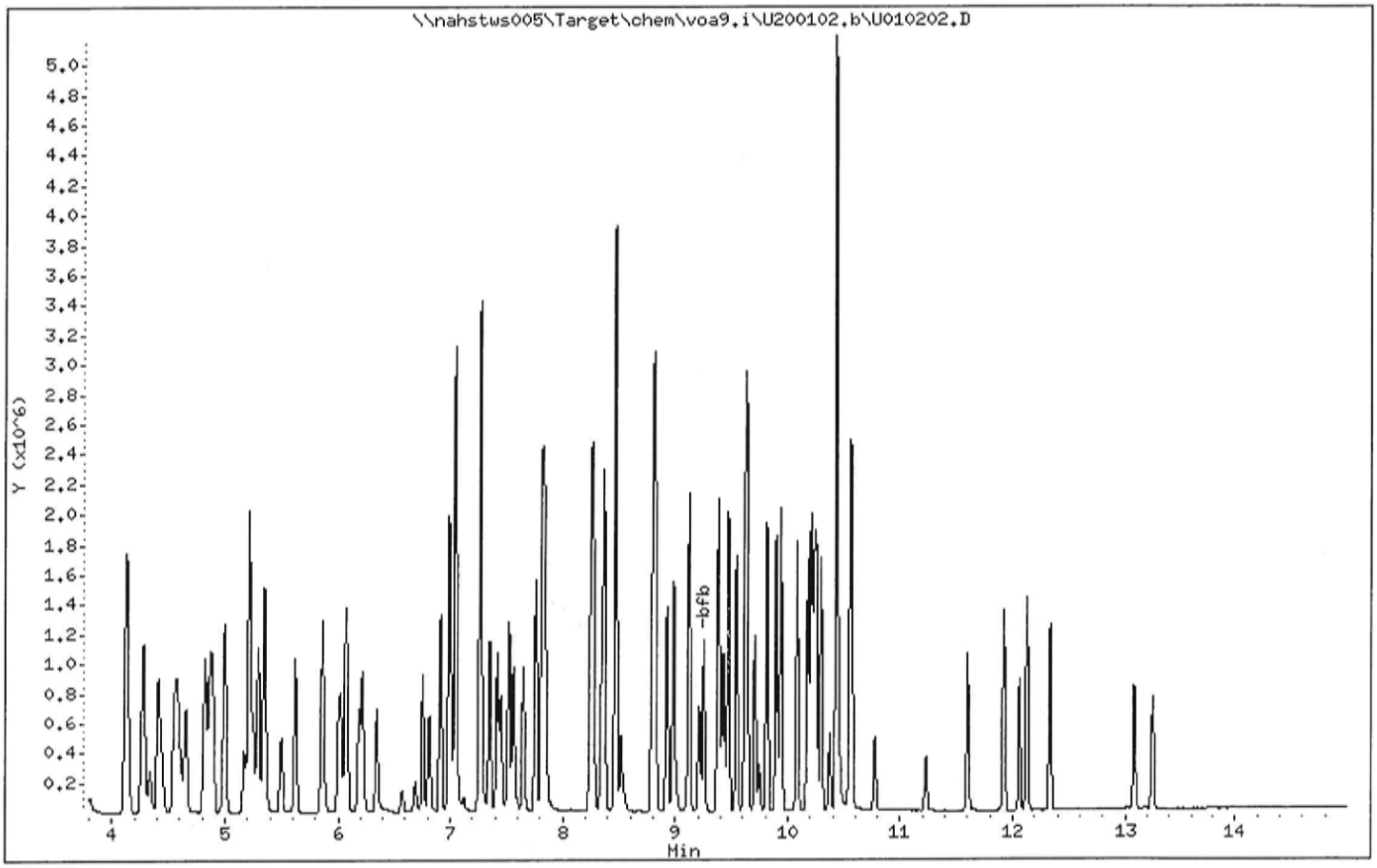
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\nahstws005\Target\chem\voa9.i\U200102.b\U010202.D

Date : 02-JAN-2020 11:22

Client ID: BFB

Instrument: VOA9.i

Sample Info: BFB;BFB;3;;BFB

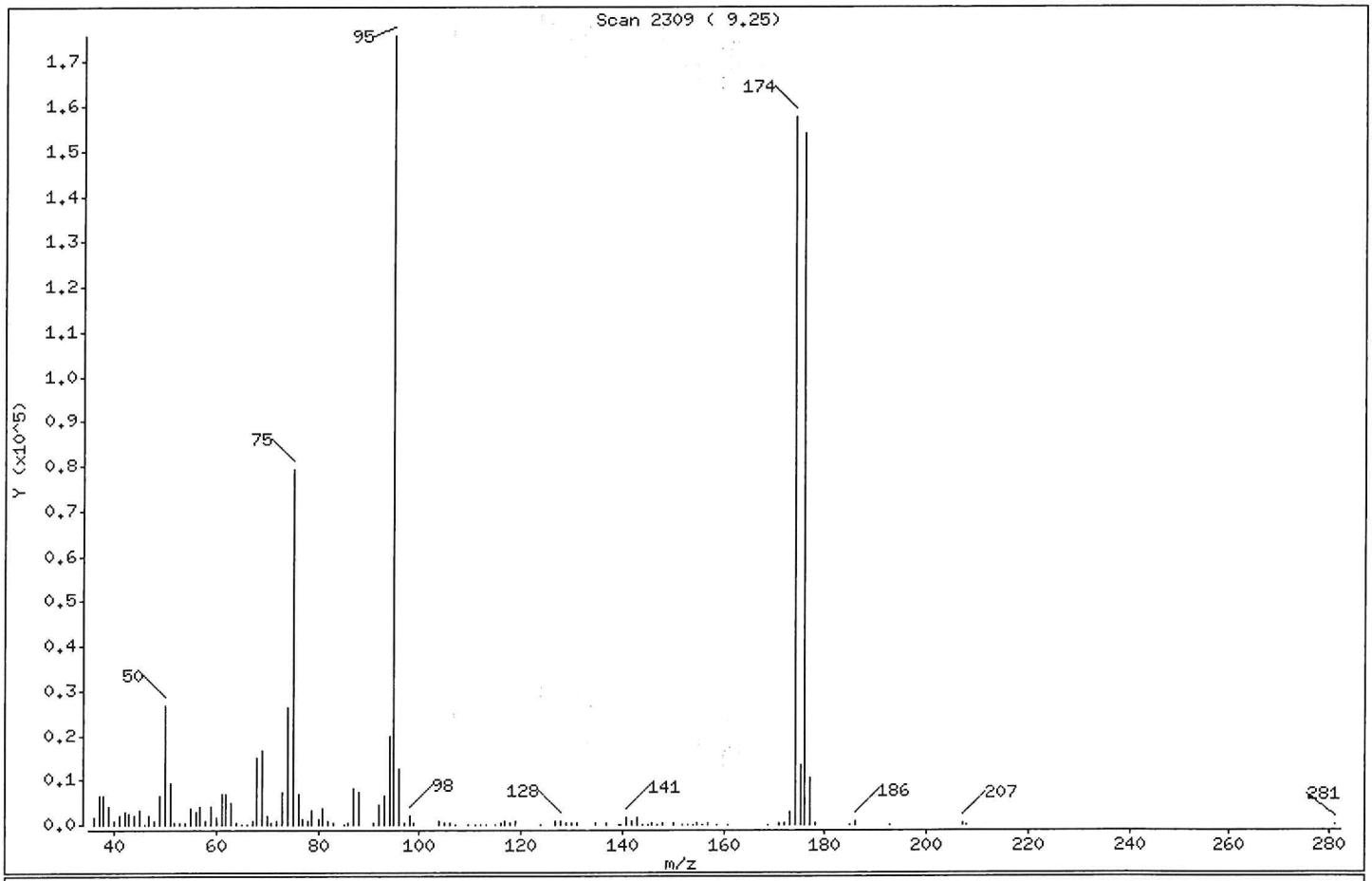
Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	15.21
75	30.00 - 60.00% of mass 95	45.09
96	5.00 - 9.00% of mass 95	7.10
173	Less than 2.00% of mass 174	1.72 (1.92)
174	Greater than 50.00% of mass 95	89.63
175	5.00 - 9.00% of mass 174	7.59 (8.47)
176	95.00 - 101.00% of mass 174	87.59 (97.73)
177	5.00 - 9.00% of mass 176	6.07 (6.93)

Data File: \\nahstws005\Target\chem\voa9.i\U200102.b\U010202.D Page 3

Date : 02-JAN-2020 11:22

Client ID: BFB Instrument: VOA9.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25

Data File: U010202.D
Spectrum: Scan 2309 (9.25)
Location of Maximum: 95.05
Number of points: 116

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1764	66.10	113	98.90	256	146.90	114
37.10	6620	67.10	782	103.90	614	147.80	399
38.00	6623	68.00	14754	104.80	264	149.90	361
39.00	3854	69.00	16496	105.90	550	151.90	155
40.00	952	70.10	2118	106.90	180	152.90	114
41.10	2006	71.00	314	109.70	61	153.90	84
42.10	2674	71.90	798	111.00	100	154.90	424
43.00	2256	73.00	7091	111.90	114	155.80	129
44.00	1906	74.00	26216	113.10	69	156.90	250
45.00	3215	75.00	79280	114.90	189	158.80	158
46.00	113	76.10	7022	115.90	575	160.80	115
47.00	2198	76.90	1057	116.90	869	168.80	68
47.90	958	78.00	973	117.90	532	170.90	579
49.00	6309	78.90	3255	118.90	641	172.00	259
50.00	26736	80.00	1398	123.90	60	173.10	3027
51.00	9104	80.90	3472	126.90	724	174.00	157568
52.00	467	81.90	712	127.90	749	175.00	13343
53.00	246	83.00	378	128.90	250	176.00	153984
54.10	312	85.10	116	130.00	499	177.00	10674
55.00	3726	86.00	249	130.90	281	178.00	378
56.00	2734	86.90	8232	134.80	269	184.90	94
57.00	4133	88.00	7471	136.90	372	185.90	924
58.00	708	91.00	564	139.20	63	192.80	56
59.00	4012	92.00	4393	139.80	170	207.10	528
60.10	1713	93.00	6539	140.90	1671	207.90	58
61.00	6847	94.00	19824	141.90	968	281.00	74
62.00	7026	95.00	175808	142.90	1587		
63.00	4799	96.00	12476	143.90	137		
64.00	582	97.00	464	145.10	90		
65.00	141	98.00	1912	145.80	239		

ALS Laboratory Group

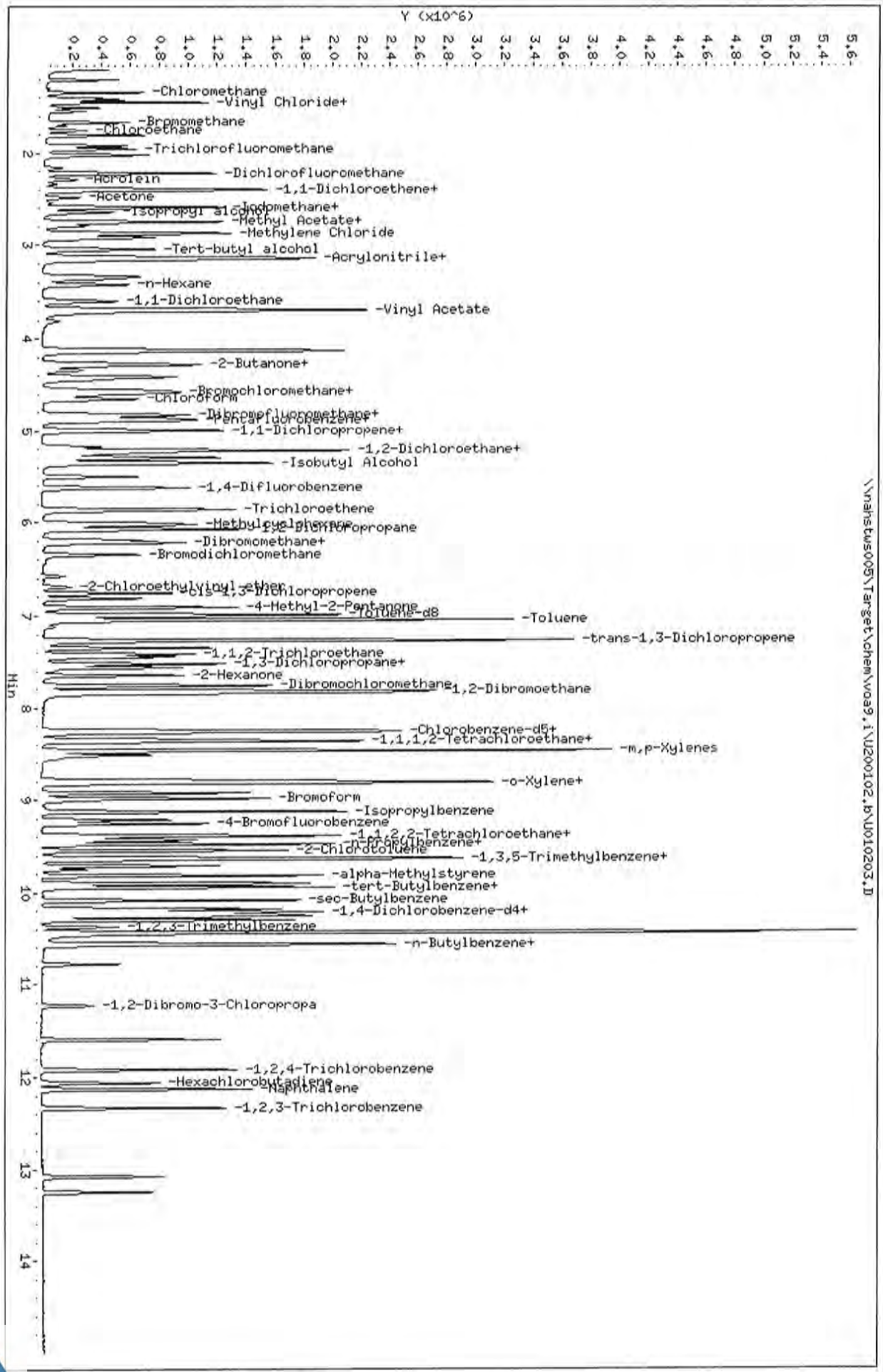
Data file : \\nahstws005\Target\chem\voa9.i\U200102.b\U010203.D
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 02-JAN-2020 11:46
Operator : PC Inst ID: VOA9.i
Smp Info : VSTD050;VSTD050;2;;
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200102.b\8260C.m
Meth Date : 17-Jan-2020 16:09 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.894	4.890	(1.000)	561931	50.0000	
* 36 1,4-Difluorobenzene	114	5.621	5.621	(1.000)	799230	50.0000	
* 47 Chlorobenzene-d5	117	8.245	8.245	(1.000)	710531	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	383868	50.0000	
$ 30 Dibromofluoromethane	113	4.826	4.827	(0.986)	226212	50.0000	47.01
$ 35 1,2-Dichloroethane-d4	65	5.171	5.171	(1.057)	237307	50.0000	43.88
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	921998	50.0000	50.49
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	324541	50.0000	48.61
60 1,1,1,2-Tetrachloroethane	131	8.346	8.347	(1.012)	300387	50.0000	55.25
31 1,1,1-Trichloroethane	97	4.826	4.823	(0.986)	416558	50.0000	49.85
68 1,1,2,2-Tetrachloroethane	83	9.388	9.389	(0.918)	443905	50.0000	49.88
53 1,1,2-Trichloroethane	83	7.417	7.417	(0.900)	246702	50.0000	48.97
22 1,1-Dichloroethane	63	3.601	3.597	(0.736)	515968	50.0000	45.93
11 1,1-Dichloroethene	96	2.401	2.394	(0.491)	256649	50.0000	47.23
32 1,1-Dichloropropene	75	5.003	4.999	(0.890)	383940	50.0000	49.18
93 1,2,3-Trichlorobenzene	180	12.331	12.331	(1.205)	390363	50.0000	51.66
71 1,2,3-Trichloropropane	75	9.422	9.422	(0.921)	472433	50.0000	52.12
90 1,2,4-Trichlorobenzene	180	11.919	11.919	(1.165)	414815	50.0000	51.58
79 1,2,4-Trimethylbenzene	105	9.940	9.940	(0.971)	1043915	50.0000	48.98
89 1,2-Dibromo-3-Chloropropane	155	11.229	11.229	(1.097)	80588	50.0000	49.02
57 1,2-Dibromoethane	107	7.848	7.848	(0.952)	315528	50.0000	52.26
88 1,2-Dichlorobenzene	146	10.566	10.566	(1.033)	644225	50.0000	50.73
33 1,2-Dichloroethane	62	5.250	5.250	(0.934)	373072	50.0000	43.74

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42	1,2-Dichloropropane	63	6.078	6.079	(1.081)	313388	50.0000	48.61
75	1,3,5-Trimethylbenzene	105	9.621	9.621	(0.940)	1022188	50.0000	50.64
83	1,3-Dichlorobenzene	146	10.176	10.176	(0.995)	653969	50.0000	51.18
54	1,3-Dichloropropane	76	7.559	7.559	(0.917)	533817	50.0000	50.07
84	1,4-Dichlorobenzene	146	10.251	10.251	(1.002)	672746	50.0000	51.93
26	2,2-Dichloropropane	77	4.272	4.268	(0.873)	367760	50.0000	57.27
24	2-Butanone	43	4.339	4.336	(0.887)	354376	100.000	91.96
76	2-Chlorotoluene	91	9.542	9.542	(0.933)	881285	50.0000	49.17
52	2-Hexanone	43	7.645	7.646	(0.927)	545646	100.000	102.37
77	4-Chlorotoluene	91	9.636	9.636	(0.942)	1012776	50.0000	49.54
82	p-Isopropyltoluene	119	10.206	10.206	(0.997)	1046767	50.0000	51.32
45	4-Methyl-2-Pentanone	43	6.911	6.911	(0.838)	764910	100.000	100.64
10	Acetone	43	2.480	2.476	(0.507)	246896	100.000	97.84
37	Benzene	78	5.216	5.213	(0.928)	1235228	50.0000	48.26
74	Bromobenzene	156	9.377	9.377	(0.916)	392663	50.0000	51.61
29	Bromochloromethane	128	4.553	4.549	(0.930)	165513	50.0000	47.29
39	Bromodichloromethane	83	6.345	6.345	(1.129)	363578	50.0000	50.53
66	Bromoform	173	8.980	8.980	(1.089)	238111	50.0000	48.18
6	Bromomethane	94	1.666	1.659	(0.341)	251216	50.0000	57.96
19	Carbon Disulfide	76	2.588	2.585	(0.529)	1585112	100.000	97.66
34	Carbon Tetrachloride	117	4.991	4.992	(0.888)	346349	50.0000	51.99
59	Chlorobenzene	112	8.271	8.272	(1.003)	845335	50.0000	50.45
7	Chloroethane	64	1.749	1.745	(0.357)	210843	50.0000	44.74
28	Chloroform	83	4.654	4.654	(0.951)	511420	50.0000	45.20
3	Chloromethane	50	1.340	1.337	(0.274)	479448	50.0000	59.91
27	cis-1,2-Dichloroethene	96	4.283	4.279	(0.875)	343228	50.0000	46.50
46	cis-1,3-Dichloropropene	75	6.757	6.753	(1.202)	484754	50.0000	48.02
55	Dibromochloromethane	129	7.754	7.754	(0.940)	308999	50.0000	49.05
44	Dibromomethane	93	6.187	6.187	(1.101)	196842	50.0000	48.77
2	Dichlorodifluoromethane	85	1.205	1.202	(0.246)	285100	50.0000	46.11
61	Ethylbenzene	106	8.369	8.365	(1.015)	441042	50.0000	51.08
91	Hexachlorobutadiene	225	12.061	12.062	(1.179)	158886	50.0000	55.30
67	Isopropylbenzene	105	9.122	9.123	(1.106)	1289019	50.0000	52.96
62	m,p-Xylenes	106	8.470	8.470	(1.027)	1080106	100.000	103.97
17	Methylene Chloride	84	2.870	2.866	(0.586)	325660	50.0000	48.71
87	n-Butylbenzene	91	10.554	10.551	(1.032)	837782	50.0000	51.67
73	n-Propylbenzene	91	9.471	9.471	(0.926)	1418772	50.0000	50.37
92	Naphthalene	128	12.129	12.129	(1.185)	1058944	50.0000	48.24
63	o-Xylene	106	8.807	8.808	(1.068)	531097	50.0000	51.07
81	sec-Butylbenzene	105	10.082	10.082	(0.985)	1152309	50.0000	51.45
64	Styrene	104	8.822	8.823	(1.070)	933510	50.0000	51.04
78	tert-Butylbenzene	119	9.898	9.899	(0.967)	864327	50.0000	50.74
56	Tetrachloroethene	166	7.522	7.518	(0.912)	360304	50.0000	54.84
50	Toluene	91	7.046	7.042	(0.855)	1305405	50.0000	50.84
20	trans-1,2-Dichloroethene	96	3.139	3.136	(0.642)	295929	50.0000	48.37
51	trans-1,3-Dichloropropene	75	7.259	7.256	(1.291)	428482	50.0000	47.19
38	Trichloroethene	130	5.861	5.857	(1.043)	333115	50.0000	49.55
8	Trichlorofluoromethane	101	1.955	1.948	(0.400)	419969	50.0000	47.36
5	Vinyl Chloride	62	1.419	1.415	(0.290)	354688	50.0000	43.86



Data File: \\nahstws005\Target\chem\voa9.i\U200102.b\U010203.D
Date : 02-JAN-2020 11:46
Client ID: CCV
Instrument: VOA9.i
Sample Info: VSTD050;VSTD050;2;;
Operator: PC
Purge Volume: 5.0
Column diameter: 0.18
Column phase: DB624

\\nahstws005\Target\chem\voa9.i\U200102.b\U010203.D

Data File: \\nahstws005\Target\chem\voa9.i\U200102.b\U010205.D Page 1
Report Date: 17-Jan-2020 16:09

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U200102.b\U010205.D
Lab Smp Id: VLCSW-200102 Client Smp ID: VLCSW-200102
Inj Date : 02-JAN-2020 12:35
Operator : PC Inst ID: VOA9.i
Smp Info : VLCSW-200102;VLCSW-200102;3;;LCS
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200102.b\8260C.m
Meth Date : 17-Jan-2020 16:09 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 5 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

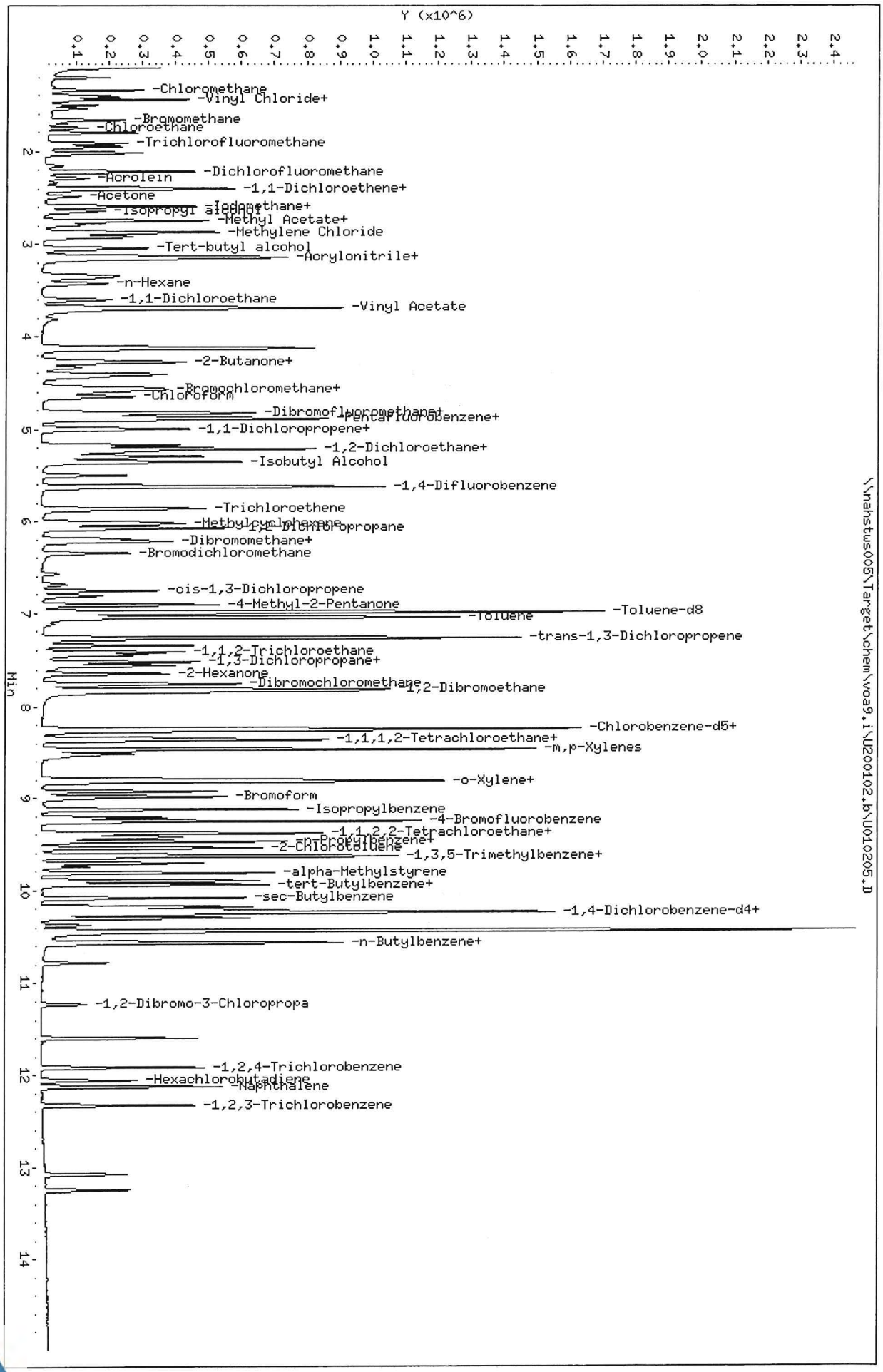
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.890	4.890	(1.000)	571207	50.0000	
* 36 1,4-Difluorobenzene	114	5.621	5.621	(1.000)	811983	50.0000	
* 47 Chlorobenzene-d5	117	8.245	8.245	(1.000)	715055	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	384375	50.0000	
$ 30 Dibromofluoromethane	113	4.826	4.827	(0.987)	234791	48.0013	48.00
$ 35 1,2-Dichloroethane-d4	65	5.171	5.171	(1.057)	245108	44.5963	44.59
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	919236	50.0255	50.02
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	329691	49.0700	49.06
60 1,1,1,2-Tetrachloroethane	131	8.346	8.347	(1.012)	114904	21.0017	21.00
31 1,1,1-Trichloroethane	97	4.823	4.823	(0.986)	153453	18.0669	18.06
68 1,1,2,2-Tetrachloroethane	83	9.389	9.389	(0.918)	184559	20.7127	20.71
53 1,1,2-Trichloroethane	83	7.417	7.417	(0.900)	104273	20.5684	20.56
22 1,1-Dichloroethane	63	3.601	3.597	(0.736)	207577	18.1781	18.17
11 1,1-Dichloroethene	96	2.397	2.394	(0.490)	95832	17.3492	17.34
32 1,1-Dichloropropene	75	5.003	4.999	(0.890)	142913	18.0195	18.01
93 1,2,3-Trichlorobenzene	180	12.331	12.331	(1.205)	144708	19.8071	19.80
71 1,2,3-Trichloropropane	75	9.422	9.422	(0.921)	181387	19.9855	19.98
90 1,2,4-Trichlorobenzene	180	11.919	11.919	(1.165)	150081	19.5357	19.53
79 1,2,4-Trimethylbenzene	105	9.940	9.940	(0.971)	363281	17.0228	17.02
89 1,2-Dibromo-3-Chloropropane	155	11.229	11.229	(1.097)	29604	18.9616	18.96
57 1,2-Dibromoethane	107	7.848	7.848	(0.952)	131542	21.6510	21.65
88 1,2-Dichlorobenzene	146	10.566	10.566	(1.033)	257052	20.2176	20.21
33 1,2-Dichloroethane	62	5.250	5.250	(0.934)	154394	17.8182	17.81

Data File: \\nahstws005\Target\chem\voa9.i\U200102.b\U010205.D Page 2
Report Date: 17-Jan-2020 16:09

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
42 1,2-Dichloropropane	63	6.078	6.079	(1.081)	127362	19.4451	19.44
75 1,3,5-Trimethylbenzene	105	9.621	9.621	(0.940)	359760	17.8004	17.80
83 1,3-Dichlorobenzene	146	10.176	10.176	(0.995)	256288	20.0334	20.03
54 1,3-Dichloropropane	76	7.559	7.559	(0.917)	221181	20.6177	20.61
84 1,4-Dichlorobenzene	146	10.251	10.251	(1.002)	266601	20.5540	20.55
26 2,2-Dichloropropane	77	4.272	4.268	(0.874)	135681	20.7862	20.78
24 2-Butanone	43	4.335	4.336	(0.887)	144812	36.9694	36.96
76 2-Chlorotoluene	91	9.542	9.542	(0.933)	348837	19.4395	19.43
52 2-Hexanone	43	7.645	7.646	(0.927)	216839	40.4257	40.42
77 4-Chlorotoluene	91	9.636	9.636	(0.942)	399908	19.5374	19.53
82 p-Isopropyltoluene	119	10.206	10.206	(0.997)	367329	17.9853	17.98
45 4-Methyl-2-Pentanone	43	6.911	6.911	(0.838)	310890	40.6472	40.64
10 Acetone	43	2.480	2.476	(0.507)	110203	41.2055	41.20
37 Benzene	78	5.216	5.213	(0.928)	497981	19.1519	19.15
74 Bromobenzene	156	9.377	9.377	(0.916)	154692	20.3074	20.30
29 Bromochloromethane	128	4.553	4.549	(0.931)	72610	20.4095	20.40
39 Bromodichloromethane	83	6.345	6.345	(1.129)	143567	19.6410	19.64
66 Bromoform	173	8.980	8.980	(1.089)	85020	18.3327	18.33
6 Bromomethane	94	1.666	1.659	(0.341)	101745	22.9960	22.99
19 Carbon Disulfide	76	2.588	2.585	(0.529)	587891	35.6335	35.63
34 Carbon Tetrachloride	117	4.991	4.992	(0.888)	122520	18.1040	18.10
59 Chlorobenzene	112	8.271	8.272	(1.003)	336411	19.9519	19.95
7 Chloroethane	64	1.749	1.745	(0.358)	84378	17.0310	17.03
28 Chloroform	83	4.654	4.654	(0.952)	206985	17.9996	17.99
3 Chloromethane	50	1.340	1.337	(0.274)	193602	22.4289	22.42
27 cis-1,2-Dichloroethene	96	4.283	4.279	(0.876)	138638	18.4809	18.48
46 cis-1,3-Dichloropropene	75	6.753	6.753	(1.201)	187572	18.9749	18.97
55 Dibromochloromethane	129	7.754	7.754	(0.940)	116910	19.1017	19.10
44 Dibromomethane	93	6.187	6.187	(1.101)	77225	18.8334	18.83
2 Dichlorodifluoromethane	85	1.205	1.202	(0.247)	102991	16.3867	16.38
61 Ethylbenzene	106	8.365	8.365	(1.015)	170429	19.6152	19.61
91 Hexachlorobutadiene	225	12.061	12.062	(1.179)	55942	20.2179	20.21
67 Isopropylbenzene	105	9.122	9.123	(1.106)	475857	19.4276	19.42
62 m,p-Xylenes	106	8.470	8.470	(1.027)	421661	40.3355	40.33
17 Methylene Chloride	84	2.870	2.866	(0.587)	135302	19.2148	19.21
87 n-Butylbenzene	91	10.554	10.551	(1.032)	280715	17.2914	17.29
73 n-Propylbenzene	91	9.471	9.471	(0.926)	520732	18.4640	18.46
92 Naphthalene	128	12.129	12.129	(1.185)	396794	18.7010	18.70
63 o-Xylene	106	8.808	8.808	(1.068)	210098	20.0752	20.07
81 sec-Butylbenzene	105	10.082	10.082	(0.985)	410299	18.2980	18.29
64 Styrene	104	8.823	8.823	(1.070)	367285	19.9557	19.95
78 tert-Butylbenzene	119	9.898	9.899	(0.967)	316992	18.5849	18.58
56 Tetrachloroethene	166	7.522	7.518	(0.912)	137539	20.6944	20.69
50 Toluene	91	7.046	7.042	(0.855)	517299	20.0214	20.02
20 trans-1,2-Dichloroethene	96	3.140	3.136	(0.642)	114465	18.4080	18.40
51 trans-1,3-Dichloropropene	75	7.256	7.256	(1.291)	163641	18.6508	18.65
38 Trichloroethene	130	5.857	5.857	(1.042)	128159	18.7644	18.76
8 Trichlorofluoromethane	101	1.951	1.948	(0.399)	152730	16.9440	16.94
5 Vinyl Chloride	62	1.419	1.415	(0.290)	138167	16.8117	16.81



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Date : 02-JAN-2020 12:35
Client ID: VLCSW-200102
Sample Info: VLCSW-200102;VLCSW-200102;3;;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

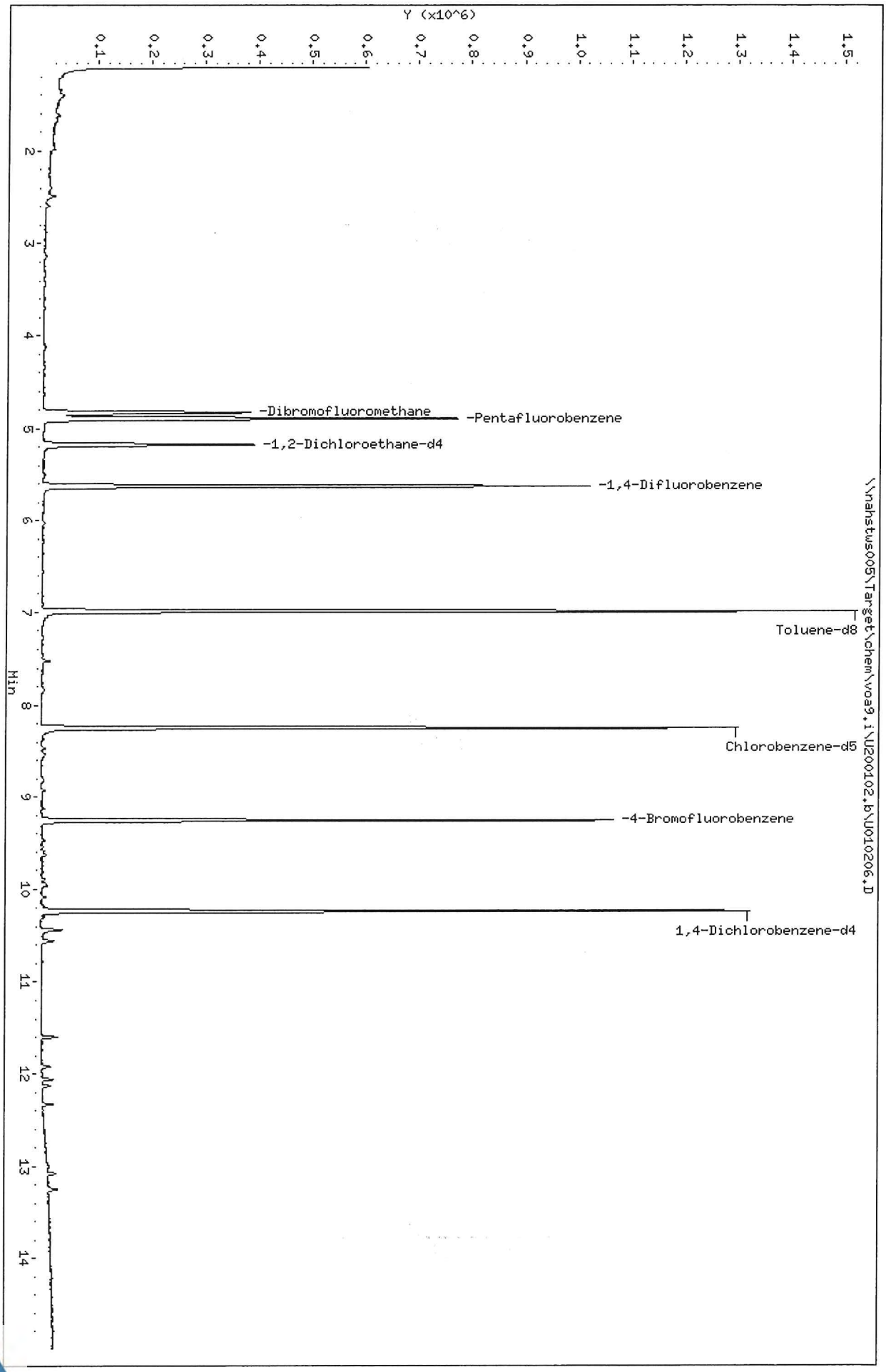
ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U200102.b\U010206.D
Lab Smp Id: VBLKW-200102 Client Smp ID: VBLKW-200102
Inj Date : 02-JAN-2020 12:59
Operator : PC Inst ID: VOA9.i
Smp Info : VBLKW-200102;VBLKW-200102;3;;BLANK
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200102.b\8260C.m
Meth Date : 17-Jan-2020 16:09 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 6 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.894	4.890	(1.000)	563950	50.0000	
* 36 1,4-Difluorobenzene	114	5.625	5.621	(1.000)	806055	50.0000	
* 47 Chlorobenzene-d5	117	8.245	8.245	(1.000)	707541	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	345002	50.0000	
$ 30 Dibromofluoromethane	113	4.830	4.827	(0.987)	222822	46.1406	46.14
$ 35 1,2-Dichloroethane-d4	65	5.175	5.171	(1.057)	246609	45.4468	45.44
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	907744	49.9247	49.92
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	317028	47.6864	47.68



Data File: \\nahstws005\Target\chem\voa9.i\U200102.b\U010206.D
Date : 02-JAN-2020 12:59
Client ID: VBLKW-200102
Sample Info: VBLKW-200102;VBLKW-200102;3;;BLANK
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa9.i\U200102.b\U010209.D Page 1
Report Date: 17-Jan-2020 16:03

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U200102.b\U010209.D
Lab Smp Id: HS19121092-05 Client Smp ID: HS19121092-05
Inj Date : 02-JAN-2020 14:26
Operator : PC Inst ID: VOA9.i
Smp Info : HS19121092-05;HS19121092-05;;;
Misc Info : 180315V9;WATER;0;5;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200102.b\8260C.m
Meth Date : 17-Jan-2020 16:02 DevakG Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 9
Dil Factor: 5.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	5.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

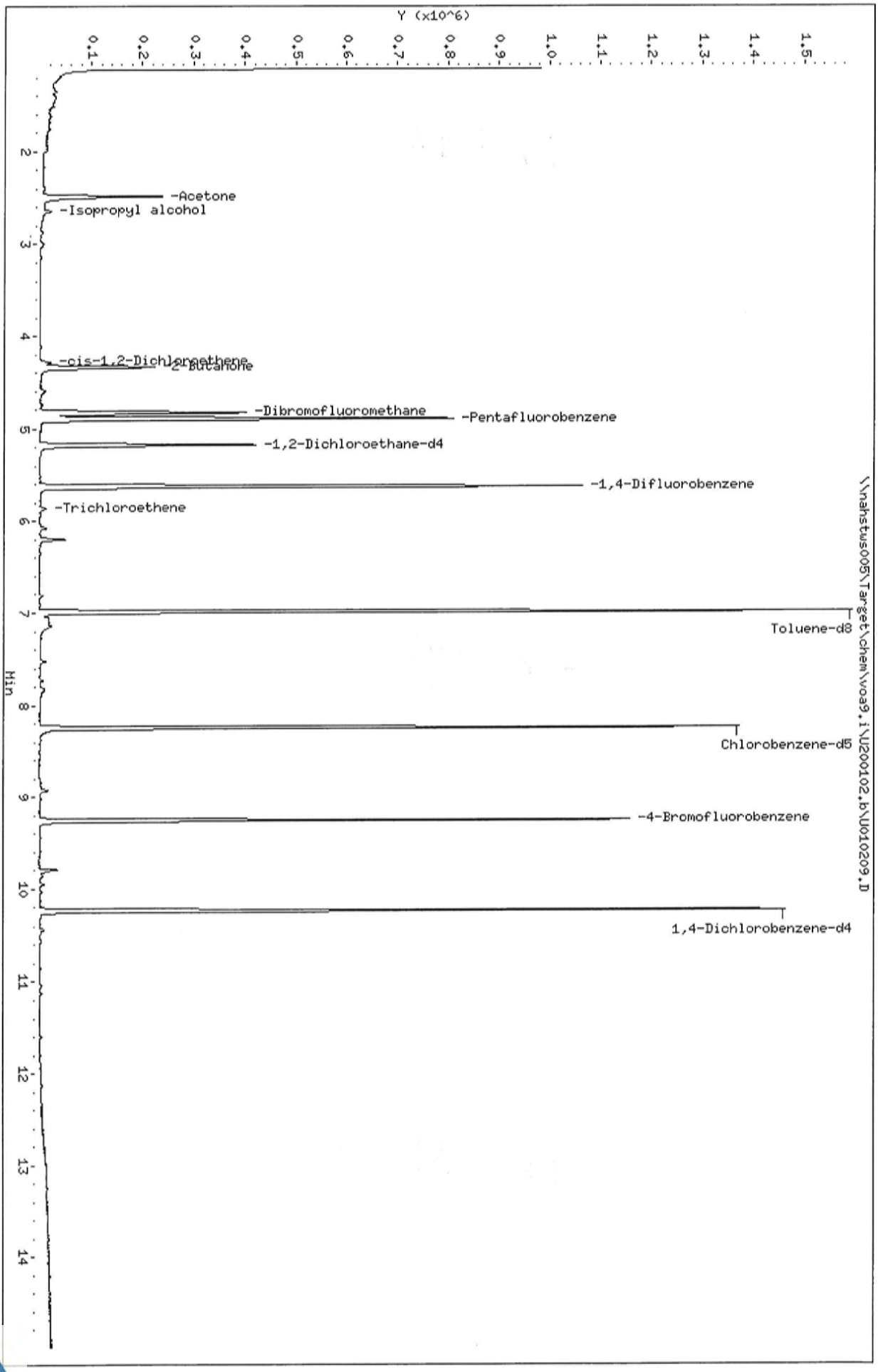
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.894	4.894	(1.000)	580944	50.0000	
* 36 1,4-Difluorobenzene	114	5.625	5.621	(1.000)	841313	50.0000	
* 47 Chlorobenzene-d5	117	8.245	8.245	(1.000)	742835	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	382844	50.0000	
$ 30 Dibromofluoromethane	113	4.830	4.826	(0.987)	229899	46.2134	46.21
$ 35 1,2-Dichloroethane-d4	65	5.175	5.171	(1.057)	254271	45.4881	45.48
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	941077	49.2988	49.29
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	336001	48.1389	48.13
24 2-Butanone	43	4.339	4.339	(0.887)	289195	72.5919	362.95
10 Acetone	43	2.483	2.480	(0.508)	248629	95.2241	476.12
27 cis-1,2-Dichloroethene	96	4.287	4.283	(0.876)	10765	1.41096	7.05(a)
38 Trichloroethene	130	5.861	5.861	(1.042)	4241	0.59930	2.99(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\nahstws005\Target\chem\voa9.i\U200102.b\U010209.D
Date : 02-JAN-2020 14:26
Client ID: HS191210092-05
Sample Info: HS191210092-05;HS191210092-05;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18



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Date : 02-JAN-2020 14:26

Client ID: HS19121092-05

Instrument: VOA9.i

Sample Info: HS19121092-05;HS19121092-05;;;

Purge Volume: 5.0

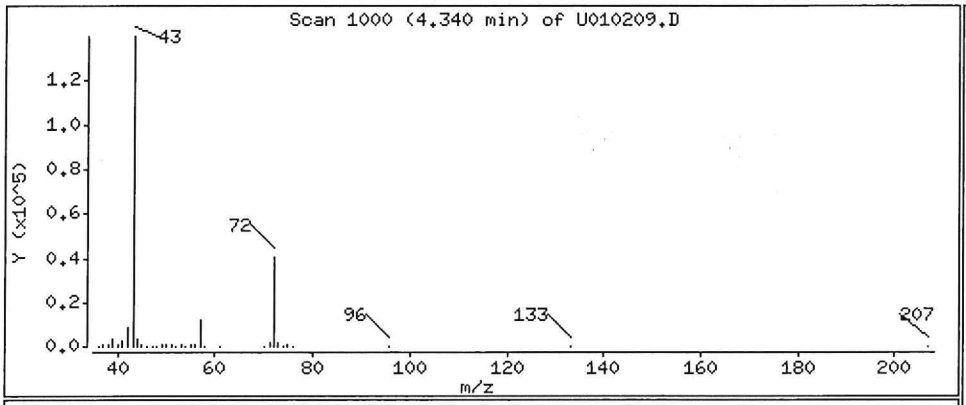
Operator: PC

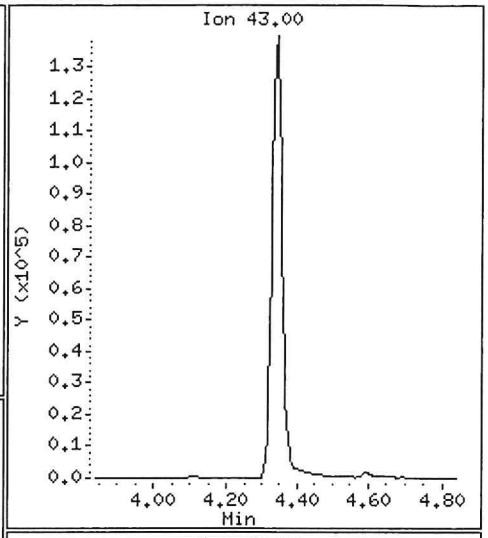
Column phase: DB624

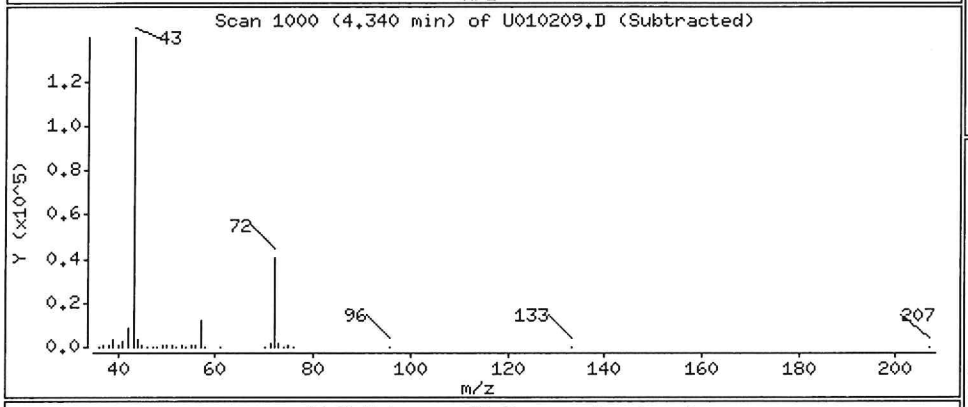
Column diameter: 0.18

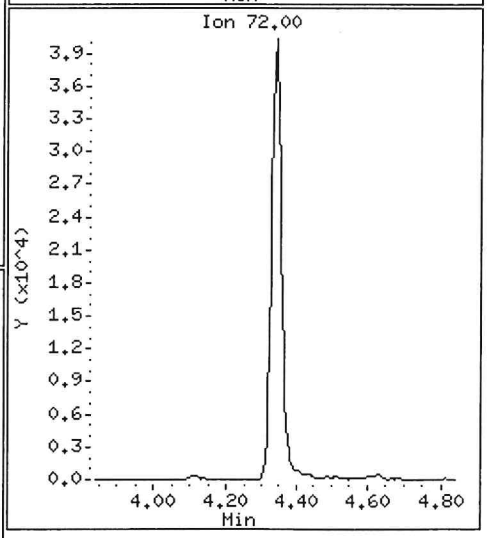
24 2-Butanone

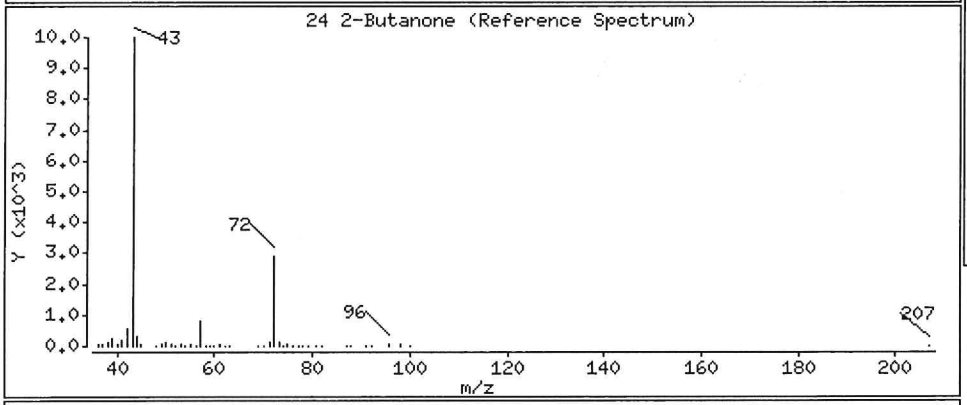
Concentration: 362.95 ug/l

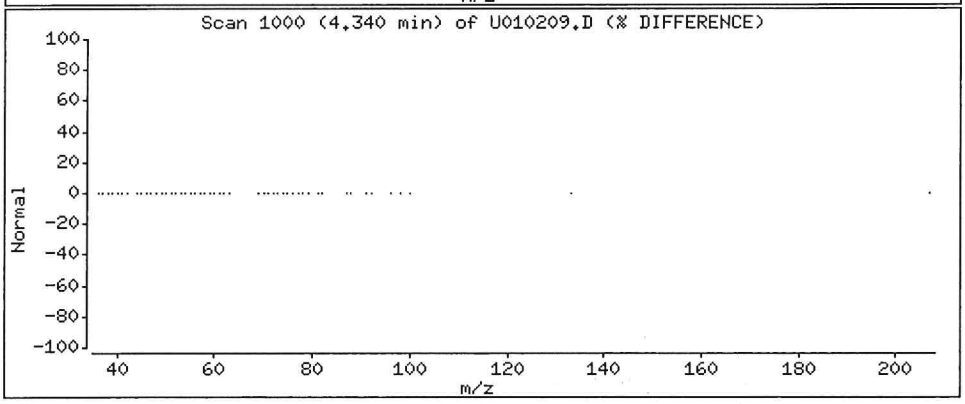












Data File: \\nahstws005\Target\chem\voa9.i\U200102.b\U010209.D

Date : 02-JAN-2020 14:26

Client ID: HS19121092-05

Instrument: VOA9.i

Sample Info: HS19121092-05;HS19121092-05;;;

Purge Volume: 5.0

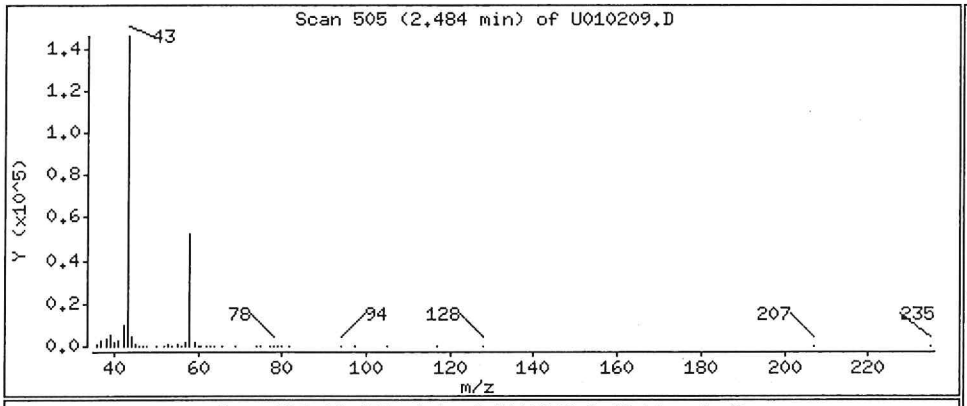
Operator: PC

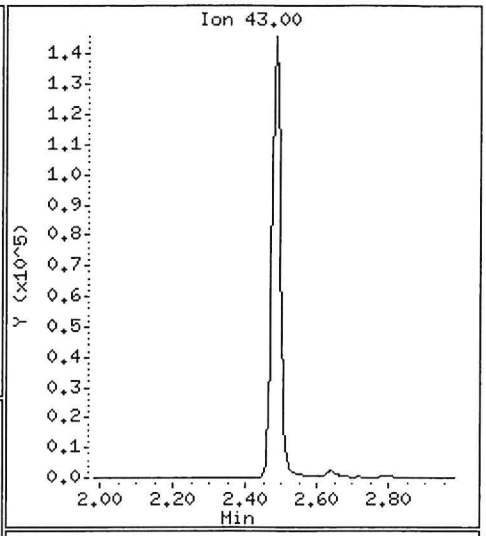
Column phase: DB624

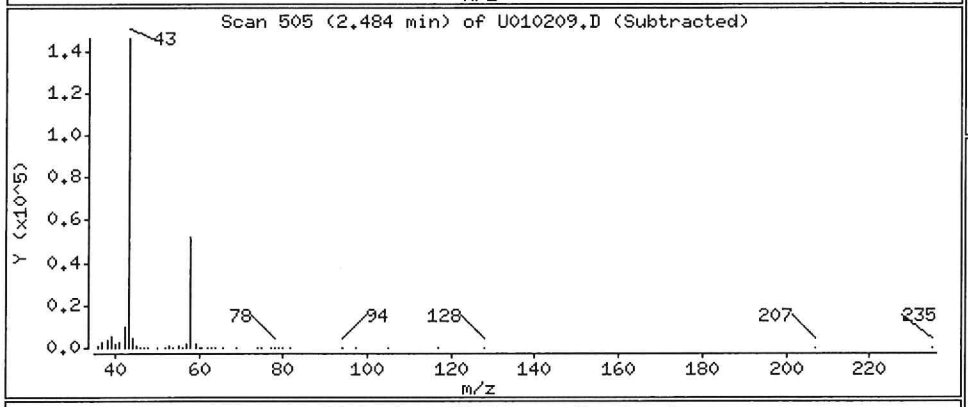
Column diameter: 0.18

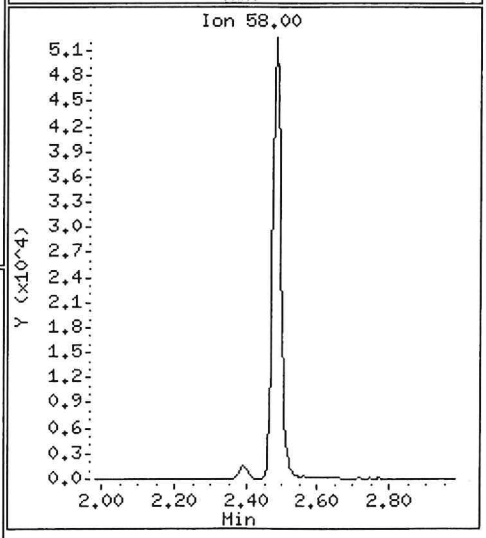
10 Acetone

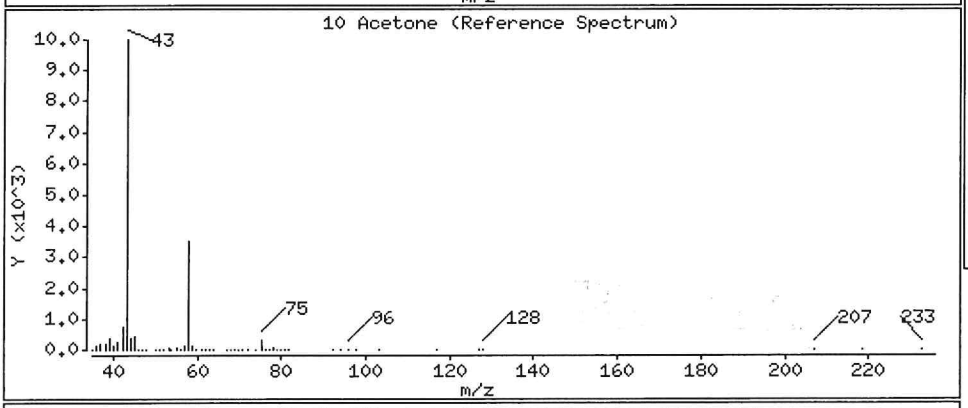
Concentration: 476.12 ug/l

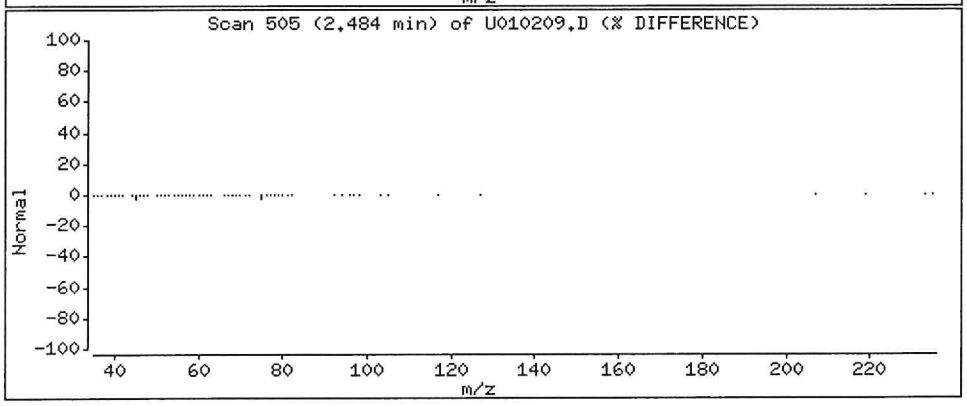












Data File: \\nahstws005\Target\chem\voa9.i\U200102.b\U010209.D

Date : 02-JAN-2020 14:26

Client ID: HS19121092-05

Instrument: VOA9.i

Sample Info: HS19121092-05;HS19121092-05;;;

Purge Volume: 5.0

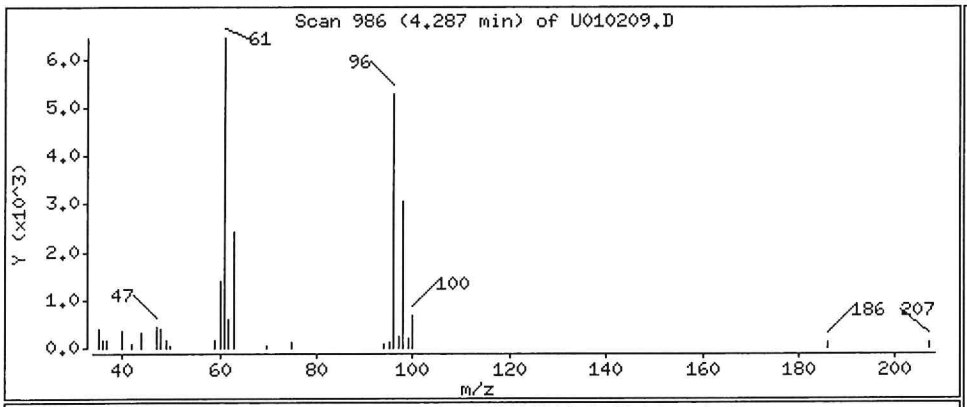
Operator: PC

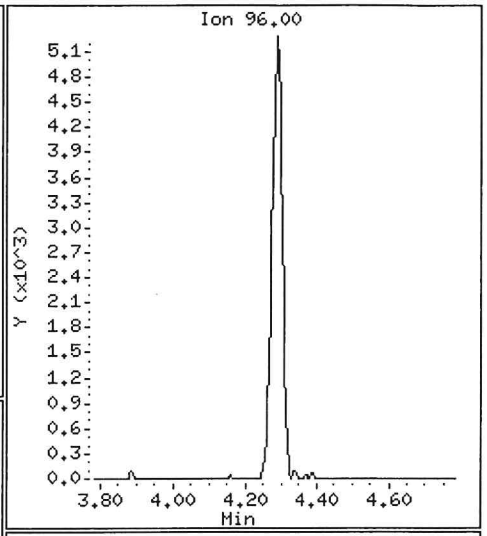
Column phase: DB624

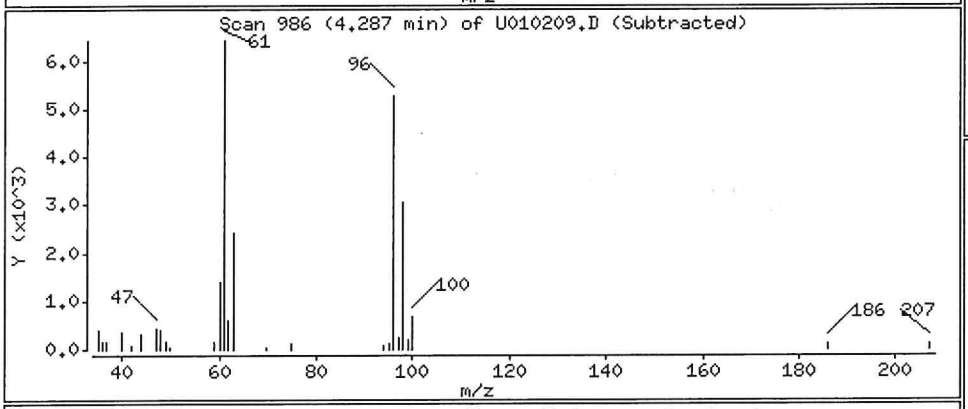
Column diameter: 0.18

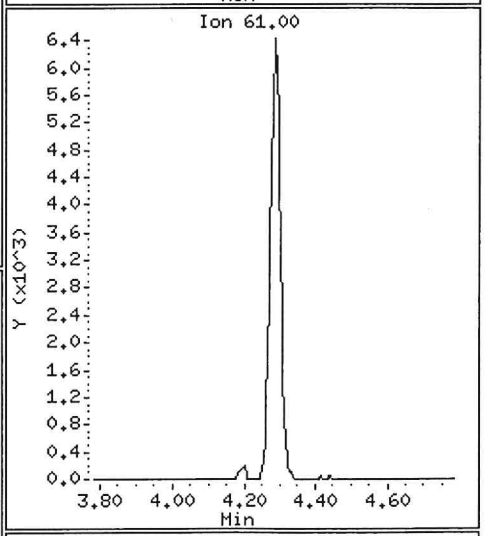
27 cis-1,2-Dichloroethene

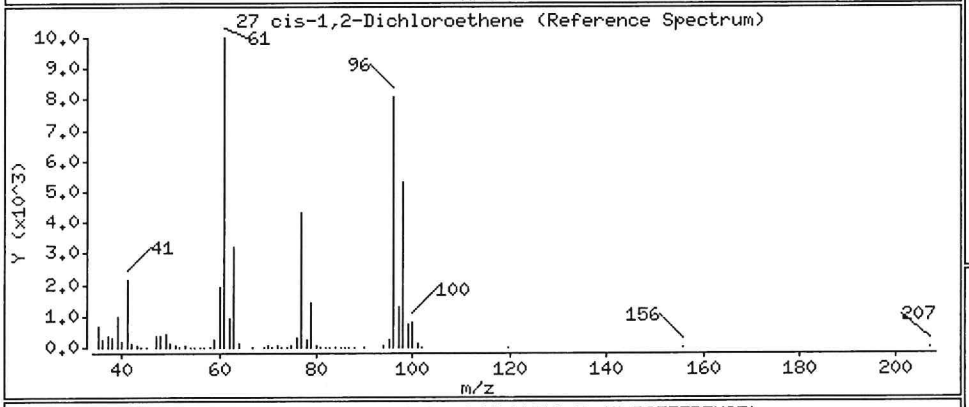
Concentration: 7.05 ug/l

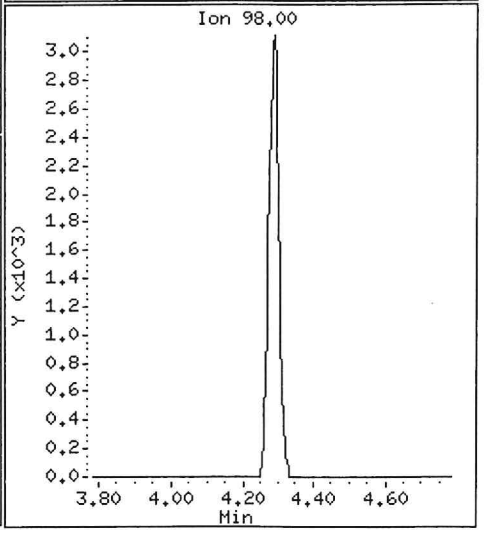


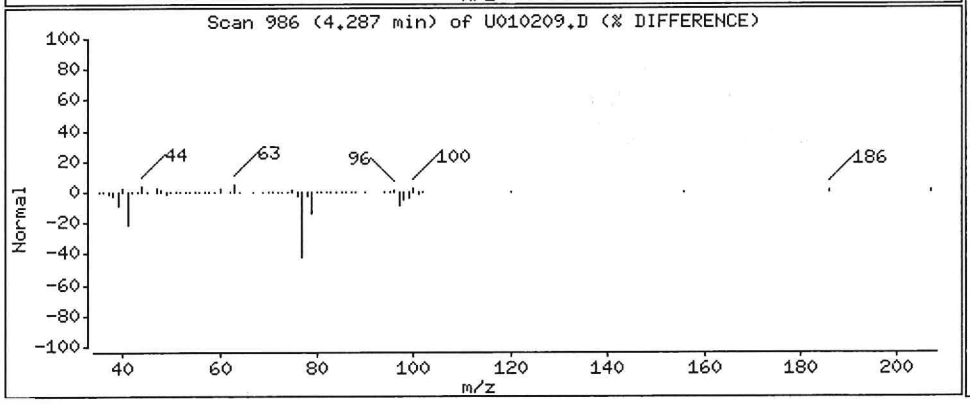












Data File: \\nahstws005\Target\chem\voa9.i\U200102.b\U010209.D

Date : 02-JAN-2020 14:26

Client ID: HS19121092-05

Instrument: VOA9.i

Sample Info: HS19121092-05;HS19121092-05;;;

Purge Volume: 5.0

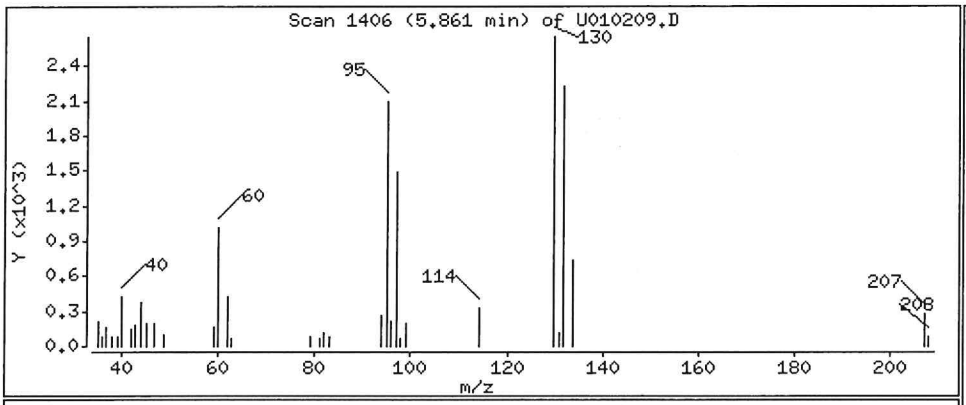
Operator: PC

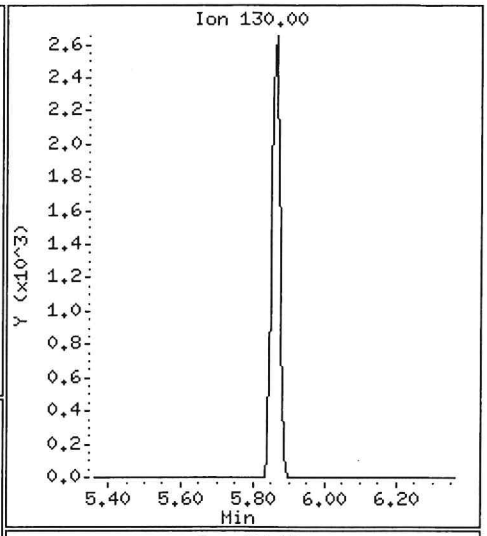
Column phase: DB624

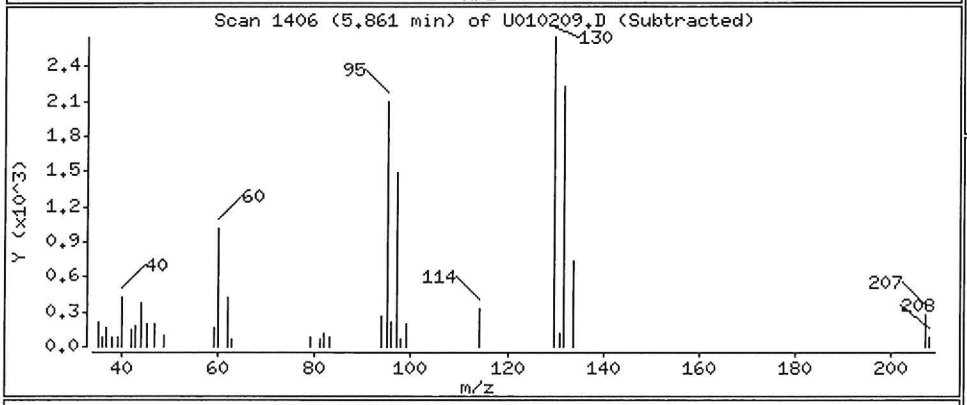
Column diameter: 0.18

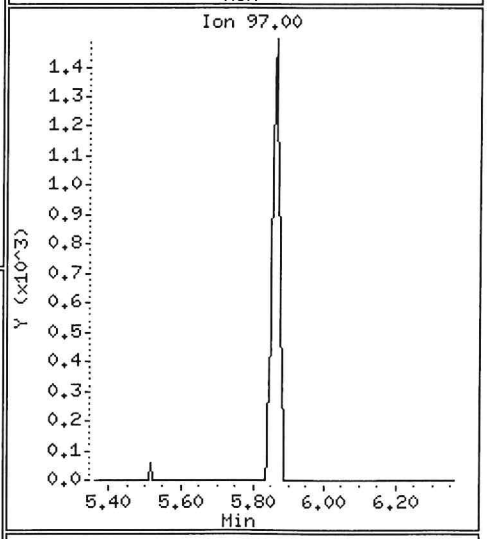
38 Trichloroethene

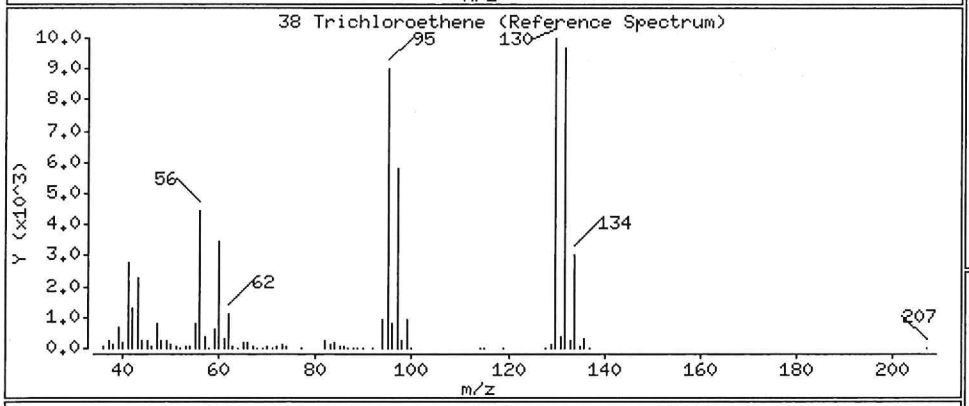
Concentration: 2.99 ug/l

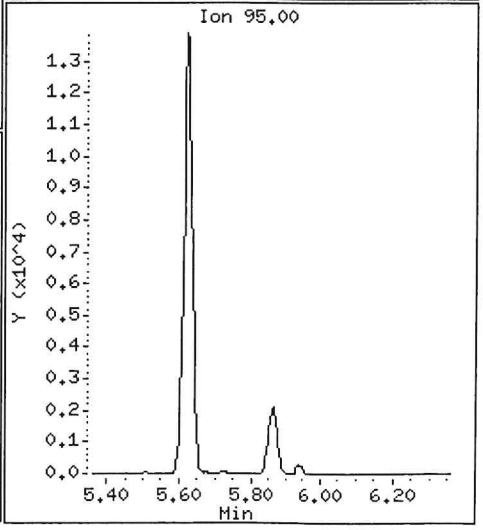


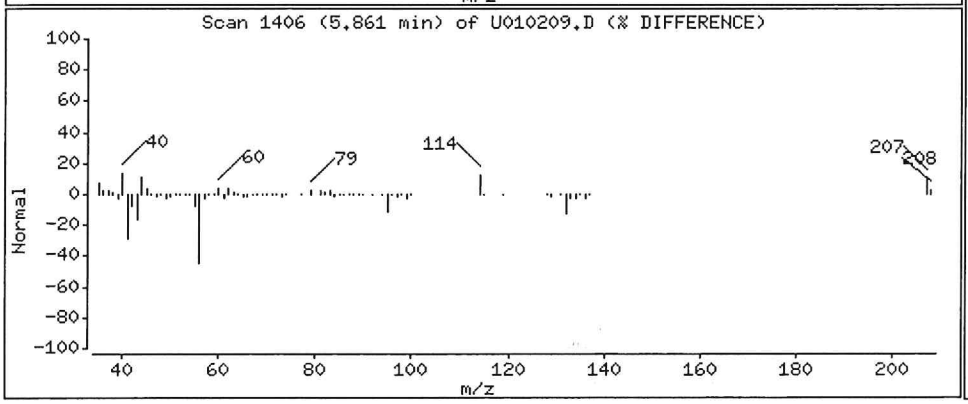












Data File: \\nahstws005\Target\chem\voa9.i\U200102.b\U010212.D Page 1
Report Date: 17-Jan-2020 16:09

ALS Laboratory Group

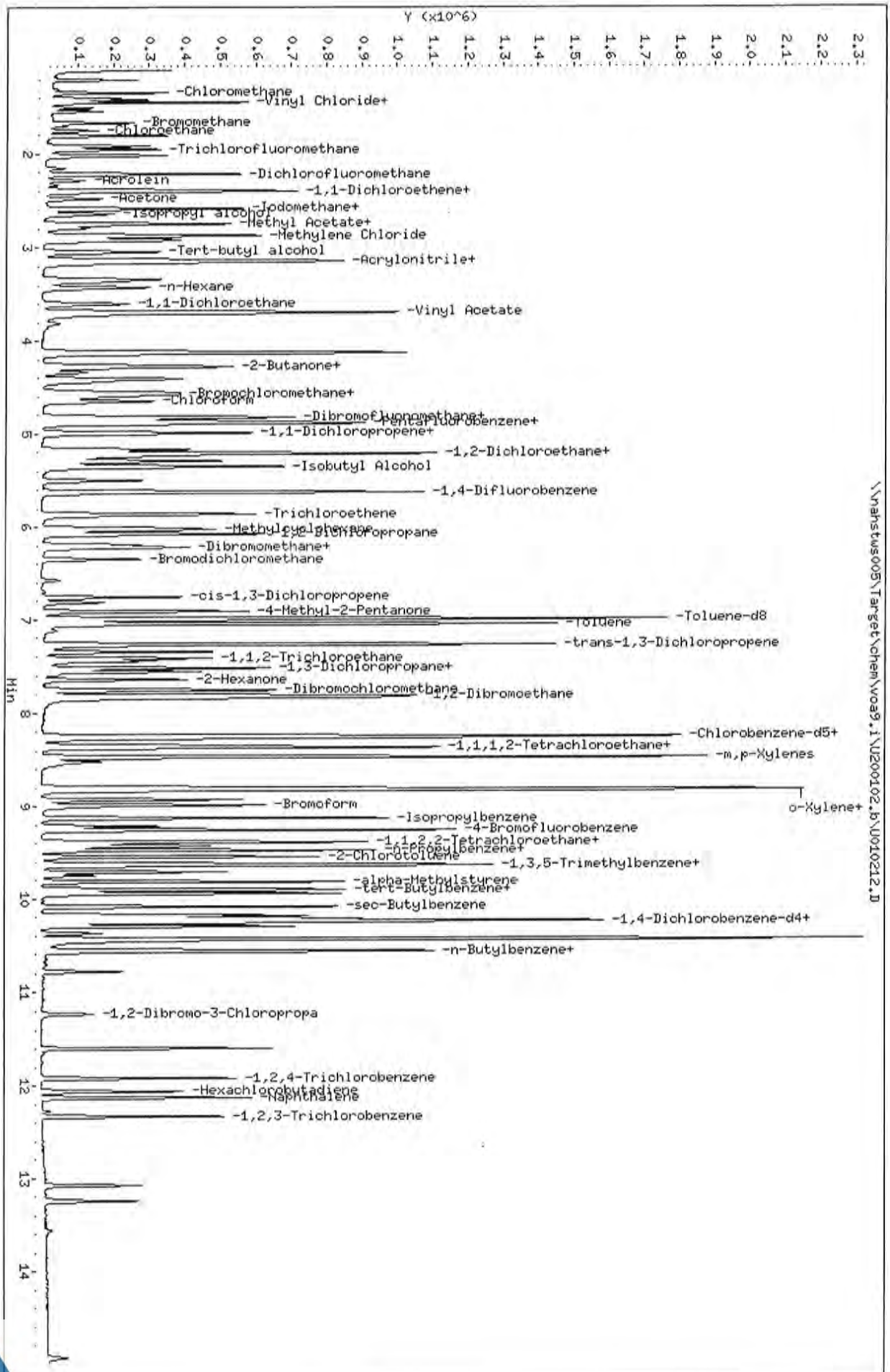
Data file : \\nahstws005\Target\chem\voa9.i\U200102.b\U010212.D
Lab Smp Id: HS19121497-01MS Client Smp ID: HS19121497-01MS
Inj Date : 02-JAN-2020 15:39
Operator : PC Inst ID: VOA9.i
Smp Info : HS19121497-01MS;HS19121497-01MS;3;;MS
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200102.b\8260C.m
Meth Date : 17-Jan-2020 16:09 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 12 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.890	4.890	(1.000)	591395	50.0000	
*	36 1,4-Difluorobenzene	114	5.621	5.621	(1.000)	830419	50.0000	
*	47 Chlorobenzene-d5	117	8.245	8.245	(1.000)	730401	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	387589	50.0000	
$	30 Dibromofluoromethane	113	4.826	4.827	(0.987)	237424	46.8827	46.88
$	35 1,2-Dichloroethane-d4	65	5.171	5.171	(1.057)	247408	43.4782	43.47
$	48 Toluene-d8	98	6.986	6.986	(0.847)	946613	50.4330	50.43
$	69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	335598	48.8997	48.89
	60 1,1,1,2-Tetrachloroethane	131	8.346	8.347	(1.012)	130444	23.3411	23.34
	31 1,1,1-Trichloroethane	97	4.823	4.823	(0.986)	192554	21.8966	21.89
	68 1,1,2,2-Tetrachloroethane	83	9.389	9.389	(0.918)	195415	21.7492	21.74
	53 1,1,2-Trichloroethane	83	7.417	7.417	(0.900)	114679	22.1458	22.14
	22 1,1-Dichloroethane	63	3.601	3.597	(0.736)	241499	20.4268	20.42
	11 1,1-Dichloroethene	96	2.397	2.394	(0.490)	122741	21.4622	21.46
	32 1,1-Dichloropropene	75	5.003	4.999	(0.890)	187300	23.0918	23.09
	93 1,2,3-Trichlorobenzene	180	12.331	12.331	(1.205)	160076	21.6239	21.62
	71 1,2,3-Trichloropropane	75	9.422	9.422	(0.921)	198223	21.6594	21.65
	90 1,2,4-Trichlorobenzene	180	11.919	11.919	(1.165)	169476	21.7092	21.70
	79 1,2,4-Trimethylbenzene	105	9.940	9.940	(0.971)	455907	21.1860	21.18
	89 1,2-Dibromo-3-Chloropropane	155	11.229	11.229	(1.097)	31282	19.7963	19.79
	57 1,2-Dibromoethane	107	7.848	7.848	(0.952)	141633	22.8221	22.82
	88 1,2-Dichlorobenzene	146	10.566	10.566	(1.033)	287179	22.3999	22.39
	33 1,2-Dichloroethane	62	5.250	5.250	(0.934)	168173	18.9775	18.97

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
42	1,2-Dichloropropane	63	6.079	6.079	(1.081)	142856	21.3265	21.32
75	1,3,5-Trimethylbenzene	105	9.621	9.621	(0.940)	439926	21.5864	21.58
83	1,3-Dichlorobenzene	146	10.176	10.176	(0.995)	291436	22.5919	22.59
54	1,3-Dichloropropane	76	7.559	7.559	(0.917)	241081	22.0006	22.00
84	1,4-Dichlorobenzene	146	10.251	10.251	(1.002)	299567	22.9041	22.90
26	2,2-Dichloropropane	77	4.272	4.268	(0.874)	172110	25.4671	25.46
24	2-Butanone	43	4.335	4.336	(0.887)	153479	37.8445	37.84
76	2-Chlorotoluene	91	9.542	9.542	(0.933)	405213	22.3939	22.39
52	2-Hexanone	43	7.645	7.646	(0.927)	231235	42.2038	42.20
77	4-Chlorotoluene	91	9.636	9.636	(0.942)	463204	22.4421	22.44
82	p-Isopropyltoluene	119	10.206	10.206	(0.997)	477207	23.1715	23.17
45	4-Methyl-2-Pentanone	43	6.911	6.911	(0.838)	337706	43.2255	43.22
10	Acetone	43	2.480	2.476	(0.507)	164151	60.6567	60.65
37	Benzene	78	5.216	5.213	(0.928)	725602	27.2864	27.28
74	Bromobenzene	156	9.377	9.377	(0.916)	175363	22.8301	22.83
29	Bromochloromethane	128	4.549	4.549	(0.930)	81022	21.9965	21.99
39	Bromodichloromethane	83	6.345	6.345	(1.129)	157274	21.0385	21.03
66	Bromoform	173	8.980	8.980	(1.089)	89810	18.8934	18.89
6	Bromomethane	94	1.666	1.659	(0.341)	118118	25.8057	25.80
19	Carbon Disulfide	76	2.585	2.585	(0.529)	713464	41.7685	41.76
34	Carbon Tetrachloride	117	4.991	4.992	(0.888)	163493	23.6219	23.62
59	Chlorobenzene	112	8.272	8.272	(1.003)	386260	22.4271	22.42
7	Chloroethane	64	1.749	1.745	(0.358)	100426	19.7225	19.72
28	Chloroform	83	4.654	4.654	(0.952)	240782	20.2239	20.22
3	Chloromethane	50	1.340	1.337	(0.274)	229591	26.0215	26.02
27	cis-1,2-Dichloroethene	96	4.283	4.279	(0.876)	168973	21.7557	21.75
46	cis-1,3-Dichloropropene	75	6.753	6.753	(1.201)	204646	20.1689	20.16
55	Dibromochloromethane	129	7.754	7.754	(0.940)	126644	20.1934	20.19
44	Dibromomethane	93	6.187	6.187	(1.101)	81005	19.3167	19.31
2	Dichlorodifluoromethane	85	1.201	1.202	(0.246)	140498	21.5912	21.59
61	Ethylbenzene	106	8.369	8.365	(1.015)	224243	25.2666	25.26
91	Hexachlorobutadiene	225	12.061	12.062	(1.179)	77398	27.3696	27.36
67	Isopropylbenzene	105	9.122	9.123	(1.106)	605551	24.2031	24.20
62	m,p-Xylenes	106	8.470	8.470	(1.027)	522905	48.9694	48.96
17	Methylene Chloride	84	2.866	2.866	(0.586)	149370	20.5666	20.56
87	n-Butylbenzene	91	10.551	10.551	(1.031)	376601	23.0054	23.00
73	n-Propylbenzene	91	9.471	9.471	(0.926)	658131	23.1423	23.14
92	Naphthalene	128	12.129	12.129	(1.185)	431479	20.0900	20.09
63	o-Xylene	106	8.808	8.808	(1.068)	253622	23.7248	23.72
81	sec-Butylbenzene	105	10.082	10.082	(0.985)	544468	24.0801	24.08
64	Styrene	104	8.823	8.823	(1.070)	817270	43.4718	43.47
78	tert-Butylbenzene	119	9.898	9.899	(0.967)	408857	23.7721	23.77
56	Tetrachloroethene	166	7.522	7.518	(0.912)	183295	27.0538	27.05
50	Toluene	91	7.046	7.042	(0.855)	636261	24.1083	24.10
20	trans-1,2-Dichloroethene	96	3.140	3.136	(0.642)	140444	21.8149	21.81
51	trans-1,3-Dichloropropene	75	7.259	7.256	(1.291)	176552	19.5954	19.59
38	Trichloroethene	130	5.857	5.857	(1.042)	154318	22.0929	22.09
8	Trichlorofluoromethane	101	1.951	1.948	(0.399)	204106	21.8707	21.87
5	Vinyl Chloride	62	1.419	1.415	(0.290)	177009	20.8027	20.80



Data File: \\nahstws005\Target\chem\voa9.i\U200102.b\U010212.D
Date : 02-JAN-2020 15:39
Client ID: HS19121497-01MS
Sample Info: HS19121497-01MS;HS19121497-01MS;3;;MS
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa9.i\U200102.b\U010213.D
Lab Smp Id: HS19121497-01MSD Client Smp ID: HS19121497-01MSD
Inj Date : 02-JAN-2020 16:04
Operator : PC Inst ID: VOA9.i
Smp Info : HS19121497-01MSD;HS19121497-01MSD;3;;MSD
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200102.b\8260C.m
Meth Date : 17-Jan-2020 16:09 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 12 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

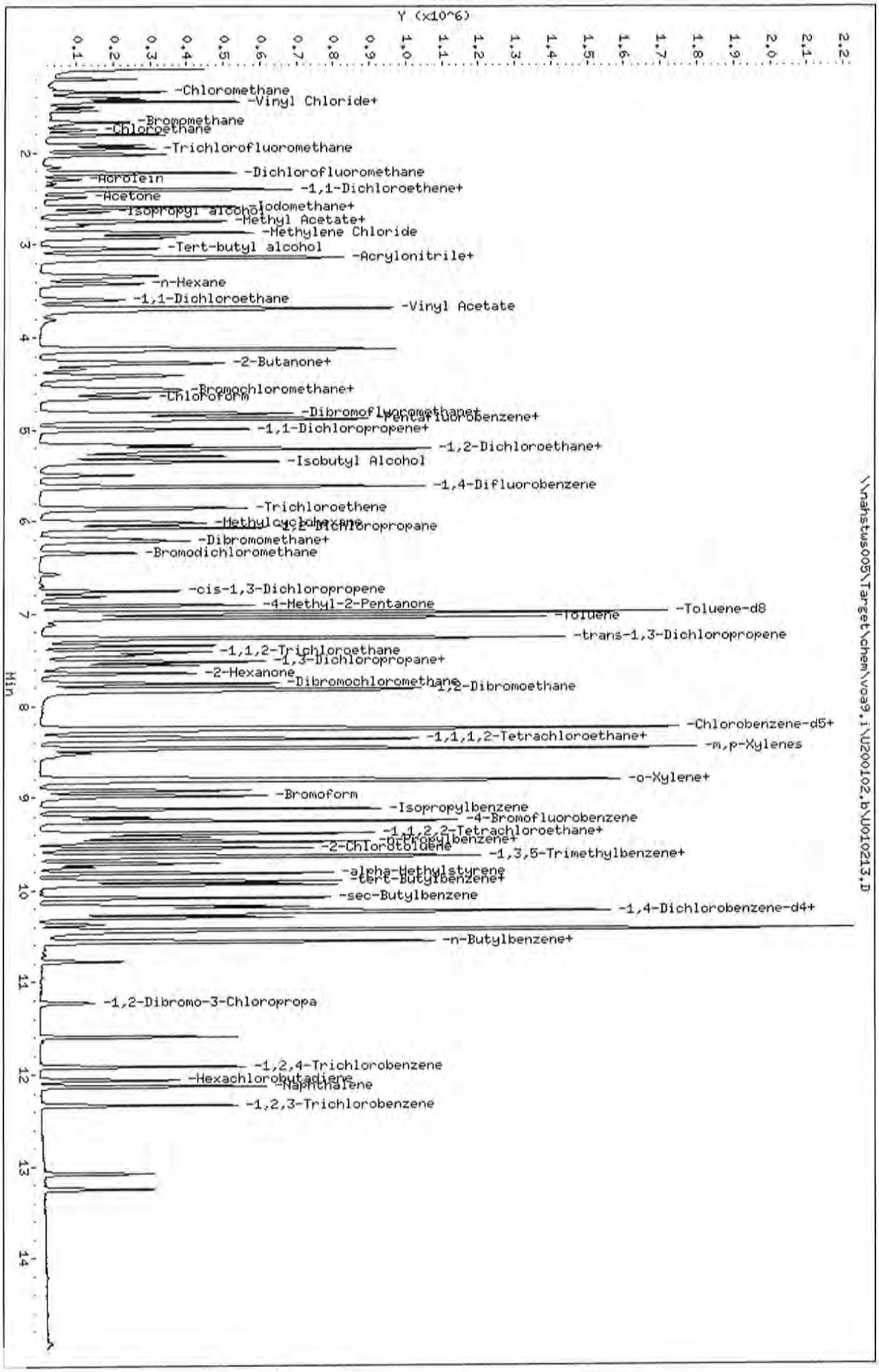
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.890	4.890	(1.000)	578707	50.0000	
* 36 1,4-Difluorobenzene	114	5.621	5.621	(1.000)	819057	50.0000	
* 47 Chlorobenzene-d5	117	8.245	8.245	(1.000)	716224	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	385827	50.0000	
$ 30 Dibromofluoromethane	113	4.827	4.827	(0.987)	234592	47.3391	47.33
$ 35 1,2-Dichloroethane-d4	65	5.171	5.171	(1.057)	246763	44.3156	44.31
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	930399	50.5503	50.55
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	328223	48.7718	48.77
60 1,1,1,2-Tetrachloroethane	131	8.347	8.347	(1.012)	126120	23.0140	23.01
31 1,1,1-Trichloroethane	97	4.823	4.823	(0.986)	184302	21.4177	21.41
68 1,1,2,2-Tetrachloroethane	83	9.389	9.389	(0.918)	197240	22.0526	22.05
53 1,1,2-Trichloroethane	83	7.417	7.417	(0.900)	110026	21.6678	21.66
22 1,1-Dichloroethane	63	3.601	3.597	(0.736)	231307	19.9937	19.99
11 1,1-Dichloroethene	96	2.397	2.394	(0.490)	117942	21.0753	21.07
32 1,1-Dichloropropene	75	5.003	4.999	(0.890)	176659	22.0820	22.08
93 1,2,3-Trichlorobenzene	180	12.331	12.331	(1.205)	163855	22.2049	22.20
71 1,2,3-Trichloropropane	75	9.422	9.422	(0.921)	197720	21.7031	21.70
90 1,2,4-Trichlorobenzene	180	11.919	11.919	(1.165)	169399	21.7927	21.79
79 1,2,4-Trimethylbenzene	105	9.940	9.940	(0.971)	428175	19.9881	19.98
89 1,2-Dibromo-3-Chloropropane	155	11.229	11.229	(1.097)	31999	20.3000	20.30
57 1,2-Dibromoethane	107	7.848	7.848	(0.952)	141048	23.1777	23.17
88 1,2-Dichlorobenzene	146	10.566	10.566	(1.033)	283678	22.2278	22.22
33 1,2-Dichloroethane	62	5.250	5.250	(0.934)	166049	18.9978	18.99

Data File: \\nahstws005\Target\chem\voa9.i\U200102.b\U010213.D Page 2
Report Date: 17-Jan-2020 16:09

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
42	1,2-Dichloropropane	63	6.079	6.079	(1.081)	140825	21.3149	21.31
75	1,3,5-Trimethylbenzene	105	9.621	9.621	(0.940)	424423	20.9208	20.92
83	1,3-Dichlorobenzene	146	10.176	10.176	(0.995)	285295	22.2169	22.21
54	1,3-Dichloropropane	76	7.559	7.559	(0.917)	235826	21.9470	21.94
84	1,4-Dichlorobenzene	146	10.251	10.251	(1.002)	291240	22.3691	22.36
26	2,2-Dichloropropane	77	4.272	4.268	(0.874)	160287	24.2376	24.23
24	2-Butanone	43	4.339	4.336	(0.887)	155384	39.1543	39.15
76	2-Chlorotoluene	91	9.542	9.542	(0.933)	390646	21.6874	21.68
52	2-Hexanone	43	7.646	7.646	(0.927)	237821	44.2650	44.26
77	4-Chlorotoluene	91	9.636	9.636	(0.942)	444970	21.6571	21.65
82	p-Isopropyltoluene	119	10.206	10.206	(0.997)	455766	22.2315	22.23
45	4-Methyl-2-Pentanone	43	6.911	6.911	(0.838)	337303	44.0286	44.02
10	Acetone	43	2.480	2.476	(0.507)	122274	45.4246	45.42
37	Benzene	78	5.216	5.213	(0.928)	700314	26.7008	26.70
74	Bromobenzene	156	9.377	9.377	(0.916)	170705	22.3252	22.32
29	Bromochloromethane	128	4.553	4.549	(0.931)	78598	21.8063	21.80
39	Bromodichloromethane	83	6.345	6.345	(1.129)	151806	20.5888	20.58
66	Bromoform	173	8.980	8.980	(1.089)	91688	19.5915	19.59
6	Bromomethane	94	1.666	1.659	(0.341)	115284	25.7383	25.73
19	Carbon Disulfide	76	2.589	2.585	(0.529)	685463	41.0091	41.00
34	Carbon Tetrachloride	117	4.991	4.992	(0.888)	153079	22.4241	22.42
59	Chlorobenzene	112	8.272	8.272	(1.003)	378054	22.3851	22.38
7	Chloroethane	64	1.753	1.745	(0.358)	96241	19.2950	19.29
28	Chloroform	83	4.654	4.654	(0.952)	231373	19.8596	19.85
3	Chloromethane	50	1.340	1.337	(0.274)	228452	26.4985	26.49
27	cis-1,2-Dichloroethene	96	4.283	4.279	(0.876)	157868	20.7716	20.77
46	cis-1,3-Dichloropropene	75	6.753	6.753	(1.201)	201459	20.1323	20.13
55	Dibromochloromethane	129	7.754	7.754	(0.940)	127161	20.6519	20.65
44	Dibromomethane	93	6.187	6.187	(1.101)	81566	19.7203	19.72
2	Dichlorodifluoromethane	85	1.205	1.202	(0.247)	135567	21.2902	21.29
61	Ethylbenzene	106	8.365	8.365	(1.015)	207538	23.8472	23.84
91	Hexachlorobutadiene	225	12.061	12.062	(1.179)	72179	25.7068	25.70
67	Isopropylbenzene	105	9.123	9.123	(1.106)	577538	23.5404	23.54
62	m,p-Xylenes	106	8.470	8.470	(1.027)	499522	47.7056	47.70
17	Methylene Chloride	84	2.870	2.866	(0.587)	145036	20.3986	20.39
87	n-Butylbenzene	91	10.555	10.551	(1.032)	353408	21.6872	21.68
73	n-Propylbenzene	91	9.471	9.471	(0.926)	636567	22.4863	22.48
92	Naphthalene	128	12.129	12.129	(1.185)	443871	20.7284	20.72
63	o-Xylene	106	8.808	8.808	(1.068)	243842	23.2614	23.26
81	sec-Butylbenzene	105	10.082	10.082	(0.985)	513918	22.8328	22.83
64	Styrene	104	8.823	8.823	(1.070)	530086	28.7542	28.75
78	tert-Butylbenzene	119	9.898	9.899	(0.967)	388874	22.7135	22.71
56	Tetrachloroethene	166	7.522	7.518	(0.912)	171259	25.7692	25.76
50	Toluene	91	7.046	7.042	(0.855)	608436	23.5103	23.51
20	trans-1,2-Dichloroethene	96	3.140	3.136	(0.642)	130068	20.6462	20.64
51	trans-1,3-Dichloropropene	75	7.259	7.256	(1.291)	174329	19.6154	19.61
38	Trichloroethene	130	5.857	5.857	(1.042)	148604	21.5699	21.56
8	Trichlorofluoromethane	101	1.955	1.948	(0.400)	197544	21.6317	21.63
5	Vinyl Chloride	62	1.419	1.415	(0.290)	167317	20.0948	20.09



Data File: \\nahstws005\Target\chem\voa9.i\U200102.b\U010213.D
Date : 02-JAN-2020 16:04
Client ID: HS1912149?-01HSD
Sample Info: HS1912149?-01HSD;HS1912149?-01HSD;3;;HSD
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa9.i\U200102.b\U010214.D Page 1
Report Date: 17-Jan-2020 16:10

ALS Laboratory Group

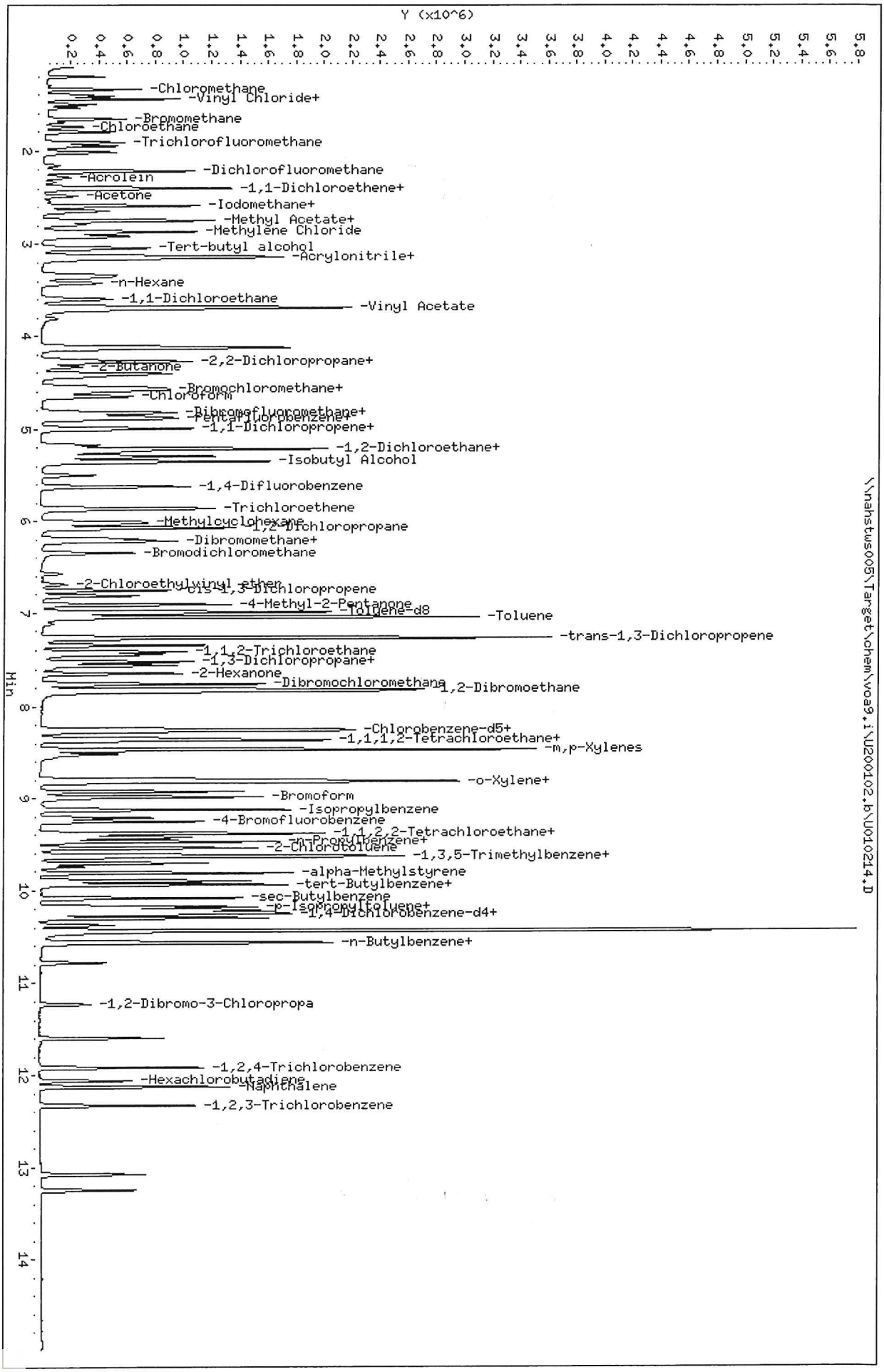
Data file : \\nahstws005\Target\chem\voa9.i\U200102.b\U010214.D
Lab Smp Id: CCV-END Client Smp ID: CCV-END
Inj Date : 02-JAN-2020 16:28
Operator : PC Inst ID: VOA9.i
Smp Info : CCV-END;CCV-END;2;;
Misc Info : 180315V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U200102.b\8260C.m
Meth Date : 17-Jan-2020 16:09 VOA9.i Quant Type: ISTD
Cal Date : 27-DEC-2019 14:17 Cal File: U122708.D
Als bottle: 13 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.890	4.890	(1.000)	576358	50.0000	
* 36 1,4-Difluorobenzene	114	5.621	5.621	(1.000)	816606	50.0000	
* 47 Chlorobenzene-d5	117	8.245	8.245	(1.000)	720522	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	10.232	10.232	(1.000)	389672	50.0000	
$ 30 Dibromofluoromethane	113	4.827	4.827	(0.987)	232131	50.0000	47.03
$ 35 1,2-Dichloroethane-d4	65	5.171	5.171	(1.057)	245310	50.0000	44.23
$ 48 Toluene-d8	98	6.986	6.986	(0.847)	934784	50.0000	50.48
$ 69 4-Bromofluorobenzene	95	9.254	9.254	(1.122)	333588	50.0000	49.27
60 1,1,1,2-Tetrachloroethane	131	8.347	8.347	(1.012)	289486	50.0000	52.50
31 1,1,1-Trichloroethane	97	4.823	4.823	(0.986)	369040	50.0000	43.06
68 1,1,2,2-Tetrachloroethane	83	9.389	9.389	(0.918)	443116	50.0000	49.05
53 1,1,2-Trichloroethane	83	7.417	7.417	(0.900)	247283	50.0000	48.40
22 1,1-Dichloroethane	63	3.597	3.597	(0.736)	505710	50.0000	43.89
11 1,1-Dichloroethene	96	2.394	2.394	(0.490)	229739	50.0000	41.21
32 1,1-Dichloropropene	75	4.999	4.999	(0.889)	336696	50.0000	42.21
93 1,2,3-Trichlorobenzene	180	12.331	12.331	(1.205)	345695	50.0000	45.20
71 1,2,3-Trichloropropane	75	9.422	9.422	(0.921)	463081	50.0000	50.32
90 1,2,4-Trichlorobenzene	180	11.919	11.919	(1.165)	356603	50.0000	43.90
79 1,2,4-Trimethylbenzene	105	9.940	9.940	(0.971)	907353	50.0000	41.93
89 1,2-Dibromo-3-Chloropropane	155	11.229	11.229	(1.097)	80428	50.0000	48.22
57 1,2-Dibromoethane	107	7.848	7.848	(0.952)	317216	50.0000	51.81
88 1,2-Dichlorobenzene	146	10.566	10.566	(1.033)	601632	50.0000	46.67
33 1,2-Dichloroethane	62	5.250	5.250	(0.934)	372549	50.0000	42.75

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42	1,2-Dichloropropane	63	6.079	6.079	(1.081)	305920	50.0000	46.44
75	1,3,5-Trimethylbenzene	105	9.621	9.621	(0.940)	874861	50.0000	42.69
83	1,3-Dichlorobenzene	146	10.176	10.176	(0.995)	600983	50.0000	46.33
54	1,3-Dichloropropane	76	7.559	7.559	(0.917)	530638	50.0000	49.08
84	1,4-Dichlorobenzene	146	10.251	10.251	(1.002)	627579	50.0000	47.72
26	2,2-Dichloropropane	77	4.268	4.268	(0.873)	335417	50.0000	50.92
24	2-Butanone	43	4.336	4.336	(0.887)	351113	100.000	88.83
76	2-Chlorotoluene	91	9.542	9.542	(0.933)	801109	50.0000	44.03
52	2-Hexanone	43	7.646	7.646	(0.927)	538014	100.000	99.54
77	4-Chlorotoluene	91	9.636	9.636	(0.942)	926021	50.0000	44.62
82	p-Isopropyltoluene	119	10.206	10.206	(0.997)	846155	50.0000	40.86
45	4-Methyl-2-Pentanone	43	6.911	6.911	(0.838)	760412	100.000	98.66
10	Acetone	43	2.476	2.476	(0.506)	244802	100.000	94.48
37	Benzene	78	5.213	5.213	(0.927)	1200441	50.0000	45.90
74	Bromobenzene	156	9.377	9.377	(0.916)	370805	50.0000	48.01
29	Bromochloromethane	128	4.549	4.549	(0.930)	164219	50.0000	45.74
39	Bromodichloromethane	83	6.345	6.345	(1.129)	362646	50.0000	49.33
66	Bromoform	173	8.980	8.980	(1.089)	233400	50.0000	46.64
6	Bromomethane	94	1.659	1.659	(0.339)	246892	50.0000	55.53
19	Carbon Disulfide	76	2.585	2.585	(0.529)	1426673	100.000	85.70
34	Carbon Tetrachloride	117	4.992	4.992	(0.888)	297100	50.0000	43.65
59	Chlorobenzene	112	8.272	8.272	(1.003)	809031	50.0000	47.61
7	Chloroethane	64	1.745	1.745	(0.357)	197332	50.0000	40.74
28	Chloroform	83	4.654	4.654	(0.952)	503269	50.0000	43.37
3	Chloromethane	50	1.337	1.337	(0.273)	471881	50.0000	57.40
27	cis-1,2-Dichloroethene	96	4.279	4.279	(0.875)	339595	50.0000	44.86
46	cis-1,3-Dichloropropene	75	6.753	6.753	(1.201)	482778	50.0000	46.84
55	Dibromochloromethane	129	7.754	7.754	(0.940)	307976	50.0000	48.23
44	Dibromomethane	93	6.187	6.187	(1.101)	197508	50.0000	47.89
2	Dichlorodifluoromethane	85	1.202	1.202	(0.246)	238959	50.0000	37.68
61	Ethylbenzene	106	8.365	8.365	(1.015)	401022	50.0000	45.80
91	Hexachlorobutadiene	225	12.062	12.062	(1.179)	126718	50.0000	43.80
67	Isopropylbenzene	105	9.123	9.123	(1.106)	1094880	50.0000	44.36
62	m,p-Xylenes	106	8.470	8.470	(1.027)	978671	100.000	92.90
17	Methylene Chloride	84	2.866	2.866	(0.586)	322828	50.0000	47.04
87	n-Butylbenzene	91	10.551	10.551	(1.031)	643144	50.0000	39.07
73	n-Propylbenzene	91	9.471	9.471	(0.926)	1203126	50.0000	42.08
92	Naphthalene	128	12.129	12.129	(1.185)	986198	50.0000	44.35
63	o-Xylene	106	8.808	8.808	(1.068)	493826	50.0000	46.82
81	sec-Butylbenzene	105	10.082	10.082	(0.985)	919799	50.0000	40.46
64	Styrene	104	8.823	8.823	(1.070)	954047	50.0000	51.44
78	tert-Butylbenzene	119	9.899	9.899	(0.967)	719599	50.0000	41.61
56	Tetrachloroethene	166	7.518	7.518	(0.912)	308375	50.0000	46.26
50	Toluene	91	7.042	7.042	(0.854)	1224850	50.0000	47.04
20	trans-1,2-Dichloroethene	96	3.136	3.136	(0.641)	277885	50.0000	44.28
51	trans-1,3-Dichloropropene	75	7.256	7.256	(1.291)	428119	50.0000	46.17
38	Trichloroethene	130	5.857	5.857	(1.042)	306987	50.0000	44.69
8	Trichlorofluoromethane	101	1.948	1.948	(0.398)	350663	50.0000	38.55
5	Vinyl Chloride	62	1.415	1.415	(0.289)	324558	50.0000	39.13



Data File: \\nahstws005\Target\chem\voa9,i\U200102,b\U010214,D
Date : 02-JAN-2020 16:28
Client ID: CCV-END
Sample Info: CCV-END;CCV-END;2;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

HS19121092 - ME - ICP_W_DOD

ALS WO# HS19121092

ALS Houston, US Date: 13-Jan-20

Form 11 - INTERNAL STANDARD ASSOCIATION

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

Instrument:ICPMS05

Mass	Analyte	Assoc Int Standard 1	Assoc Int Standard 2	Mode
9	Beryllium	Lithium		Ar
11	Boron	Lithium		Ar
23	Sodium	Germanium		Ar
24	Magnesium	Germanium		Ar
27	Aluminum	Germanium		Ar
39	Potassium	Germanium		Ar
44	Calcium	Germanium		Ar
47	Titanium	Germanium		Ar
51	Vanadium	Germanium		ArHe
52	Chromium	Germanium		ArHe
55	Manganese	Germanium		ArHe
56	Iron	Germanium		ArHe
59	Cobalt	Germanium		ArHe
60	Nickel	Germanium		ArHe
63	Copper	Germanium		ArHe
66	Zinc	Germanium		ArHe
75	Arsenic	Germanium		ArHe
78	Selenium	Germanium		ArHe
88	Strontium	Germanium		Ar
95	Molybdenum	Germanium		Ar
105	Palladium	Germanium		Ar
107	Silver	Germanium		Ar
114	Cadmium	Indium		Ar
118	Tin	Germanium		Ar
121	Antimony	Germanium		ArHe
137	Barium	Indium		Ar
205	Thallium	Bismuth		Ar
208	Lead	Bismuth		Ar

ALS Houston, US

Date: 13-Jan-20

FORM 12 - PREPARATION LOG

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092
Start Date: 27-Dec-2019 09:00 End Date: 27-Dec-2019 13:00

Batch ID: 149161
Prep Code: 3010A
Method: SW3010A
Technician:

SampID	ClientID	Matrix	Init Wt	Init Vol	FinalVol (mL)	PrepFac
HS19121036-01MS				10	10	1
HS19121036-01MSD				10	10	1
HS19121036-01PDS				10	10	1
HS19121036-01SD				10	10	1
HS19121092-01	35AWW09_121819	Groundwater		10	10	1
HS19121092-02	03WW01_121819	Groundwater		10	10	1
HS19121092-03	35AWW08_121819	Groundwater		10	10	1
LCS-149161				10	10	1
MBLK-149161				10	10	1

ALS Houston, US Date: 13-Jan-20

FORM 13 - ANALYSIS RUN LOG

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092
Start Date: 03-Jan-2020 End Date: 03-Jan-2020

Run ID:ICPMS05_353764
Instrument:ICPMS05
Method:

Sample No.	D/F	Time	FileID	Analytes
ICPMS05_353764_Tune	1	03-Jan-2020 00:00	ICPMS05_353764_Tune_1	
CAL BLK	1	03-Jan-2020 11:06	013CALB.d_5422272	AS
2/10/200	1	03-Jan-2020 11:08	014CALS.d_5422273	AS
5/25/500	1	03-Jan-2020 11:10	015CALS.d_5422274	AS
10/50/1000	1	03-Jan-2020 11:13	016CALS.d_5422275	AS
100/500/10K	1	03-Jan-2020 11:15	017CALS.d_5422276	AS
200/1000/20K	1	03-Jan-2020 11:17	018CALS.d_5422277	AS
ICV	1	03-Jan-2020 11:22	020_ICV.d_5422279	AS
LLICV2	1	03-Jan-2020 11:24	021LCV2.d_5422280	AS
LLICV5	1	03-Jan-2020 11:26	022LCV5.d_5422281	AS
ICB	1	03-Jan-2020 11:28	023_ICB.d_5422282	AS
ICSA	1	03-Jan-2020 11:30	024ICSA.d_5422283	AS
ICSAB	1	03-Jan-2020 11:33	025ICSB.d_5422284	AS
CCV 1	1	03-Jan-2020 11:55	032_CCV.d_5423036	AS
CCB 1	1	03-Jan-2020 11:57	033_CCB.d_5423037	AS
MBLK-149161	1	03-Jan-2020 12:00	034SMPL.d_5423038	AS
LCS-149161	1	03-Jan-2020 12:03	035SMPL.d_5423039	AS
ZZZZZZSD	5	03-Jan-2020 12:12	039SMPL.d_5423043	AS
ZZZZZZMS	1	03-Jan-2020 12:14	040SMPL.d_5423044	AS
ZZZZZZMSD	1	03-Jan-2020 12:17	041SMPL.d_5423045	AS
ZZZZZZPDS	1	03-Jan-2020 12:19	042SMPL.d_5423046	AS
CCV 2	1	03-Jan-2020 12:27	044_CCV.d_5423048	AS
CCB 2	1	03-Jan-2020 12:30	045_CCB.d_5423049	AS
35AWW09_121819	1	03-Jan-2020 12:41	050SMPL.d_5423054	AS
03WW01_121819	1	03-Jan-2020 12:43	051SMPL.d_5423055	AS
35AWW08_121819	1	03-Jan-2020 12:49	053SMPL.d_5423057	AS
CCV 3	1	03-Jan-2020 12:58	056_CCV.d_5423060	AS
CCB 3	1	03-Jan-2020 13:00	057_CCB.d_5423035	AS
CAL BLK	1	03-Jan-2020 13:55	077CALB.d_5423146	AS
2/10/200	1	03-Jan-2020 13:57	078CALS.d_5423147	AS
5/25/500	1	03-Jan-2020 13:59	079CALS.d_5423148	AS
10/50/1000	1	03-Jan-2020 14:02	080CALS.d_5423149	AS
100/500/10K	1	03-Jan-2020 14:04	081CALS.d_5423150	AS
200/1000/20K	1	03-Jan-2020 14:06	082CALS.d_5423151	AS
LLCCV2	1	03-Jan-2020 14:19	085LCV2.d_5423154	AS
LLCCV5	1	03-Jan-2020 14:21	086LCV5.d_5423155	AS
ICCB 4	1	03-Jan-2020 14:23	087_ICB.d_5423156	AS
ZZZZZZSD	100	03-Jan-2020 14:36	092SMPL.d_5423161	
ZZZZZZPDS	20	03-Jan-2020 14:39	093SMPL.d_5423162	
CCV 4	1	03-Jan-2020 14:50	098_CCV.d_5423167	AS
CCB 5	1	03-Jan-2020 14:52	099_CCB.d_5423168	AS
CCV 5	1	03-Jan-2020 15:16	110_CCV.d_5423222	AS
CCB 6	1	03-Jan-2020 15:19	111_CCB.d_5423223	AS
CCV 6	1	03-Jan-2020 15:43	122_CCV.d_5423226	AS
CCV 7	1	03-Jan-2020 15:43	122_CCV.d_5428365	AS
CCB 7	1	03-Jan-2020 15:45	123_CCB.d_5423227	AS
CCB 8	1	03-Jan-2020 15:45	123_CCB.d_5428366	AS
CCV 8	1	03-Jan-2020 16:16	134_CCV.d_5428368	AS
CCB 9	1	03-Jan-2020 16:19	135_CCB.d_5428369	AS

ALS Houston, US

Date: 13-Jan-20

Form 2 - Initial and Continuing Calibration Verification

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

Run ID: ICPMS05_353764
Instrument: ICPMS05
Method: SW6020

ICV	Date: 03-Jan-2020 11:22		Seq: 5422279	ICV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Arsenic	100	98.942	99	90-110	

CCV1	Date: 03-Jan-2020 11:55		Seq: 5423036	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Arsenic	100	101.747	102	90-110	

CCV2	Date: 03-Jan-2020 12:27		Seq: 5423048	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Arsenic	100	99.283	99	90-110	

CCV3	Date: 03-Jan-2020 12:58		Seq: 5423060	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Arsenic	100	100.144	100	90-110	

CCV4	Date: 03-Jan-2020 14:50		Seq: 5423167	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Arsenic	100	104.993	105	90-110	

CCV5	Date: 03-Jan-2020 15:16		Seq: 5423222	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Arsenic	100	104.521	105	90-110	

CCV7	Date: 03-Jan-2020 15:43		Seq: 5428365	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Arsenic	100	104.533	105	90-110	

CCV6	Date: 03-Jan-2020 15:43		Seq: 5423226	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Arsenic	100	104.533	105	90-110	

CCV8	Date: 03-Jan-2020 16:16		Seq: 5428368	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Arsenic	100	104.245	104	90-110	

ALS Houston, US Date: 13-Jan-20

Form 3 - BLANKS

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

Run ID: ICPMS05_353764
Instrument: ICPMS05
Method: SW6020

ICB	Date: 03-Jan-2020 11:28		Seq: 5422282	ICB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Arsenic	5	0.4	5	U	
CCB1	Date: 03-Jan-2020 11:57		Seq: 5423037	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Arsenic	2	0.4	2	U	
MBLK-149161	Date: 03-Jan-2020 12:00		Seq: 5423038	MBLK	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Arsenic	5	0.4	5	U	
CCB2	Date: 03-Jan-2020 12:30		Seq: 5423049	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Arsenic	2	0.4	2	U	
CCB3	Date: 03-Jan-2020 13:00		Seq: 5423035	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Arsenic	2	0.4	2	U	
ICCB4	Date: 03-Jan-2020 14:23		Seq: 5423156	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Arsenic	5	0.4	5	U	
CCB5	Date: 03-Jan-2020 14:52		Seq: 5423168	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Arsenic	2	0.4	2	U	
CCB6	Date: 03-Jan-2020 15:19		Seq: 5423223	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Arsenic	2	0.4	2	U	
CCB8	Date: 03-Jan-2020 15:45		Seq: 5428366	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Arsenic	2	0.4	2	U	
CCB7	Date: 03-Jan-2020 15:45		Seq: 5423227	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Arsenic	2	0.4	2	U	
CCB9	Date: 03-Jan-2020 16:19		Seq: 5428369	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Arsenic	2	0.4	2	U	

ALS Houston, US Date: 13-Jan-20

Form 4 - ICP Interference Check Sample

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

Run ID: ICPMS05_353764
Instrument: ICPMS05
Method: SW6020

ICSA	Date: 03-Jan-2020 11:30	Seq: 5422283	ICSA	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Arsenic		0.024	0	

ICSAB	Date: 03-Jan-2020 11:33	Seq: 5422284	ICSAB	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Arsenic	100	109.7	110	

ALS Houston, US Date: 13-Jan-20

Form 5A - Matrix Spike/Matrix Spike Duplicate Recovery

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

Date Analyzed: 03-Jan-2020 12:17
Date Extracted: 27-Dec-2019 13:00
Units: ug/L

Matrix Spike: HS19121036-01MS
Client Sample ID:

Analysis Method: SW6020

Analyte	Sample Result	MS Result	Spike Amount	% Rec	MSD Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Arsenic	5.000	49.54	50.00	99.1	48.23	50.00	96.5	84-116	2.68	20

ALS Houston, US Date: 13-Jan-20

Form 5B - Post Digest Sample Recovery

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

Date Analyzed: 03-Jan-2020 12:19
Date Extracted: 27-Dec-2019 13:00
Units: ug/L

Lab Sample ID: HS19121036-01PDS
Client Sample ID:

Analysis Method: SW6020

Analyte	Sample Result	PDS Result	Spike Amount	% Rec	% Rec Limits
Arsenic	0	98.11	100	98	80-120

ALS Houston, US Date: 13-Jan-20

Form 7 - Laboratory Control Sample

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

Date Analyzed: 03-Jan-2020 12:03
Date Extracted: 27-Dec-2019 13:00
Units: ug/L

Lab Sample ID: LCS-149161 Analysis Method: SW6020

Analyte	Spike Amount	LCS Result	% Rec	% Rec Limits
Arsenic	50	50.72	101	84-116

ALS Houston, US Date: 13-Jan-20

Form 8 - ICP Serial Dilutions

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121092

Date Analyzed: 03-Jan-2020 12:12
Date Extracted: 27-Dec-2019 13:00
Units: ug/L

Lab Sample ID: HS19121036-01SD
Client Sample ID:

Analysis Method: SW6020

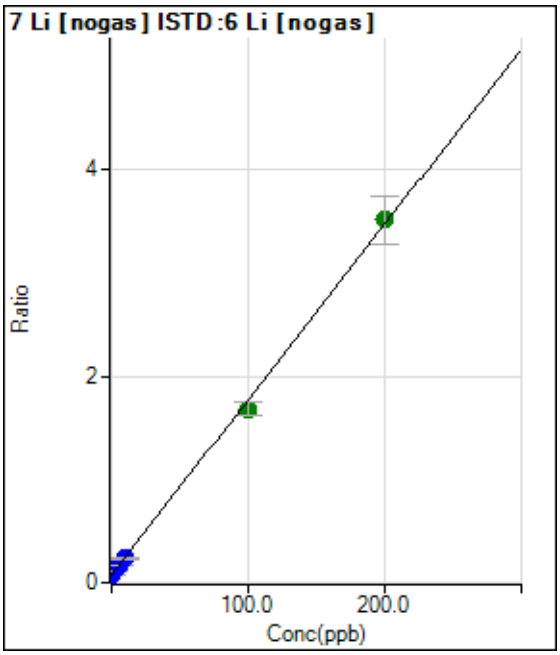
Analyte	Sample Result	C	SD Result	C	RPD	Q
Arsenic	0	U	0	U	0	

Calibration for 163_ICV.d

Batch Folder: C:\Agilent\ICPMH\1\DATA\010320A.b\
Analysis File: 010320A.batch.bin
DA Date-Time: 1/6/2020 8:24:45 AM
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	153CALB.d	CAL BLK	1/3/2020 8:58:18 PM
2	154CALS.d	2/10/200	1/3/2020 9:00:32 PM
3	155CALS.d	5/25/500	1/3/2020 9:02:49 PM
4	156CALS.d	10/50/1000	1/3/2020 9:05:04 PM
5	157CALS.d	100/500/10K	1/3/2020 9:07:18 PM
6	158CALS.d	200/1000/20K	1/3/2020 9:09:30 PM
7			

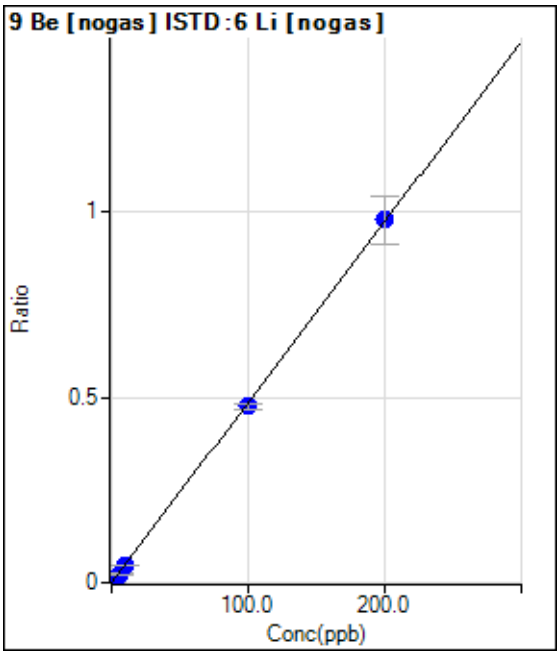
Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	87724.13	0.0762	P	3.4
2	☐	2.000	1.894	123984.27	0.1083	P	3.4
3	☐	5.000	4.943	176028.98	0.1600	P	1.9
4	☐	10.000	9.260	258496.92	0.2333	P	1.3
5	☐	100.000	94.822	1801984.50	1.6847	A	7.3
6	☐	200.000	202.629	3542933.38	3.5136	A	13.5
7	☐	1.000					

y = 0.0170 * x + 0.0762
R = 0.9995
DL = 0.4636
BEC = 4.491

Weight: <None>
Min Conc: <None>

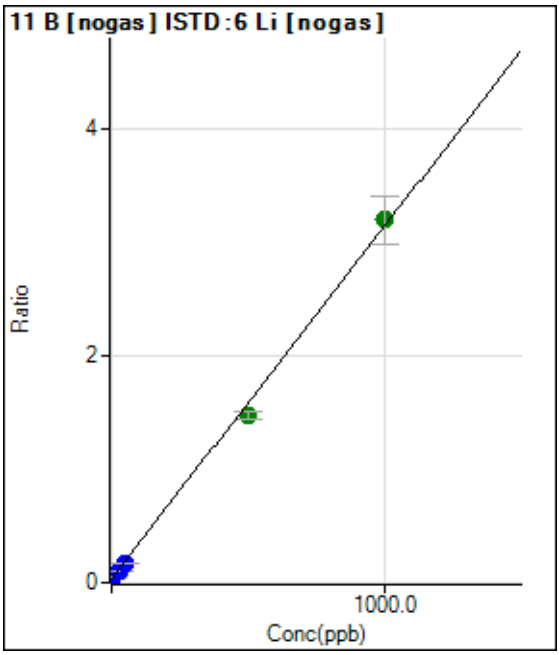


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	13.33	0.0000	P	78.5
2	☐	2.000	1.851	10311.19	0.0090	P	3.8
3	☐	5.000	4.746	25386.77	0.0231	P	3.1
4	☐	10.000	9.467	50990.39	0.0460	P	3.0
5	☐	100.000	97.765	508490.11	0.4752	P	3.7
6	☐	200.000	201.152	985846.65	0.9776	P	13.5
7	☐	1.000					

y = 0.0049 * x + 1.1629E-005
R = 0.9999
DL = 0.005636
BEC = 0.002393

Weight: <None>
Min Conc: <None>

Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	40018.10	0.0347	P	1.3
2	☐	10.000	8.021	68281.90	0.0597	P	5.4
3	☐	25.000	21.726	112553.21	0.1023	P	0.9
4	☐	50.000	42.733	185734.98	0.1676	P	3.0
5	☐	500.000	464.312	1581944.61	1.4787	A	5.1
6	☐	1000.000	1018.309	3230079.22	3.2016	A	13.0
7	☐	5.000					

y = 0.0031 * x + 0.0347

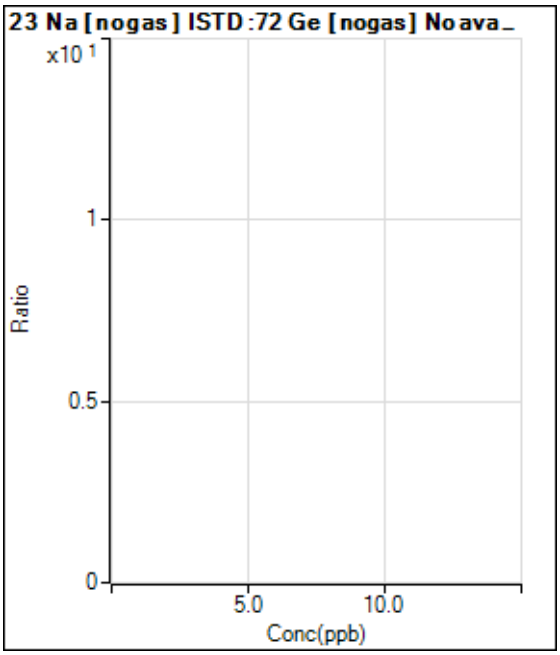
R = 0.9991

DL = 0.4211

BEC = 11.17

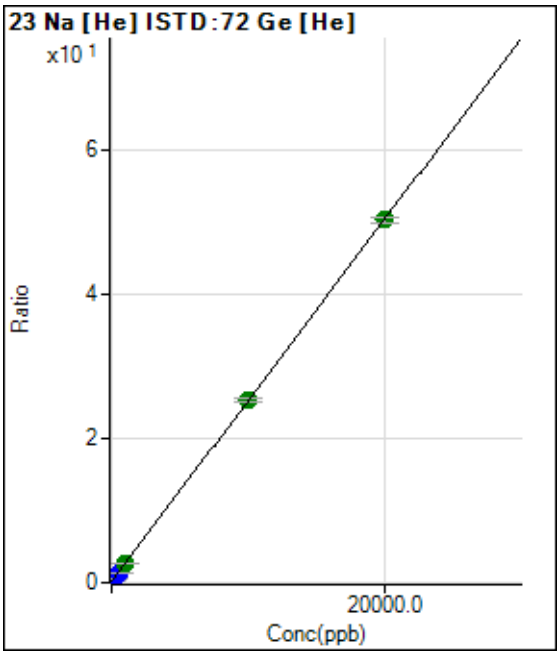
Weight: <None>

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.000					
6	☐	20000.000					
7	☐	100.000					

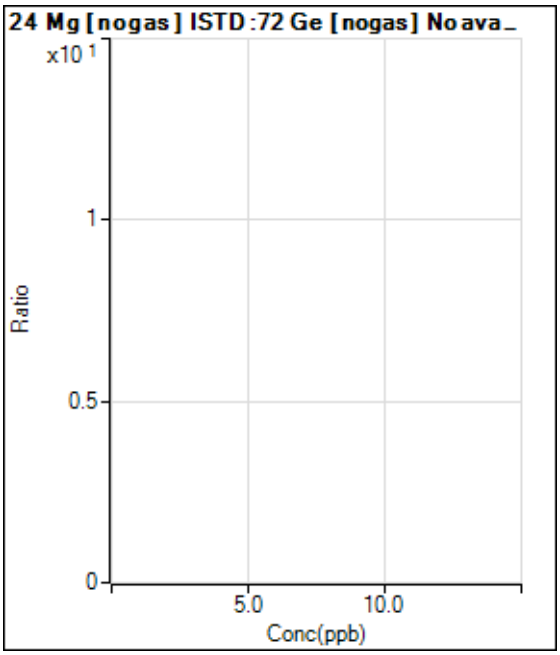
Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	58376.64	0.1367	P	4.2
2	☐	200.000	207.662	283817.67	0.6573	P	1.9
3	☐	500.000	507.643	624102.73	1.4093	P	2.3
4	☐	1000.000	989.493	1163948.76	2.6173	A	1.3
5	☐	10000.000	10050.125	10847119.42	25.3315	A	1.5
6	☐	20000.000	19975.195	20952284.69	50.2129	A	1.7
7	☐	100.000					

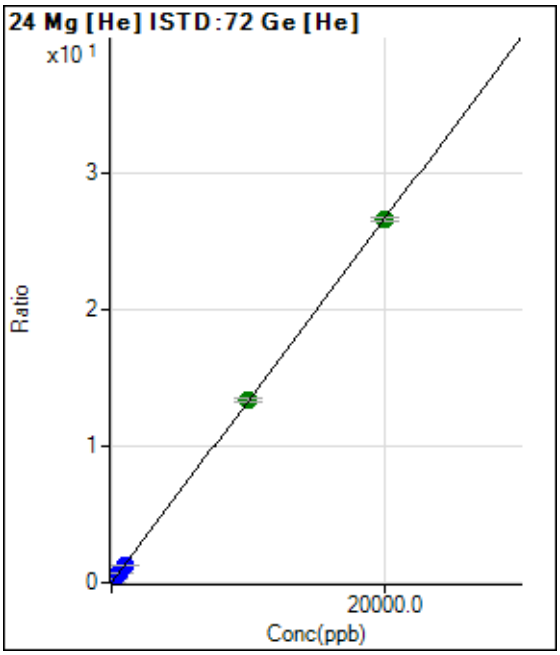
y = 0.0025 * x + 0.1367
R = 1.0000
DL = 6.819
BEC = 54.52

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.000					
6	☐	20000.000					
7	☐	100.000					

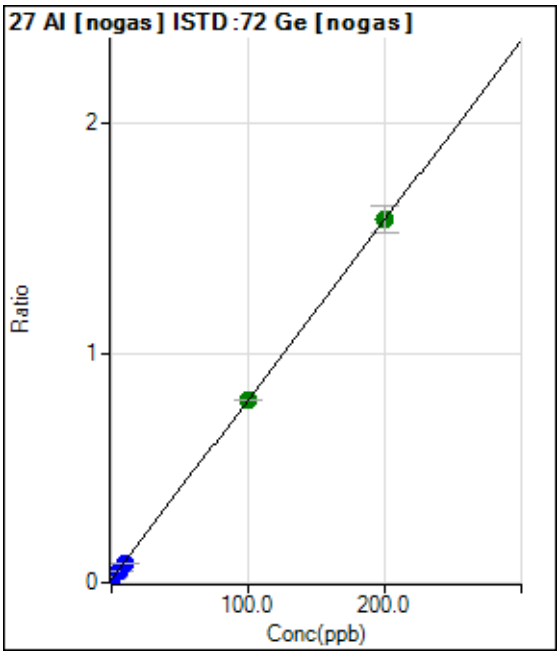
Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	446.68	0.0010	P	27.5
2	☐	200.000	210.559	121737.65	0.2819	P	1.8
3	☐	500.000	518.513	306749.28	0.6927	P	2.6
4	☐	1000.000	988.973	587159.82	1.3203	P	1.5
5	☐	10000.000	10086.933	5761743.04	13.4563	A	2.1
6	☐	20000.000	19956.517	11108640.25	26.6217	A	1.1
7	☐	100.000					

y = 0.0013 * x + 0.0010
R = 1.0000
DL = 0.6472
BEC = 0.7834

Weight: <None>
Min Conc: <None>

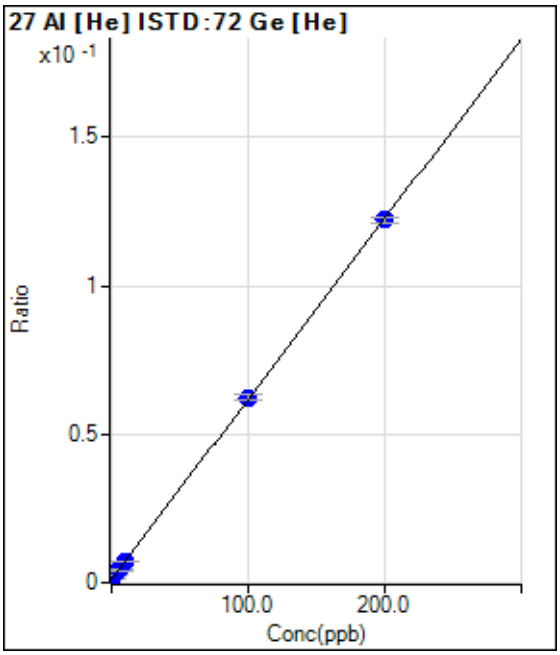


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	26408.65	0.0145	P	4.2
2	☐	2.000	1.900	55094.24	0.0294	P	0.5
3	☐	5.000	4.553	94377.07	0.0501	P	3.6
4	☐	10.000	9.210	167487.39	0.0866	P	1.4
5	☐	100.000	99.850	1463238.26	0.7963	A	0.7
6	☐	200.000	200.127	2930362.04	1.5814	A	7.4
7	☐	1.000					

y = 0.0078 * x + 0.0145
R = 1.0000
DL = 0.2305
BEC = 1.849

Weight: <None>
Min Conc: <None>

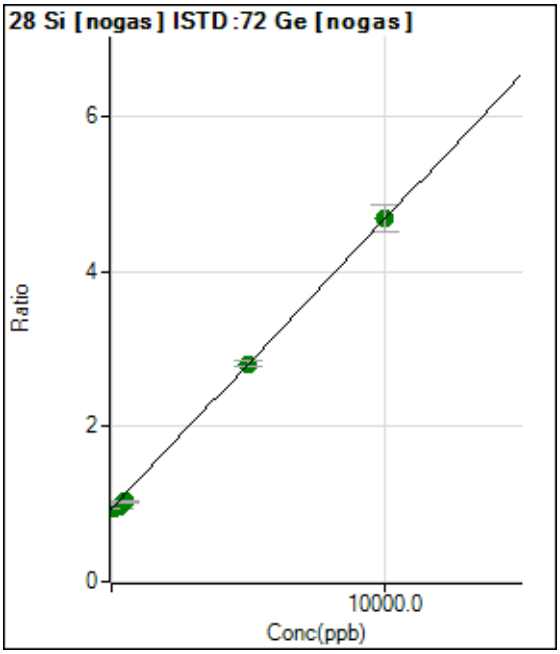
Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	490.01	0.0011	P	12.6
2	☐	2.000	2.154	1060.04	0.0025	P	10.7
3	☐	5.000	5.390	1956.80	0.0044	P	12.3
4	☐	10.000	9.897	3180.32	0.0072	P	4.8
5	☐	100.000	100.896	26695.83	0.0623	P	2.8
6	☐	200.000	199.546	50985.40	0.1222	P	1.7
7	☐	1.000					

y = 6.0657E-004 * x + 0.0011
R = 1.0000
DL = 0.7182
BEC = 1.893

Weight: <None>
Min Conc: <None>

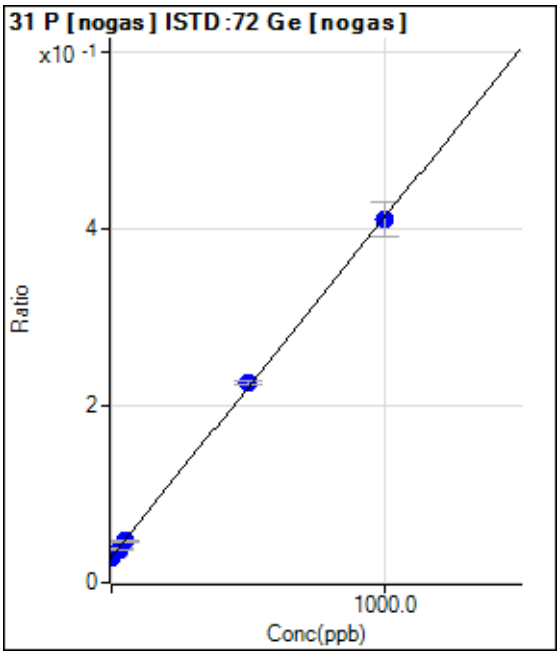


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1721372.06	0.9438	A	2.1
2	☐	100.000	13.626	1781249.30	0.9489	A	1.8
3	☐	250.000	64.688	1824592.26	0.9680	A	4.2
4	☐	500.000	256.927	2011112.73	1.0398	A	2.0
5	☐	5000.000	5013.415	5175372.32	2.8166	A	2.2
6	☐	10000.000	10010.942	8676827.79	4.6835	A	7.6
7	☐	50.000					

y = 3.7356E-004 * x + 0.9438
R = 0.9998
DL = 160.6
BEC = 2527

Weight: <None>
Min Conc: <None>

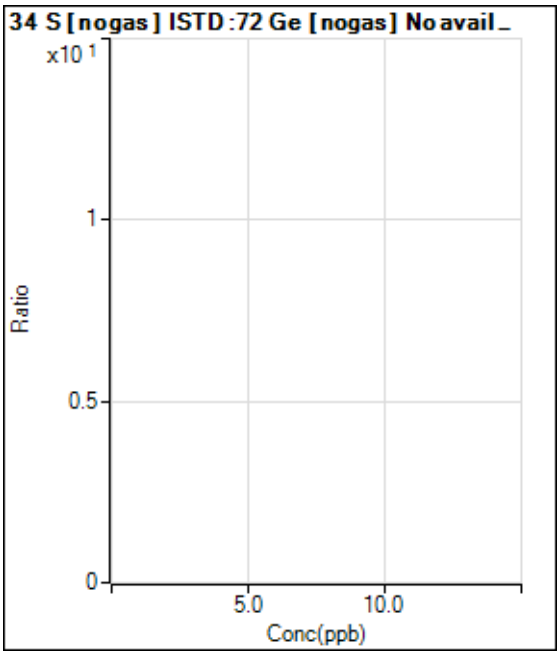
Calibration for 163_ICV.d



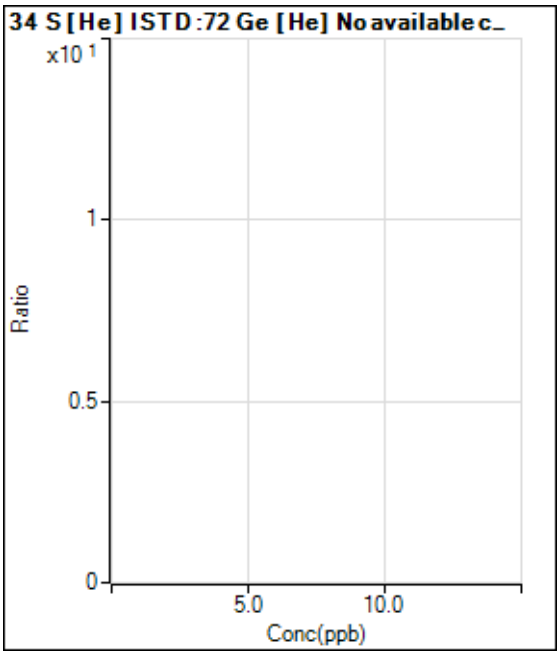
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	53168.23	0.0291	P	1.1
2	☐	10.000	6.900	59671.21	0.0318	P	2.4
3	☐	25.000	22.978	71498.30	0.0380	P	3.2
4	☐	50.000	47.009	91295.75	0.0472	P	2.3
5	☐	500.000	514.668	416731.58	0.2268	P	2.0
6	☐	1000.000	992.897	759578.77	0.4105	P	9.4
7	☐	5.000					

y = 3.8405E-004 * x + 0.0291
R = 0.9998
DL = 2.431
BEC = 75.89

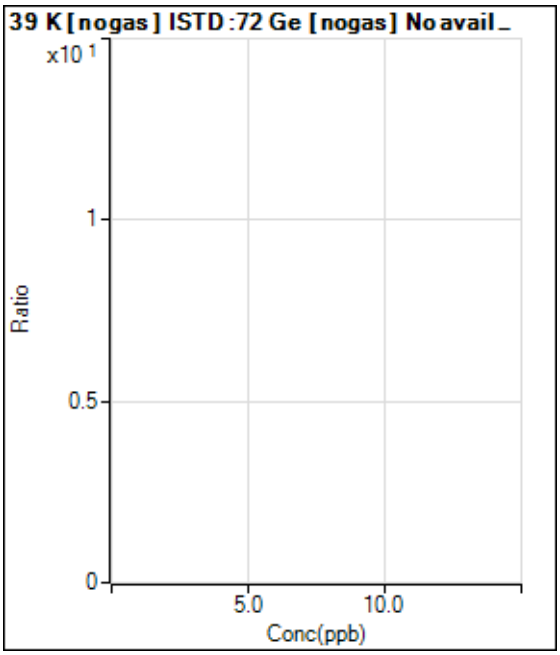
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	400.000					
3	☐	1000.000					
4	☐	2000.000					
5	☐	20000.000					
6	☐	40000.000					
7	☐	200.000					

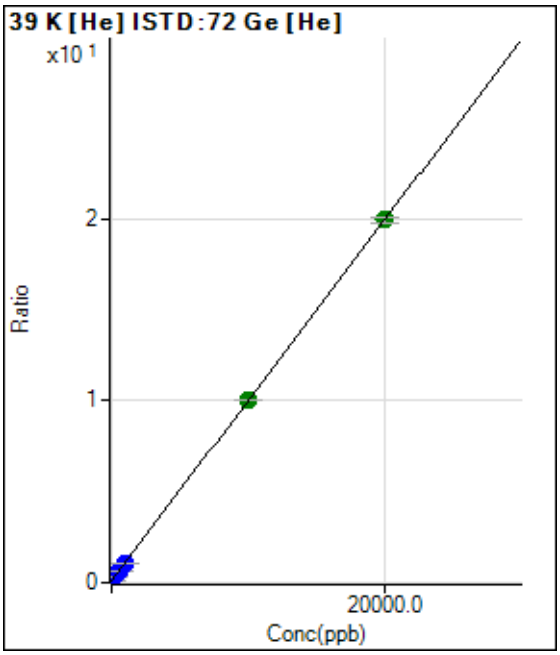


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	400.000					
3	☐	1000.000					
4	☐	2000.000					
5	☐	20000.000					
6	☐	40000.000					
7	☐	200.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.000					
6	☐	20000.000					
7	☐	100.000					

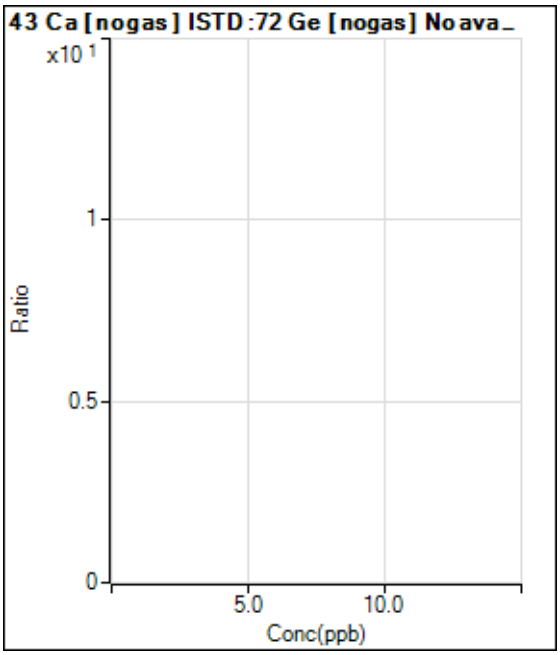
Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	49572.42	0.1160	P	1.9
2	☐	200.000	203.565	137229.64	0.3178	P	2.6
3	☐	500.000	497.246	269665.32	0.6090	P	2.7
4	☐	1000.000	964.491	476833.74	1.0722	P	0.6
5	☐	10000.000	10009.320	4298711.39	10.0390	A	0.4
6	☐	20000.000	19997.149	8320702.38	19.9407	A	1.9
7	☐	100.000					

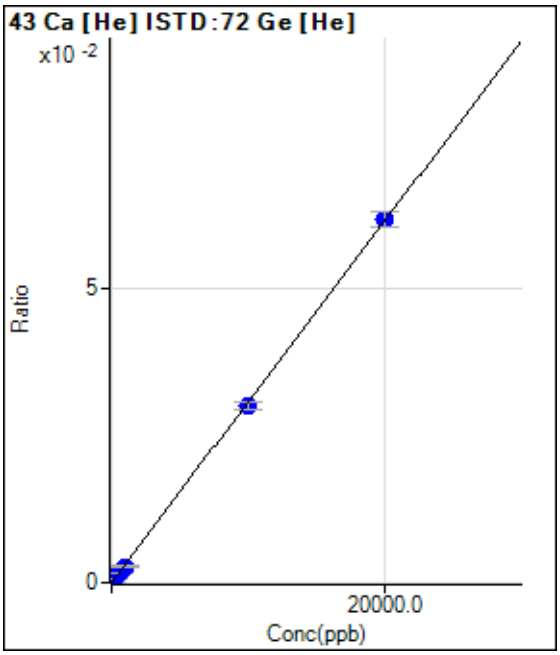
y = 9.9137E-004 * x + 0.1160
R = 1.0000
DL = 6.742
BEC = 117

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.000					
6	☐	20000.000					
7	☐	100.000					

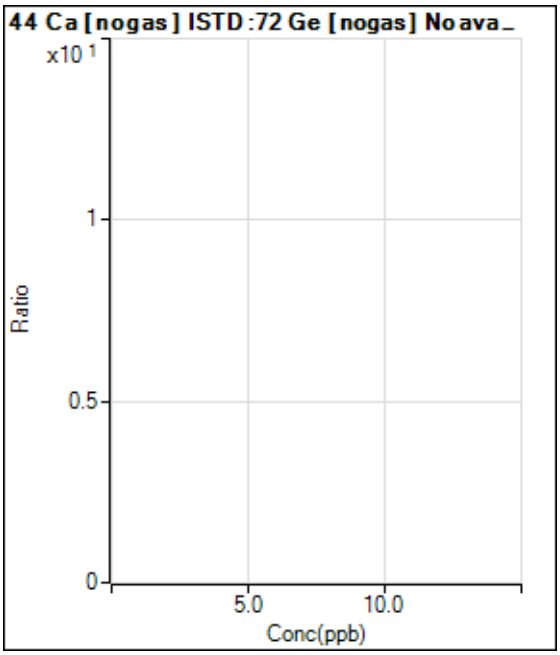
Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	20.00	0.0000	P	1.3
2	☐	200.000	196.776	280.01	0.0006	P	18.9
3	☐	500.000	503.312	703.36	0.0016	P	9.5
4	☐	1000.000	872.592	1206.73	0.0027	P	12.9
5	☐	10000.000	9823.218	12874.60	0.0301	P	4.6
6	☐	20000.000	20094.711	25641.18	0.0615	P	4.2
7	☐	100.000					

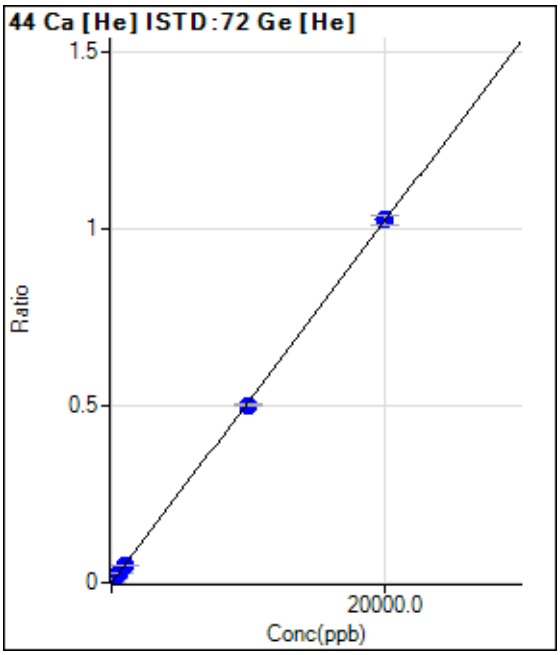
y = 3.0565E-006 * x + 4.6816E-005
R = 0.9999
DL = 0.5776
BEC = 15.32

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.000					
6	☐	20000.000					
7	☐	100.000					

Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	203.34	0.0005	P	6.4
2	☐	200.000	205.812	4734.00	0.0110	P	2.0
3	☐	500.000	496.741	11413.66	0.0258	P	4.6
4	☐	1000.000	973.408	22263.50	0.0501	P	1.6
5	☐	10000.000	9823.560	214467.01	0.5009	P	1.7
6	☐	20000.000	20089.573	427160.79	1.0238	P	2.6
7	☐	100.000					

y = 5.0939E-005 * x + 4.7570E-004

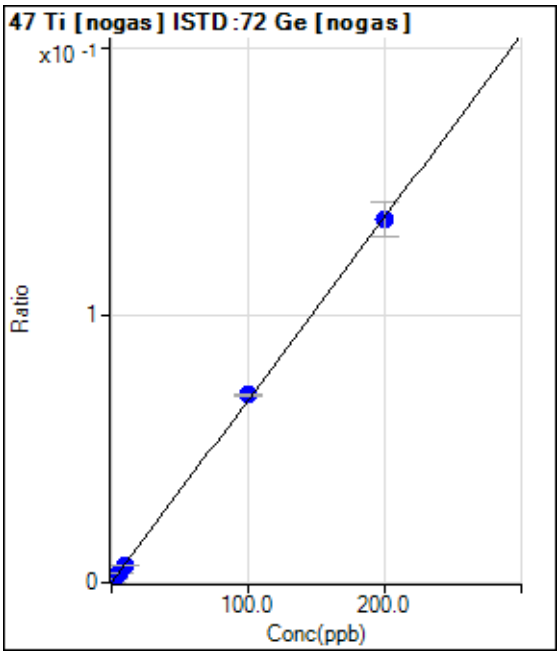
R = 0.9999

DL = 1.78

BEC = 9.338

Weight: <None>

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	76.67	0.0000	P	38.9
2	☐	2.000	1.984	2620.24	0.0014	P	8.9
3	☐	5.000	5.043	6571.26	0.0035	P	4.4
4	☐	10.000	9.387	12484.34	0.0065	P	2.2
5	☐	100.000	102.771	129027.61	0.0702	P	1.6
6	☐	200.000	198.644	251128.90	0.1357	P	9.4
7	☐	1.000					

y = 6.8289E-004 * x + 4.1943E-005

R = 0.9999

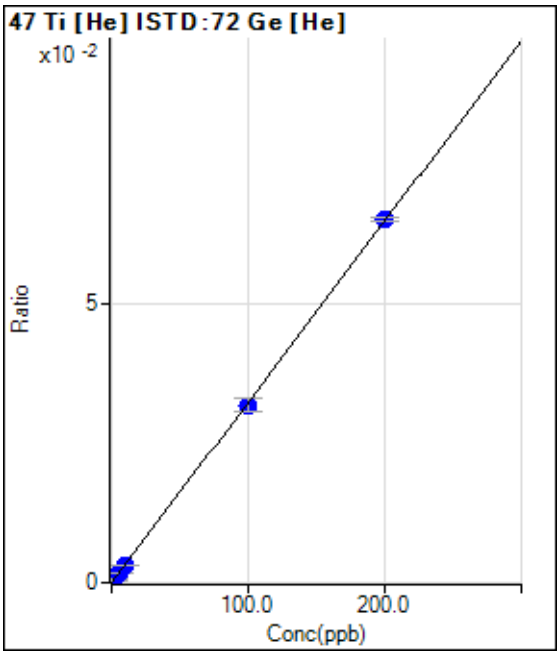
DL = 0.07166

BEC = 0.06142

Weight: <None>

Min Conc: <None>

Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	0.00	0.0000	P	
2	☐	2.000	1.749	243.34	0.0006	P	32.4
3	☐	5.000	5.501	786.70	0.0018	P	10.6
4	☐	10.000	9.482	1363.40	0.0031	P	7.4
5	☐	100.000	98.276	13605.17	0.0318	P	7.0
6	☐	200.000	200.878	27106.69	0.0650	P	0.9
7	☐	1.000					

y = 3.2337E-004 * x + 0.0000E+000

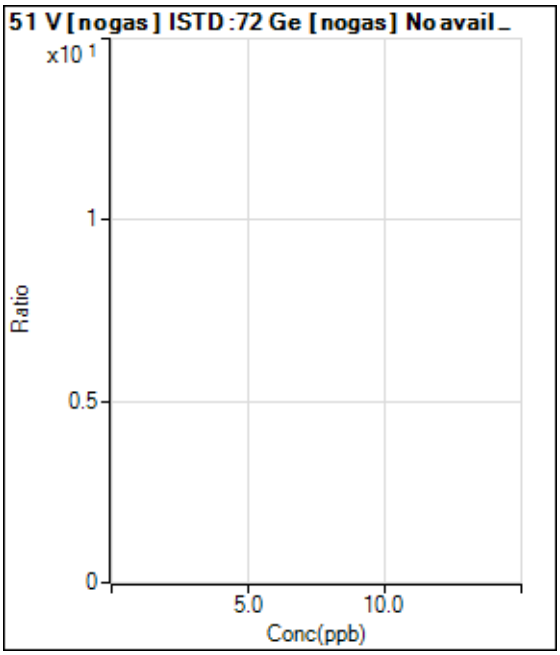
R = 0.9999

DL = 0

BEC = 0

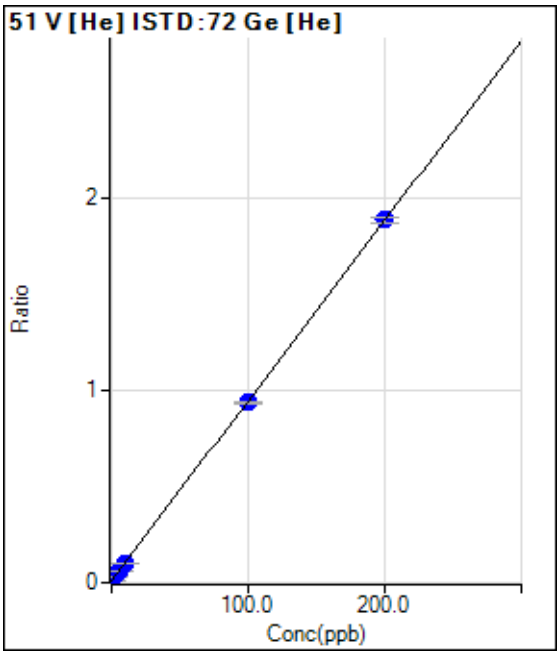
Weight: <None>

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

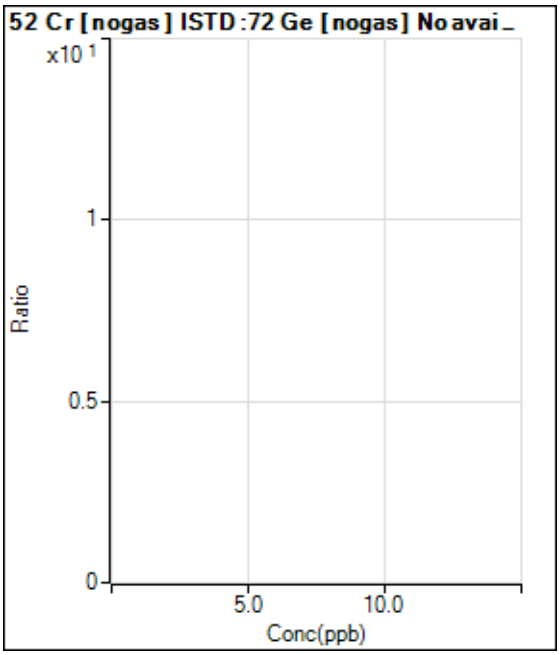
Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4408.32	0.0103	P	2.1
2	☐	2.000	1.984	12456.42	0.0288	P	1.1
3	☐	5.000	5.081	25569.75	0.0578	P	5.9
4	☐	10.000	9.516	44114.33	0.0992	P	1.5
5	☐	100.000	98.967	400211.49	0.9346	P	0.7
6	☐	200.000	200.539	785814.21	1.8832	P	1.4
7	☐	1.000					

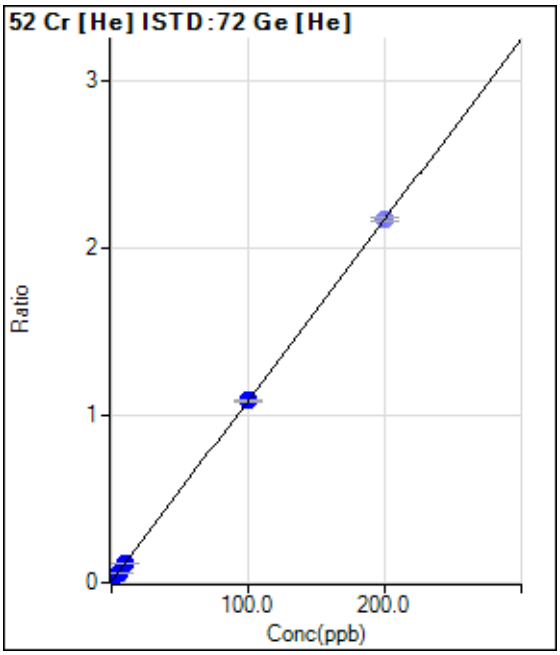
y = 0.0093 * x + 0.0103
R = 1.0000
DL = 0.06802
BEC = 1.105

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

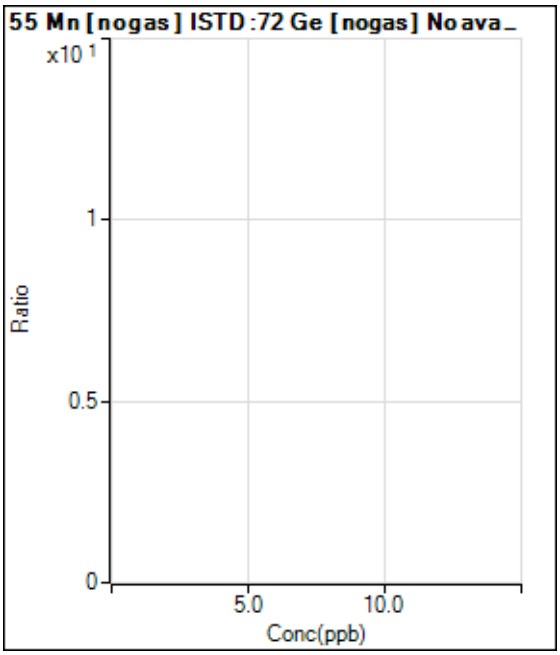
Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3393.70	0.0079	P	8.6
2	☐	2.000	2.027	12901.33	0.0299	P	3.8
3	☐	5.000	5.022	27583.98	0.0623	P	0.7
4	☐	10.000	9.963	51468.42	0.1157	P	2.0
5	☐	100.000	100.002	466640.23	1.0898	P	1.1
6	☑	200.000		905910.09	2.1709	P	0.9
7	☐	1.000					

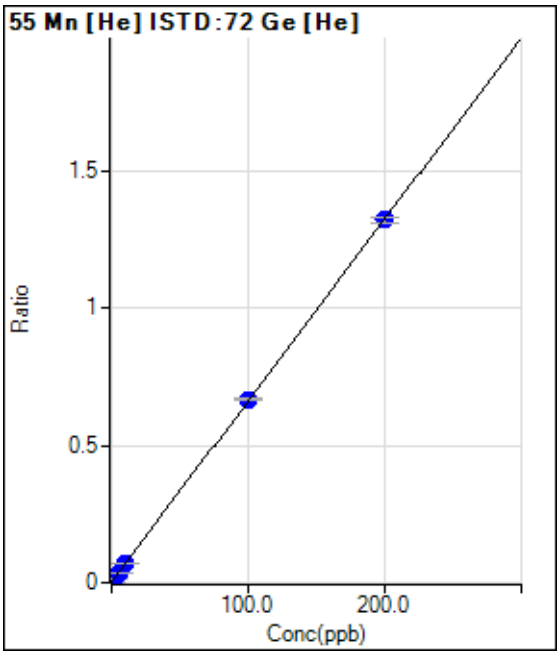
y = 0.0108 * x + 0.0079
R = 1.0000
DL = 0.1896
BEC = 0.7348

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

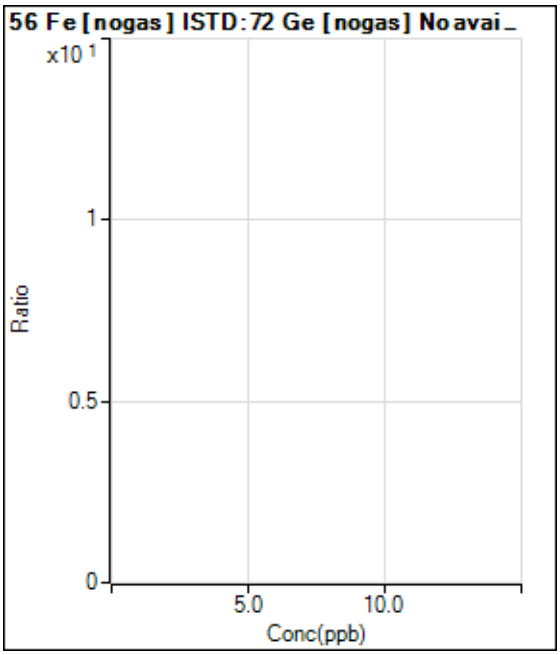
Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	963.37	0.0023	P	12.3
2	☐	2.000	1.939	6517.93	0.0151	P	4.5
3	☐	5.000	5.152	16093.92	0.0363	P	3.1
4	☐	10.000	10.005	30442.07	0.0684	P	1.0
5	☐	100.000	100.504	285697.32	0.6672	P	1.0
6	☐	200.000	199.745	552355.13	1.3238	P	1.6
7	☐	1.000					

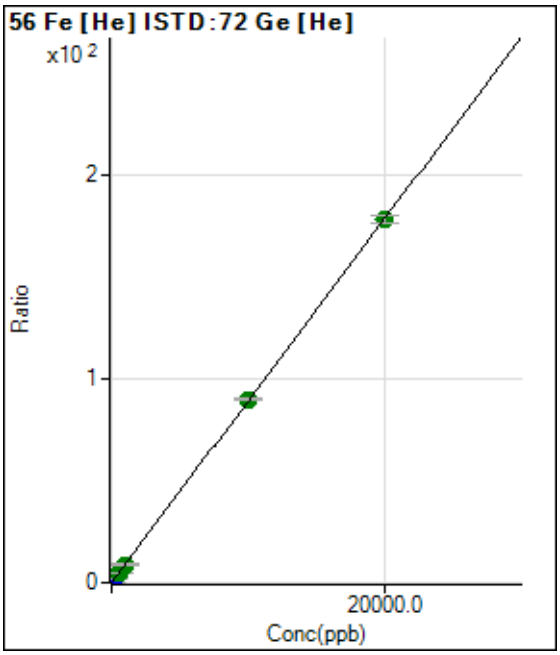
y = 0.0066 * x + 0.0023
R = 1.0000
DL = 0.1255
BEC = 0.341

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.000					
6	☐	20000.000					
7	☐	100.000					

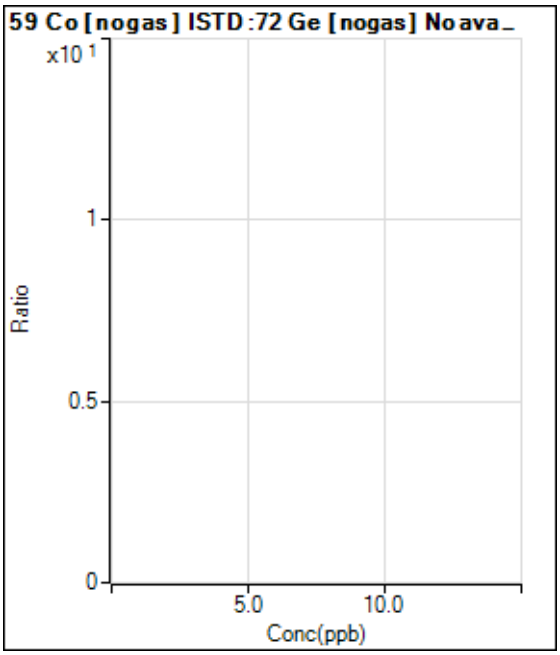
Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	8145.24	0.0191	P	3.5
2	☐	200.000	207.361	807457.59	1.8696	P	0.9
3	☐	500.000	527.468	2092660.28	4.7262	A	3.4
4	☐	1000.000	1000.379	3978788.28	8.9464	A	0.7
5	☐	10000.000	10094.947	38584847.76	90.1061	A	1.0
6	☐	20000.000	19951.747	74297595.56	178.0678	A	2.0
7	☐	100.000					

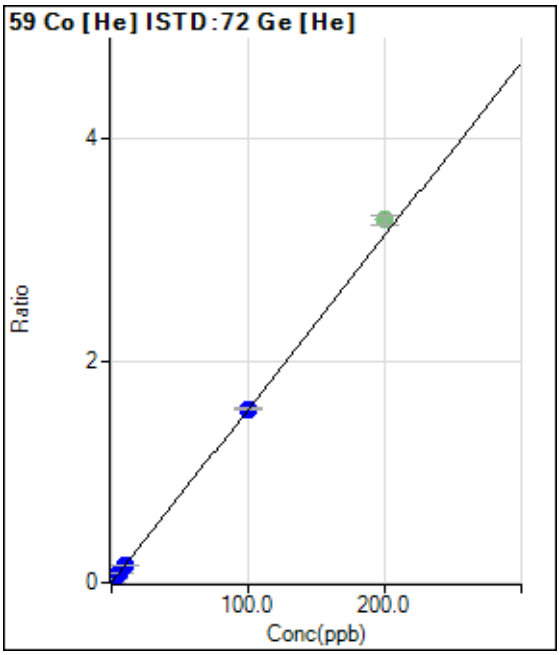
y = 0.0089 * x + 0.0191
R = 1.0000
DL = 0.2222
BEC = 2.137

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

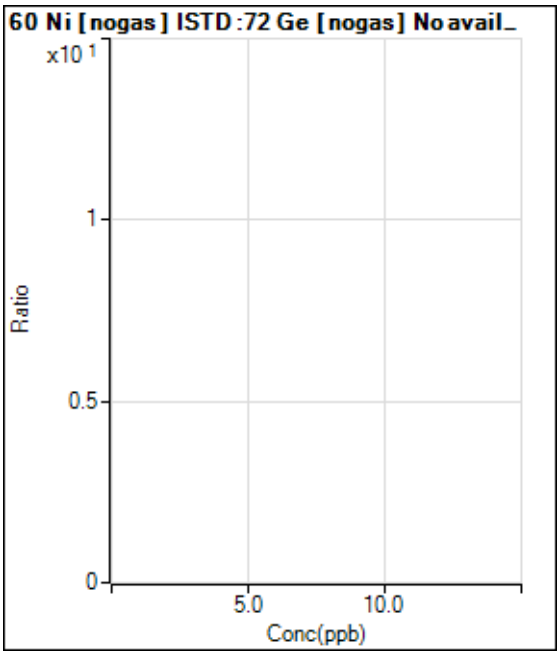
Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	43.33	0.0001	P	48.3
2	☐	2.000	2.129	14425.87	0.0334	P	1.8
3	☐	5.000	5.151	35735.08	0.0807	P	1.7
4	☐	10.000	9.899	68921.93	0.1550	P	1.3
5	☐	100.000	100.000	669989.05	1.5646	P	0.9
6	☑	200.000		1366010.92	3.2738	A	2.3
7	☐	1.000					

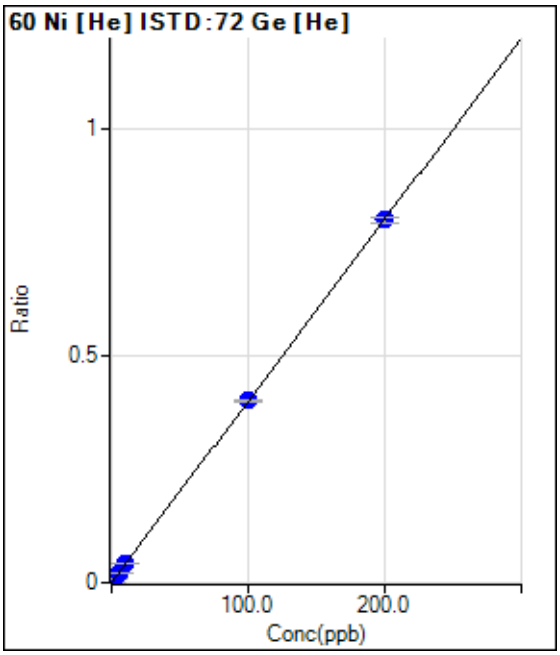
y = 0.0156 * x + 1.0167E-004
R = 1.0000
DL = 0.009421
BEC = 0.006498

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

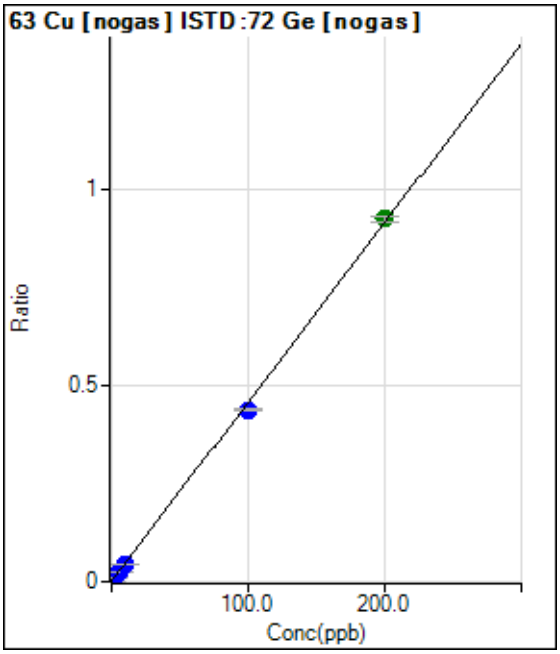
Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	103.33	0.0002	P	16.1
2	☐	2.000	2.137	3790.45	0.0088	P	5.9
3	☐	5.000	5.427	9709.37	0.0219	P	2.5
4	☐	10.000	10.100	18042.43	0.0406	P	1.1
5	☐	100.000	100.144	171317.42	0.4001	P	0.9
6	☐	200.000	199.911	333134.71	0.7984	P	1.8
7	☐	1.000					

y = 0.0040 * x + 2.4218E-004
R = 1.0000
DL = 0.02926
BEC = 0.06066

Weight: <None>
Min Conc: <None>

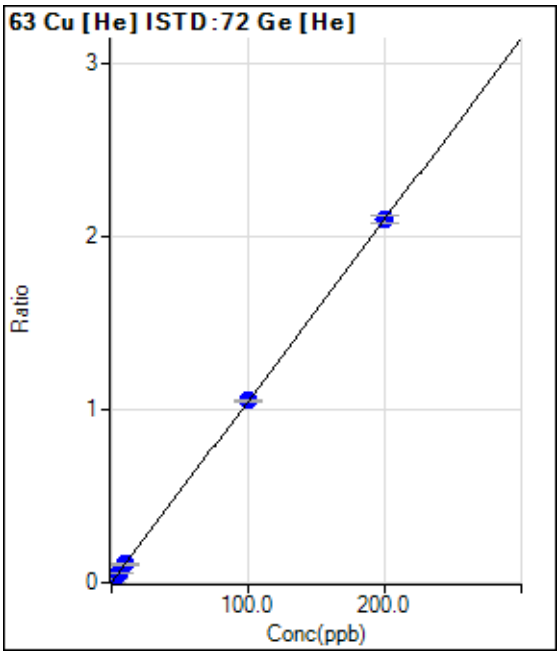


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1990.14	0.0011	P	1.6
2	☐	2.000	1.920	18479.54	0.0098	P	1.2
3	☐	5.000	4.790	43197.74	0.0229	P	0.9
4	☐	10.000	9.239	83592.64	0.0432	P	1.3
5	☐	100.000	95.574	802772.96	0.4369	P	1.5
6	☐	200.000	202.257	1719703.31	0.9233	A	1.7
7	☐	1.000					

y = 0.0046 * x + 0.0011
R = 0.9997
DL = 0.01176
BEC = 0.2393

Weight: <None>
Min Conc: <None>

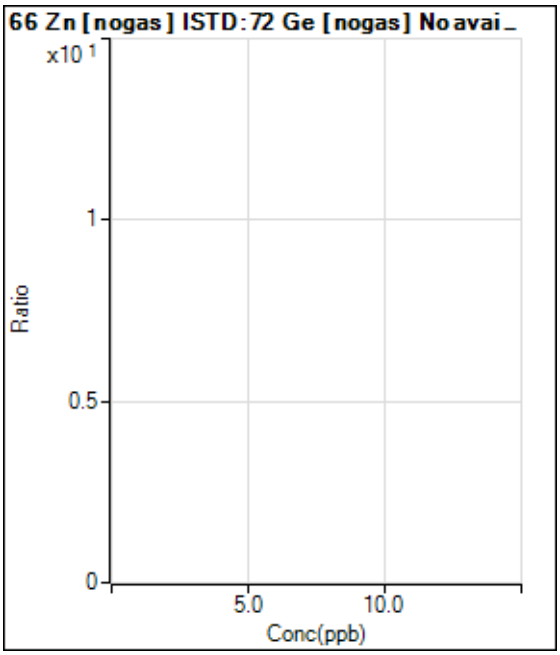
Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	616.69	0.0014	P	10.6
2	☐	2.000	2.044	9862.76	0.0228	P	2.6
3	☐	5.000	5.044	24025.97	0.0543	P	4.8
4	☐	10.000	10.013	47261.13	0.1063	P	2.6
5	☐	100.000	100.122	449467.82	1.0496	P	0.6
6	☐	200.000	199.937	873970.90	2.0946	P	2.0
7	☐	1.000					

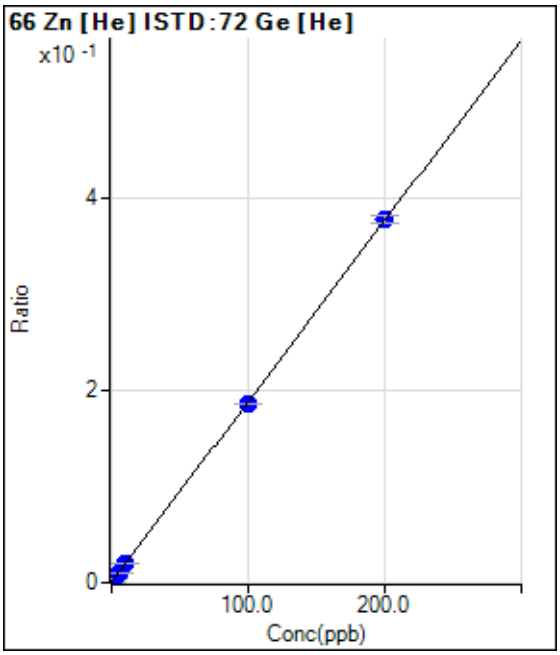
y = 0.0105 * x + 0.0014
R = 1.0000
DL = 0.04371
BEC = 0.138

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	250.01	0.0006	P	17.6
2	☐	2.000	2.054	1920.13	0.0044	P	8.6
3	☐	5.000	5.157	4547.30	0.0103	P	13.8
4	☐	10.000	10.048	8665.50	0.0195	P	3.4
5	☐	100.000	98.856	79873.41	0.1865	P	0.5
6	☐	200.000	200.565	157656.34	0.3779	P	2.0
7	☐	1.000					

y = 0.0019 * x + 5.8476E-004

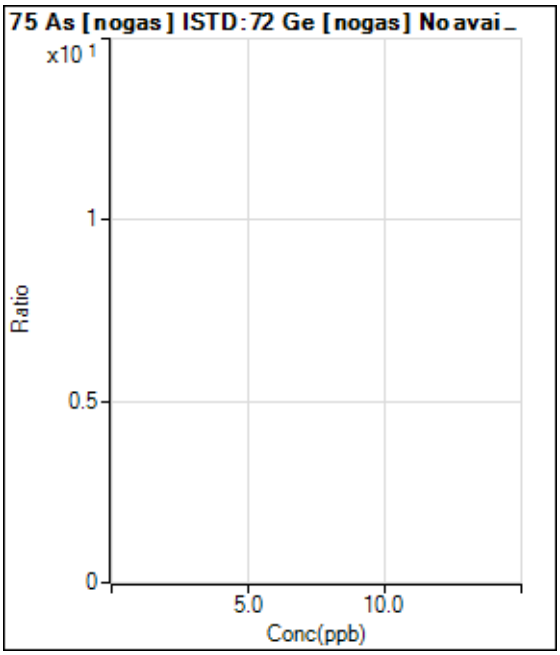
R = 1.0000

DL = 0.1643

BEC = 0.3109

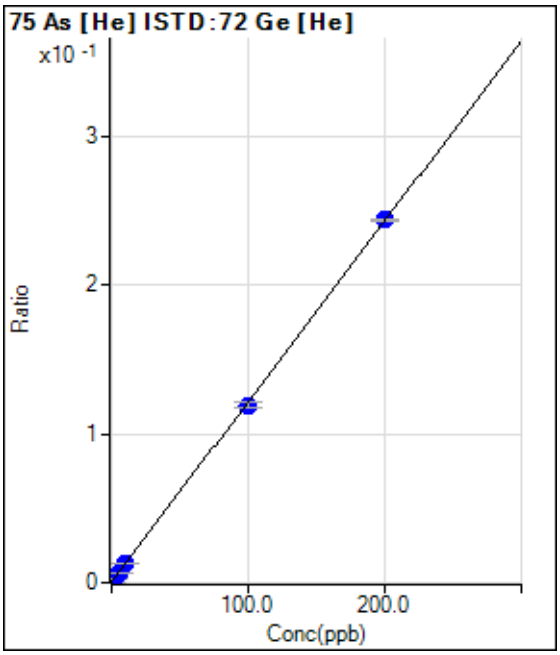
Weight: <None>

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	106.67	0.0002	P	29.6
2	☐	2.000	1.942	1125.59	0.0026	P	3.6
3	☐	5.000	4.899	2742.44	0.0062	P	1.0
4	☐	10.000	10.079	5547.53	0.0125	P	2.5
5	☐	100.000	98.259	51143.69	0.1194	P	3.0
6	☐	200.000	200.870	101776.24	0.2439	P	0.6
7	☐	1.000					

y = 0.0012 * x + 2.4911E-004

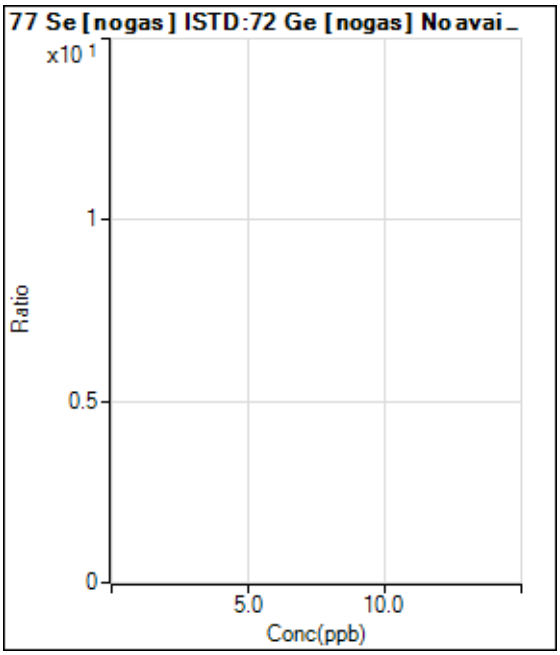
R = 0.9999

DL = 0.1826

BEC = 0.2054

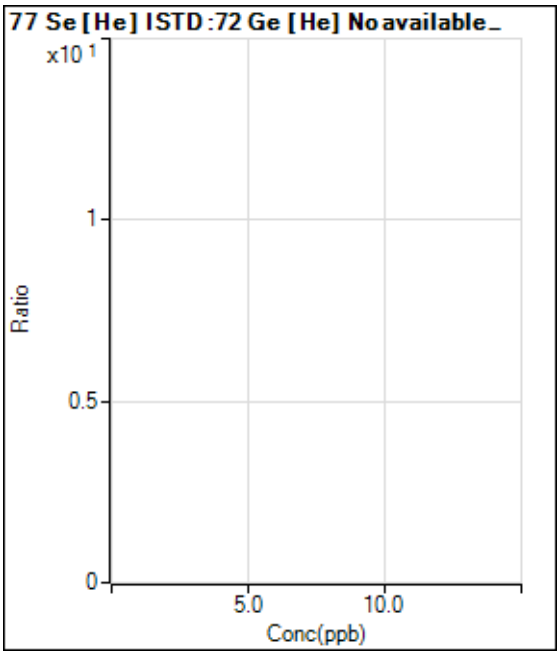
Weight: <None>

Min Conc: <None>

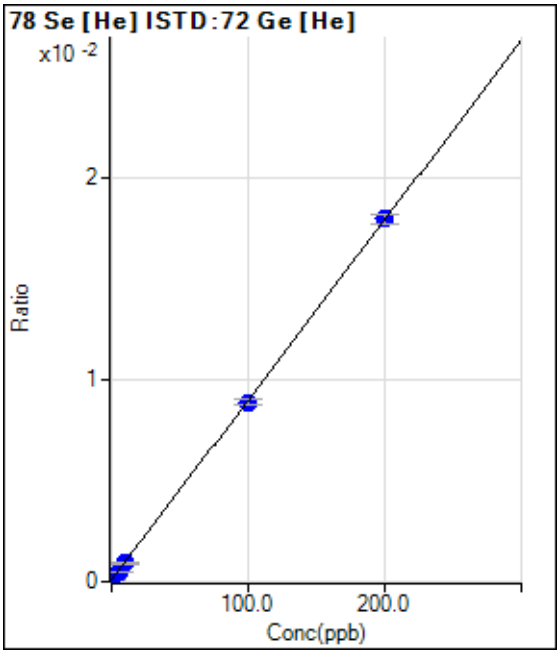


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	36.00	0.0001	P	33.8
2	☐	2.000	2.100	117.33	0.0003	P	12.0
3	☐	5.000	4.212	203.33	0.0005	P	8.0
4	☐	10.000	9.282	405.34	0.0009	P	6.3
5	☐	100.000	98.713	3803.74	0.0089	P	3.1
6	☐	200.000	200.698	7498.23	0.0180	P	2.9
7	☐	1.000					

y = 8.9128E-005 * x + 8.4127E-005

R = 1.0000

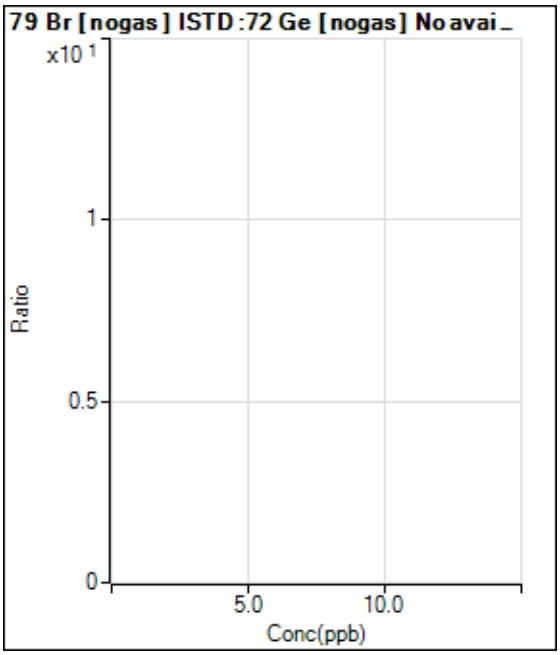
DL = 0.957

BEC = 0.9439

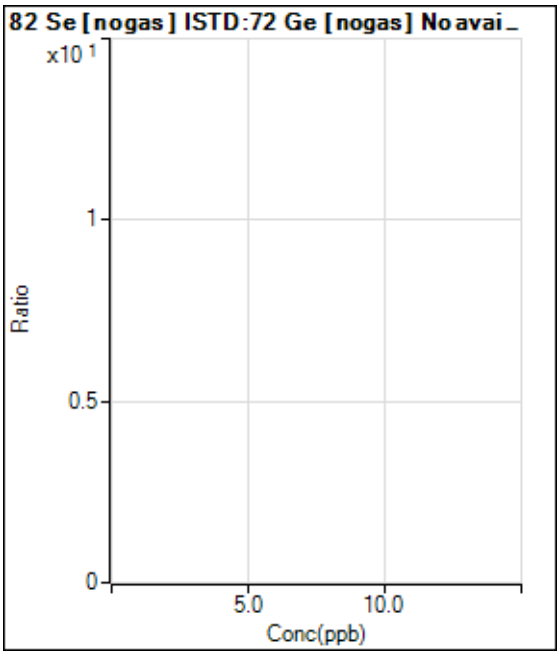
Weight: <None>

Min Conc: <None>

Calibration for 163_ICV.d

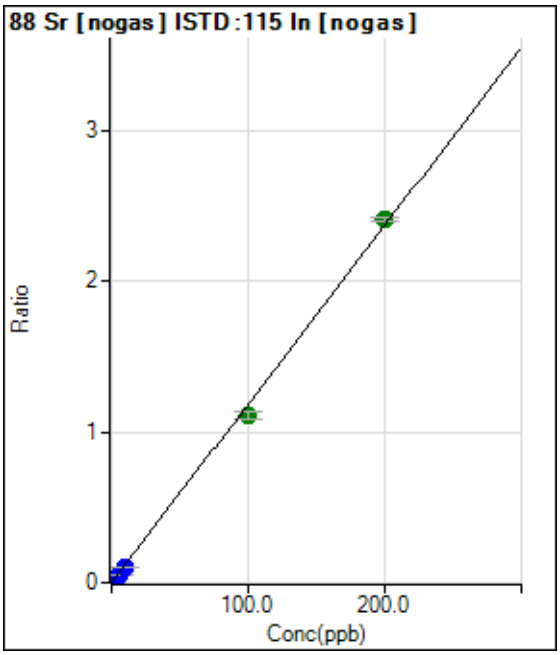


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

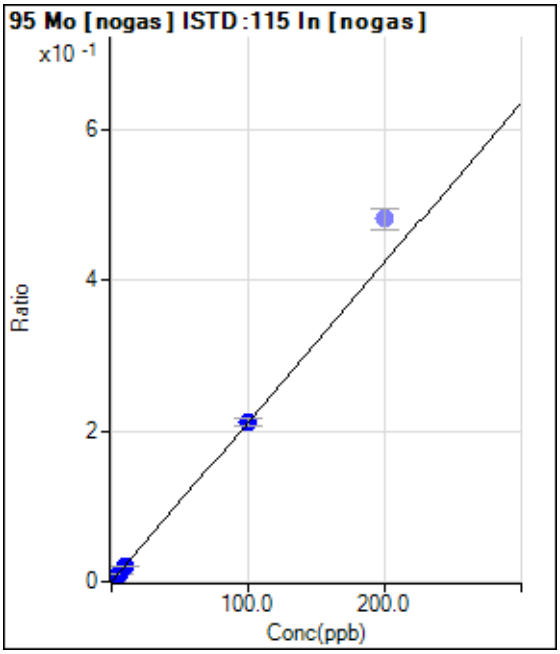
Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	636.69	0.0003	P	21.9
2	☐	2.000	1.801	39620.76	0.0217	P	1.4
3	☐	5.000	4.602	98870.95	0.0548	P	4.0
4	☐	10.000	8.652	191979.03	0.1027	P	4.5
5	☐	100.000	93.549	1984987.26	1.1068	A	4.6
6	☐	200.000	203.305	3831245.25	2.4049	A	1.0
7	☐	1.000					

y = 0.0118 * x + 3.4549E-004
R = 0.9993
DL = 0.01919
BEC = 0.02921

Weight: <None>
Min Conc: <None>

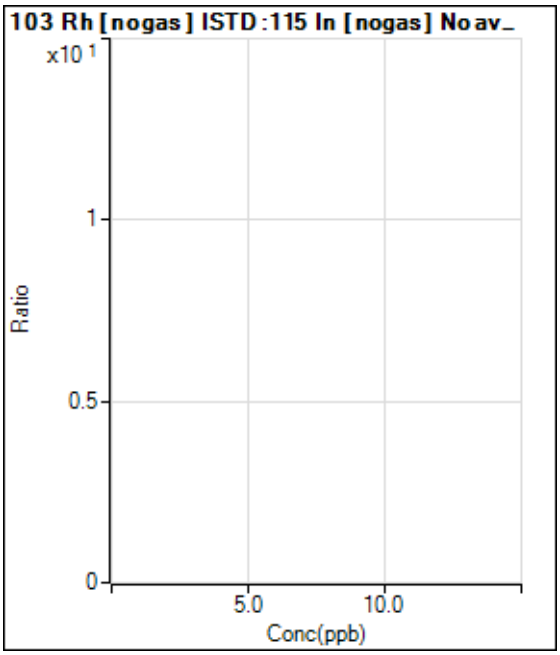


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	66.67	0.0000	P	53.0
2	☐	2.000	1.982	7738.45	0.0042	P	4.3
3	☐	5.000	5.128	19651.07	0.0109	P	4.0
4	☐	10.000	9.529	37773.73	0.0202	P	3.3
5	☐	100.000	100.041	379688.10	0.2117	P	3.9
6	☑	200.000		764579.13	0.4808	P	5.9
7	☐	1.000					

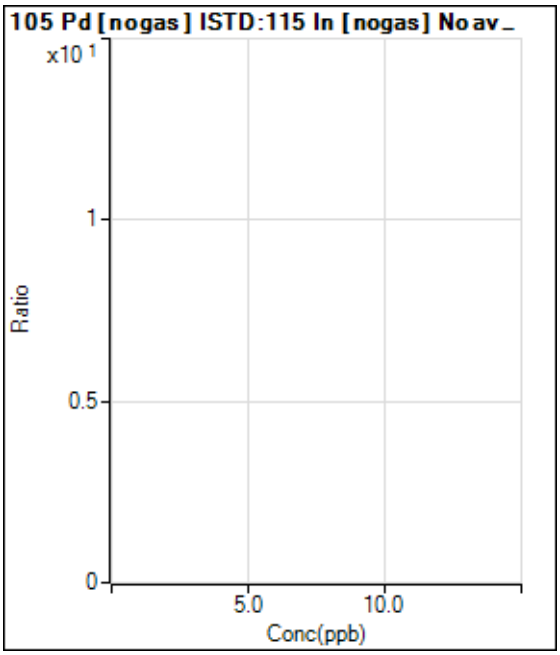
y = 0.0021 * x + 3.6276E-005
R = 1.0000
DL = 0.02726
BEC = 0.01715

Weight: <None>
Min Conc: <None>

Calibration for 163_ICV.d

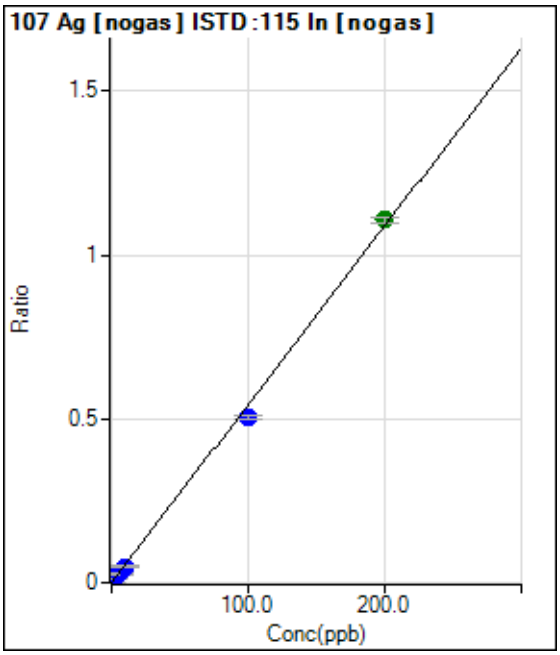


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

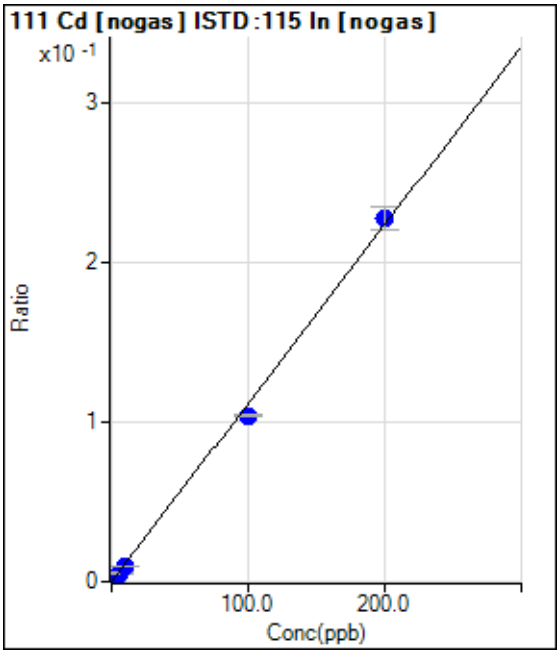
Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	93.33	0.0001	P	6.5
2	☐	2.000	1.907	19050.46	0.0104	P	2.4
3	☐	5.000	4.878	47948.78	0.0266	P	3.4
4	☐	10.000	9.065	92254.35	0.0493	P	2.3
5	☐	100.000	92.925	906192.33	0.5051	P	2.5
6	☐	200.000	203.588	1764151.69	1.1066	A	1.5
7	☐	1.000					

y = 0.0054 * x + 5.0674E-005
R = 0.9991
DL = 0.001806
BEC = 0.009323

Weight: <None>
Min Conc: <None>

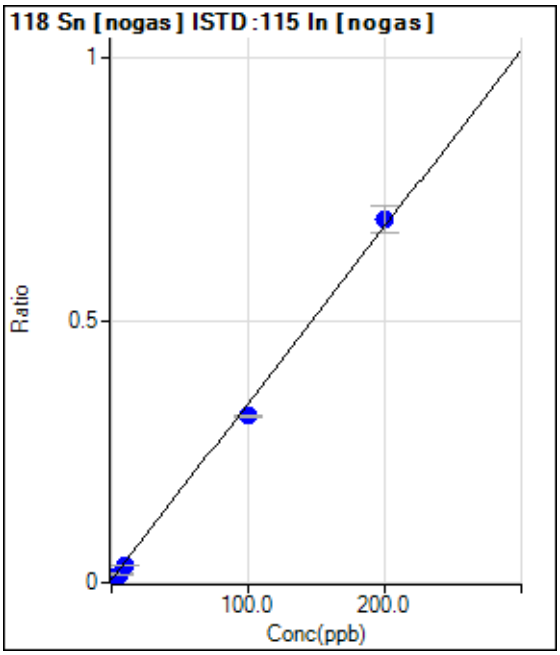


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	13.33	0.0000	P	86.6
2	☐	2.000	1.806	3703.78	0.0020	P	1.7
3	☐	5.000	4.737	9559.38	0.0053	P	4.8
4	☐	10.000	8.860	18520.02	0.0099	P	3.6
5	☐	100.000	93.211	186843.34	0.1041	P	0.7
6	☐	200.000	203.460	361267.69	0.2272	P	6.2
7	☐	1.000					

y = 0.0011 * x + 7.2124E-006
R = 0.9992
DL = 0.01678
BEC = 0.006458

Weight: <None>
Min Conc: <None>

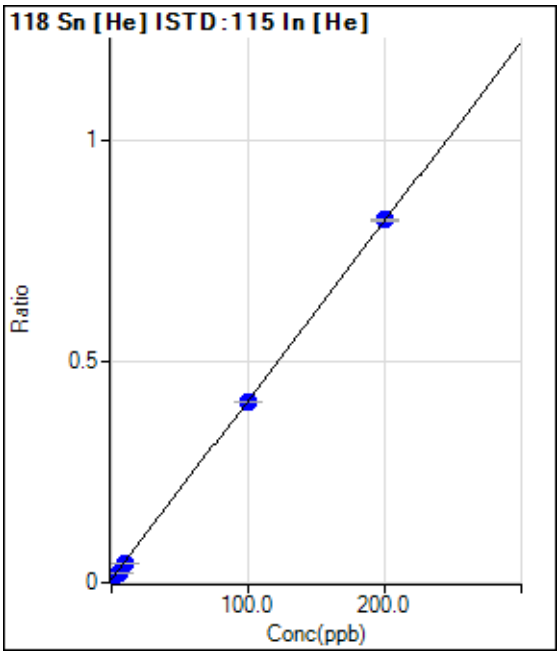
Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10630.07	0.0058	P	1.2
2	☐	2.000	1.483	19684.99	0.0108	P	0.9
3	☐	5.000	3.146	29498.59	0.0163	P	5.1
4	☐	10.000	8.080	61612.02	0.0329	P	2.8
5	☐	100.000	92.550	568758.17	0.3170	P	1.8
6	☐	200.000	203.872	1098572.61	0.6913	P	7.5
7	☐	1.000					

y = 0.0034 * x + 0.0058
R = 0.9991
DL = 0.0637
BEC = 1.716

Weight: <None>
Min Conc: <None>

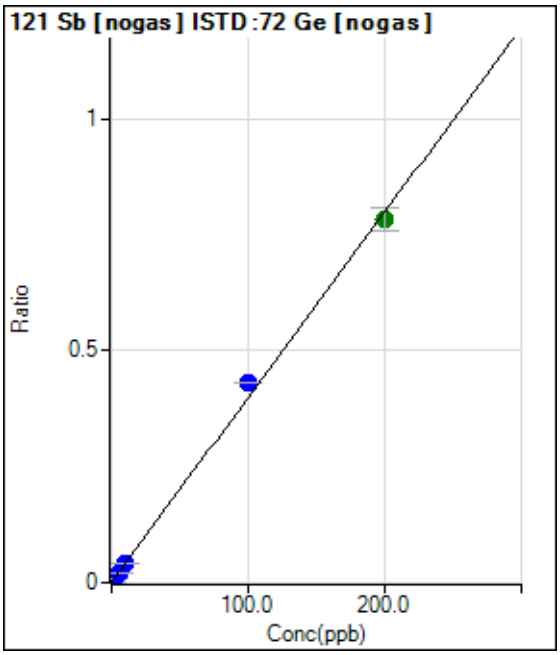


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4490.64	0.0076	P	4.7
2	☐	2.000	1.471	7928.60	0.0136	P	1.4
3	☐	5.000	3.254	12311.21	0.0208	P	1.2
4	☐	10.000	8.521	24517.45	0.0421	P	2.0
5	☐	100.000	98.862	229007.67	0.4084	P	0.3
6	☐	200.000	200.692	454633.00	0.8213	P	0.5
7	☐	1.000					

y = 0.0041 * x + 0.0076
R = 1.0000
DL = 0.2653
BEC = 1.873

Weight: <None>
Min Conc: <None>

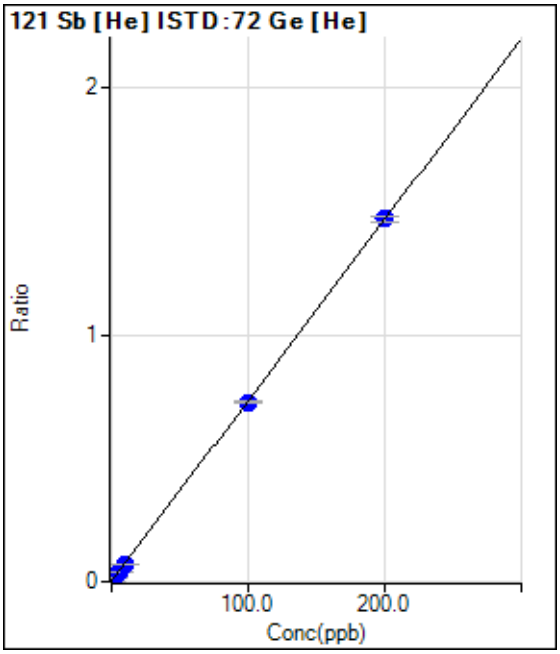
Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1723.45	0.0009	P	10.5
2	☐	2.000	2.137	17755.98	0.0095	P	1.4
3	☐	5.000	5.299	41536.20	0.0221	P	1.2
4	☐	10.000	10.089	79581.12	0.0411	P	1.8
5	☐	100.000	108.094	792918.30	0.4315	P	0.4
6	☐	200.000	195.939	1448957.43	0.7814	A	6.5
7	☐	1.000					

y = 0.0040 * x + 9.4541E-004
R = 0.9988
DL = 0.07492
BEC = 0.2374

Weight: <None>
Min Conc: <None>

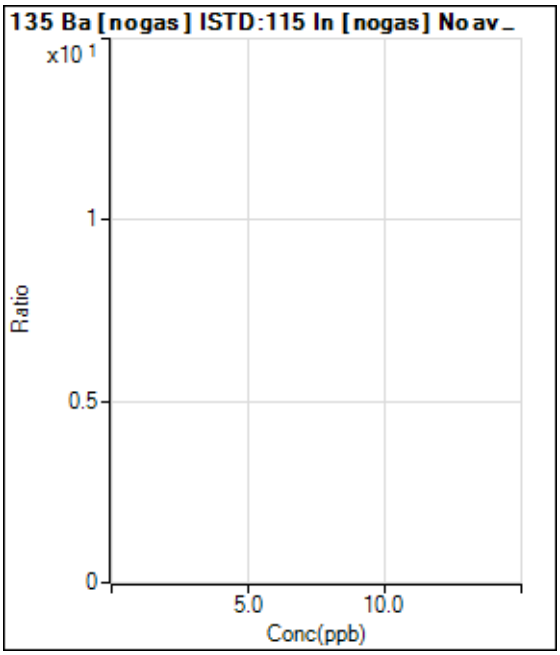


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	753.37	0.0018	P	14.9
2	☐	2.000	1.942	6908.13	0.0160	P	1.5
3	☐	5.000	4.714	16074.27	0.0363	P	3.2
4	☐	10.000	9.451	31578.70	0.0710	P	1.4
5	☐	100.000	99.130	311746.73	0.7280	P	0.4
6	☐	200.000	200.470	613566.79	1.4705	P	1.6
7	☐	1.000					

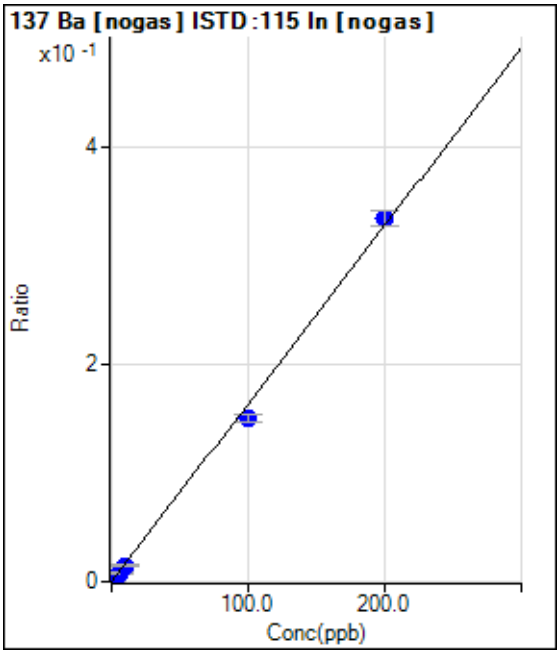
y = 0.0073 * x + 0.0018
R = 1.0000
DL = 0.1076
BEC = 0.2409

Weight: <None>
Min Conc: <None>

Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	220.01	0.0001	P	19.8
2	☐	2.000	1.745	5457.62	0.0030	P	7.7
3	☐	5.000	4.765	14326.15	0.0079	P	4.0
4	☐	10.000	9.024	27919.53	0.0149	P	4.8
5	☐	100.000	92.334	271864.12	0.1516	P	4.7
6	☐	200.000	203.890	532381.96	0.3346	P	4.3
7	☐	1.000					

y = 0.0016 * x + 1.1942E-004

R = 0.9990

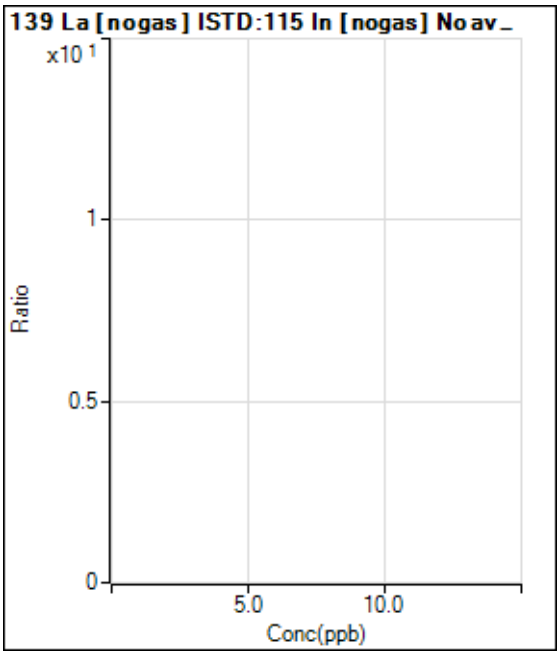
DL = 0.04318

BEC = 0.07279

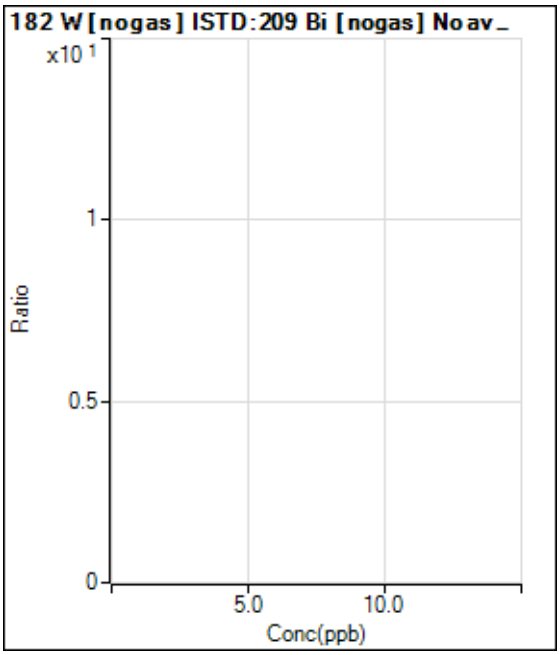
Weight: <None>

Min Conc: <None>

Calibration for 163_ICV.d

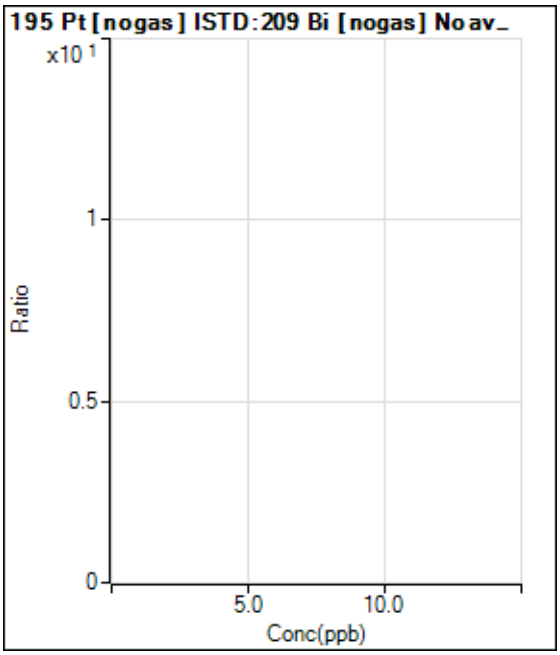


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

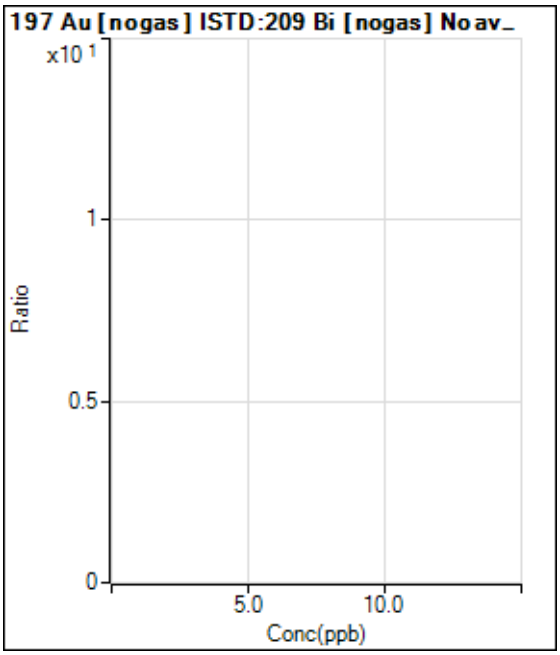


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

Calibration for 163_ICV.d

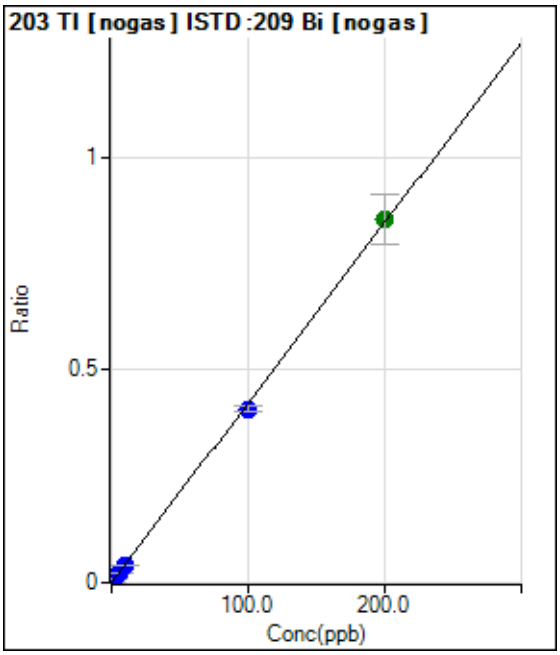


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

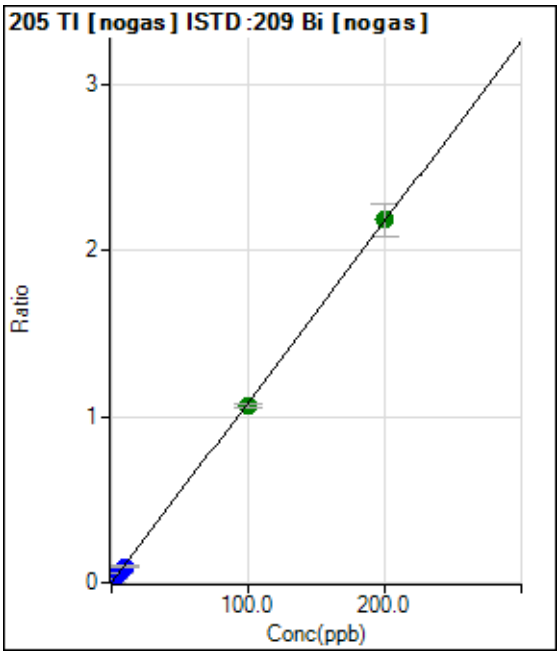
Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	30.00	0.0000	P	87.0
2	☐	2.000	2.021	12438.21	0.0086	P	2.7
3	☐	5.000	5.399	31981.75	0.0228	P	8.6
4	☐	10.000	9.674	61375.65	0.0409	P	1.9
5	☐	100.000	96.596	603840.04	0.4080	P	2.9
6	☐	200.000	201.708	1135883.18	0.8519	A	13.6
7	☐	1.000					

y = 0.0042 * x + 2.0405E-005
R = 0.9998
DL = 0.01262
BEC = 0.004831

Weight: <None>
Min Conc: <None>

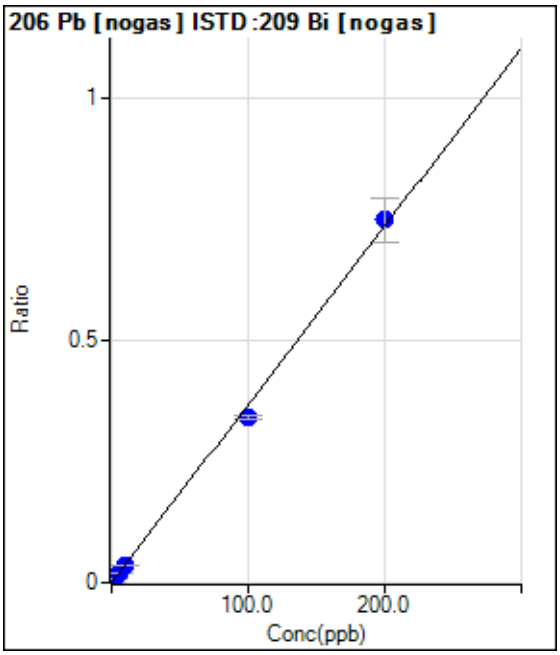


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	90.00	0.0001	P	41.0
2	☐	2.000	1.899	30061.39	0.0207	P	2.7
3	☐	5.000	4.997	76174.57	0.0543	P	7.4
4	☐	10.000	9.015	147069.83	0.0979	P	2.3
5	☐	100.000	98.168	1577993.67	1.0660	A	1.9
6	☐	200.000	200.966	2920997.46	2.1821	A	8.9
7	☐	1.000					

y = 0.0109 * x + 6.1875E-005
R = 0.9999
DL = 0.007004
BEC = 0.005699

Weight: <None>
Min Conc: <None>

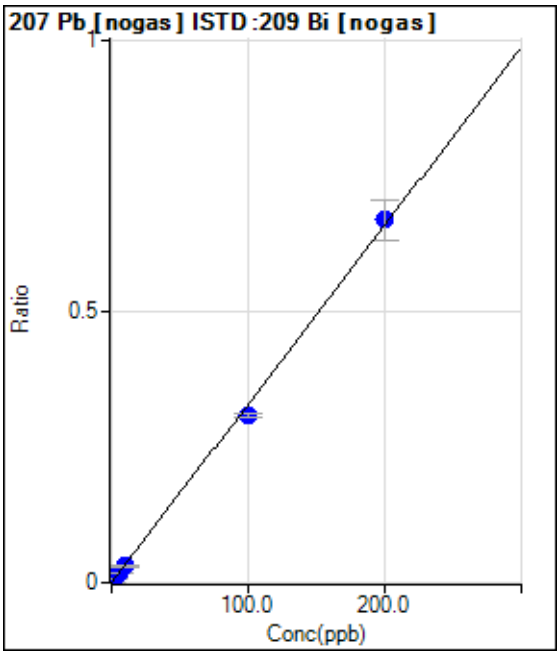
Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	70.00	0.0000	P	37.5
2	☐	2.000	1.935	10400.19	0.0072	P	4.4
3	☐	5.000	5.173	26708.75	0.0191	P	8.3
4	☐	10.000	9.403	51956.63	0.0346	P	2.4
5	☐	100.000	92.732	504555.33	0.3408	P	2.4
6	☐	200.000	203.660	999450.04	0.7485	P	11.9
7	☐	1.000					

y = 0.0037 * x + 4.7887E-005
R = 0.9991
DL = 0.01465
BEC = 0.01303

Weight: <None>
Min Conc: <None>

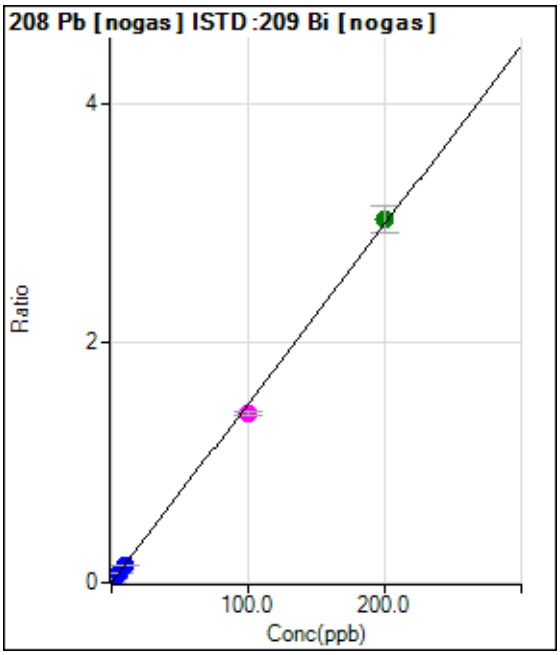


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	50.00	0.0000	P	34.1
2	☐	2.000	1.881	9042.75	0.0062	P	7.6
3	☐	5.000	5.148	23797.67	0.0170	P	8.9
4	☐	10.000	9.208	45584.16	0.0304	P	1.4
5	☐	100.000	93.586	456322.22	0.3082	P	1.7
6	☐	200.000	203.244	894208.22	0.6693	P	11.1
7	☐	1.000					

y = 0.0033 * x + 3.4195E-005
R = 0.9993
DL = 0.01061
BEC = 0.01038

Weight: <None>
Min Conc: <None>

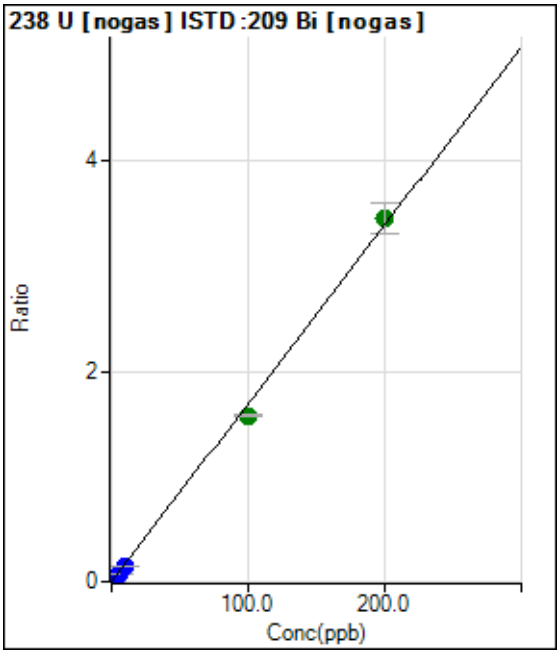
Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	266.67	0.0002	P	8.3
2	☐	2.000	1.908	41685.06	0.0287	P	5.3
3	☐	5.000	5.093	107024.86	0.0763	P	6.3
4	☐	10.000	9.349	210099.63	0.1399	P	0.9
5	☐	100.000	94.668	2095173.88	1.4151	M	2.8
6	☐	200.000	202.697	4060527.54	3.0296	A	7.4
7	☐	1.000					

y = 0.0149 * x + 1.8259E-004
R = 0.9995
DL = 0.00305
BEC = 0.01222

Weight: <None>
Min Conc: <None>

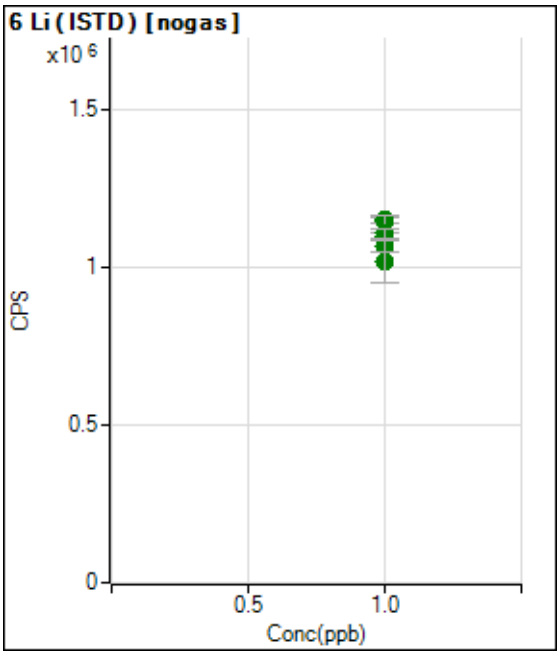


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	16.67	0.0000	P	92.2
2	☐	2.000	1.769	43586.73	0.0300	P	5.0
3	☐	5.000	4.601	109389.75	0.0780	P	6.9
4	☐	10.000	8.430	214602.32	0.1429	P	1.7
5	☐	100.000	92.914	2331503.30	1.5750	A	1.2
6	☐	200.000	203.634	4622430.66	3.4517	A	8.4
7	☐	1.000					

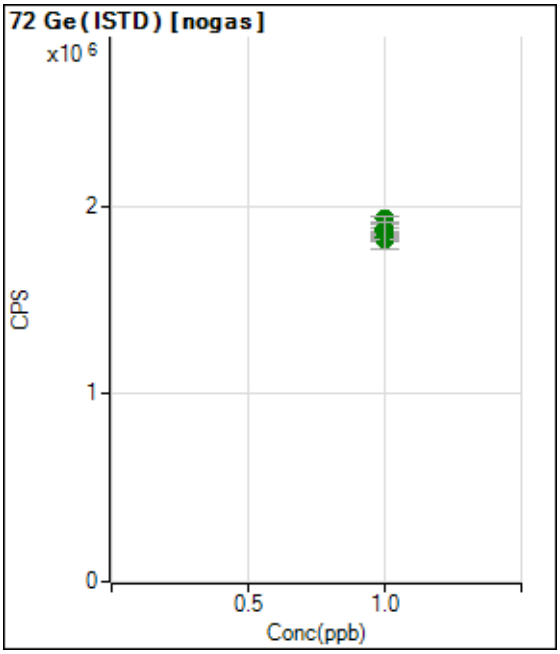
y = 0.0170 * x + 1.1421E-005
R = 0.9991
DL = 0.001864
BEC = 0.0006738

Weight: <None>
Min Conc: <None>

Calibration for 163_ICV.d

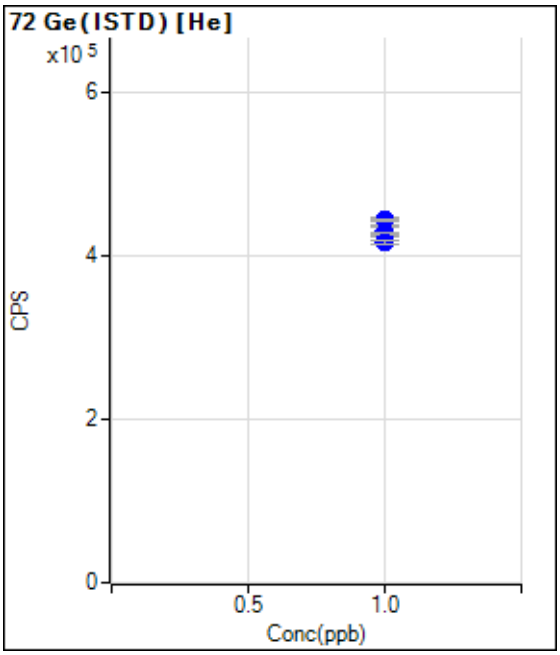


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1151863.30		A	1.5
2	☐	1.000		1145510.22		A	3.8
3	☐	1.000		1100246.67		A	2.4
4	☐	1.000		1108409.18		A	2.3
5	☐	1.000		1071026.45		A	3.4
6	☐	1.000		1020826.09		A	13.6
7	☐	1.000					

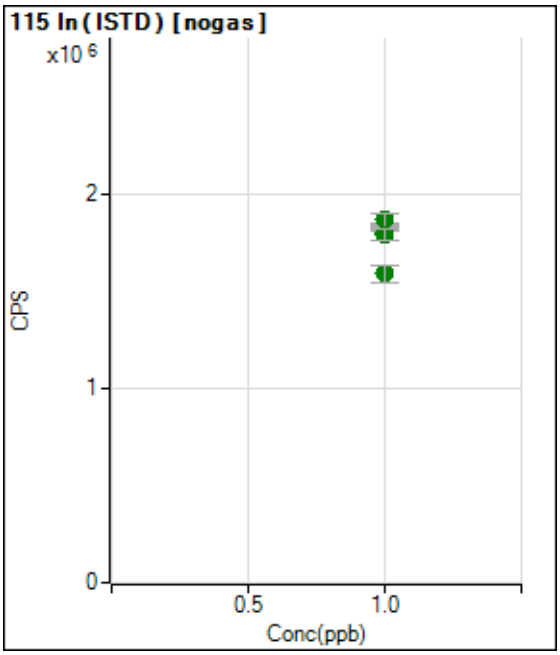


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1824061.43		A	1.1
2	☐	1.000		1877007.42		A	1.2
3	☐	1.000		1883917.78		A	2.5
4	☐	1.000		1934517.00		A	1.5
5	☐	1.000		1837619.92		A	1.2
6	☐	1.000		1861543.83		A	9.5
7	☐	1.000					

Calibration for 163_ICV.d

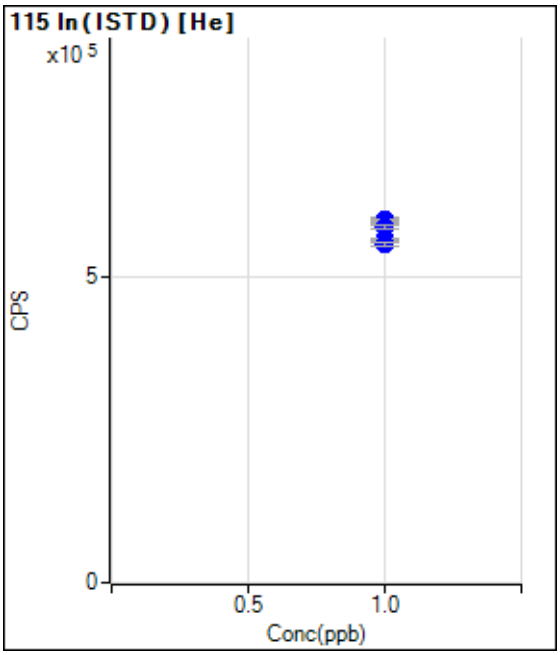


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		427251.24		P	1.3
2	☐	1.000		431912.19		P	1.8
3	☐	1.000		443014.22		P	2.5
4	☐	1.000		444734.00		P	0.4
5	☐	1.000		428201.77		P	0.5
6	☐	1.000		417316.02		P	1.3
7	☐	1.000					

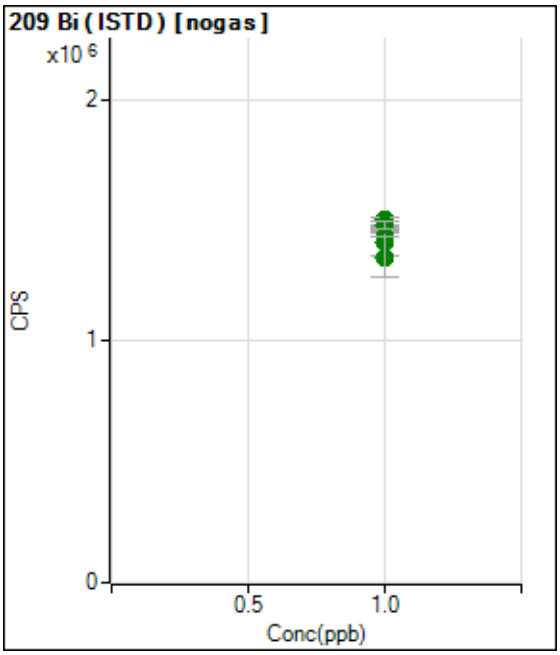


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1842086.41		A	0.9
2	☐	1.000		1829909.95		A	1.8
3	☐	1.000		1806867.41		A	4.2
4	☐	1.000		1871604.02		A	3.6
5	☐	1.000		1794931.01		A	3.0
6	☐	1.000		1593582.82		A	5.7
7	☐	1.000					

Calibration for 163_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		591083.87		P	1.5
2	☐	1.000		584767.05		P	0.6
3	☐	1.000		592186.93		P	0.6
4	☐	1.000		581788.74		P	1.1
5	☐	1.000		560720.35		P	0.9
6	☐	1.000		553575.63		P	1.0
7	☐	1.000					



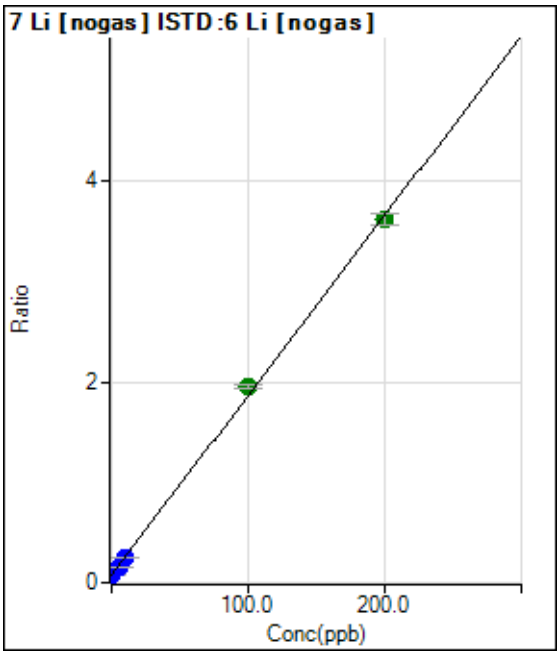
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1459556.75		A	1.3
2	☐	1.000		1454241.02		A	3.1
3	☐	1.000		1406998.15		A	7.2
4	☐	1.000		1501686.90		A	1.0
5	☐	1.000		1480559.35		A	1.7
6	☐	1.000		1348503.73		A	12.4
7	☐	1.000					

Calibration for 084_ICV.d

Batch Folder: C:\Agilent\ICPMH\1\DATA\010320A.b\
Analysis File: 010320A.batch.bin
DA Date-Time: 1/6/2020 8:24:44 AM
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	077CALB.d	CAL BLK	1/3/2020 1:55:23 PM
2	078CALS.d	2/10/200	1/3/2020 1:57:37 PM
3	079CALS.d	5/25/500	1/3/2020 1:59:52 PM
4	080CALS.d	10/50/1000	1/3/2020 2:02:06 PM
5	081CALS.d	100/500/10K	1/3/2020 2:04:20 PM
6	082CALS.d	200/1000/20K	1/3/2020 2:06:32 PM
7			

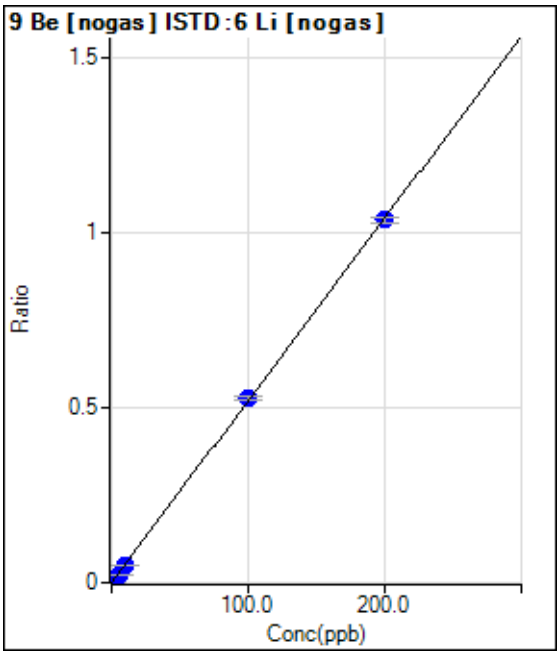
Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	83992.68	0.0762	P	3.3
2	☐	2.000	1.761	119182.99	0.1077	P	3.9
3	☐	5.000	4.509	172044.01	0.1569	P	4.2
4	☐	10.000	9.419	268265.66	0.2448	P	0.9
5	☐	100.000	104.737	1985204.71	1.9503	A	2.2
6	☐	200.000	197.675	3568429.22	3.6132	A	3.1
7	☐	1.000					

y = 0.0179 * x + 0.0762
R = 0.9996
DL = 0.4161
BEC = 4.261

Weight: <None>
Min Conc: <None>

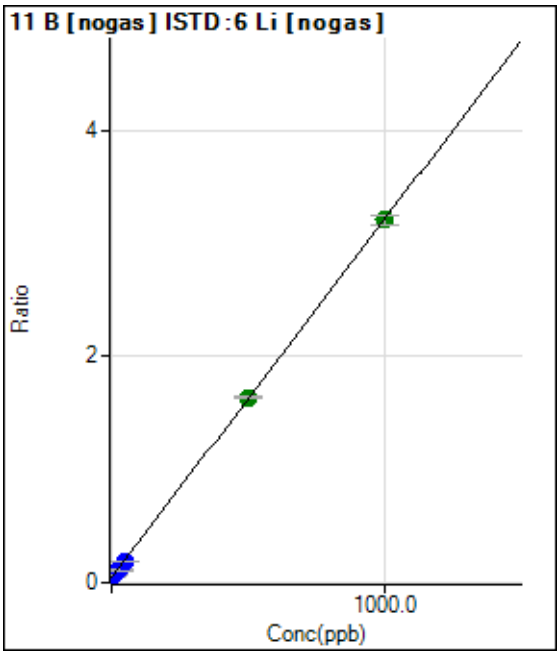


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	51.67	0.0000	P	6.1
2	☐	2.000	1.814	10502.91	0.0095	P	3.1
3	☐	5.000	4.656	26635.06	0.0243	P	2.8
4	☐	10.000	9.485	54169.04	0.0494	P	1.7
5	☐	100.000	101.543	538109.39	0.5287	P	2.5
6	☐	200.000	199.265	1024684.44	1.0374	P	1.9
7	☐	1.000					

y = 0.0052 * x + 4.6890E-005
R = 1.0000
DL = 0.001639
BEC = 0.009007

Weight: <None>
Min Conc: <None>

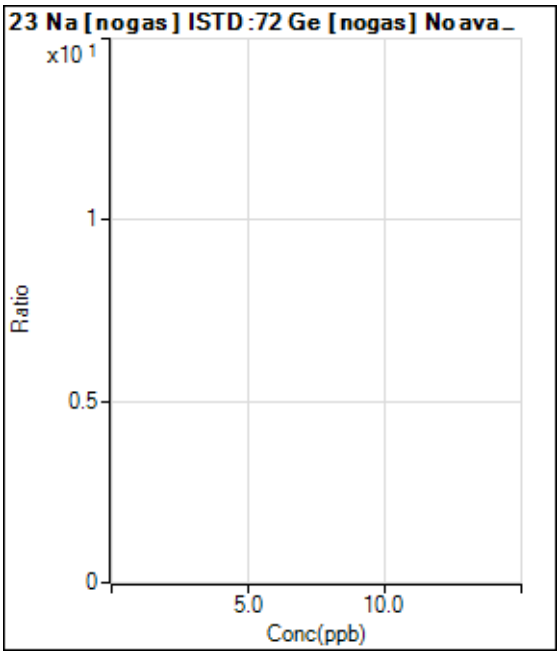
Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	49339.66	0.0448	P	2.6
2	☐	10.000	7.757	76723.41	0.0694	P	3.2
3	☐	25.000	21.270	122999.33	0.1122	P	3.2
4	☐	50.000	44.161	202385.86	0.1847	P	1.4
5	☐	500.000	503.486	1669529.93	1.6397	A	0.9
6	☐	1000.000	998.664	3168613.29	3.2082	A	2.6
7	☐	5.000					

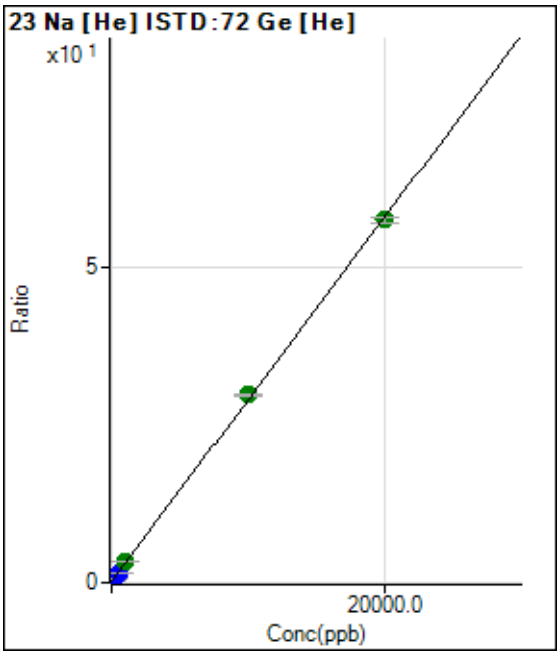
y = 0.0032 * x + 0.0448
R = 1.0000
DL = 1.102
BEC = 14.14

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.000					
6	☐	20000.000					
7	☐	100.000					

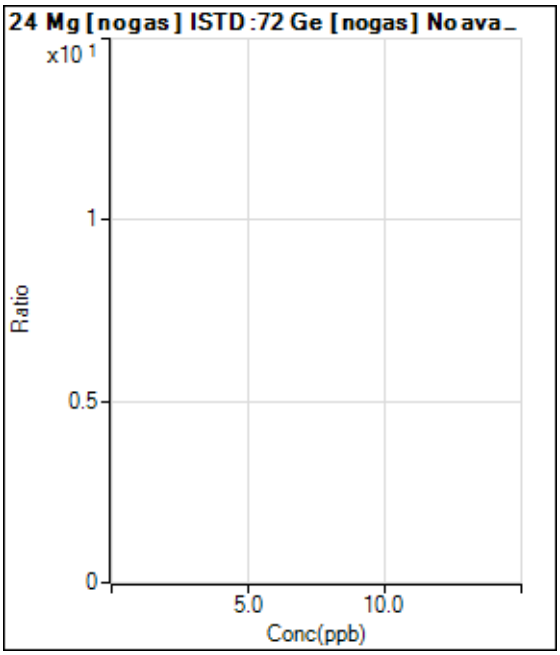
Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	68329.29	0.1716	P	2.8
2	☐	200.000	196.669	296803.26	0.7406	P	2.9
3	☐	500.000	496.692	637412.49	1.6086	P	1.4
4	☐	1000.000	1076.382	1299619.83	3.2857	A	1.6
5	☐	10000.000	10262.285	11510297.33	29.8619	A	1.5
6	☐	20000.000	19865.155	21753878.01	57.6445	A	1.7
7	☐	100.000					

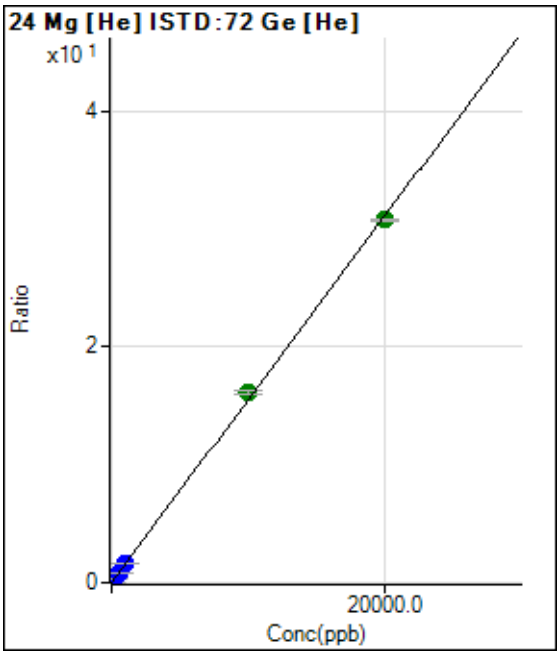
y = 0.0029 * x + 0.1716
R = 0.9999
DL = 4.973
BEC = 59.32

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.000					
6	☐	20000.000					
7	☐	100.000					

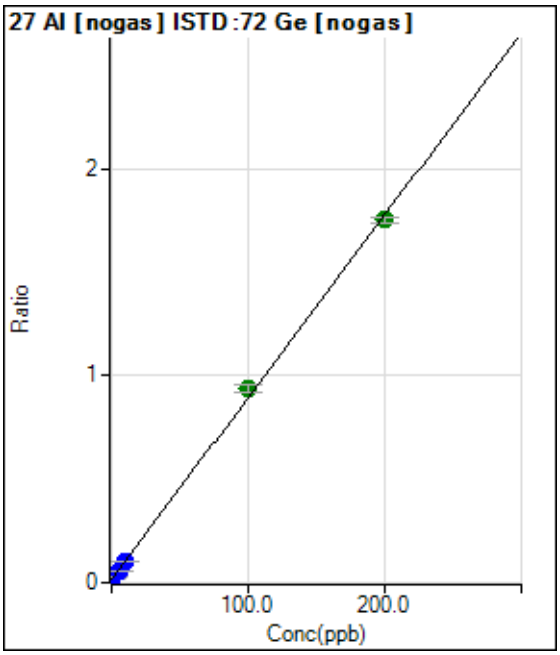
Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	733.36	0.0018	P	6.2
2	☐	200.000	200.063	125280.92	0.3126	P	2.9
3	☐	500.000	498.470	307541.33	0.7761	P	0.7
4	☐	1000.000	1008.992	620672.37	1.5691	P	0.7
5	☐	10000.000	10381.600	6216339.49	16.1278	A	1.3
6	☐	20000.000	19808.788	11611941.50	30.7712	A	0.6
7	☐	100.000					

y = 0.0016 * x + 0.0018
R = 0.9997
DL = 0.2212
BEC = 1.186

Weight: <None>
Min Conc: <None>

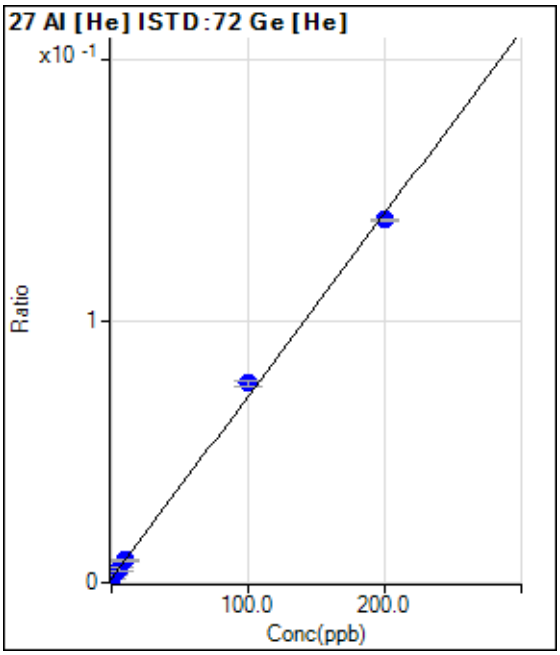


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	25944.81	0.0149	P	6.0
2	☐	2.000	2.645	66308.10	0.0381	P	30.4
3	☐	5.000	4.661	100364.36	0.0559	P	4.5
4	☐	10.000	10.081	183256.49	0.1035	P	1.2
5	☐	100.000	105.049	1615552.01	0.9385	A	3.7
6	☐	200.000	197.474	2897300.06	1.7512	A	1.9
7	☐	1.000					

y = 0.0088 * x + 0.0149
R = 0.9995
DL = 0.3041
BEC = 1.692

Weight: <None>
Min Conc: <None>

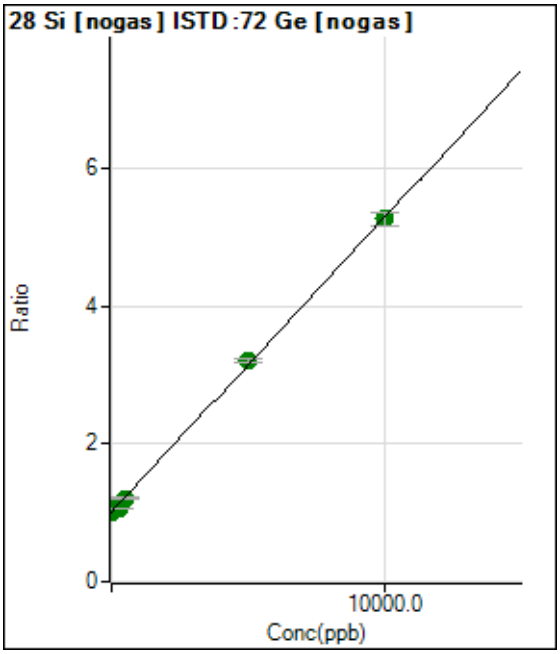
Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	623.35	0.0016	P	30.0
2	☐	2.000	1.685	1100.05	0.0027	P	6.4
3	☐	5.000	5.538	2157.14	0.0054	P	28.4
4	☐	10.000	10.056	3397.02	0.0086	P	8.4
5	☐	100.000	106.857	29363.02	0.0762	P	2.4
6	☐	200.000	196.558	52385.79	0.1388	P	0.7
7	☐	1.000					

y = 6.9831E-004 * x + 0.0016
R = 0.9992
DL = 2.019
BEC = 2.241

Weight: <None>
Min Conc: <None>

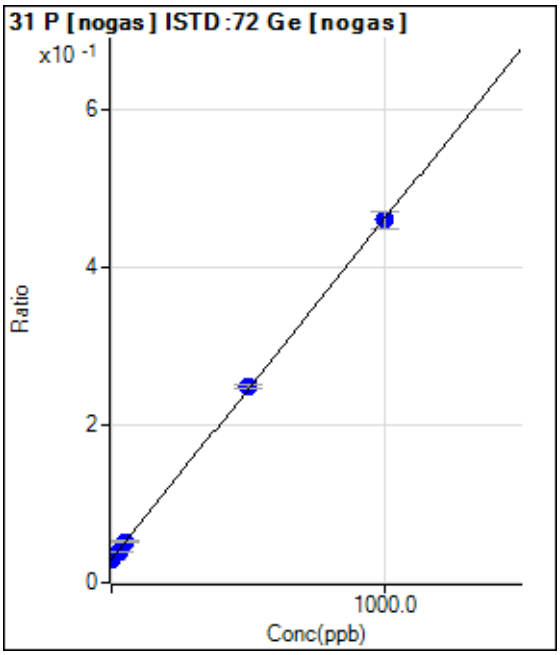


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1772209.24	1.0158	A	3.1
2	☐	100.000	86.755	1835157.06	1.0530	A	3.4
3	☐	250.000	122.158	1921229.24	1.0681	A	1.3
4	☐	500.000	452.611	2141444.86	1.2096	A	2.0
5	☐	5000.000	5119.925	5523757.00	3.2080	A	1.4
6	☐	10000.000	9945.736	8720364.87	5.2742	A	3.6
7	☐	50.000					

y = 4.2816E-004 * x + 1.0158
R = 0.9998
DL = 217.7
BEC = 2373

Weight: <None>
Min Conc: <None>

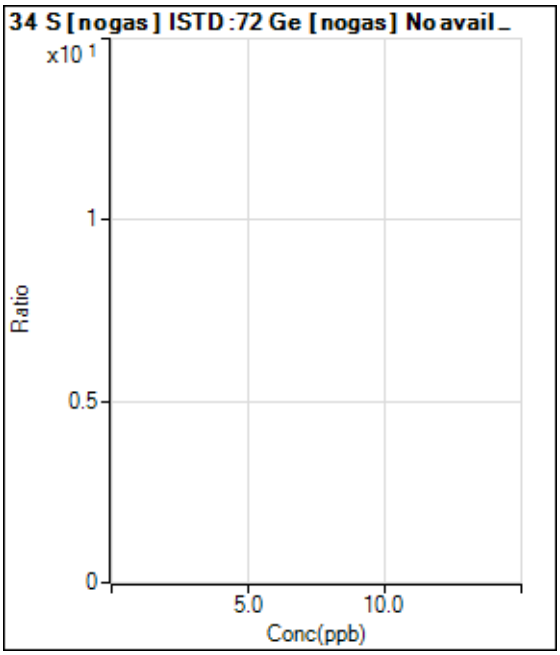
Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	51928.34	0.0298	P	3.3
2	☐	10.000	8.854	58550.68	0.0336	P	2.3
3	☐	25.000	21.633	70253.96	0.0391	P	4.6
4	☐	50.000	51.005	91657.86	0.0518	P	2.8
5	☐	500.000	505.770	427055.98	0.2480	P	1.9
6	☐	1000.000	997.160	760296.37	0.4601	P	5.1
7	☐	5.000					

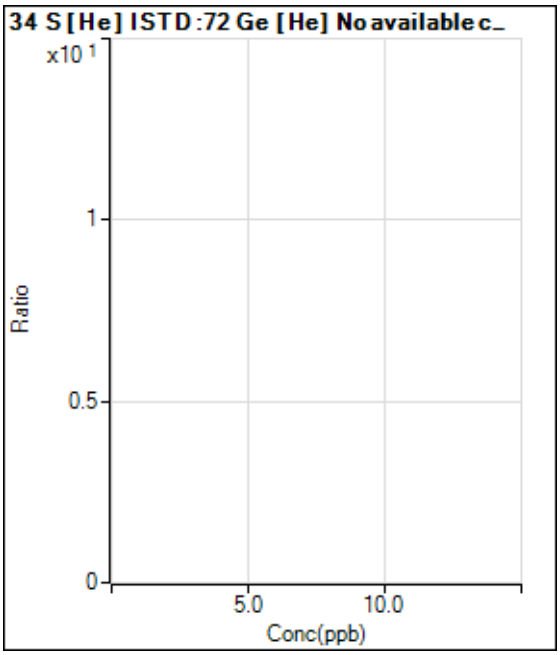
y = 4.3155E-004 * x + 0.0298
R = 1.0000
DL = 6.809
BEC = 68.98

Weight: <None>
Min Conc: <None>

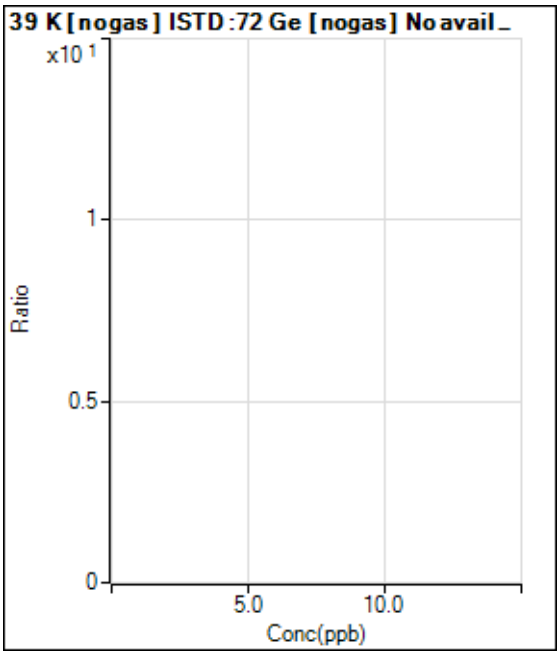


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	400.000					
3	☐	1000.000					
4	☐	2000.000					
5	☐	20000.000					
6	☐	40000.000					
7	☐	200.000					

Calibration for 084_ICV.d

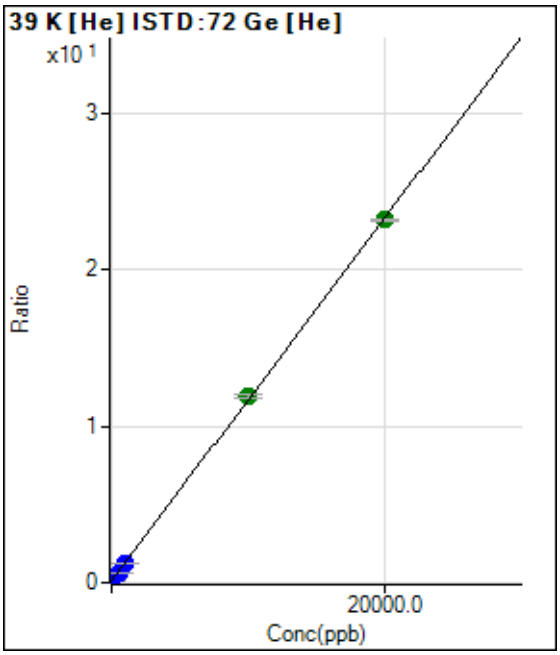


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	400.000					
3	☐	1000.000					
4	☐	2000.000					
5	☐	20000.000					
6	☐	40000.000					
7	☐	200.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.000					
6	☐	20000.000					
7	☐	100.000					

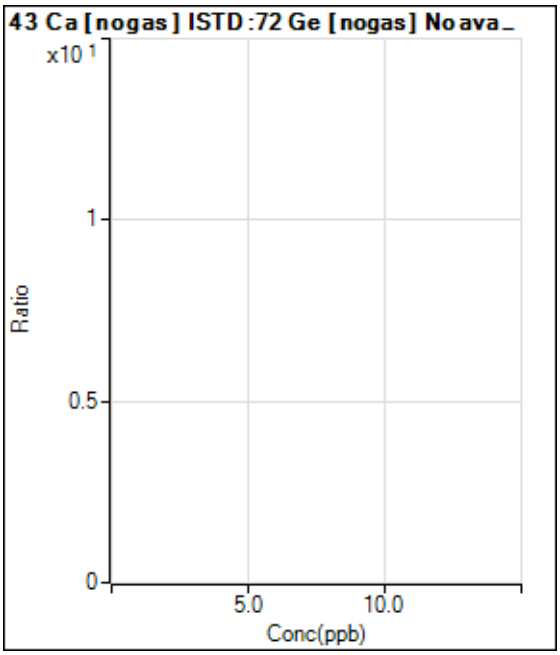
Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	45555.65	0.1144	P	0.9
2	☐	200.000	196.075	136968.97	0.3417	P	3.0
3	☐	500.000	482.635	267096.99	0.6740	P	0.1
4	☐	1000.000	997.760	502850.06	1.2713	P	1.3
5	☐	10000.000	10150.673	4580528.99	11.8843	A	2.1
6	☐	20000.000	19925.249	8761477.16	23.2181	A	0.8
7	☐	100.000					

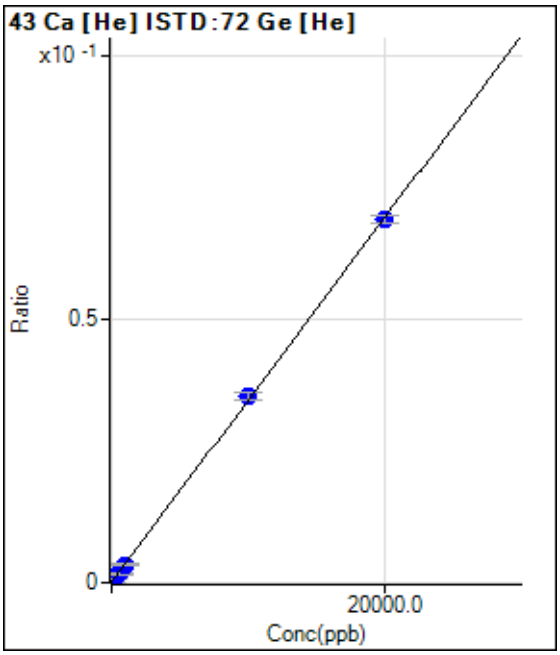
y = 0.0012 * x + 0.1144
R = 1.0000
DL = 2.59
BEC = 98.66

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.000					
6	☐	20000.000					
7	☐	100.000					

Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	23.33	0.0001	P	107.2
2	☐	200.000	228.255	340.01	0.0008	P	8.0
3	☐	500.000	478.197	676.69	0.0017	P	27.1
4	☐	1000.000	953.742	1326.73	0.0034	P	11.2
5	☐	10000.000	10216.696	13628.50	0.0354	P	3.5
6	☐	20000.000	19894.228	25958.45	0.0688	P	2.0
7	☐	100.000					

y = 3.4550E-006 * x + 5.8234E-005

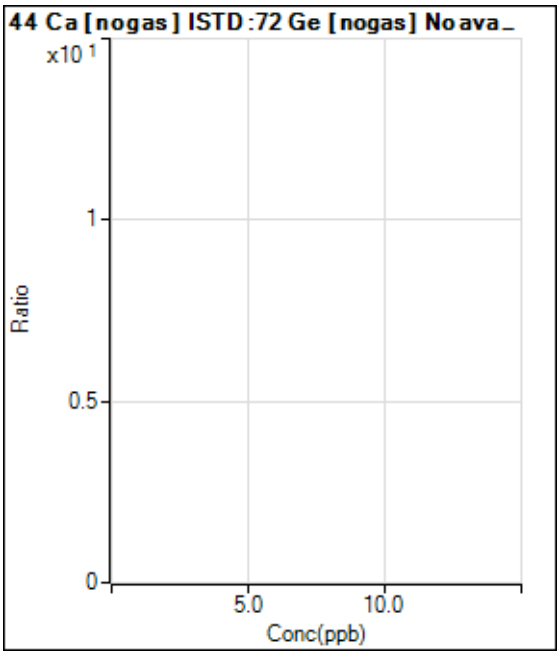
R = 0.9999

DL = 54.2

BEC = 16.86

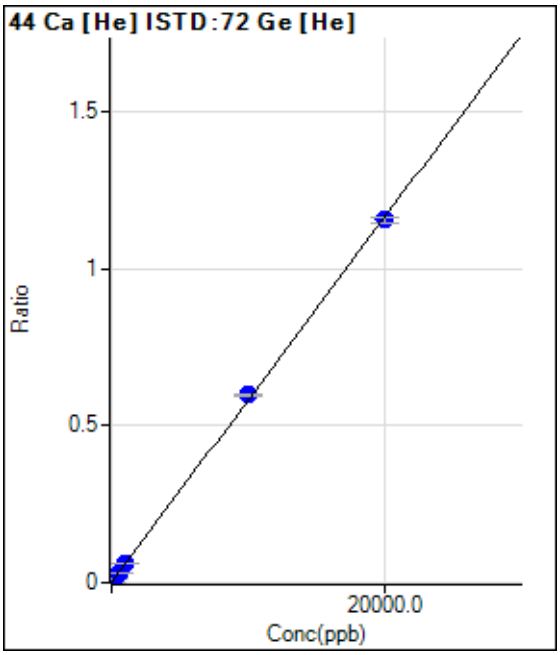
Weight: <None>

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.000					
6	☐	20000.000					
7	☐	100.000					

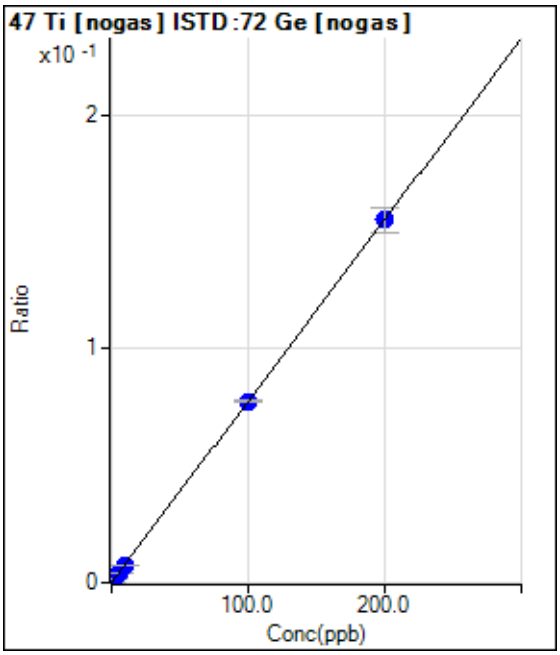
Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	320.01	0.0008	P	5.1
2	☐	200.000	193.560	4827.36	0.0121	P	7.5
3	☐	500.000	475.003	11256.88	0.0284	P	0.9
4	☐	1000.000	1013.364	23611.84	0.0597	P	2.0
5	☐	10000.000	10268.837	230337.61	0.5976	P	1.4
6	☐	20000.000	19865.603	435953.63	1.1553	P	1.8
7	☐	100.000					

y = 5.8116E-005 * x + 8.0353E-004
R = 0.9999
DL = 2.12
BEC = 13.83

Weight: <None>
Min Conc: <None>

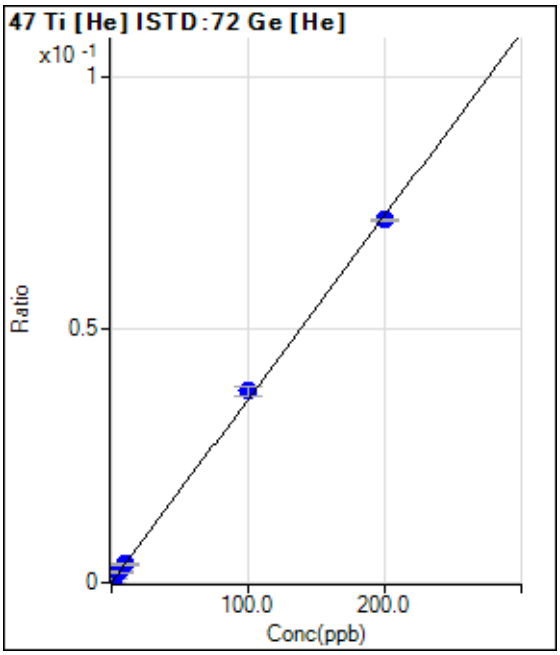


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	150.00	0.0001	P	23.2
2	☐	2.000	2.014	2870.27	0.0016	P	4.9
3	☐	5.000	4.817	6858.03	0.0038	P	5.7
4	☐	10.000	9.514	13201.49	0.0075	P	1.6
5	☐	100.000	100.029	133637.59	0.0776	P	1.4
6	☐	200.000	200.014	256071.47	0.1551	P	6.6
7	☐	1.000					

y = 7.7481E-004 * x + 8.5847E-005
R = 1.0000
DL = 0.07711
BEC = 0.1108

Weight: <None>
Min Conc: <None>

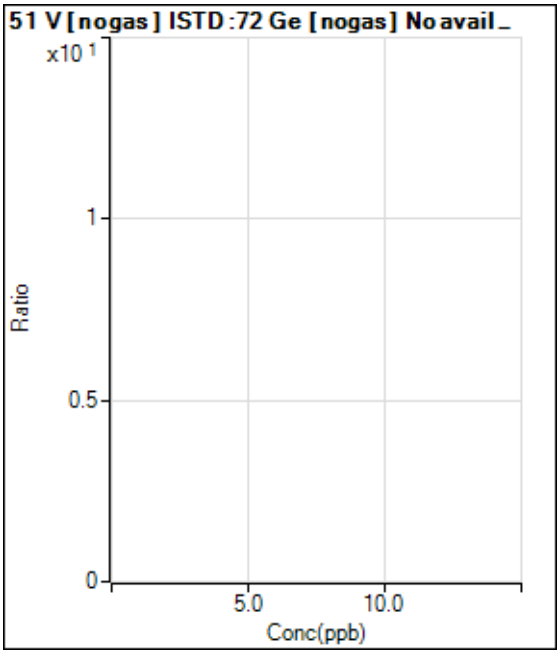
Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3.33	0.0000	P	173.2
2	☐	2.000	1.858	273.34	0.0007	P	7.2
3	☐	5.000	5.835	840.03	0.0021	P	17.0
4	☐	10.000	10.166	1460.08	0.0037	P	5.6
5	☐	100.000	104.342	14572.52	0.0378	P	4.5
6	☐	200.000	197.801	27046.54	0.0717	P	0.8
7	☐	1.000					

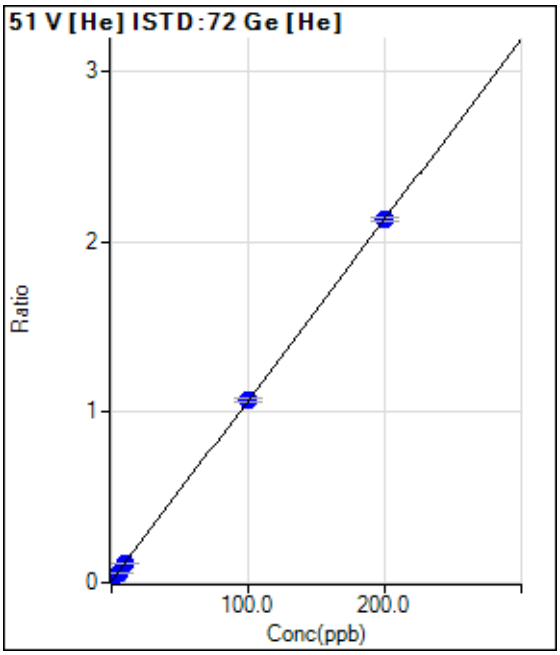
y = 3.6230E-004 * x + 8.4098E-006
R = 0.9997
DL = 0.1206
BEC = 0.02321

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

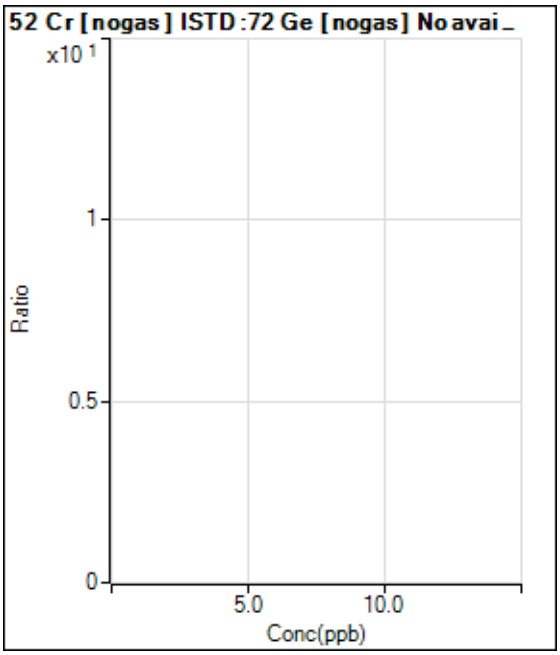
Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3654.82	0.0092	P	1.7
2	☐	2.000	1.979	12098.40	0.0302	P	3.8
3	☐	5.000	4.870	24123.43	0.0609	P	1.5
4	☐	10.000	10.135	46196.02	0.1168	P	1.0
5	☐	100.000	100.205	413656.23	1.0732	P	1.8
6	☐	200.000	199.894	804391.67	2.1317	P	0.9
7	☐	1.000					

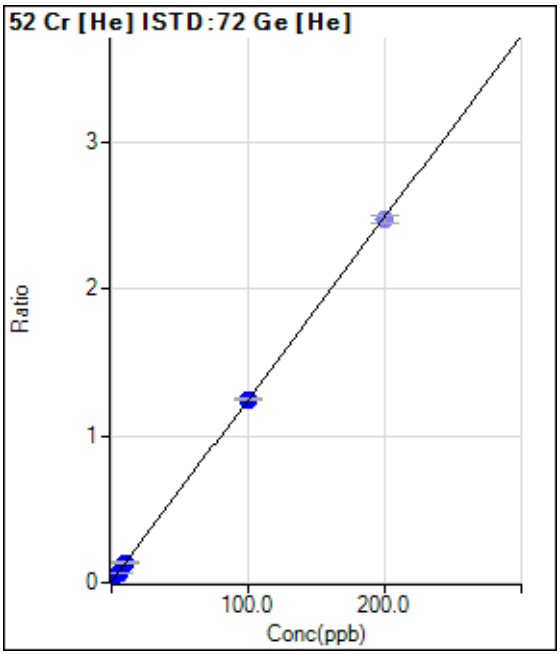
y = 0.0106 * x + 0.0092
R = 1.0000
DL = 0.04304
BEC = 0.8643

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

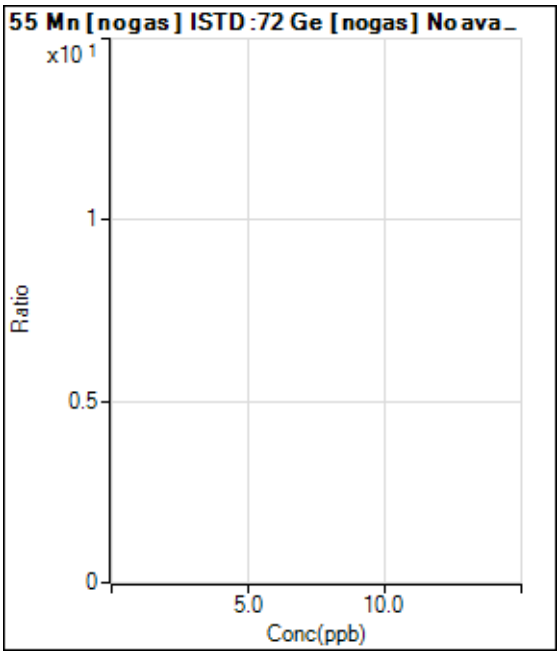
Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3440.38	0.0086	P	3.8
2	☐	2.000	2.006	13418.38	0.0335	P	0.8
3	☐	5.000	4.894	27427.18	0.0692	P	2.0
4	☐	10.000	10.400	54339.86	0.1374	P	0.2
5	☐	100.000	99.965	480290.66	1.2460	P	1.1
6	☑	200.000		931581.92	2.4688	P	2.2
7	☐	1.000					

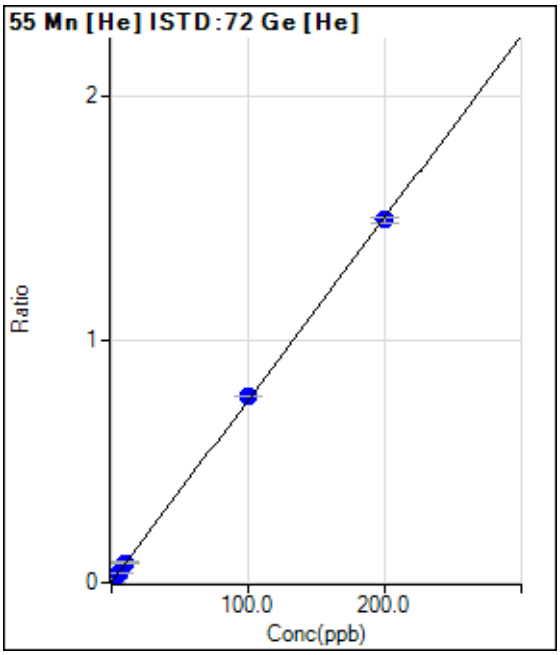
y = 0.0124 * x + 0.0086
R = 1.0000
DL = 0.07914
BEC = 0.6981

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	700.03	0.0018	P	23.1
2	☐	2.000	2.064	6908.10	0.0172	P	5.7
3	☐	5.000	5.008	15580.17	0.0393	P	3.0
4	☐	10.000	10.772	32645.85	0.0825	P	2.0
5	☐	100.000	102.199	296087.47	0.7681	P	0.3
6	☐	200.000	198.861	563394.47	1.4930	P	1.7
7	☐	1.000					

y = 0.0075 * x + 0.0018

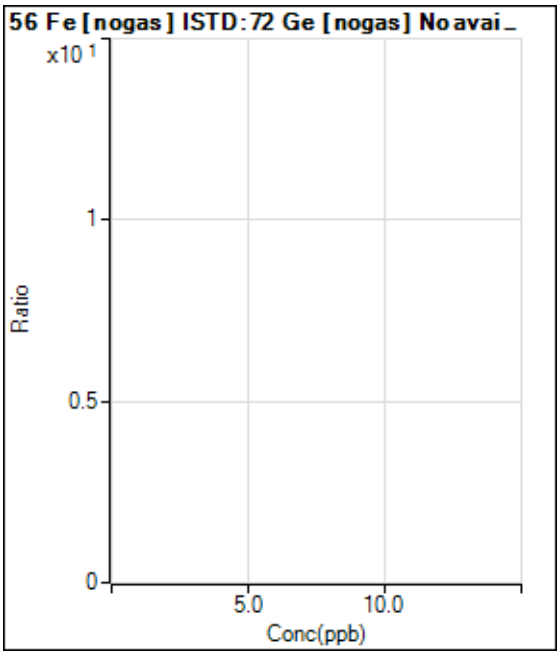
R = 0.9999

DL = 0.1622

BEC = 0.2342

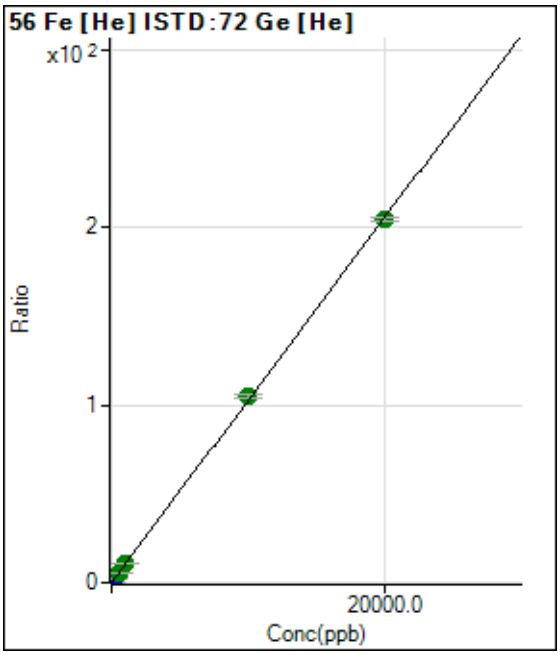
Weight: <None>

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.000					
6	☐	20000.000					
7	☐	100.000					

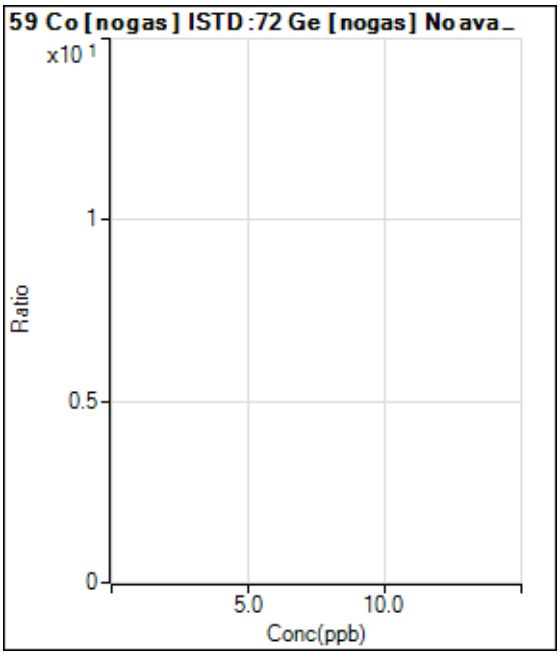
Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	12467.72	0.0313	P	2.4
2	☐	200.000	199.827	833684.81	2.0806	P	3.9
3	☐	500.000	510.961	2088709.03	5.2713	A	2.4
4	☐	1000.000	1038.452	4224816.08	10.6808	A	1.0
5	☐	10000.000	10217.258	40398413.56	104.8106	A	1.7
6	☐	20000.000	19889.176	76978453.85	203.9974	A	1.2
7	☐	100.000					

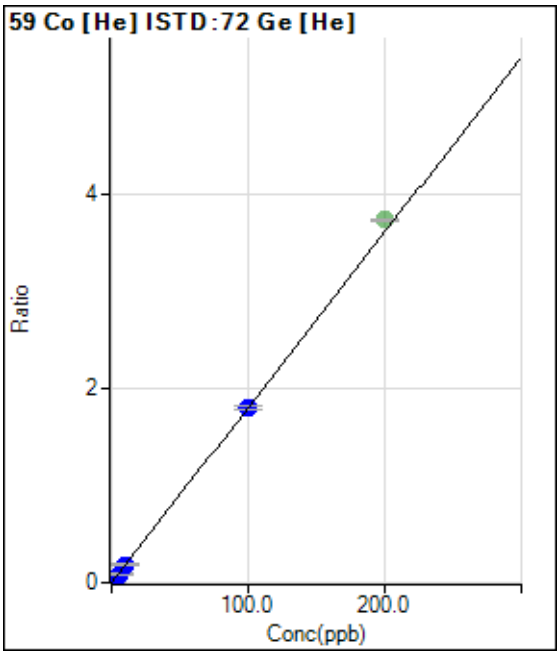
y = 0.0103 * x + 0.0313
R = 0.9999
DL = 0.2229
BEC = 3.053

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

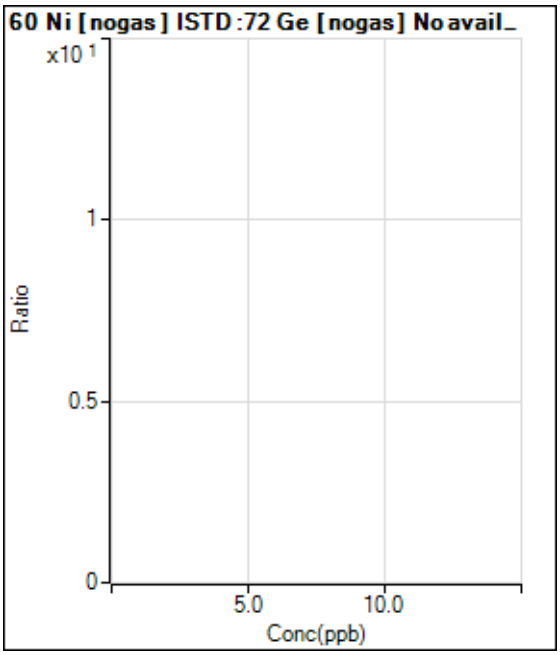
Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	90.00	0.0002	P	51.2
2	☐	2.000	2.021	14672.71	0.0366	P	5.0
3	☐	5.000	4.924	35210.65	0.0889	P	4.1
4	☐	10.000	10.376	73974.64	0.1870	P	1.9
5	☐	100.000	99.966	693738.61	1.7999	P	2.2
6	☑	200.000		1407498.26	3.7299	A	0.5
7	☐	1.000					

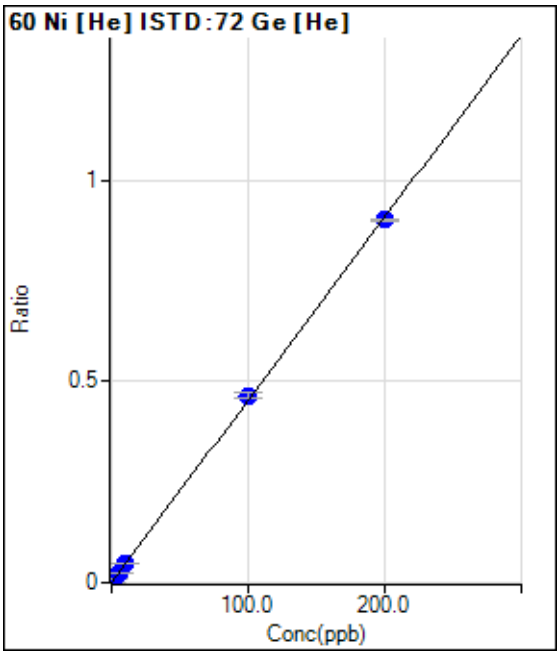
y = 0.0180 * x + 2.2608E-004
R = 1.0000
DL = 0.01931
BEC = 0.01256

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

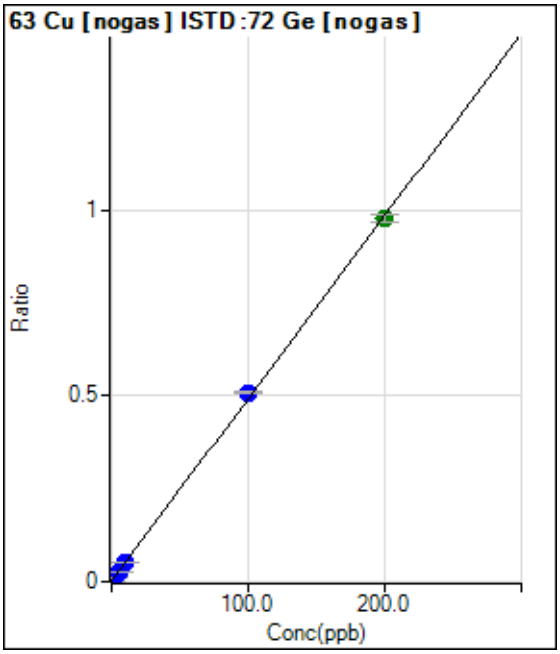
Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	156.67	0.0004	P	6.3
2	☐	2.000	2.170	4110.53	0.0102	P	6.9
3	☐	5.000	5.246	9585.95	0.0242	P	4.2
4	☐	10.000	10.307	18649.62	0.0472	P	3.4
5	☐	100.000	102.477	179328.97	0.4653	P	2.6
6	☐	200.000	198.738	340375.19	0.9020	P	0.8
7	☐	1.000					

y = 0.0045 * x + 3.9325E-004
R = 0.9999
DL = 0.01651
BEC = 0.08669

Weight: <None>
Min Conc: <None>

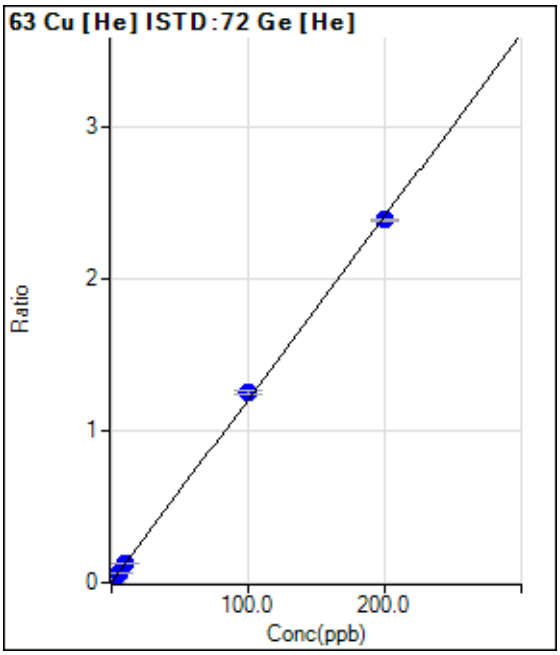


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2816.92	0.0016	P	6.7
2	☐	2.000	2.057	20444.94	0.0117	P	0.7
3	☐	5.000	4.860	45871.23	0.0255	P	1.0
4	☐	10.000	10.098	90756.79	0.0513	P	1.9
5	☐	100.000	103.038	875219.86	0.5082	P	1.2
6	☐	200.000	198.479	1619749.82	0.9775	A	2.2
7	☐	1.000					

y = 0.0049 * x + 0.0016
R = 0.9998
DL = 0.06585
BEC = 0.3283

Weight: <None>
Min Conc: <None>

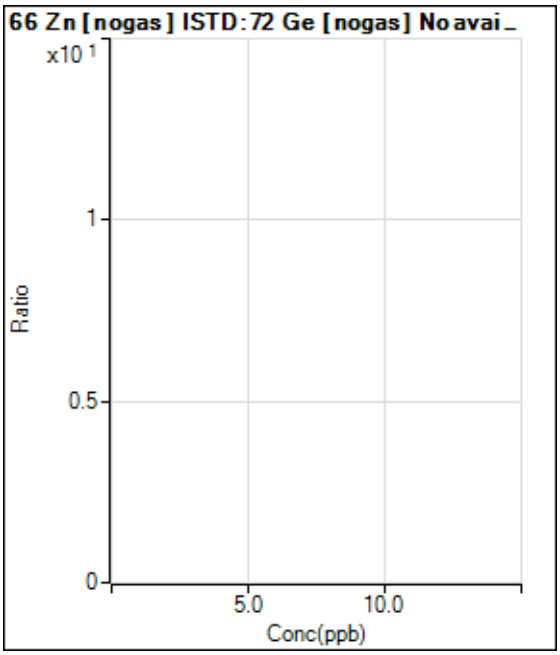
Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	730.03	0.0018	P	10.1
2	☐	2.000	2.018	10453.09	0.0261	P	2.1
3	☐	5.000	4.971	24393.18	0.0616	P	1.6
4	☐	10.000	10.501	50633.59	0.1280	P	1.6
5	☐	100.000	103.487	479970.63	1.2453	P	2.1
6	☐	200.000	198.232	899508.40	2.3837	P	0.7
7	☐	1.000					

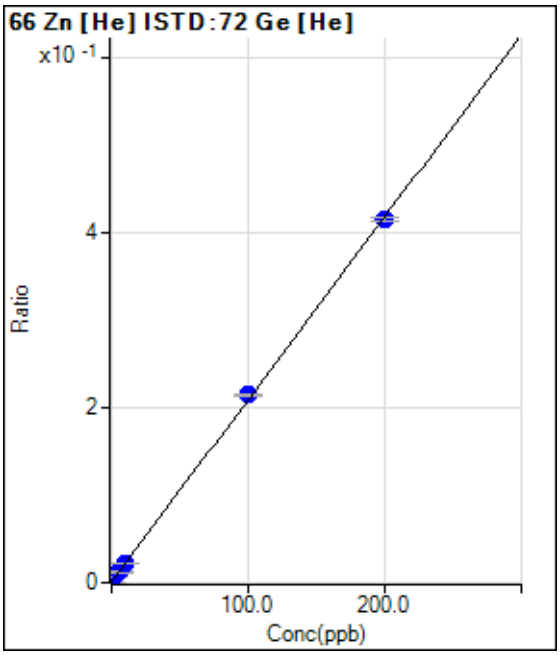
y = 0.0120 * x + 0.0018
R = 0.9998
DL = 0.04625
BEC = 0.1526

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	313.34	0.0008	P	5.3
2	☐	2.000	2.386	2306.84	0.0058	P	1.6
3	☐	5.000	5.450	4807.35	0.0121	P	4.1
4	☐	10.000	10.316	8805.56	0.0223	P	1.7
5	☐	100.000	102.809	82800.00	0.2148	P	1.0
6	☐	200.000	198.564	156284.55	0.4142	P	1.1
7	☐	1.000					

y = 0.0021 * x + 7.8698E-004

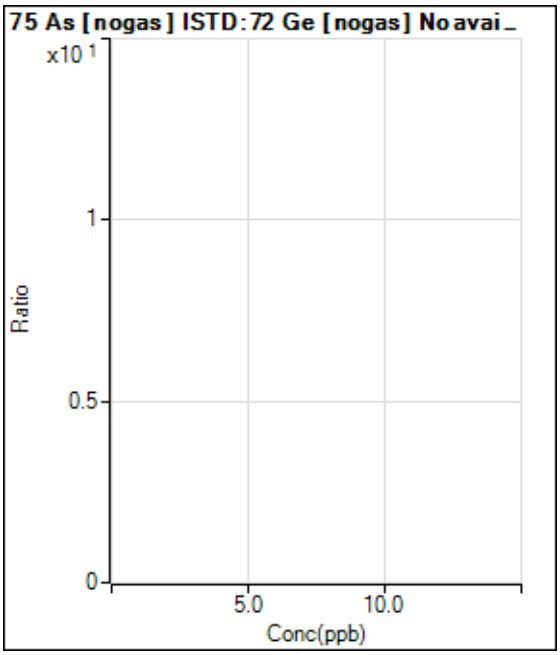
R = 0.9999

DL = 0.05984

BEC = 0.378

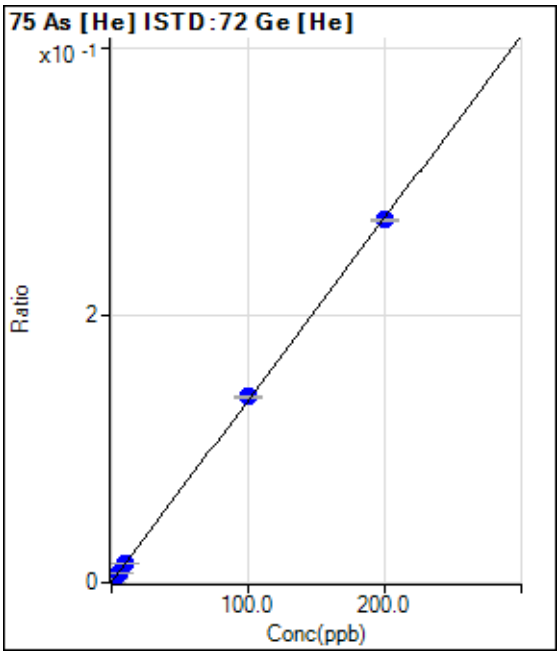
Weight: <None>

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	93.33	0.0002	P	15.4
2	☐	2.000	2.009	1192.27	0.0030	P	4.8
3	☐	5.000	4.863	2719.11	0.0069	P	2.1
4	☐	10.000	10.228	5605.33	0.0142	P	1.7
5	☐	100.000	102.071	53703.09	0.1393	P	0.8
6	☐	200.000	198.956	102396.74	0.2713	P	0.8
7	☐	1.000					

y = 0.0014 * x + 2.3416E-004

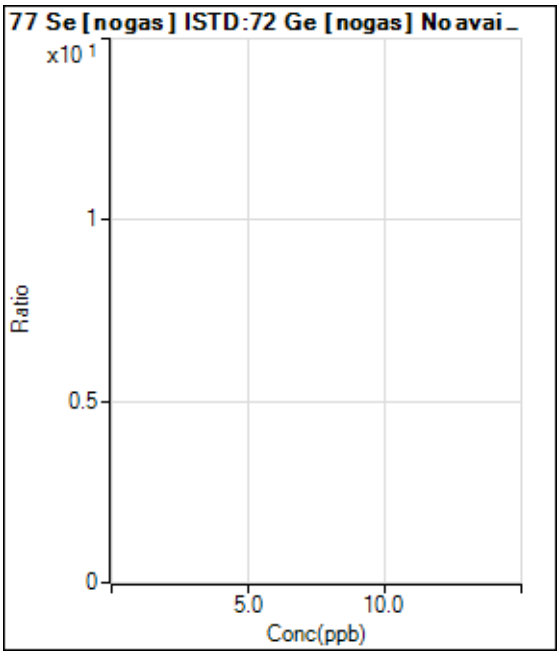
R = 0.9999

DL = 0.07946

BEC = 0.1718

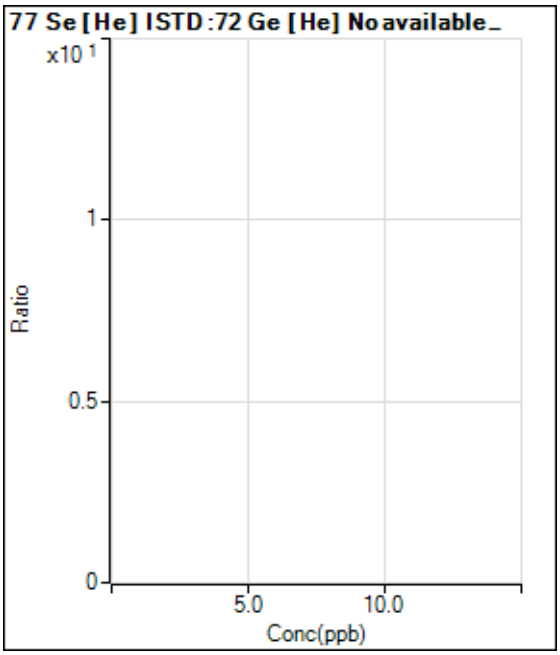
Weight: <None>

Min Conc: <None>

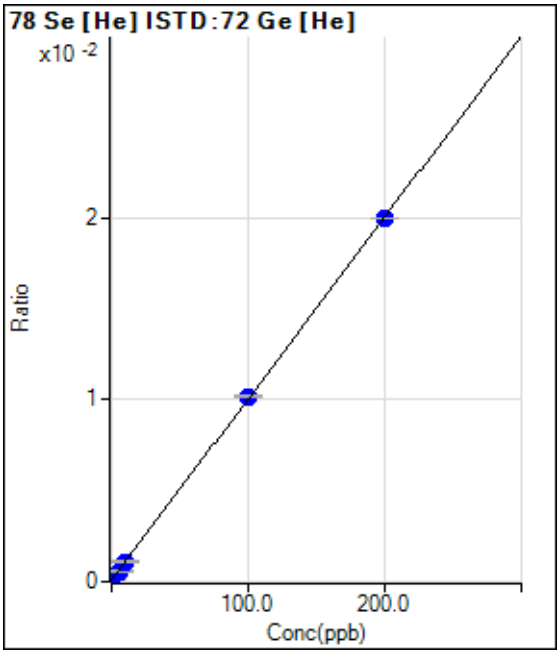


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	34.67	0.0001	P	17.5
2	☐	2.000	2.066	117.33	0.0003	P	2.3
3	☐	5.000	4.817	224.67	0.0006	P	9.0
4	☐	10.000	9.974	427.34	0.0011	P	8.6
5	☐	100.000	101.480	3929.77	0.0102	P	1.2
6	☐	200.000	199.265	7522.91	0.0199	P	0.1
7	☐	1.000					

y = 9.9609E-005 * x + 8.6953E-005

R = 1.0000

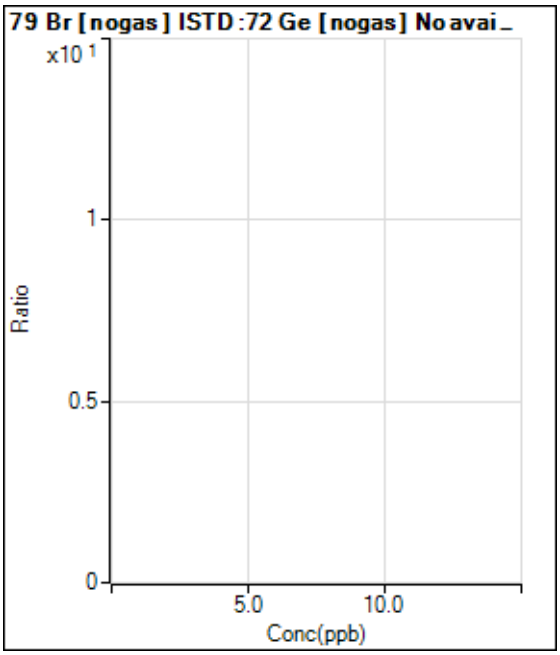
DL = 0.4578

BEC = 0.8729

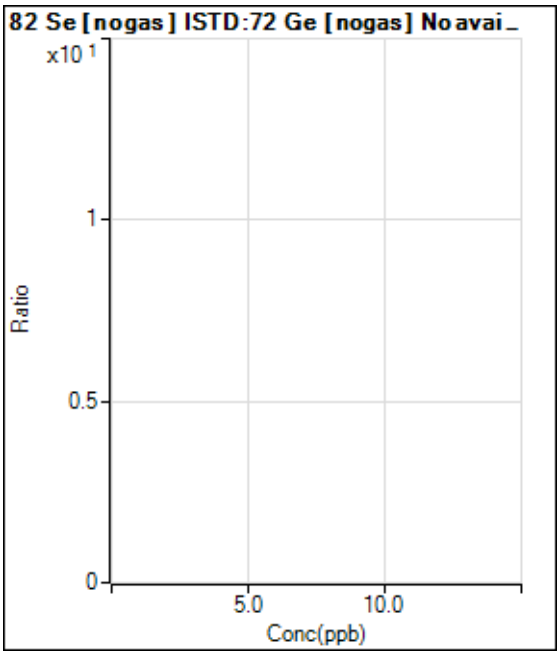
Weight: <None>

Min Conc: <None>

Calibration for 084_ICV.d

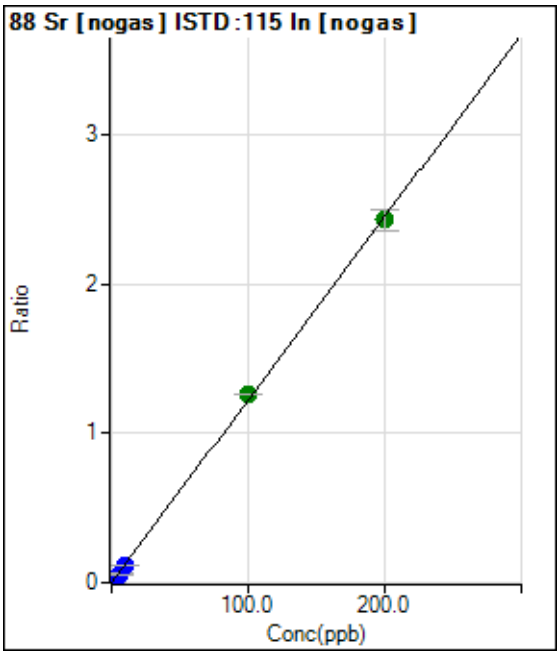


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

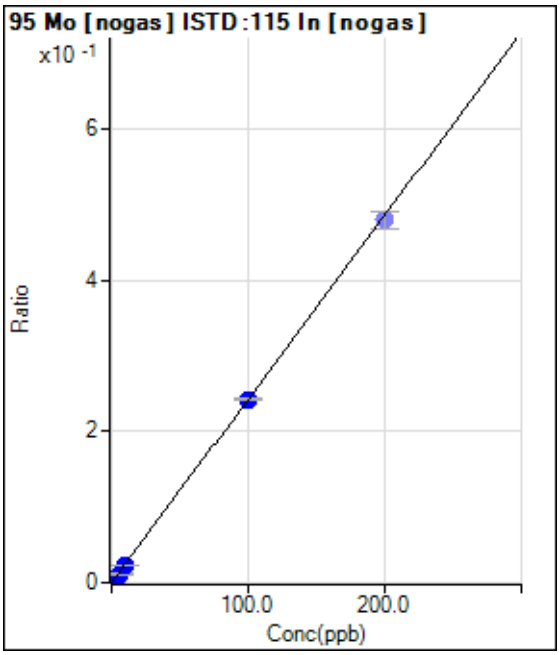
Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	816.70	0.0005	P	10.8
2	☐	2.000	1.852	40543.03	0.0231	P	3.3
3	☐	5.000	4.598	99262.95	0.0567	P	7.5
4	☐	10.000	9.378	201527.66	0.1152	P	1.7
5	☐	100.000	103.108	2066978.04	1.2620	A	0.4
6	☐	200.000	198.489	3941086.61	2.4290	A	6.1
7	☐	1.000					

y = 0.0122 * x + 4.7850E-004
R = 0.9998
DL = 0.01269
BEC = 0.03911

Weight: <None>
Min Conc: <None>

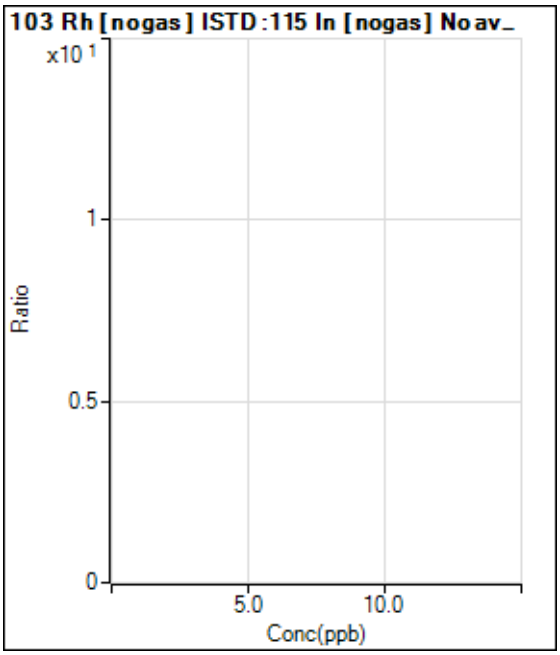


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	113.33	0.0001	P	37.7
2	☐	2.000	1.883	8138.63	0.0046	P	4.2
3	☐	5.000	4.599	19651.08	0.0112	P	9.6
4	☐	10.000	9.469	40372.59	0.0231	P	2.4
5	☐	100.000	100.075	398442.26	0.2433	P	2.1
6	☑	200.000		780149.34	0.4806	P	5.1
7	☐	1.000					

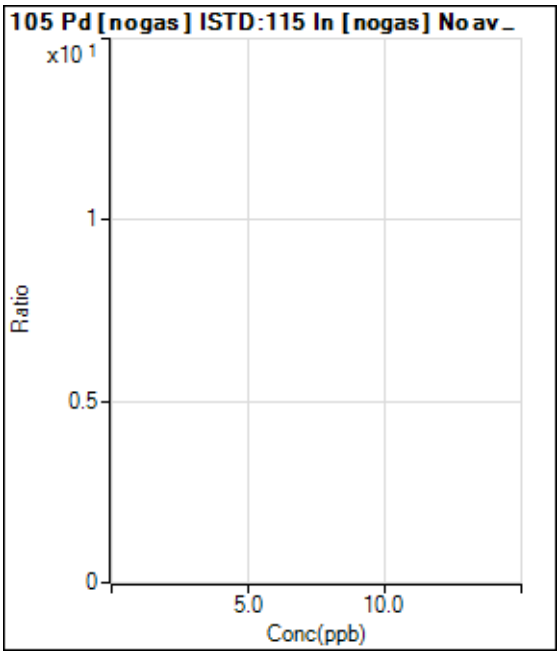
y = 0.0024 * x + 6.6498E-005
R = 1.0000
DL = 0.03092
BEC = 0.02736

Weight: <None>
Min Conc: <None>

Calibration for 084_ICV.d

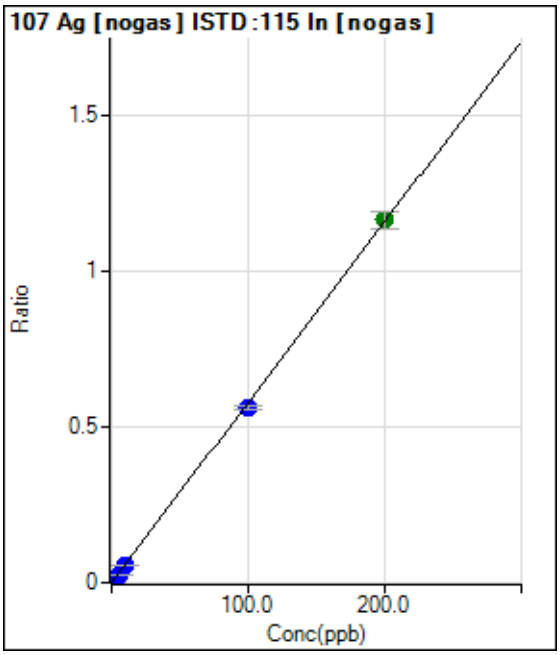


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

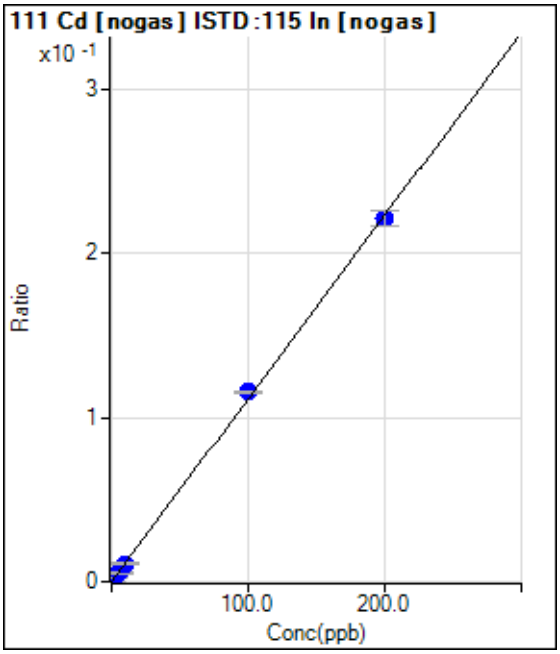
Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	63.33	0.0000	P	25.0
2	☐	2.000	1.864	18987.15	0.0108	P	4.9
3	☐	5.000	4.606	46735.55	0.0267	P	7.5
4	☐	10.000	9.765	98983.51	0.0566	P	2.5
5	☐	100.000	97.445	924427.20	0.5645	P	2.3
6	☐	200.000	201.300	1892685.80	1.1660	A	4.9
7	☐	1.000					

y = 0.0058 * x + 3.7136E-005
R = 0.9999
DL = 0.004814
BEC = 0.006411

Weight: <None>
Min Conc: <None>

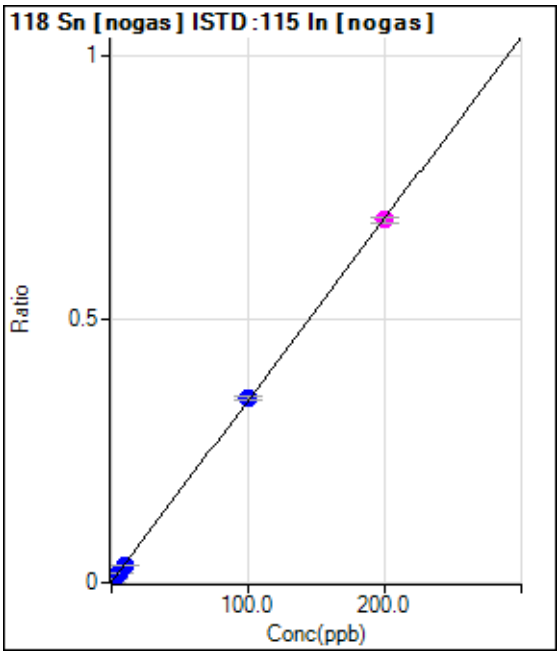


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	16.67	0.0000	P	125.4
2	☐	2.000	1.955	3840.48	0.0022	P	10.3
3	☐	5.000	4.780	9369.31	0.0053	P	5.7
4	☐	10.000	9.911	19364.25	0.0111	P	4.0
5	☐	100.000	103.588	189367.44	0.1156	P	1.3
6	☐	200.000	198.217	359222.91	0.2213	P	4.4
7	☐	1.000					

y = 0.0011 * x + 9.8268E-006
R = 0.9998
DL = 0.03313
BEC = 0.008804

Weight: <None>
Min Conc: <None>

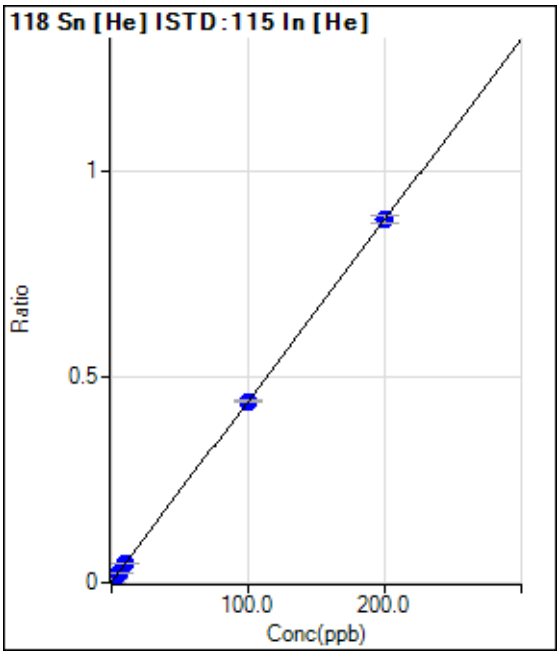
Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2260.18	0.0013	P	5.3
2	☐	2.000	1.808	13261.90	0.0076	P	4.5
3	☐	5.000	4.617	30196.60	0.0173	P	7.1
4	☐	10.000	9.423	59203.77	0.0338	P	3.0
5	☐	100.000	101.446	575533.38	0.3515	P	2.6
6	☐	200.000	199.317	1120280.01	0.6893	M	1.5
7	☐	1.000					

y = 0.0035 * x + 0.0013
R = 1.0000
DL = 0.06047
BEC = 0.3833

Weight: <None>
Min Conc: <None>

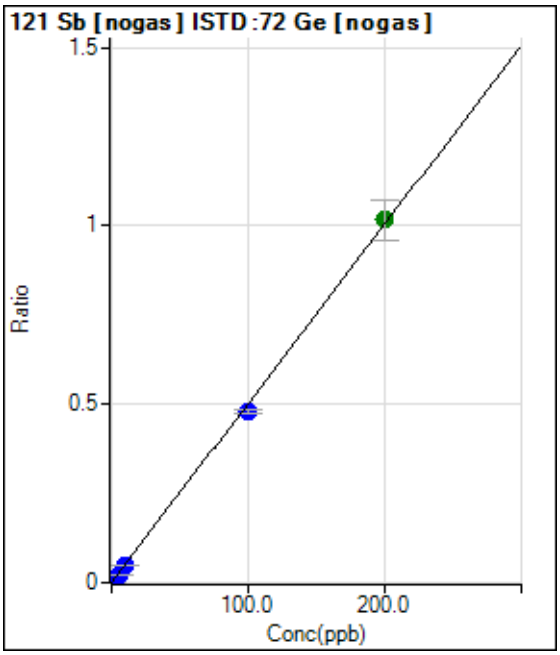


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	936.71	0.0017	P	7.0
2	☐	2.000	1.781	5250.87	0.0095	P	2.5
3	☐	5.000	4.597	11944.23	0.0219	P	6.3
4	☐	10.000	10.018	24824.55	0.0457	P	1.3
5	☐	100.000	99.941	234641.12	0.4403	P	1.3
6	☐	200.000	200.041	454058.40	0.8796	P	2.2
7	☐	1.000					

y = 0.0044 * x + 0.0017
R = 1.0000
DL = 0.0822
BEC = 0.3906

Weight: <None>
Min Conc: <None>

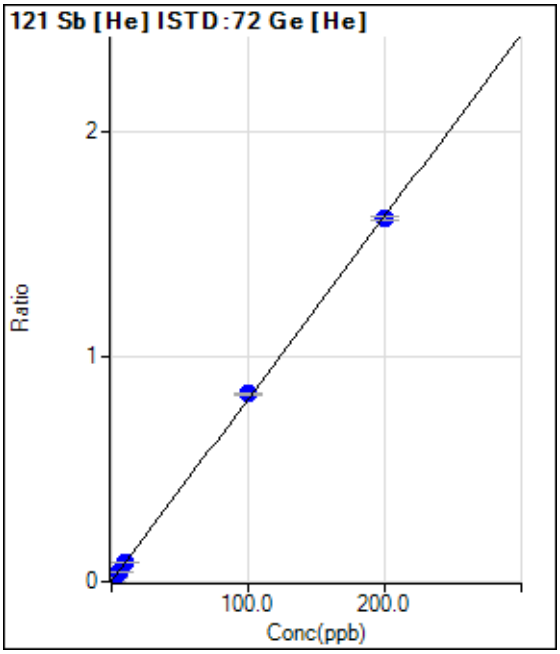
Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1653.44	0.0009	P	9.7
2	☐	2.000	1.836	17699.25	0.0102	P	3.5
3	☐	5.000	4.478	42044.28	0.0234	P	4.7
4	☐	10.000	9.177	83140.99	0.0470	P	0.9
5	☐	100.000	95.035	822194.47	0.4775	P	2.1
6	☐	200.000	202.538	1676124.40	1.0166	A	11.0
7	☐	1.000					

y = 0.0050 * x + 9.4826E-004
R = 0.9996
DL = 0.05516
BEC = 0.1891

Weight: <None>
Min Conc: <None>

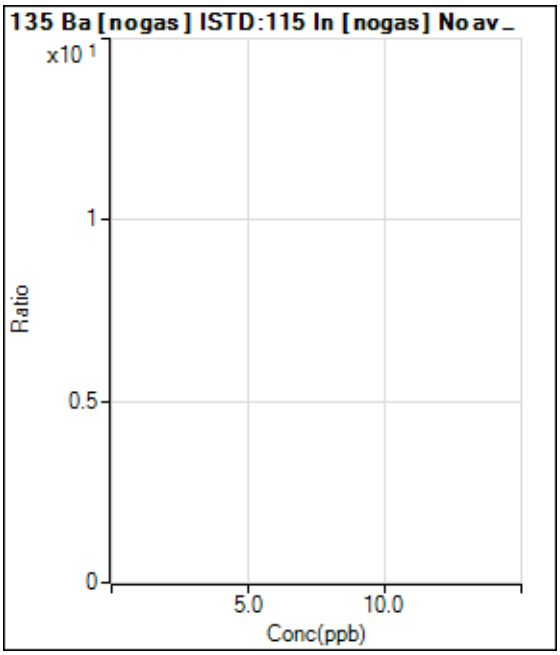


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	660.02	0.0017	P	12.4
2	☐	2.000	1.968	7051.54	0.0176	P	3.5
3	☐	5.000	4.916	16427.88	0.0415	P	3.0
4	☐	10.000	10.260	33519.04	0.0847	P	0.7
5	☐	100.000	102.605	320899.40	0.8325	P	1.0
6	☐	200.000	198.687	607768.34	1.6105	P	1.1
7	☐	1.000					

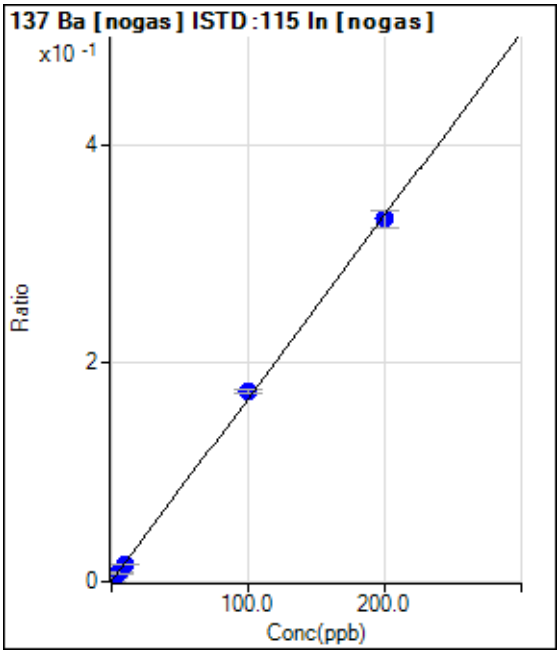
y = 0.0081 * x + 0.0017
R = 0.9999
DL = 0.07638
BEC = 0.2048

Weight: <None>
Min Conc: <None>

Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	503.35	0.0003	P	16.7
2	☐	2.000	1.869	6001.14	0.0034	P	3.4
3	☐	5.000	4.715	14309.53	0.0082	P	11.3
4	☐	10.000	9.473	28253.56	0.0162	P	3.3
5	☐	100.000	103.726	284855.82	0.1740	P	2.2
6	☐	200.000	198.172	539091.23	0.3321	P	4.8
7	☐	1.000					

y = 0.0017 * x + 2.9495E-004

R = 0.9997

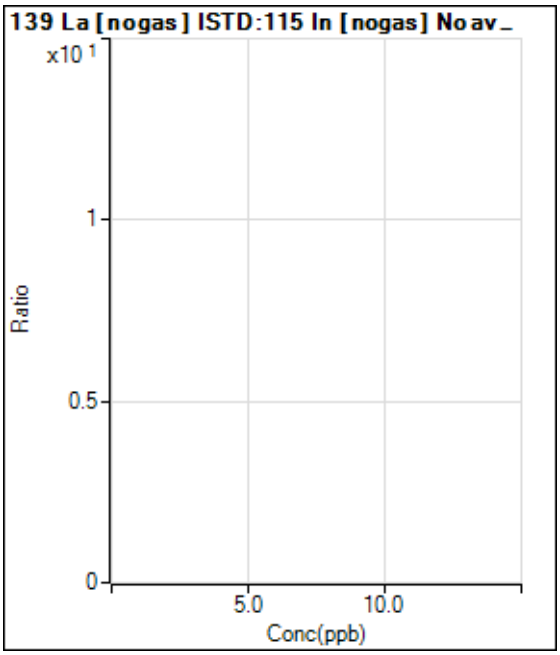
DL = 0.08802

BEC = 0.1762

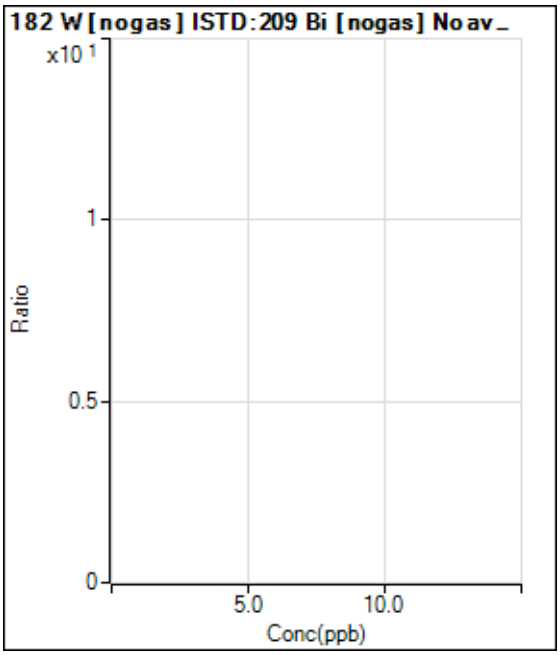
Weight: <None>

Min Conc: <None>

Calibration for 084_ICV.d

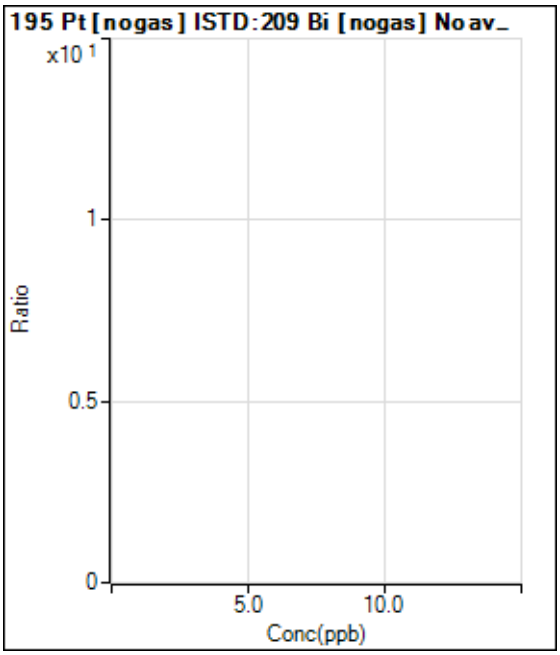


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

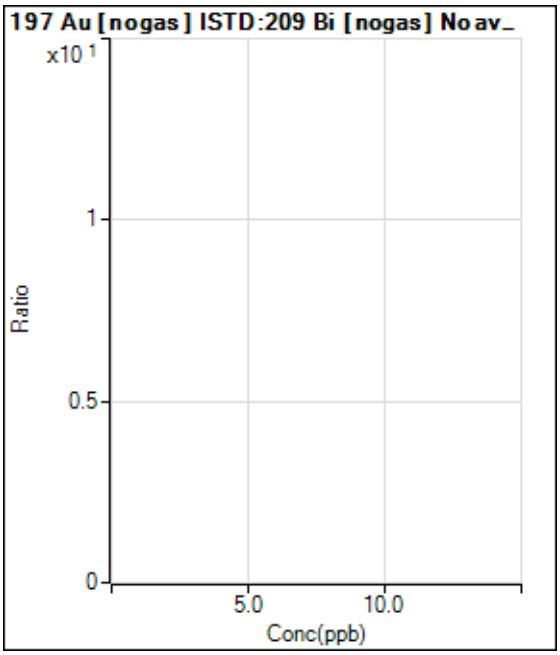


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

Calibration for 084_ICV.d

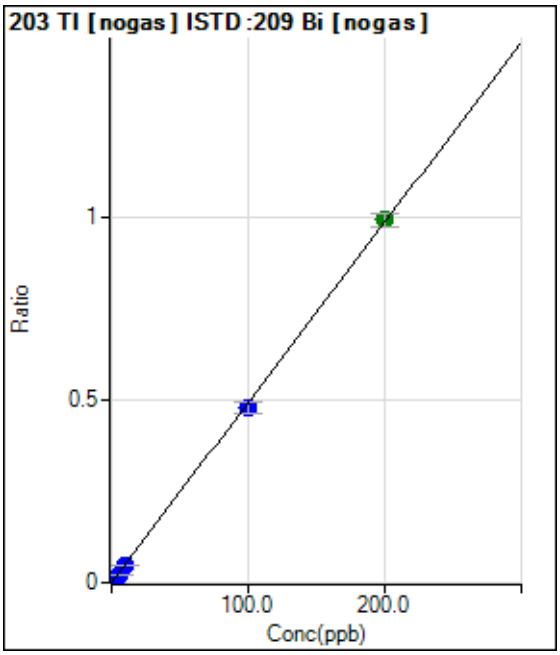


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

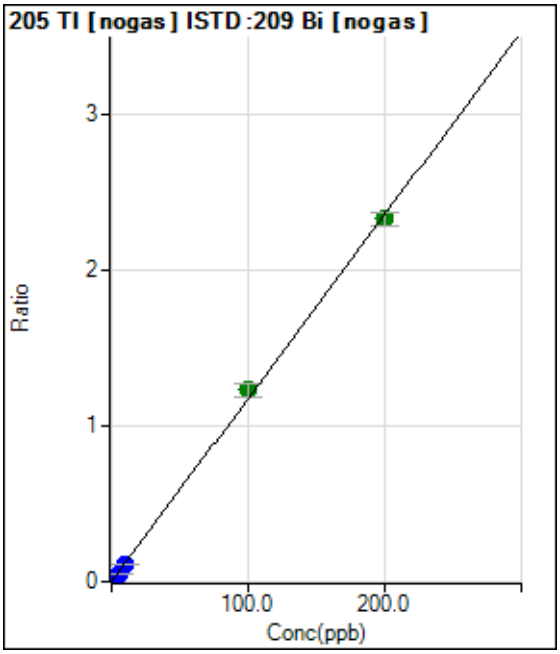
Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	140.00	0.0001	P	14.1
2	☐	2.000	1.765	12314.76	0.0088	P	5.4
3	☐	5.000	4.405	30459.01	0.0218	P	7.2
4	☐	10.000	9.241	63426.86	0.0456	P	3.3
5	☐	100.000	97.289	634674.61	0.4796	P	7.3
6	☐	200.000	201.411	1345999.38	0.9927	A	4.1
7	☐	1.000					

y = 0.0049 * x + 1.0200E-004
R = 0.9999
DL = 0.008752
BEC = 0.0207

Weight: <None>
Min Conc: <None>

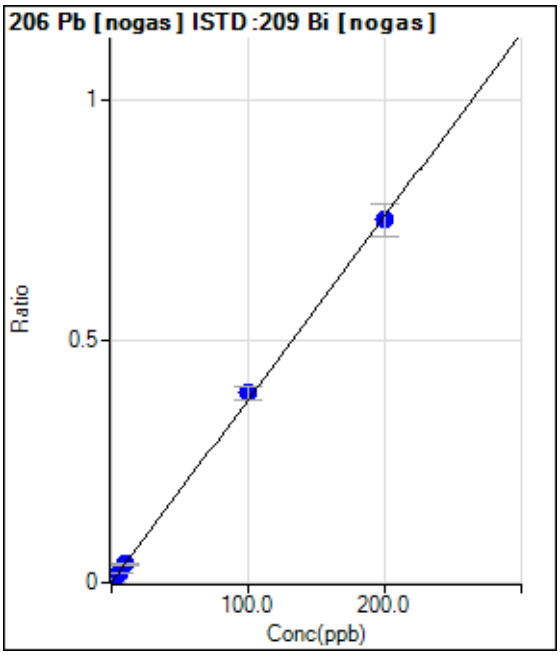


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	256.68	0.0002	P	26.2
2	☐	2.000	1.788	29761.17	0.0213	P	4.4
3	☐	5.000	4.510	74503.43	0.0533	P	5.9
4	☐	10.000	9.236	151500.57	0.1090	P	3.0
5	☐	100.000	104.417	1628589.87	1.2306	A	7.2
6	☐	200.000	197.844	3162626.20	2.3315	A	3.9
7	☐	1.000					

y = 0.0118 * x + 1.8714E-004
R = 0.9996
DL = 0.0125
BEC = 0.01588

Weight: <None>
Min Conc: <None>

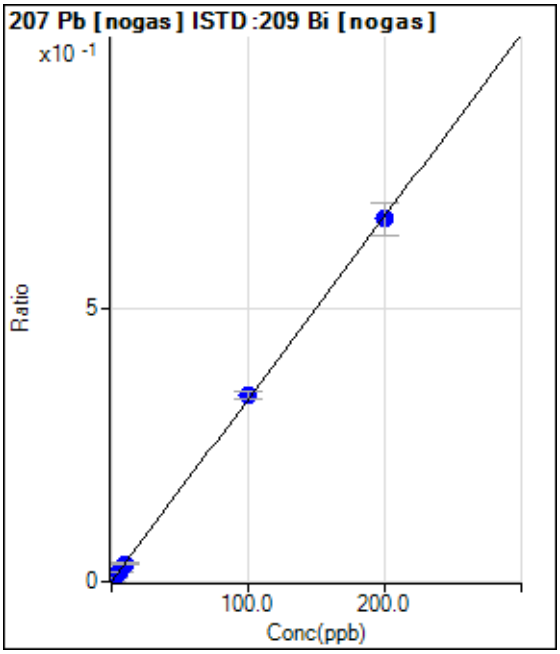
Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	143.33	0.0001	P	8.3
2	☐	2.000	1.989	10693.70	0.0076	P	8.4
3	☐	5.000	5.095	27112.95	0.0194	P	7.5
4	☐	10.000	10.032	52969.68	0.0381	P	3.9
5	☐	100.000	103.763	520653.82	0.3933	P	6.8
6	☐	200.000	198.115	1014992.28	0.7509	P	9.1
7	☐	1.000					

y = 0.0038 * x + 1.0446E-004
R = 0.9997
DL = 0.006883
BEC = 0.02756

Weight: <None>
Min Conc: <None>

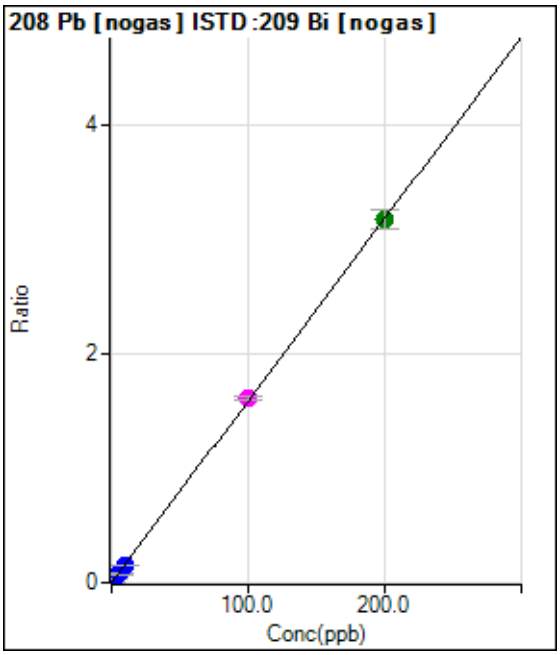


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	130.00	0.0001	P	7.5
2	☐	2.000	2.024	9626.27	0.0069	P	3.6
3	☐	5.000	4.933	23196.84	0.0166	P	7.5
4	☐	10.000	9.905	46212.75	0.0333	P	5.0
5	☐	100.000	102.542	455129.75	0.3435	P	4.0
6	☐	200.000	198.735	899985.90	0.6657	P	8.8
7	☐	1.000					

y = 0.0033 * x + 9.4722E-005
R = 0.9999
DL = 0.006374
BEC = 0.02828

Weight: <None>
Min Conc: <None>

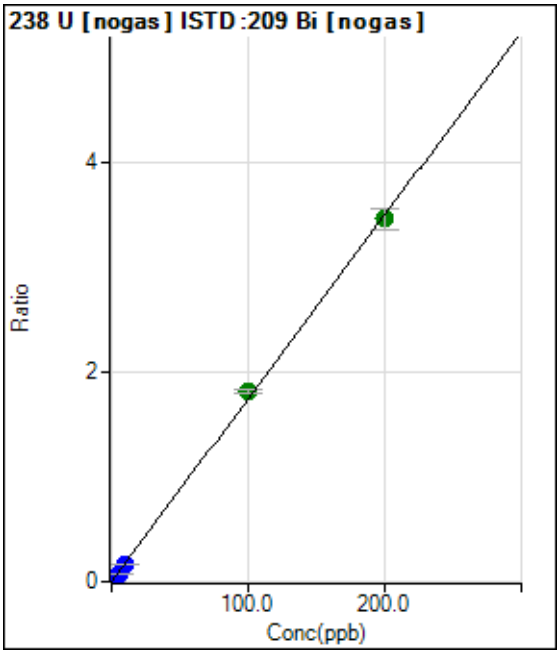
Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	536.67	0.0004	P	6.3
2	☐	2.000	1.926	43326.55	0.0309	P	1.3
3	☐	5.000	4.834	107594.60	0.0771	P	8.0
4	☐	10.000	9.658	213441.23	0.1536	P	3.5
5	☐	100.000	101.126	2127538.34	1.6046	M	2.1
6	☐	200.000	199.459	4287755.59	3.1645	A	5.2
7	☐	1.000					

y = 0.0159 * x + 3.9112E-004
R = 1.0000
DL = 0.004646
BEC = 0.02466

Weight: <None>
Min Conc: <None>

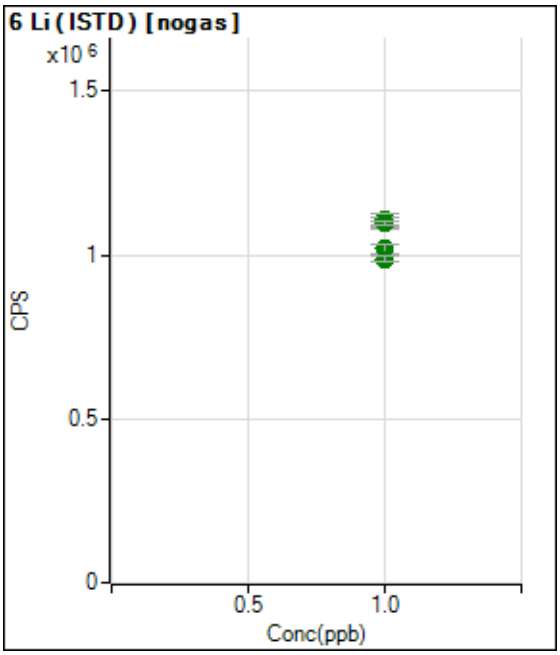


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	60.00	0.0000	P	33.5
2	☐	2.000	1.836	44914.15	0.0321	P	4.1
3	☐	5.000	4.560	111206.83	0.0796	P	5.7
4	☐	10.000	9.259	224464.79	0.1616	P	4.5
5	☐	100.000	103.934	2403336.53	1.8133	A	2.9
6	☐	200.000	198.083	4679614.62	3.4559	A	6.2
7	☐	1.000					

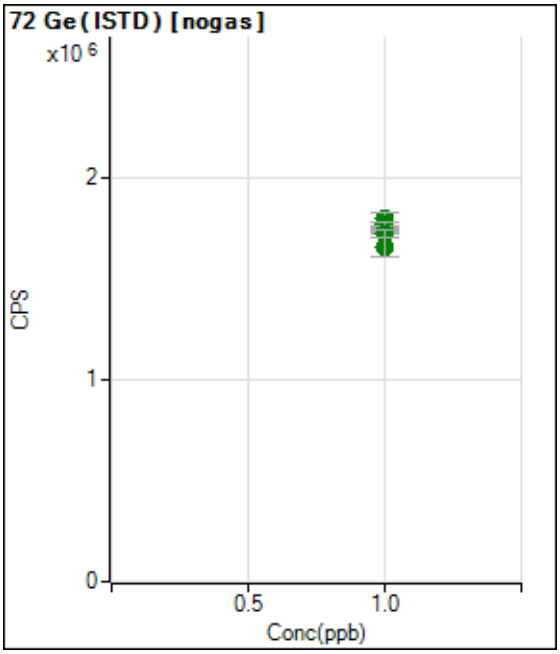
y = 0.0174 * x + 4.3735E-005
R = 0.9997
DL = 0.002521
BEC = 0.002507

Weight: <None>
Min Conc: <None>

Calibration for 084_ICV.d

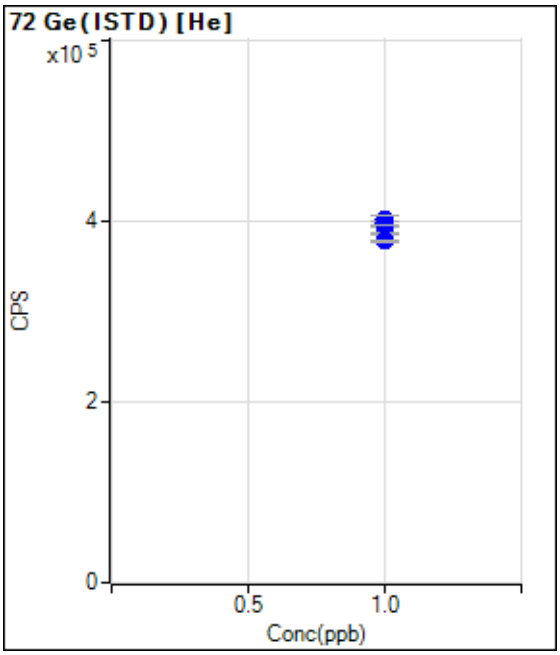


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1102270.34		A	2.2
2	☐	1.000		1107099.47		A	3.4
3	☐	1.000		1097502.93		A	3.6
4	☐	1.000		1096063.37		A	1.2
5	☐	1.000		1018259.69		A	2.7
6	☐	1.000		987920.88		A	1.6
7	☐	1.000					

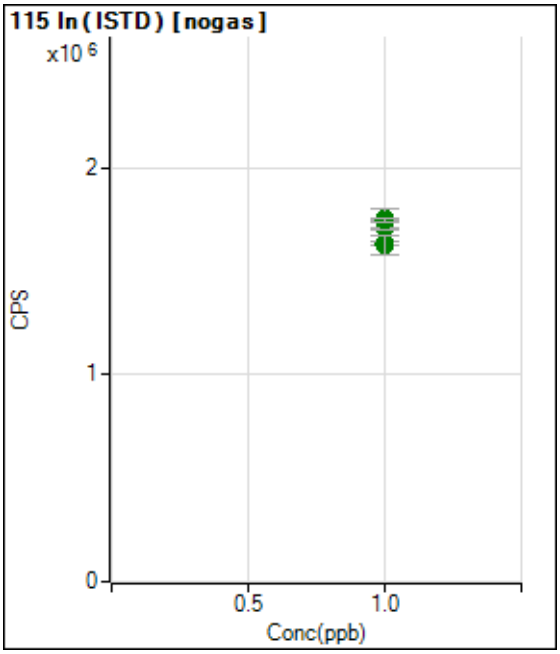


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1744974.87		A	1.6
2	☐	1.000		1743679.98		A	2.2
3	☐	1.000		1798700.23		A	3.9
4	☐	1.000		1770437.11		A	1.0
5	☐	1.000		1722209.61		A	2.1
6	☐	1.000		1655675.18		A	5.8
7	☐	1.000					

Calibration for 084_ICV.d

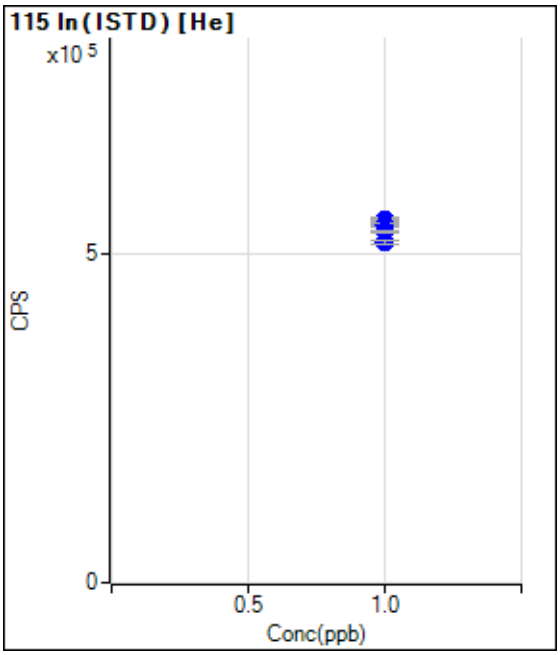


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		398221.83		P	1.0
2	☐	1.000		400973.20		P	2.8
3	☐	1.000		396271.85		P	1.2
4	☐	1.000		395546.44		P	0.3
5	☐	1.000		385466.82		P	0.8
6	☐	1.000		377362.10		P	0.4
7	☐	1.000					

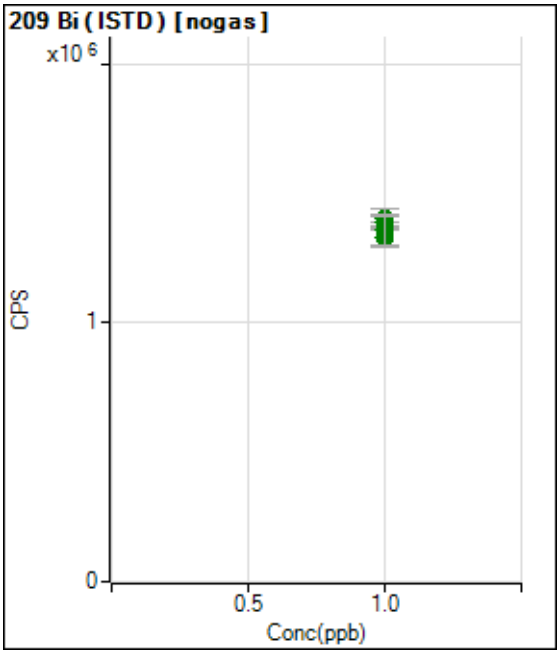


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1707883.39		A	0.9
2	☐	1.000		1752869.15		A	0.9
3	☐	1.000		1754490.50		A	6.1
4	☐	1.000		1749172.06		A	0.9
5	☐	1.000		1637830.22		A	1.5
6	☐	1.000		1626044.39		A	5.4
7	☐	1.000					

Calibration for 084_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		546301.06		P	1.5
2	☐	1.000		550874.64		P	0.9
3	☐	1.000		545992.67		P	2.2
4	☐	1.000		543499.55		P	0.7
5	☐	1.000		532892.82		P	0.2
6	☐	1.000		516284.70		P	1.1
7	☐	1.000					



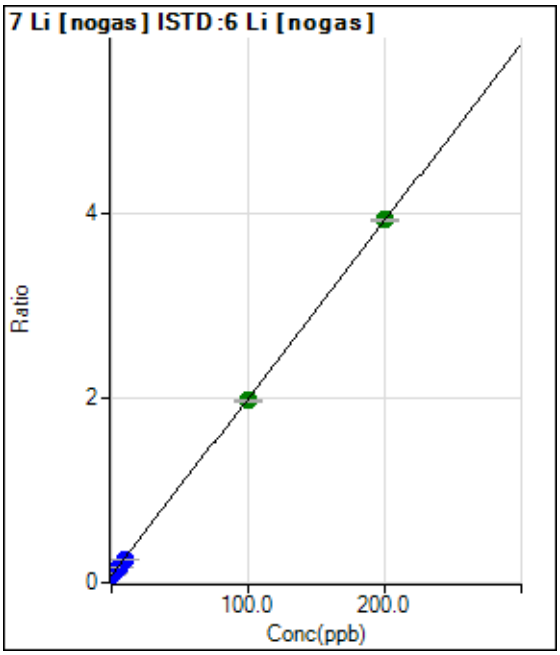
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1372321.28		A	0.3
2	☐	1.000		1400493.62		A	1.9
3	☐	1.000		1400060.76		A	5.6
4	☐	1.000		1390515.71		A	3.4
5	☐	1.000		1326695.06		A	5.2
6	☐	1.000		1359094.77		A	9.0
7	☐	1.000					

Calibration for 020_ICV.d

Batch Folder: C:\Agilent\ICPMH\1\DATA\010320A.b\
Analysis File: 010320A.batch.bin
DA Date-Time: 1/6/2020 8:24:44 AM
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	013CALB.d	CAL BLK	1/3/2020 11:06:19 AM
2	014CALS.d	2/10/200	1/3/2020 11:08:36 AM
3	015CALS.d	5/25/500	1/3/2020 11:10:52 AM
4	016CALS.d	10/50/1000	1/3/2020 11:13:07 AM
5	017CALS.d	100/500/10K	1/3/2020 11:15:22 AM
6	018CALS.d	200/1000/20K	1/3/2020 11:17:35 AM
7			

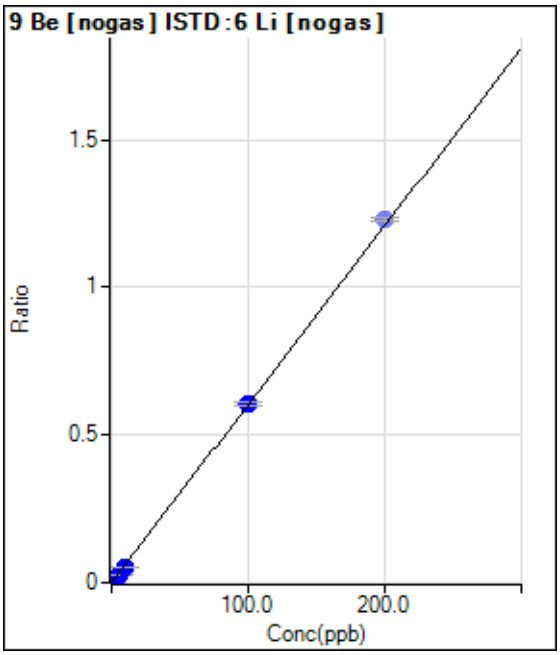
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	69106.18	0.0780	P	1.9
2	☐	2.000	1.795	99688.53	0.1126	P	3.2
3	☐	5.000	4.425	143257.45	0.1632	P	1.2
4	☐	10.000	9.037	220679.85	0.2519	P	2.3
5	☐	100.000	98.887	1581715.91	1.9809	A	1.0
6	☐	200.000	200.621	2924348.50	3.9385	A	0.7
7	☐	1.000					

y = 0.0192 * x + 0.0780
R = 1.0000
DL = 0.2262
BEC = 4.056

Weight: <None>
Min Conc: <None>

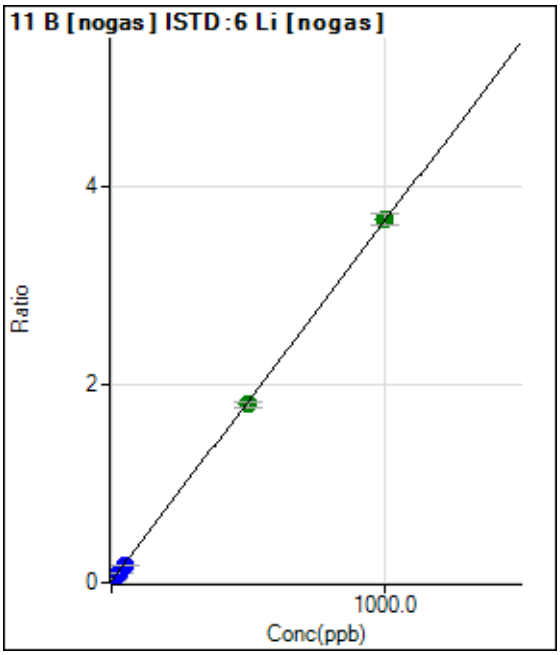


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	45.00	0.0001	P	33.0
2	☐	2.000	1.792	9619.13	0.0109	P	5.9
3	☐	5.000	4.470	23737.98	0.0270	P	0.7
4	☐	10.000	8.962	47433.19	0.0542	P	1.7
5	☐	100.000	100.134	482715.97	0.6046	P	1.8
6	☑	200.000		912463.09	1.2288	P	1.1
7	☐	1.000					

y = 0.0060 * x + 5.0749E-005
R = 1.0000
DL = 0.008323
BEC = 0.008406

Weight: <None>
Min Conc: <None>

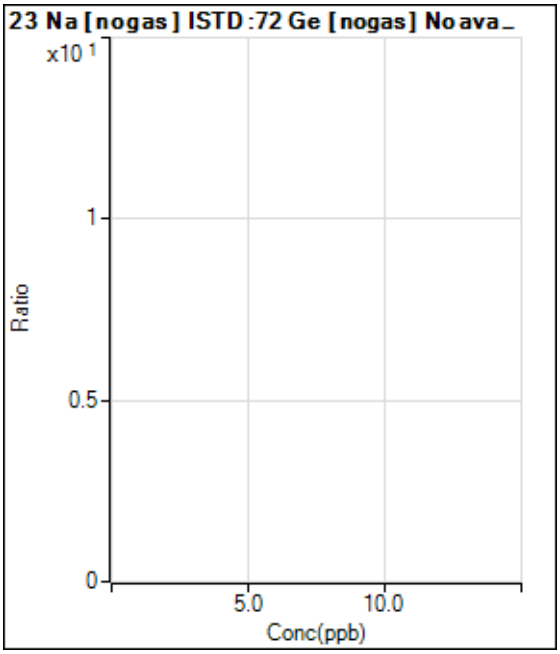
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	15037.57	0.0170	P	1.3
2	☐	10.000	8.457	42293.03	0.0478	P	1.2
3	☐	25.000	21.635	84011.71	0.0957	P	0.9
4	☐	50.000	43.951	154948.95	0.1769	P	2.0
5	☐	500.000	492.047	1442995.14	1.8074	A	3.3
6	☐	1000.000	1004.379	2725574.65	3.6717	A	3.2
7	☐	5.000					

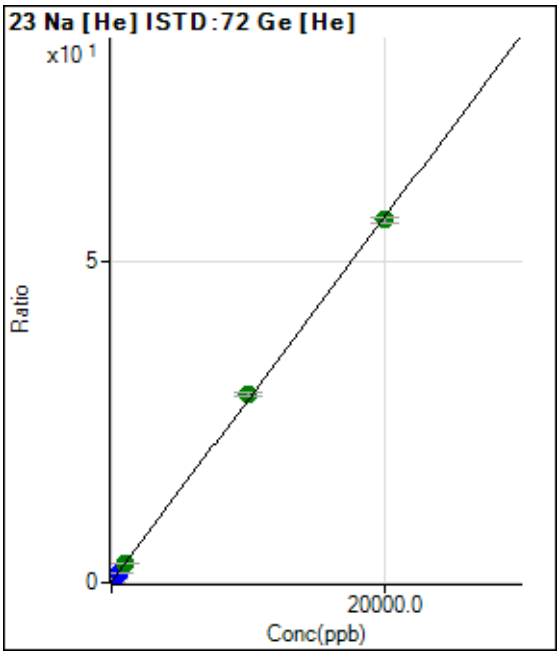
y = 0.0036 * x + 0.0170
R = 1.0000
DL = 0.176
BEC = 4.666

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.000					
6	☐	20000.000					
7	☐	100.000					

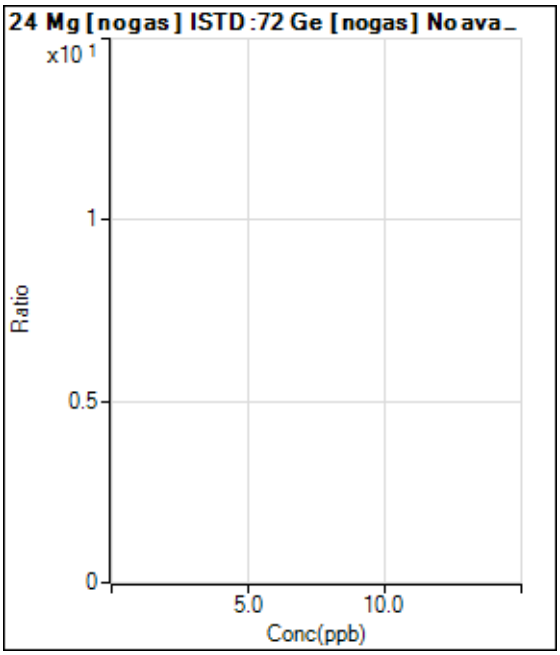
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	50413.91	0.1274	P	1.4
2	☐	200.000	196.085	277734.42	0.6855	P	1.6
3	☐	500.000	485.150	605505.47	1.5083	P	1.6
4	☐	1000.000	1023.031	1201129.31	3.0393	A	2.8
5	☐	10000.000	10279.162	11330990.25	29.3856	A	2.3
6	☐	20000.000	19859.678	21100227.19	56.6551	A	1.2
7	☐	100.000					

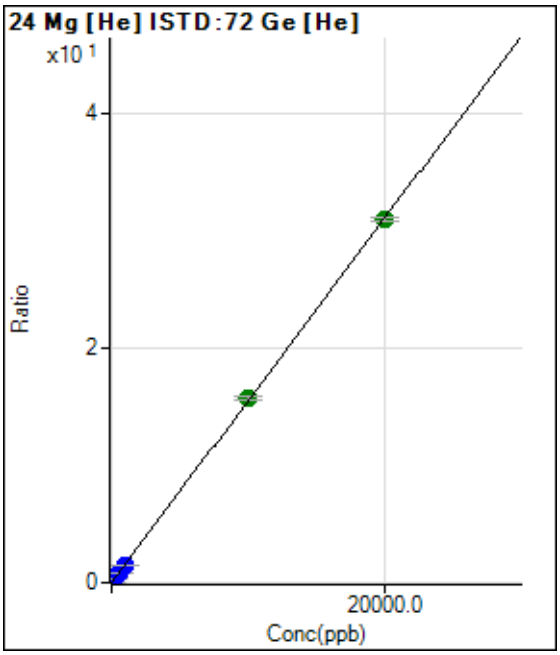
y = 0.0028 * x + 0.1274
R = 0.9999
DL = 1.918
BEC = 44.76

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.000					
6	☐	20000.000					
7	☐	100.000					

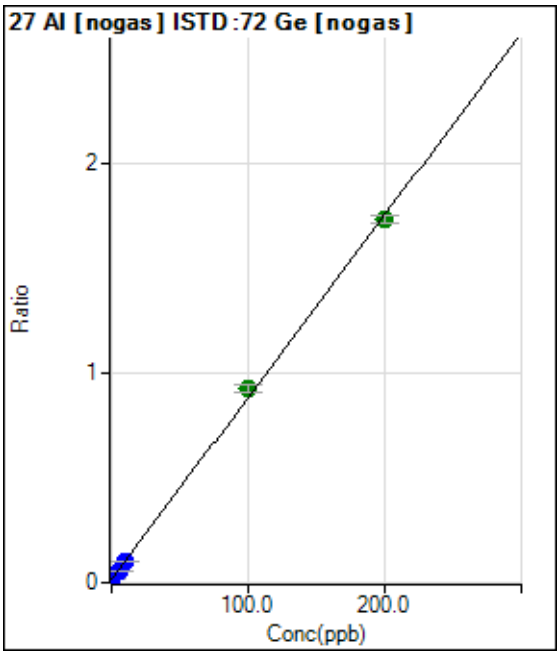
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	473.35	0.0012	P	17.3
2	☐	200.000	197.298	124356.79	0.3069	P	3.3
3	☐	500.000	486.201	302959.51	0.7546	P	0.8
4	☐	1000.000	991.693	607787.10	1.5380	P	0.5
5	☐	10000.000	10158.311	6070488.24	15.7432	A	1.5
6	☐	20000.000	19921.632	11498469.41	30.8732	A	0.9
7	☐	100.000					

y = 0.0015 * x + 0.0012
R = 1.0000
DL = 0.4
BEC = 0.7703

Weight: <None>
Min Conc: <None>

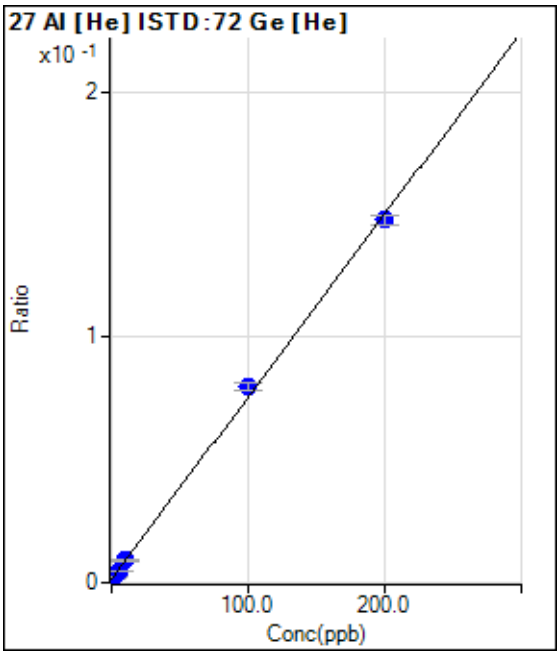


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	22810.74	0.0153	P	3.4
2	☐	2.000	1.981	48783.02	0.0325	P	1.5
3	☐	5.000	4.901	87296.94	0.0579	P	2.6
4	☐	10.000	9.968	157130.75	0.1019	P	1.6
5	☐	100.000	105.071	1376930.60	0.9281	A	4.2
6	☐	200.000	197.469	2475522.72	1.7308	A	2.2
7	☐	1.000					

y = 0.0087 * x + 0.0153
R = 0.9995
DL = 0.1806
BEC = 1.765

Weight: <None>
Min Conc: <None>

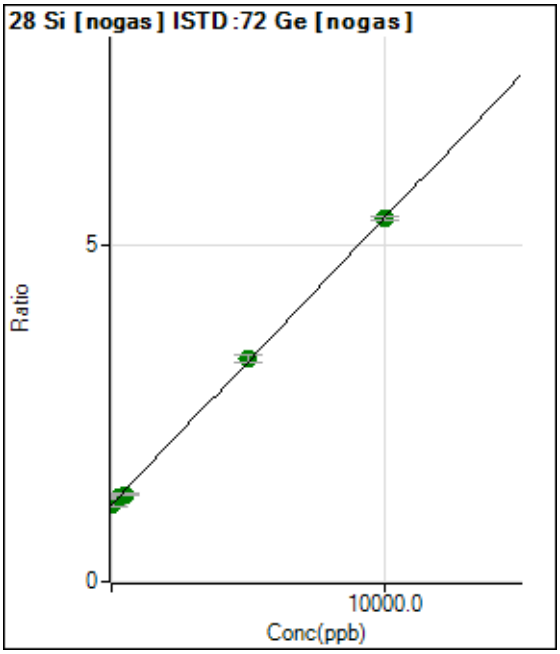
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	546.68	0.0014	P	16.6
2	☐	2.000	1.669	1063.38	0.0026	P	14.2
3	☐	5.000	4.486	1893.46	0.0047	P	1.9
4	☐	10.000	10.461	3620.40	0.0092	P	10.1
5	☐	100.000	105.924	30905.52	0.0801	P	3.8
6	☐	200.000	197.031	55083.57	0.1479	P	2.4
7	☐	1.000					

y = 7.4361E-004 * x + 0.0014
R = 0.9994
DL = 0.9223
BEC = 1.857

Weight: <None>
Min Conc: <None>

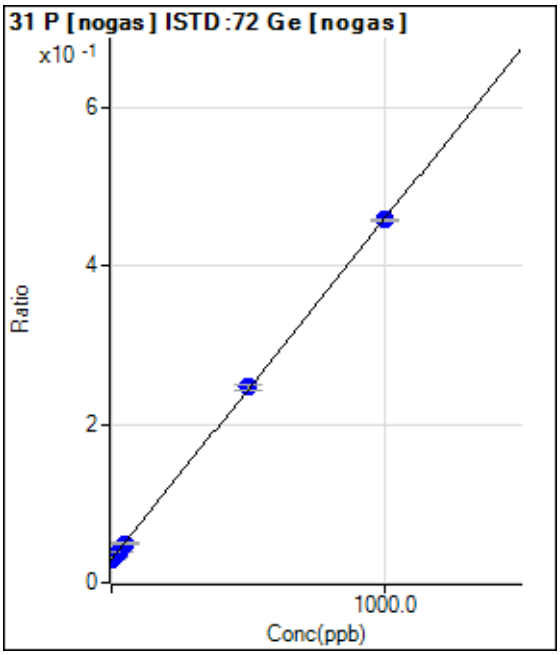


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1704571.64	1.1461	A	2.7
2	☐	100.000	30.013	1736665.03	1.1589	A	5.6
3	☐	250.000	247.967	1886977.68	1.2518	A	2.8
4	☐	500.000	335.676	1987777.78	1.2891	A	1.9
5	☐	5000.000	5086.181	4916957.01	3.3139	A	3.0
6	☐	10000.000	9965.876	7715215.51	5.3938	A	1.1
7	☐	50.000					

y = 4.2622E-004 * x + 1.1461
R = 0.9998
DL = 217.2
BEC = 2689

Weight: <None>
Min Conc: <None>

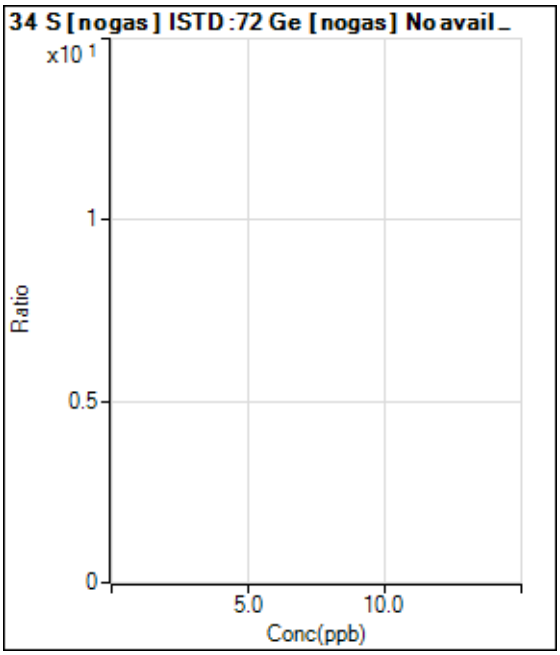
Calibration for 020_ICV.d



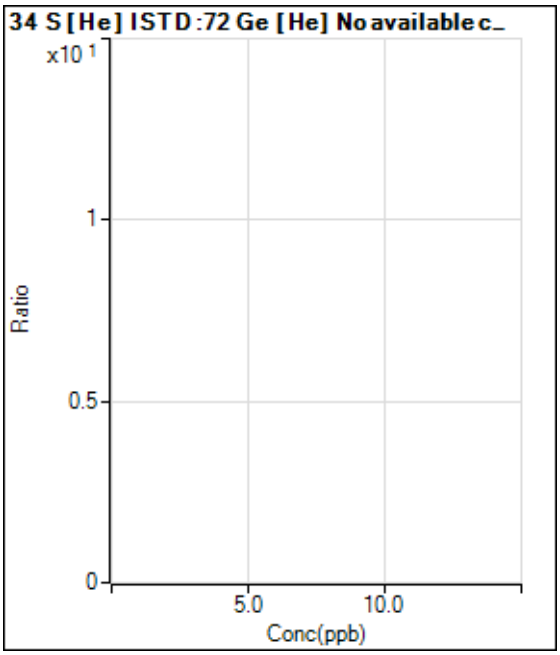
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	43406.85	0.0292	P	2.5
2	☐	10.000	7.164	48358.68	0.0323	P	3.1
3	☐	25.000	21.928	58209.70	0.0386	P	1.3
4	☐	50.000	47.674	76608.45	0.0497	P	1.5
5	☐	500.000	505.933	366034.75	0.2467	P	2.7
6	☐	1000.000	997.255	655012.96	0.4579	P	0.4
7	☐	5.000					

y = 4.2990E-004 * x + 0.0292
R = 1.0000
DL = 5.181
BEC = 67.89

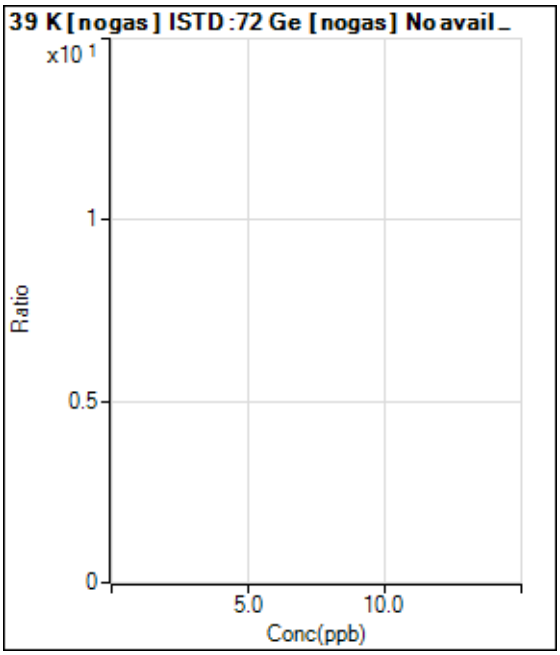
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	400.000					
3	☐	1000.000					
4	☐	2000.000					
5	☐	20000.000					
6	☐	40000.000					
7	☐	200.000					

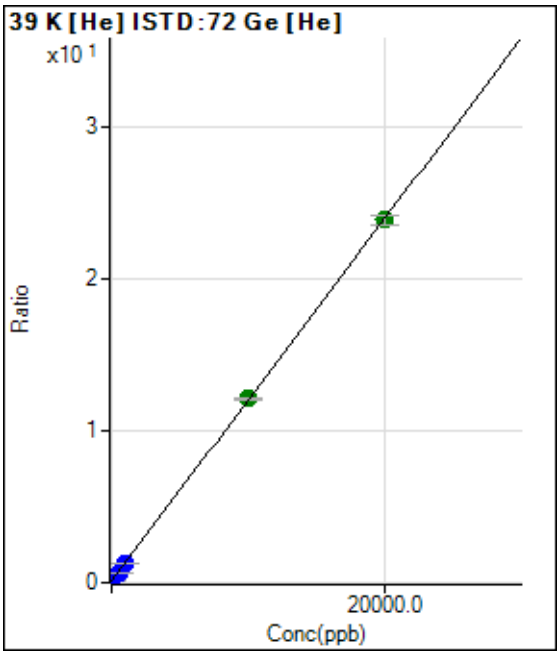


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	400.000					
3	☐	1000.000					
4	☐	2000.000					
5	☐	20000.000					
6	☐	40000.000					
7	☐	200.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.000					
6	☐	20000.000					
7	☐	100.000					

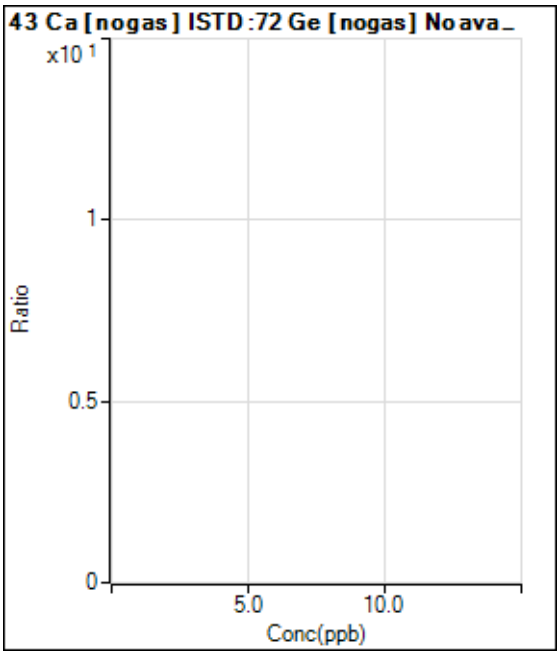
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	45933.14	0.1161	P	0.9
2	☐	200.000	190.098	138780.60	0.3425	P	1.1
3	☐	500.000	481.040	276641.32	0.6891	P	1.7
4	☐	1000.000	970.509	502730.17	1.2722	P	1.4
5	☐	10000.000	10098.005	4682984.72	12.1454	A	1.0
6	☐	20000.000	19953.045	8894580.07	23.8852	A	3.0
7	☐	100.000					

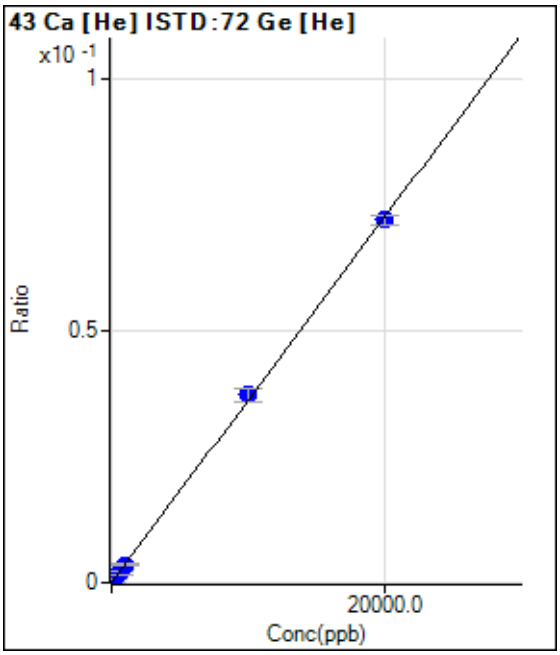
y = 0.0012 * x + 0.1161
R = 1.0000
DL = 2.693
BEC = 97.45

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.000					
6	☐	20000.000					
7	☐	100.000					

Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3.33	0.0000	P	173.2
2	☐	200.000	220.081	326.68	0.0008	P	17.9
3	☐	500.000	525.547	766.70	0.0019	P	24.3
4	☐	1000.000	966.212	1386.74	0.0035	P	12.1
5	☐	10000.000	10275.112	14355.74	0.0372	P	6.4
6	☐	20000.000	19863.294	26799.46	0.0720	P	2.9
7	☐	100.000					

y = 3.6225E-006 * x + 8.4148E-006

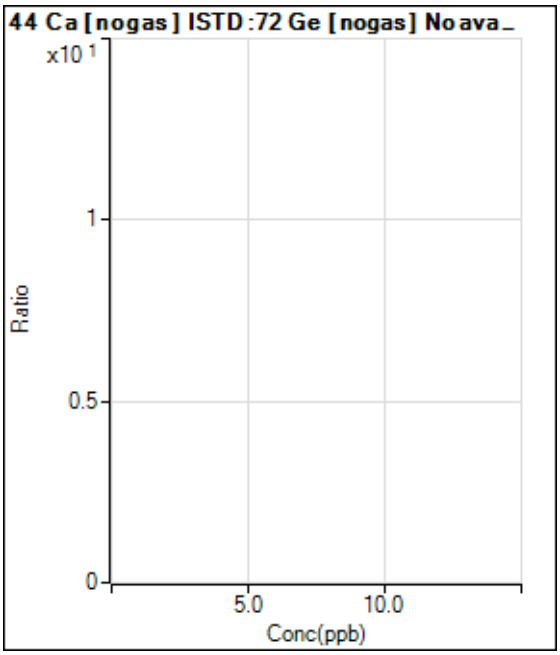
R = 0.9999

DL = 12.07

BEC = 2.323

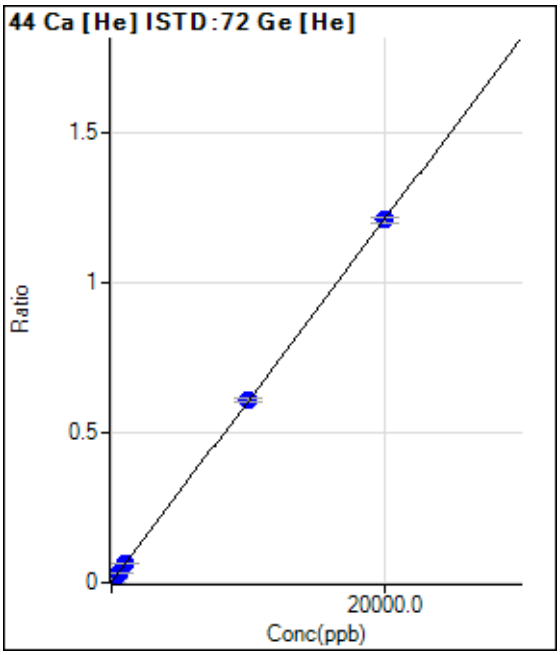
Weight: <None>

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.000					
6	☐	20000.000					
7	☐	100.000					

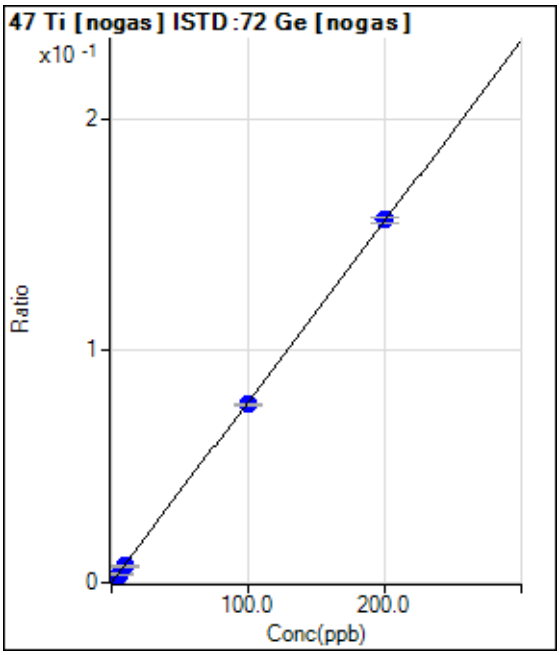
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	413.35	0.0010	P	18.4
2	☐	200.000	186.379	4997.41	0.0123	P	5.7
3	☐	500.000	482.358	12154.11	0.0303	P	2.0
4	☐	1000.000	1004.888	24476.25	0.0619	P	1.7
5	☐	10000.000	10041.067	235025.19	0.6095	P	2.0
6	☐	20000.000	19979.799	451326.17	1.2118	P	1.7
7	☐	100.000					

y = 6.0599E-005 * x + 0.0010
R = 1.0000
DL = 9.495
BEC = 17.23

Weight: <None>
Min Conc: <None>

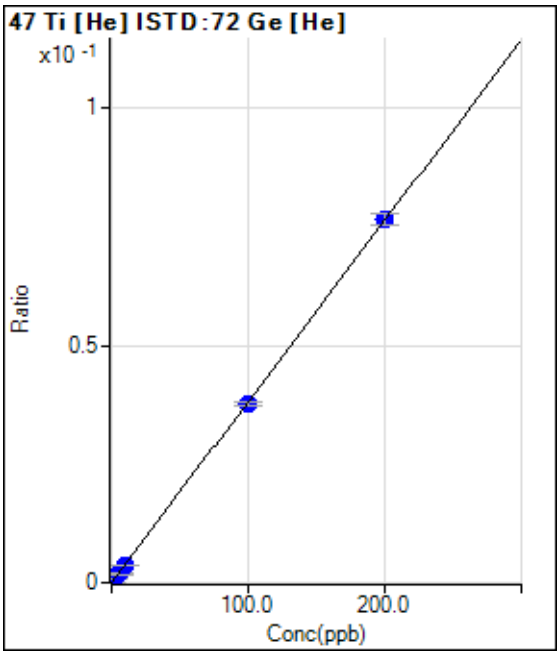


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	140.00	0.0001	P	9.9
2	☐	2.000	2.026	2503.54	0.0017	P	7.3
3	☐	5.000	4.620	5560.91	0.0037	P	4.4
4	☐	10.000	9.077	11033.46	0.0072	P	4.1
5	☐	100.000	98.652	114091.37	0.0769	P	1.4
6	☐	200.000	200.729	223594.44	0.1563	P	1.5
7	☐	1.000					

y = 7.7833E-004 * x + 9.3943E-005
R = 1.0000
DL = 0.03575
BEC = 0.1207

Weight: <None>
Min Conc: <None>

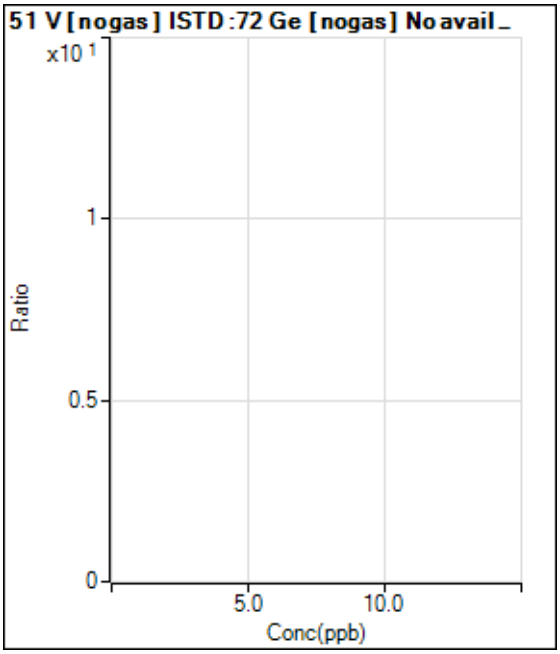
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3.33	0.0000	P	173.2
2	☐	2.000	2.611	406.68	0.0010	P	2.0
3	☐	5.000	4.967	763.36	0.0019	P	10.5
4	☐	10.000	9.495	1433.41	0.0036	P	7.2
5	☐	100.000	99.036	14555.87	0.0378	P	1.9
6	☐	200.000	200.502	28458.63	0.0764	P	3.3
7	☐	1.000					

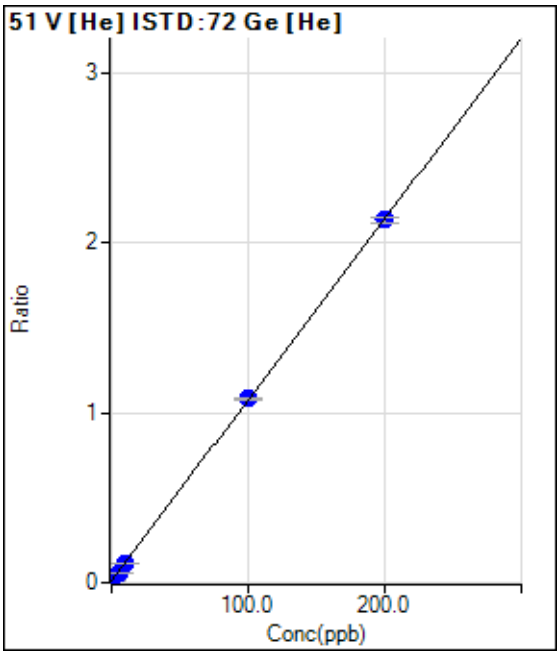
y = 3.8109E-004 * x + 8.4148E-006
R = 1.0000
DL = 0.1147
BEC = 0.02208

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

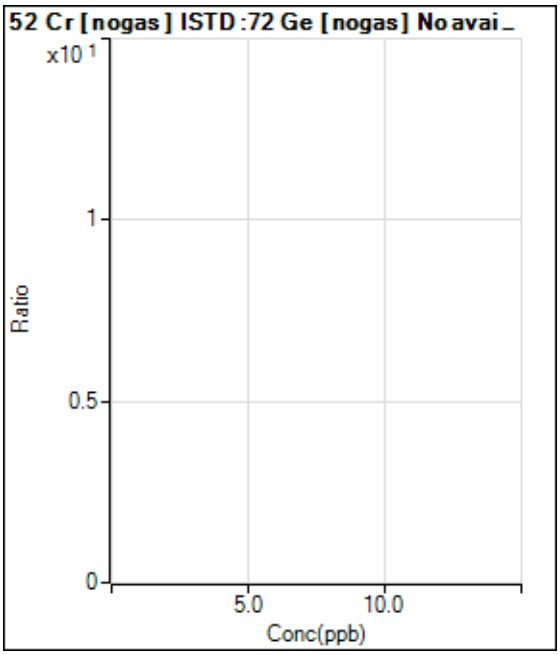
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4690.61	0.0119	P	3.5
2	☐	2.000	1.856	12799.99	0.0316	P	3.1
3	☐	5.000	4.633	24533.94	0.0611	P	0.5
4	☐	10.000	9.543	44773.69	0.1133	P	1.6
5	☐	100.000	100.816	417803.41	1.0836	P	0.8
6	☐	200.000	199.626	794747.92	2.1339	P	1.6
7	☐	1.000					

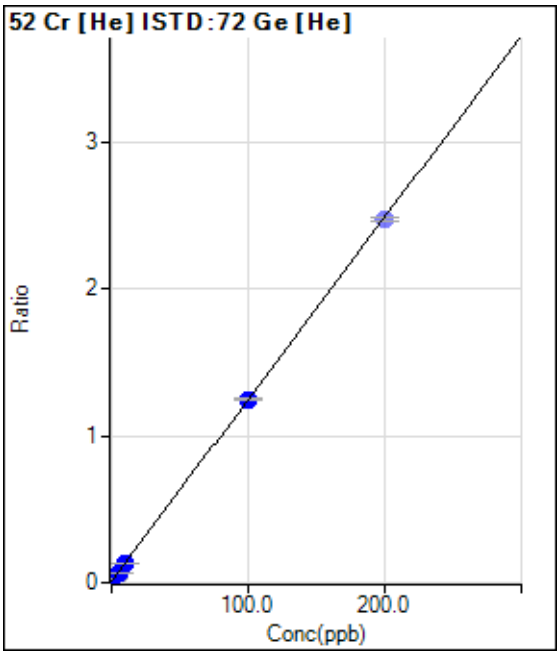
y = 0.0106 * x + 0.0119
R = 1.0000
DL = 0.116
BEC = 1.116

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

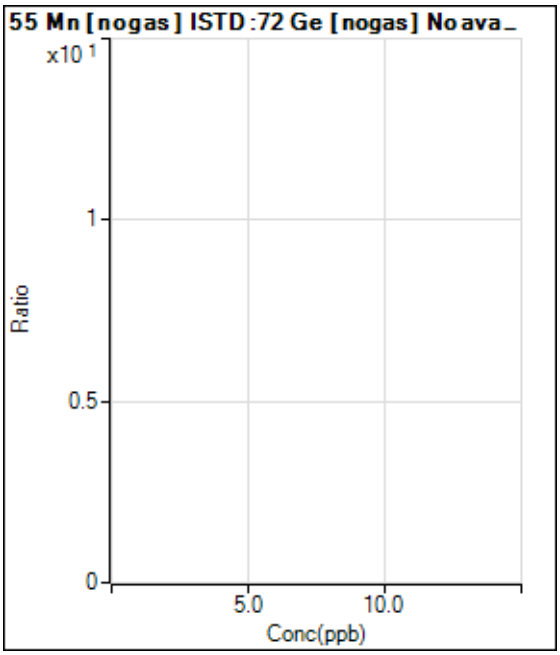
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3830.47	0.0097	P	12.3
2	☐	2.000	1.876	13338.28	0.0329	P	2.4
3	☐	5.000	4.744	27480.62	0.0684	P	1.3
4	☐	10.000	9.944	52491.21	0.1328	P	3.3
5	☐	100.000	100.021	481340.01	1.2483	P	1.7
6	☑	200.000		920183.48	2.4707	P	1.1
7	☐	1.000					

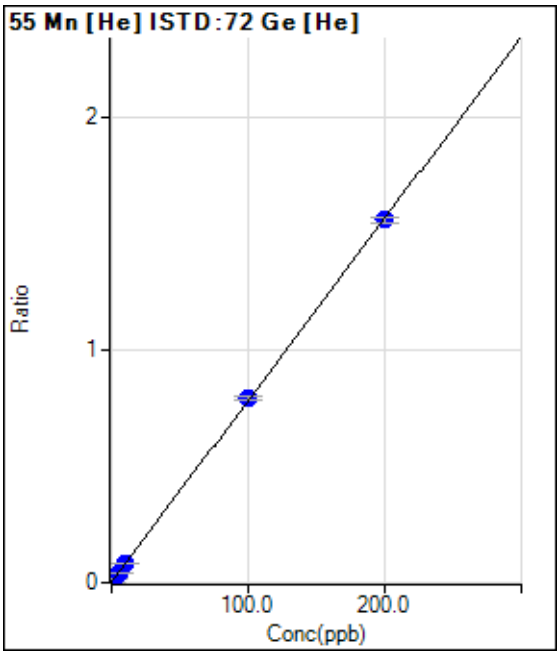
y = 0.0124 * x + 0.0097
R = 1.0000
DL = 0.2897
BEC = 0.7829

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

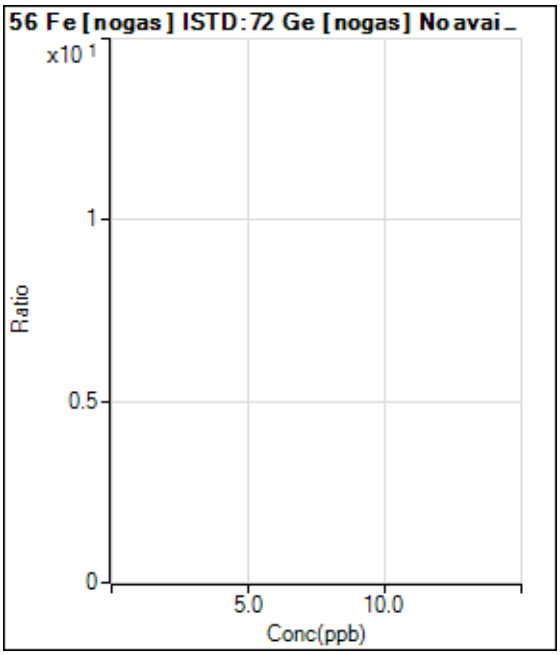
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	673.36	0.0017	P	0.6
2	☐	2.000	1.930	6794.68	0.0168	P	4.7
3	☐	5.000	4.972	16263.99	0.0405	P	3.0
4	☐	10.000	10.217	32191.73	0.0815	P	1.0
5	☐	100.000	101.333	305665.78	0.7927	P	1.2
6	☐	200.000	199.324	580146.02	1.5577	P	1.3
7	☐	1.000					

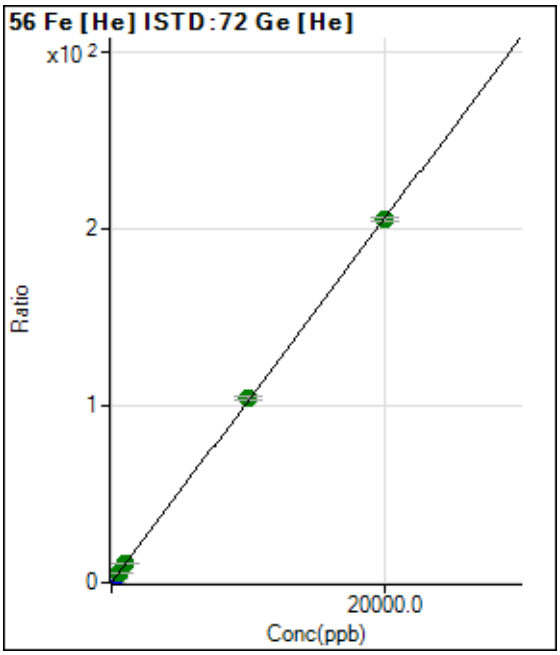
y = 0.0078 * x + 0.0017
R = 1.0000
DL = 0.004035
BEC = 0.218

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	200.000					
3	☐	500.000					
4	☐	1000.000					
5	☐	10000.000					
6	☐	20000.000					
7	☐	100.000					

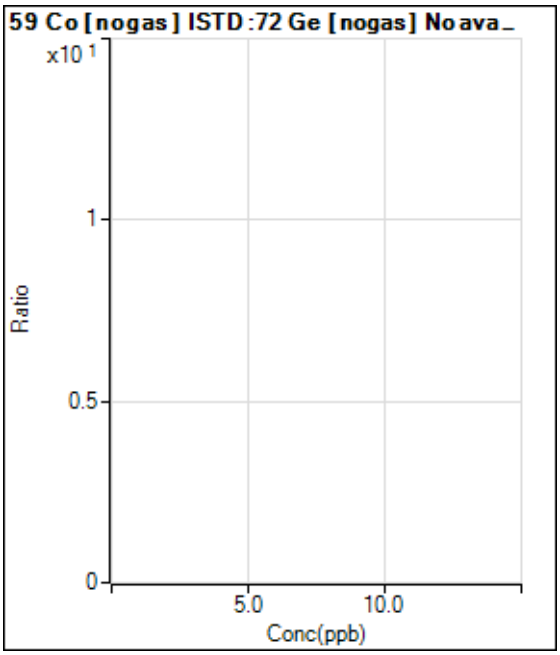
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10146.23	0.0257	P	3.4
2	☐	200.000	199.191	841352.20	2.0765	P	1.8
3	☐	500.000	503.949	2093414.45	5.2144	A	1.2
4	☐	1000.000	1037.936	4233357.12	10.7123	A	1.0
5	☐	10000.000	10123.591	40200837.73	104.2590	A	1.4
6	☐	20000.000	19936.217	76460485.53	205.2907	A	1.1
7	☐	100.000					

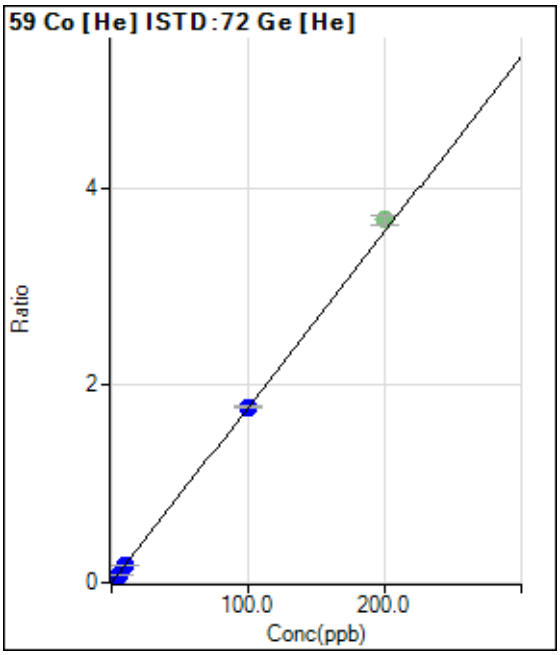
y = 0.0103 * x + 0.0257
R = 1.0000
DL = 0.2546
BEC = 2.491

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

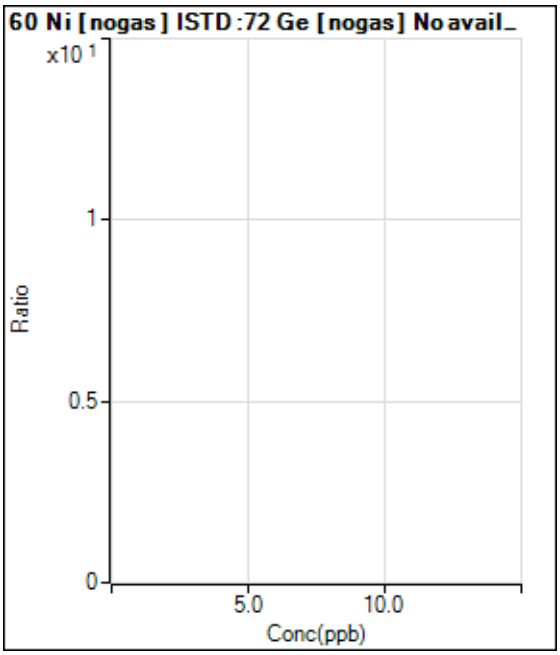
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	50.00	0.0001	P	34.8
2	☐	2.000	2.006	14499.21	0.0358	P	3.0
3	☐	5.000	4.879	34863.14	0.0868	P	1.4
4	☐	10.000	10.000	70287.13	0.1779	P	1.8
5	☐	100.000	100.006	685360.66	1.7775	P	0.8
6	☑	200.000		1369486.54	3.6775	A	2.9
7	☐	1.000					

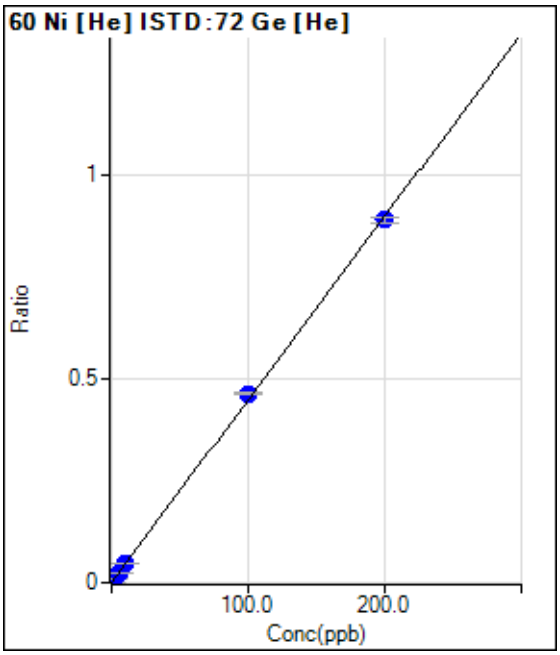
y = 0.0178 * x + 1.2643E-004
R = 1.0000
DL = 0.007426
BEC = 0.007114

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

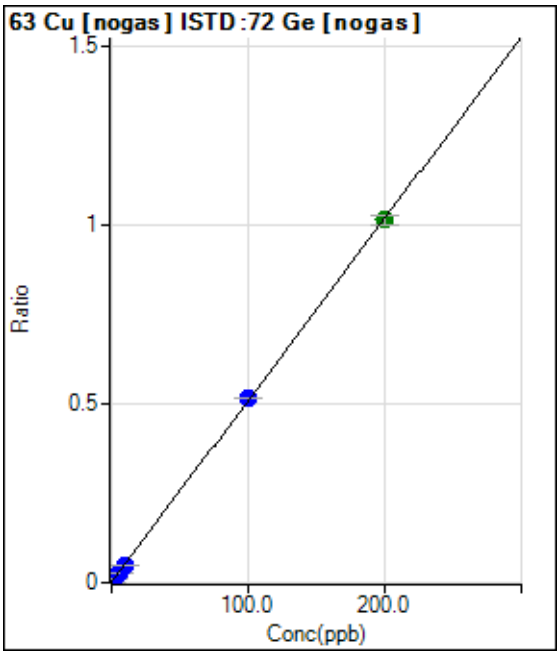
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	133.33	0.0003	P	17.3
2	☐	2.000	2.056	3880.47	0.0096	P	2.1
3	☐	5.000	5.095	9329.15	0.0232	P	4.8
4	☐	10.000	10.174	18205.95	0.0461	P	0.7
5	☐	100.000	103.449	179429.52	0.4653	P	1.2
6	☐	200.000	198.264	332030.23	0.8915	P	1.5
7	☐	1.000					

y = 0.0045 * x + 3.3700E-004
R = 0.9998
DL = 0.03886
BEC = 0.07497

Weight: <None>
Min Conc: <None>

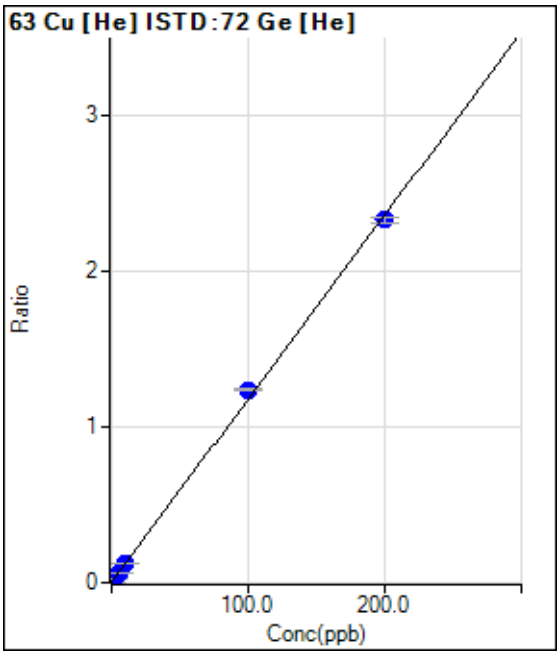


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1806.78	0.0012	P	11.7
2	☐	2.000	2.027	17268.34	0.0115	P	3.1
3	☐	5.000	4.928	39609.57	0.0263	P	1.5
4	☐	10.000	9.638	77419.69	0.0502	P	1.5
5	☐	100.000	101.310	766281.32	0.5163	P	0.9
6	☐	200.000	199.365	1451427.43	1.0149	A	2.4
7	☐	1.000					

y = 0.0051 * x + 0.0012
R = 1.0000
DL = 0.08426
BEC = 0.2392

Weight: <None>
Min Conc: <None>

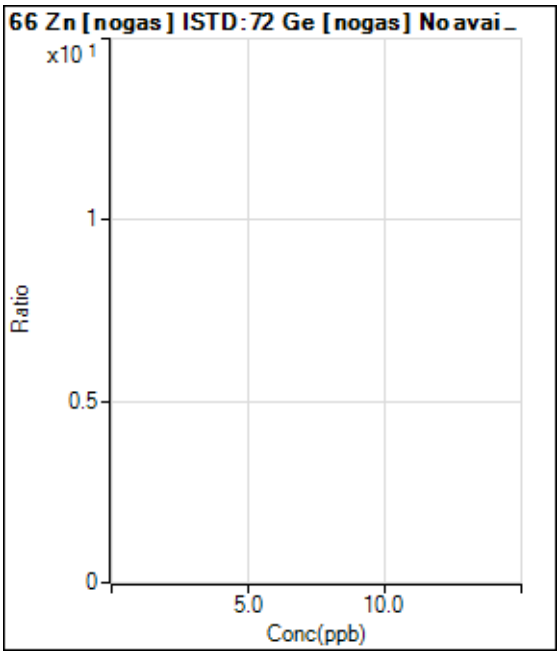
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	733.36	0.0019	P	18.3
2	☐	2.000	2.028	10426.42	0.0257	P	5.4
3	☐	5.000	5.038	24563.33	0.0612	P	4.5
4	☐	10.000	10.155	47996.26	0.1215	P	0.4
5	☐	100.000	104.814	476706.49	1.2363	P	1.2
6	☐	200.000	197.584	867360.12	2.3289	P	1.5
7	☐	1.000					

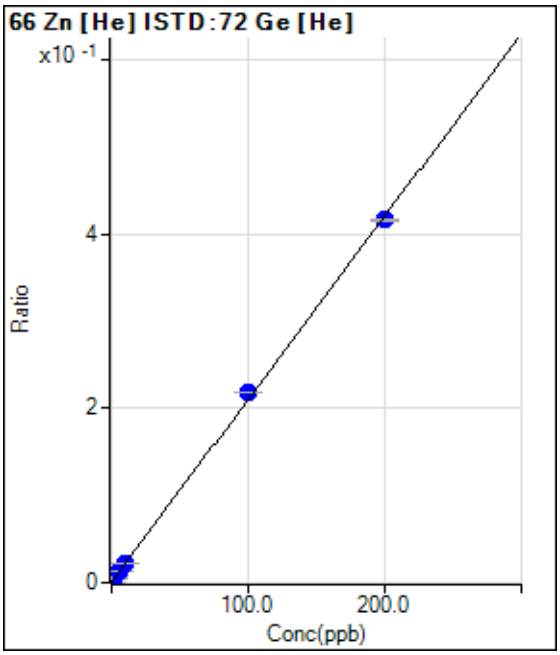
y = 0.0118 * x + 0.0019
R = 0.9996
DL = 0.08631
BEC = 0.1573

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	300.01	0.0008	P	14.6
2	☐	2.000	2.150	2133.49	0.0053	P	11.2
3	☐	5.000	5.625	5040.76	0.0126	P	5.5
4	☐	10.000	9.957	8552.10	0.0216	P	5.6
5	☐	100.000	103.571	84055.38	0.2180	P	0.4
6	☐	200.000	198.199	155126.94	0.4165	P	0.4
7	☐	1.000					

y = 0.0021 * x + 7.5908E-004

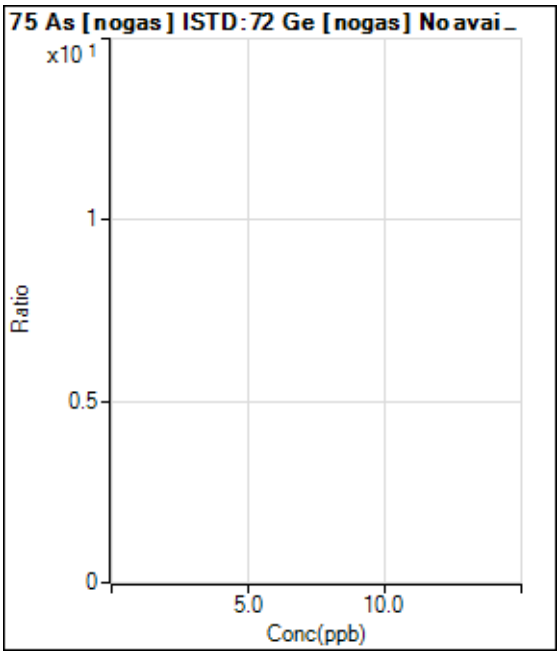
R = 0.9998

DL = 0.1583

BEC = 0.3619

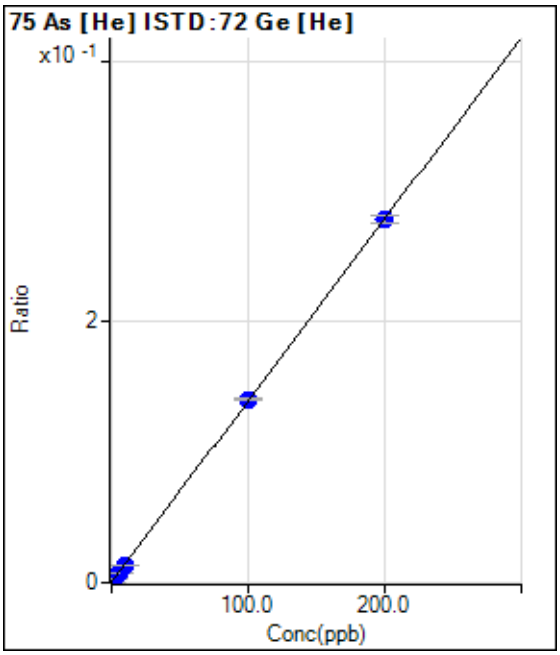
Weight: <None>

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

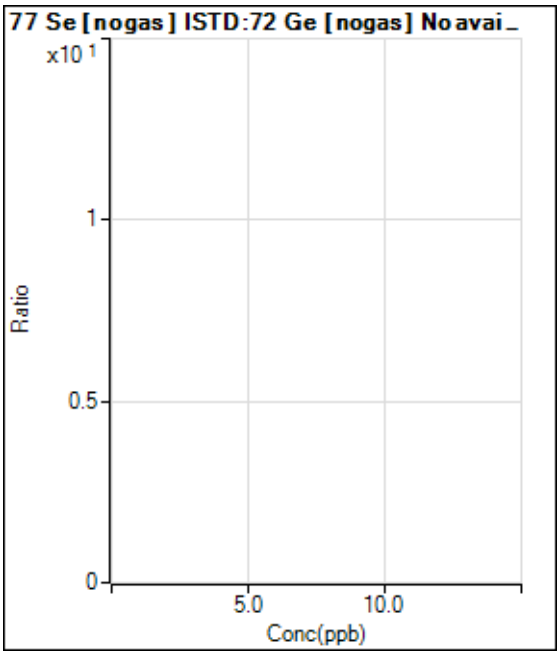
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	118.89	0.0003	P	15.1
2	☐	2.000	1.871	1177.82	0.0029	P	2.6
3	☐	5.000	4.797	2803.56	0.0070	P	2.7
4	☐	10.000	9.612	5409.71	0.0137	P	4.7
5	☐	100.000	100.792	54250.25	0.1407	P	1.3
6	☐	200.000	199.630	103673.30	0.2784	P	2.1
7	☐	1.000					

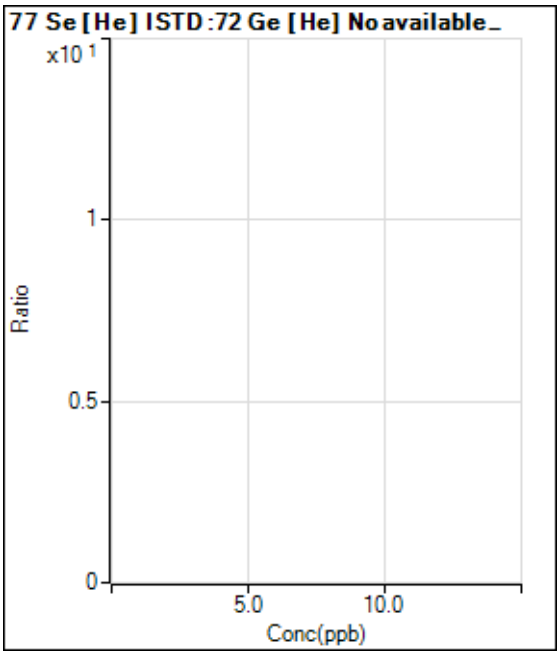
y = 0.0014 * x + 3.0003E-004
R = 1.0000
DL = 0.09785
BEC = 0.2154

Weight: <None>
Min Conc: <None>

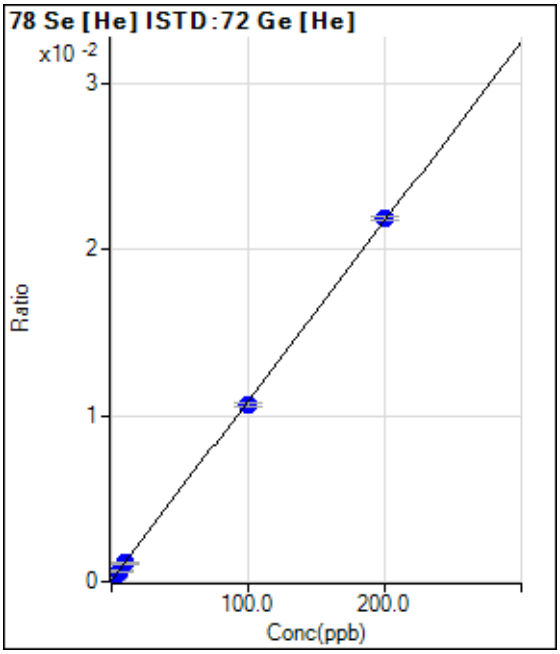


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	38.67	0.0001	P	24.1
2	☐	2.000	1.337	98.00	0.0002	P	13.4
3	☐	5.000	4.864	250.00	0.0006	P	10.8
4	☐	10.000	9.690	452.01	0.0011	P	9.0
5	☐	100.000	97.484	4095.80	0.0106	P	1.7
6	☐	200.000	201.284	8129.83	0.0218	P	1.2
7	☐	1.000					

y = 1.0796E-004 * x + 9.7761E-005

R = 0.9999

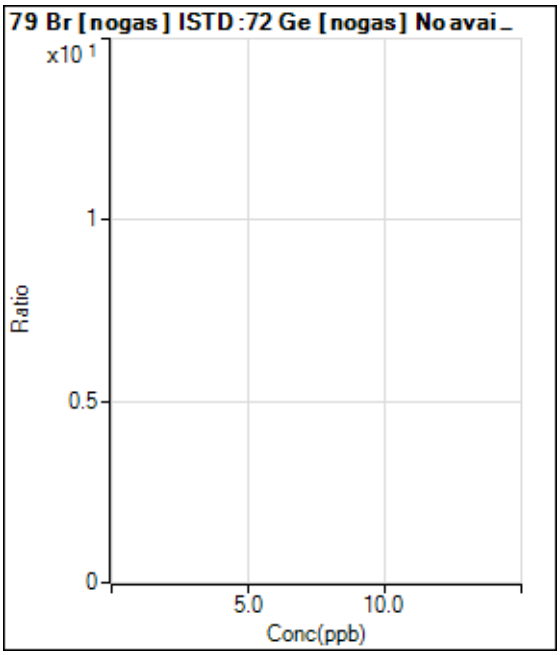
DL = 0.6542

BEC = 0.9055

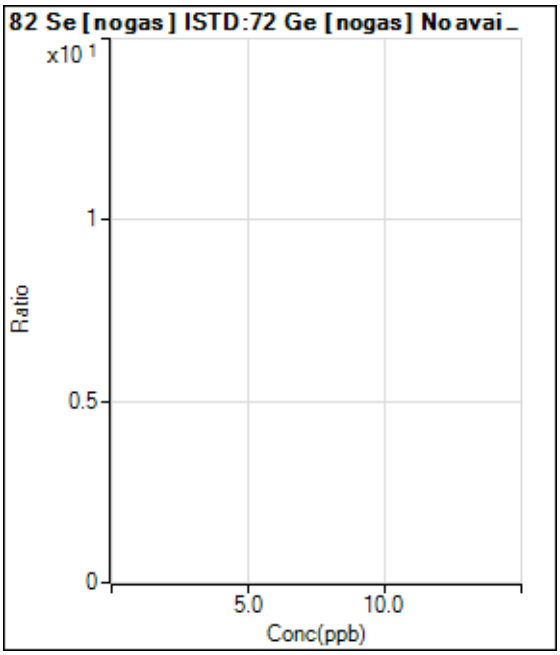
Weight: <None>

Min Conc: <None>

Calibration for 020_ICV.d

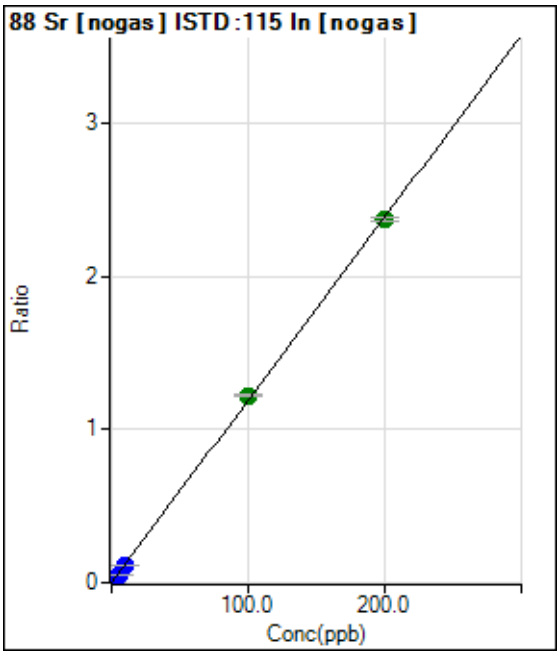


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

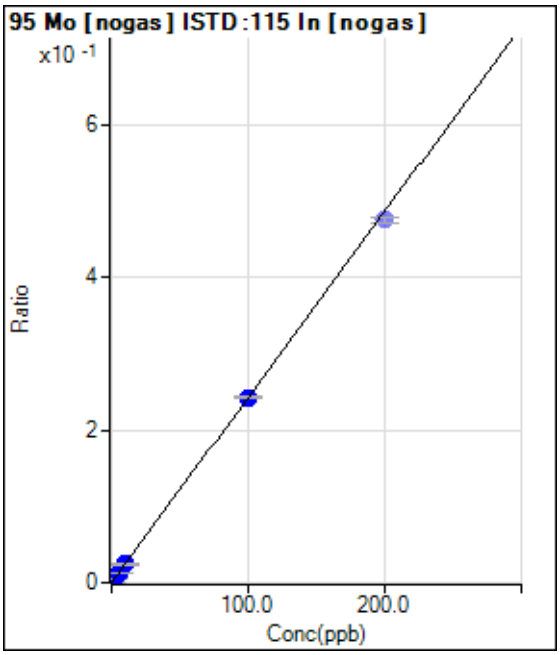
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	716.69	0.0005	P	6.9
2	☐	2.000	1.881	34727.24	0.0229	P	3.2
3	☐	5.000	4.594	84645.17	0.0553	P	3.1
4	☐	10.000	9.628	172744.08	0.1153	P	3.2
5	☐	100.000	102.603	1800545.18	1.2240	A	1.4
6	☐	200.000	198.728	3383359.33	2.3702	A	1.0
7	☐	1.000					

y = 0.0119 * x + 4.7839E-004
R = 0.9999
DL = 0.008349
BEC = 0.04012

Weight: <None>
Min Conc: <None>

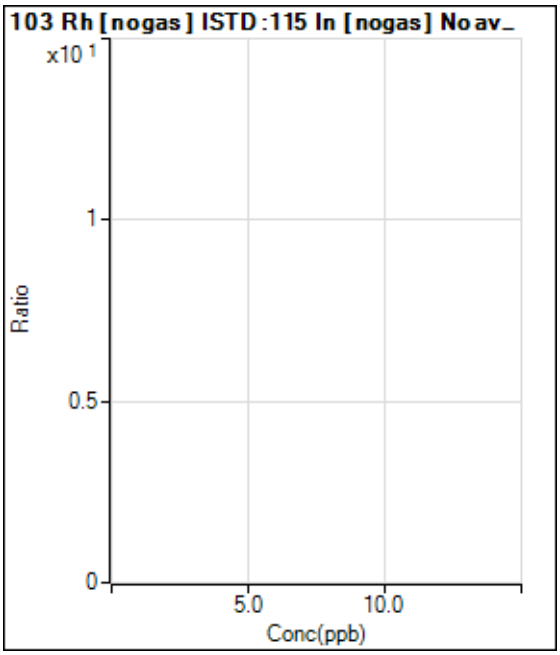


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	30.00	0.0000	P	32.6
2	☐	2.000	1.936	7164.89	0.0047	P	6.0
3	☐	5.000	4.758	17759.02	0.0116	P	1.0
4	☐	10.000	9.850	35929.77	0.0240	P	4.2
5	☐	100.000	100.028	357894.93	0.2433	P	1.0
6	☑	200.000		679250.95	0.4759	P	1.3
7	☐	1.000					

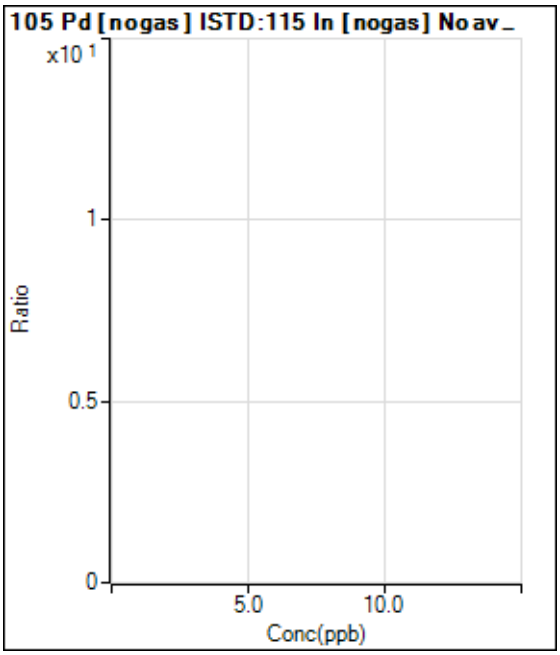
y = 0.0024 * x + 1.9997E-005
R = 1.0000
DL = 0.008049
BEC = 0.008222

Weight: <None>
Min Conc: <None>

Calibration for 020_ICV.d

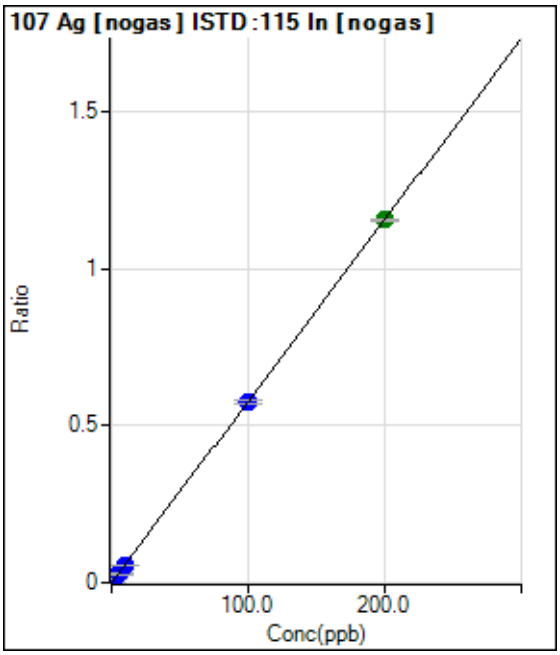


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

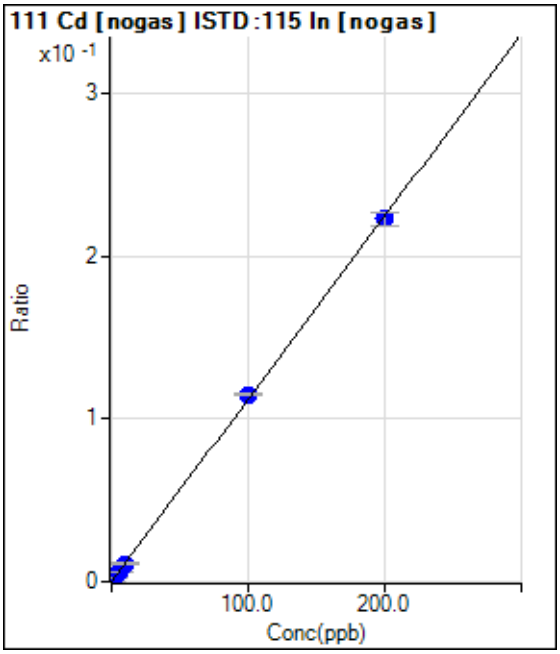
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	53.33	0.0000	P	27.2
2	☐	2.000	1.997	17542.33	0.0116	P	6.9
3	☐	5.000	4.790	42471.23	0.0277	P	1.1
4	☐	10.000	9.898	85777.34	0.0572	P	2.8
5	☐	100.000	99.959	849884.10	0.5778	P	1.9
6	☐	200.000	200.031	1650538.10	1.1562	A	0.6
7	☐	1.000					

y = 0.0058 * x + 3.5532E-005
R = 1.0000
DL = 0.005021
BEC = 0.006147

Weight: <None>
Min Conc: <None>

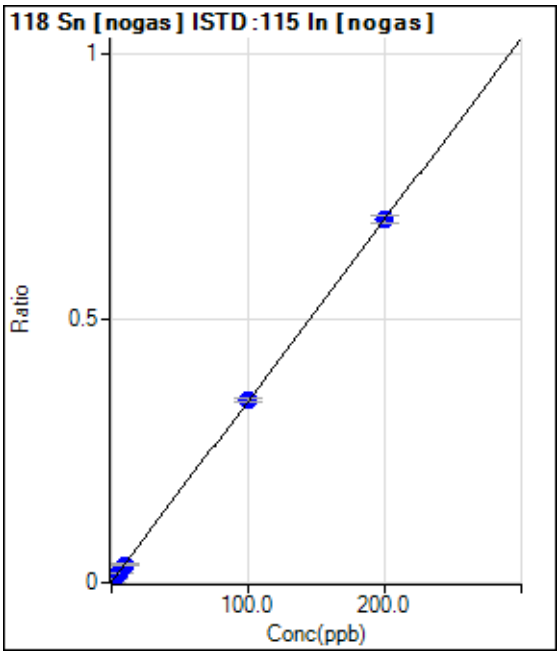


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3.33	0.0000	P	173.2
2	☐	2.000	2.070	3520.40	0.0023	P	5.0
3	☐	5.000	4.901	8418.81	0.0055	P	4.7
4	☐	10.000	9.920	16668.16	0.0111	P	3.1
5	☐	100.000	102.646	169253.65	0.1151	P	1.3
6	☐	200.000	198.683	317926.85	0.2227	P	3.4
7	☐	1.000					

y = 0.0011 * x + 2.1967E-006
R = 0.9999
DL = 0.01018
BEC = 0.00196

Weight: <None>
Min Conc: <None>

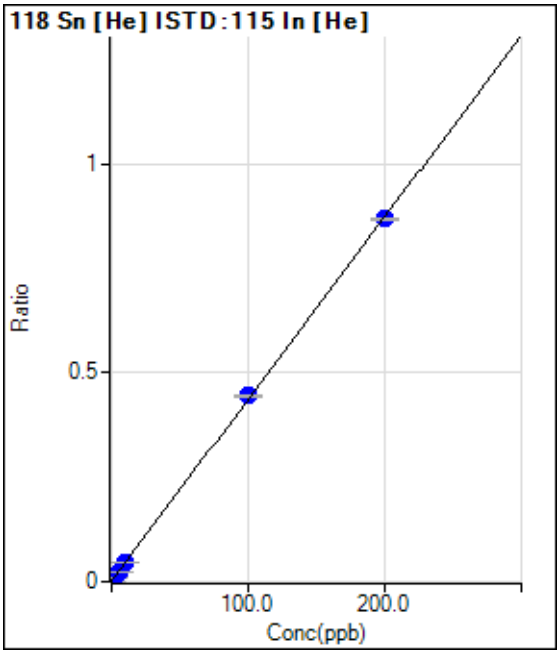
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2163.50	0.0014	P	4.3
2	☐	2.000	1.855	11830.83	0.0078	P	1.5
3	☐	5.000	4.541	26053.03	0.0170	P	1.9
4	☐	10.000	9.644	51693.13	0.0345	P	2.8
5	☐	100.000	100.215	507313.18	0.3449	P	2.2
6	☐	200.000	199.923	980099.23	0.6866	P	2.1
7	☐	1.000					

y = 0.0034 * x + 0.0014
R = 1.0000
DL = 0.05414
BEC = 0.4215

Weight: <None>
Min Conc: <None>

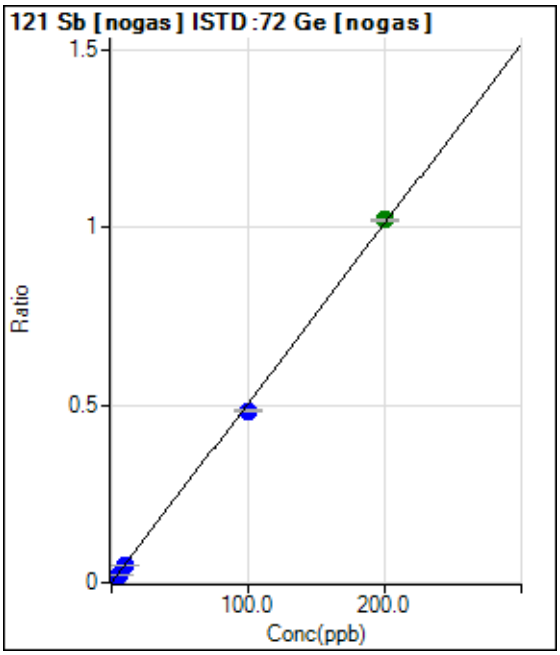


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	953.37	0.0017	P	13.8
2	☐	2.000	1.862	5587.64	0.0098	P	0.3
3	☐	5.000	4.726	12634.68	0.0223	P	2.0
4	☐	10.000	10.098	25231.79	0.0457	P	2.2
5	☐	100.000	101.747	240388.39	0.4446	P	0.7
6	☐	200.000	199.130	456402.46	0.8686	P	0.4
7	☐	1.000					

y = 0.0044 * x + 0.0017
R = 0.9999
DL = 0.1623
BEC = 0.3909

Weight: <None>
Min Conc: <None>

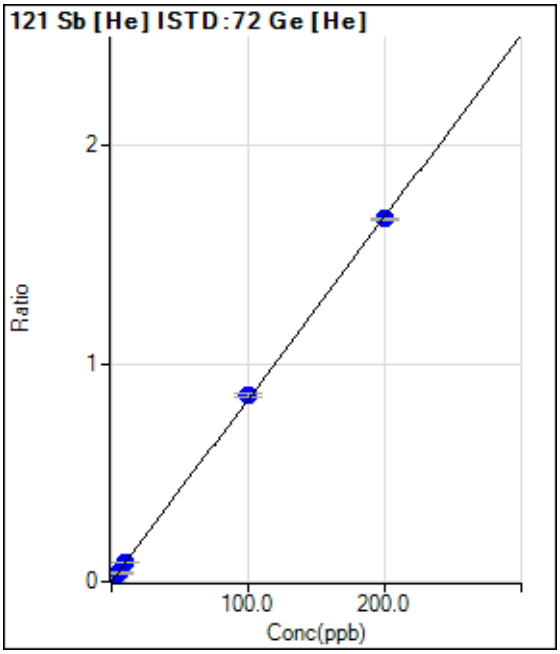
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	503.35	0.0003	P	19.7
2	☐	2.000	1.943	15220.12	0.0102	P	3.5
3	☐	5.000	4.676	36114.04	0.0240	P	2.4
4	☐	10.000	9.192	72091.95	0.0468	P	1.3
5	☐	100.000	95.826	718683.77	0.4843	P	1.8
6	☐	200.000	202.136	1460858.83	1.0212	A	0.8
7	☐	1.000					

y = 0.0051 * x + 3.3949E-004
R = 0.9997
DL = 0.03976
BEC = 0.06722

Weight: <None>
Min Conc: <None>

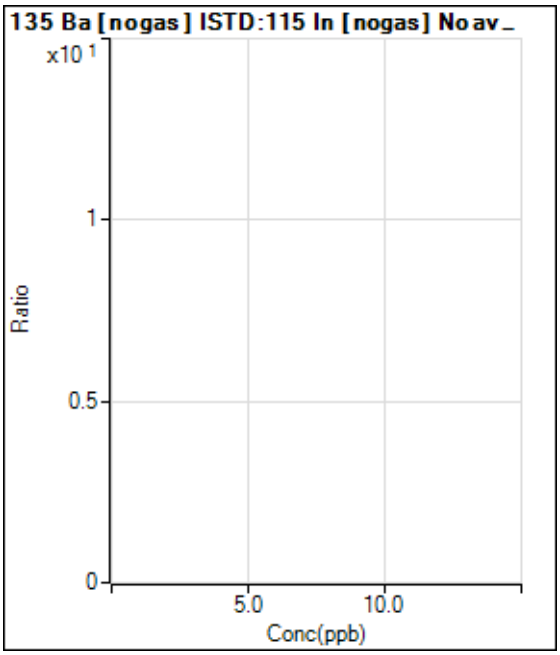


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	226.67	0.0006	P	16.0
2	☐	2.000	1.953	6851.45	0.0169	P	2.6
3	☐	5.000	4.681	15950.78	0.0397	P	1.7
4	☐	10.000	10.103	33625.82	0.0851	P	2.6
5	☐	100.000	101.980	329174.27	0.8537	P	1.6
6	☐	200.000	199.013	620283.13	1.6654	P	0.8
7	☐	1.000					

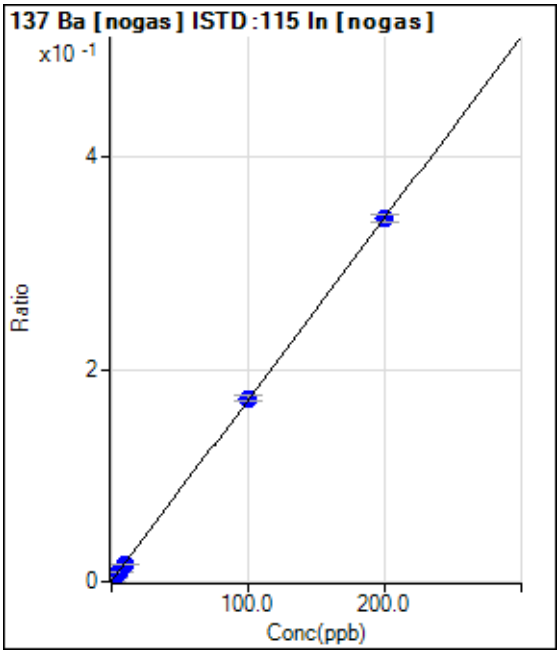
y = 0.0084 * x + 5.7173E-004
R = 0.9999
DL = 0.03273
BEC = 0.06834

Weight: <None>
Min Conc: <None>

Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	460.01	0.0003	P	14.2
2	☐	2.000	1.792	5114.16	0.0034	P	6.9
3	☐	5.000	4.691	12774.89	0.0083	P	3.3
4	☐	10.000	9.602	25111.85	0.0168	P	2.2
5	☐	100.000	100.865	254505.89	0.1730	P	2.3
6	☐	200.000	199.597	488336.36	0.3421	P	2.0
7	☐	1.000					

y = 0.0017 * x + 3.0759E-004

R = 1.0000

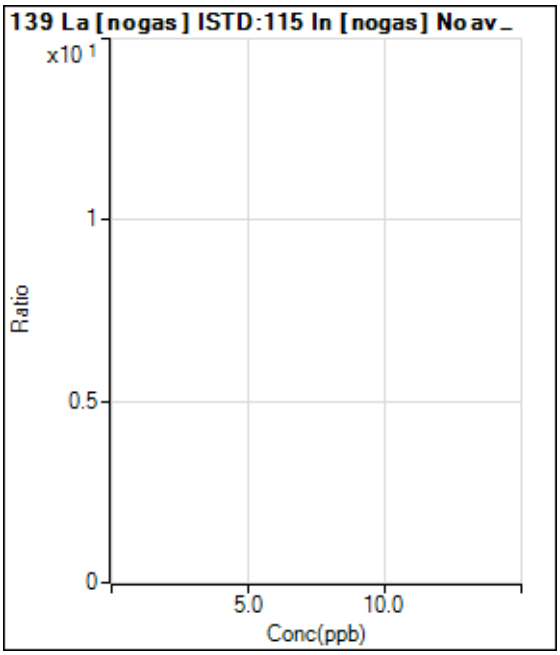
DL = 0.07646

BEC = 0.1796

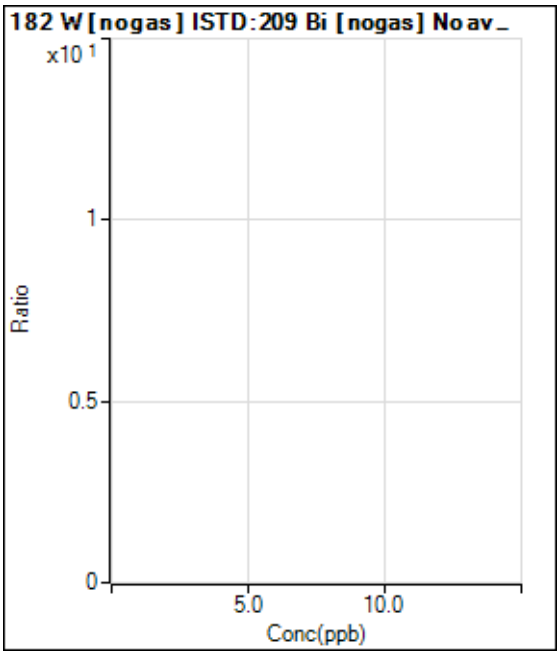
Weight: <None>

Min Conc: <None>

Calibration for 020_ICV.d

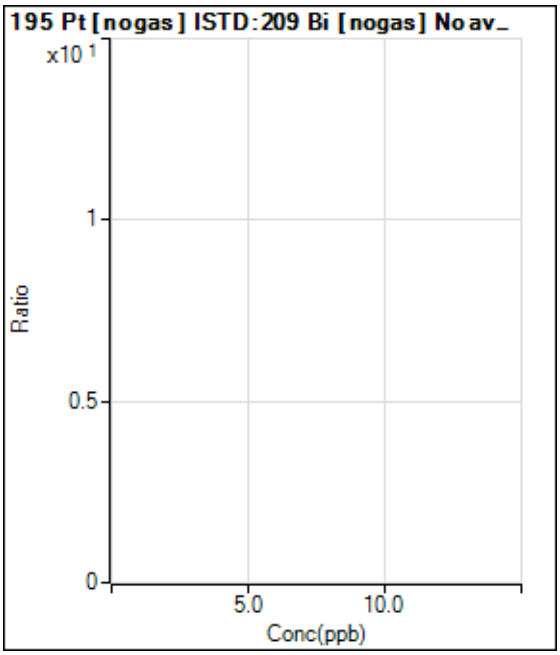


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

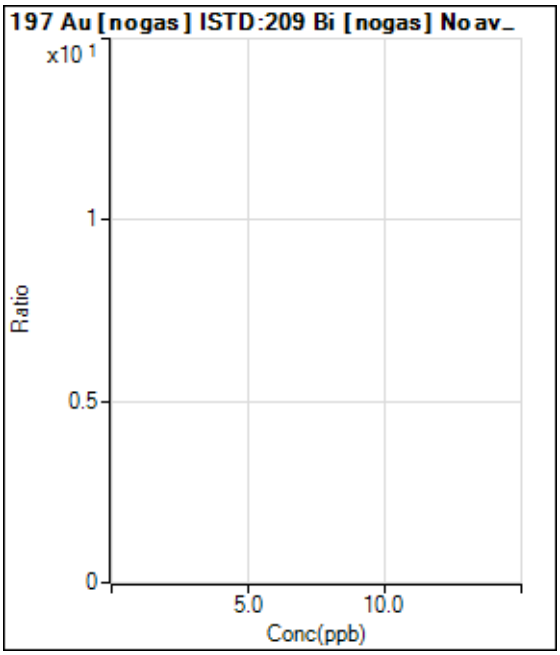


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

Calibration for 020_ICV.d

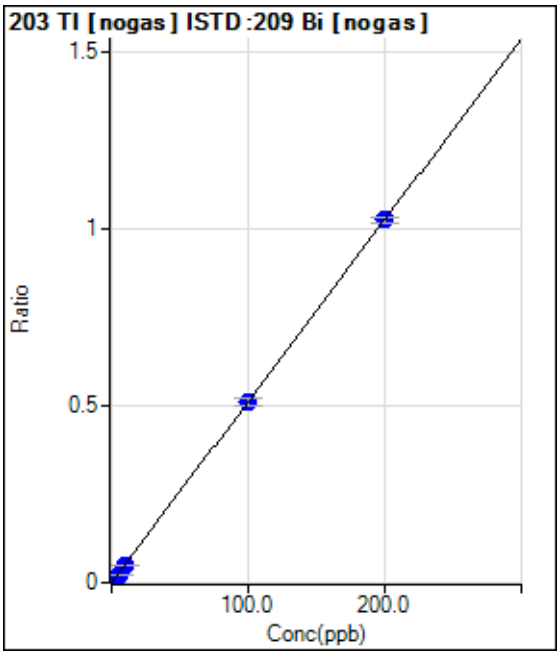


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

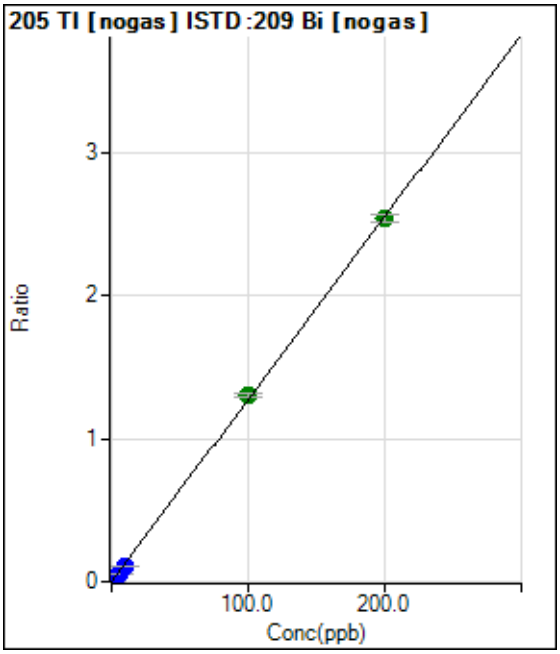
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	33.33	0.0000	P	69.7
2	☐	2.000	1.887	11694.34	0.0097	P	4.4
3	☐	5.000	4.250	27490.05	0.0218	P	1.7
4	☐	10.000	9.228	57989.78	0.0472	P	2.8
5	☐	100.000	99.816	584014.78	0.5105	P	3.4
6	☐	200.000	200.150	1115191.91	1.0235	P	1.7
7	☐	1.000					

y = 0.0051 * x + 2.7596E-005
R = 1.0000
DL = 0.01128
BEC = 0.005396

Weight: <None>
Min Conc: <None>

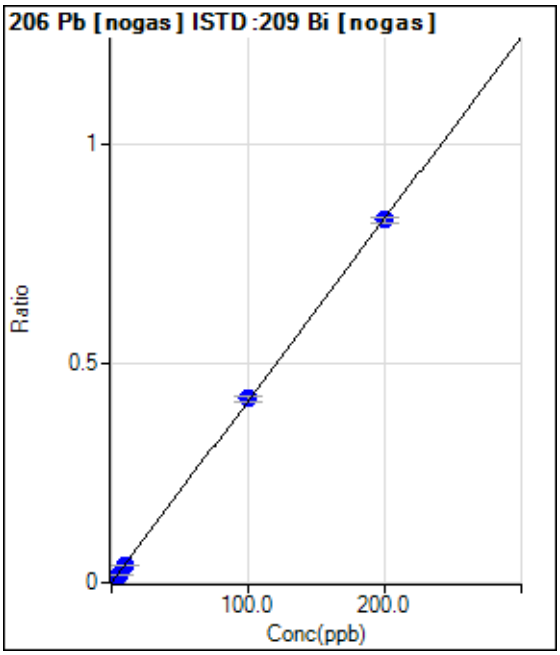


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	96.67	0.0001	P	31.7
2	☐	2.000	1.818	28127.70	0.0233	P	3.5
3	☐	5.000	4.090	66023.95	0.0523	P	2.3
4	☐	10.000	8.809	138164.40	0.1125	P	1.8
5	☐	100.000	102.203	1492388.00	1.3041	A	2.1
6	☐	200.000	198.983	2767309.34	2.5390	A	2.1
7	☐	1.000					

y = 0.0128 * x + 7.9871E-005
R = 0.9999
DL = 0.005953
BEC = 0.00626

Weight: <None>
Min Conc: <None>

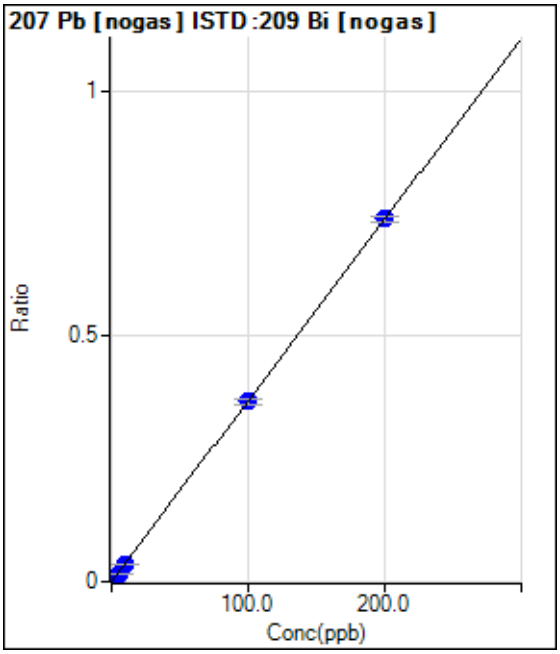
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	190.00	0.0002	P	43.9
2	☐	2.000	1.954	9963.18	0.0082	P	6.6
3	☐	5.000	4.547	23984.62	0.0190	P	4.9
4	☐	10.000	9.706	49575.55	0.0404	P	1.8
5	☐	100.000	101.178	479717.83	0.4192	P	2.9
6	☐	200.000	199.437	900461.65	0.8262	P	1.7
7	☐	1.000					

y = 0.0041 * x + 1.5660E-004
R = 1.0000
DL = 0.04985
BEC = 0.03781

Weight: <None>
Min Conc: <None>

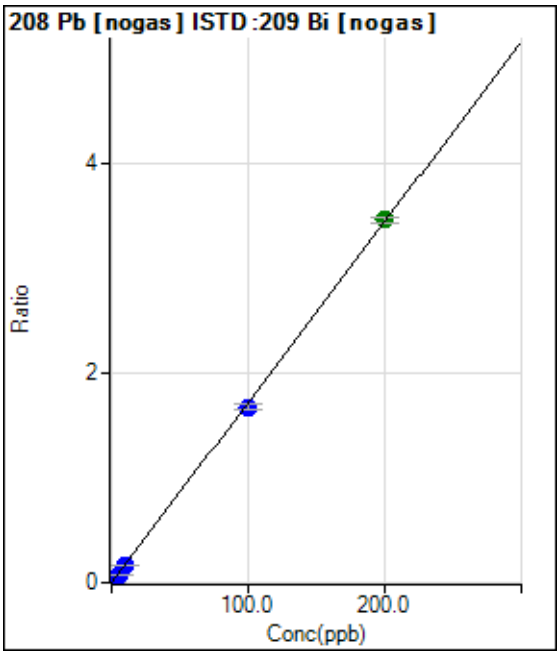


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	100.00	0.0001	P	54.8
2	☐	2.000	1.929	8692.49	0.0072	P	5.1
3	☐	5.000	4.481	20963.75	0.0166	P	5.2
4	☐	10.000	9.442	42849.96	0.0349	P	1.1
5	☐	100.000	99.317	418997.16	0.3662	P	3.5
6	☐	200.000	200.383	805139.29	0.7387	P	1.9
7	☐	1.000					

y = 0.0037 * x + 8.2387E-005
R = 1.0000
DL = 0.03672
BEC = 0.02235

Weight: <None>
Min Conc: <None>

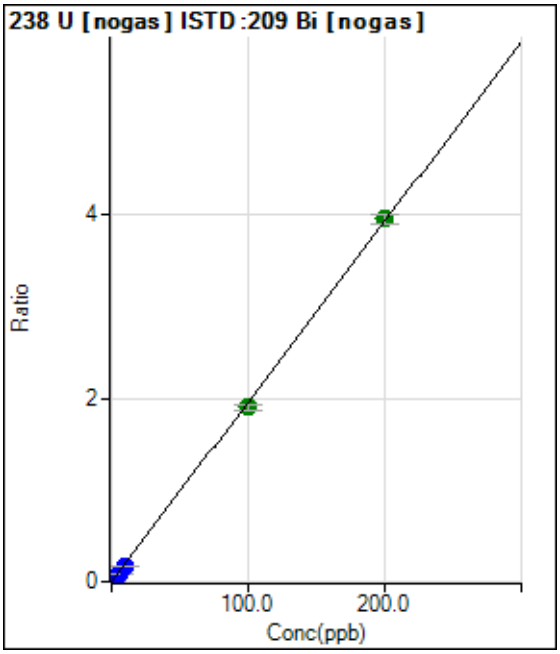
Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	586.68	0.0005	P	19.6
2	☐	2.000	1.867	39439.24	0.0326	P	3.4
3	☐	5.000	4.439	97132.43	0.0769	P	3.4
4	☐	10.000	9.253	196241.50	0.1598	P	1.2
5	☐	100.000	97.523	1921486.79	1.6793	P	3.6
6	☐	200.000	201.291	3777432.58	3.4657	A	1.9
7	☐	1.000					

y = 0.0172 * x + 4.8429E-004
R = 0.9999
DL = 0.01651
BEC = 0.02813

Weight: <None>
Min Conc: <None>

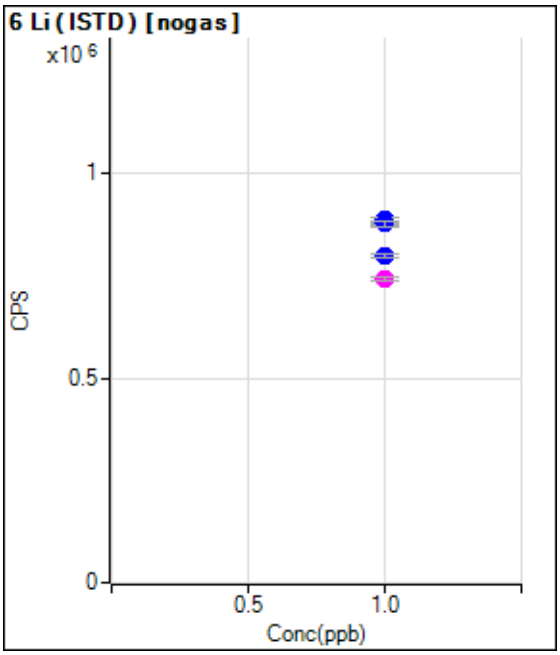


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	20.00	0.0000	P	51.2
2	☐	2.000	1.738	41257.41	0.0341	P	3.0
3	☐	5.000	4.107	101867.74	0.0806	P	2.9
4	☐	10.000	8.701	209791.58	0.1708	P	4.9
5	☐	100.000	96.852	2175786.11	1.9012	A	3.6
6	☐	200.000	201.664	4312625.98	3.9587	A	2.7
7	☐	1.000					

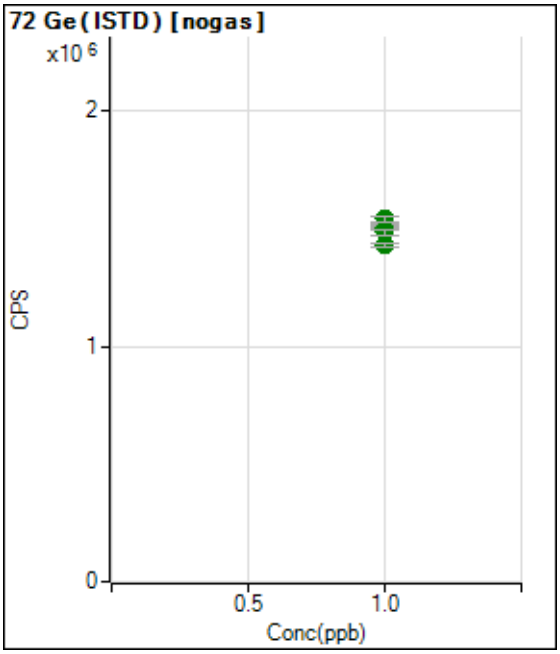
y = 0.0196 * x + 1.6614E-005
R = 0.9998
DL = 0.001299
BEC = 0.0008464

Weight: <None>
Min Conc: <None>

Calibration for 020_ICV.d

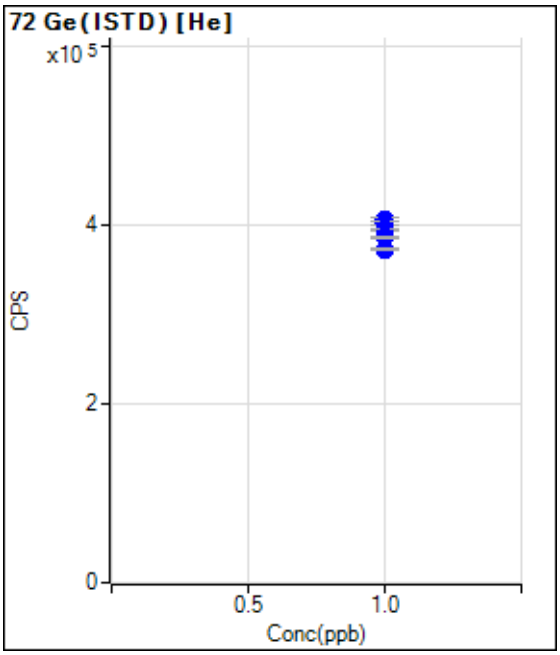


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		885638.35		P	1.2
2	☐	1.000		885778.33		P	1.8
3	☐	1.000		877886.86		P	1.2
4	☐	1.000		876028.19		P	1.5
5	☐	1.000		798541.77		P	1.0
6	☐	1.000		742562.72		M	1.7
7	☐	1.000					

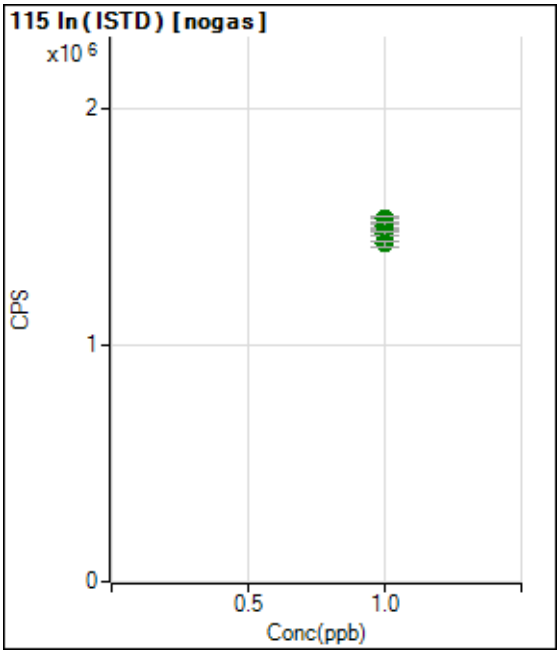


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1488050.03		A	2.8
2	☐	1.000		1498968.21		A	0.8
3	☐	1.000		1507621.96		A	1.2
4	☐	1.000		1541804.45		A	1.9
5	☐	1.000		1484255.76		A	1.8
6	☐	1.000		1430507.53		A	1.5
7	☐	1.000					

Calibration for 020_ICV.d

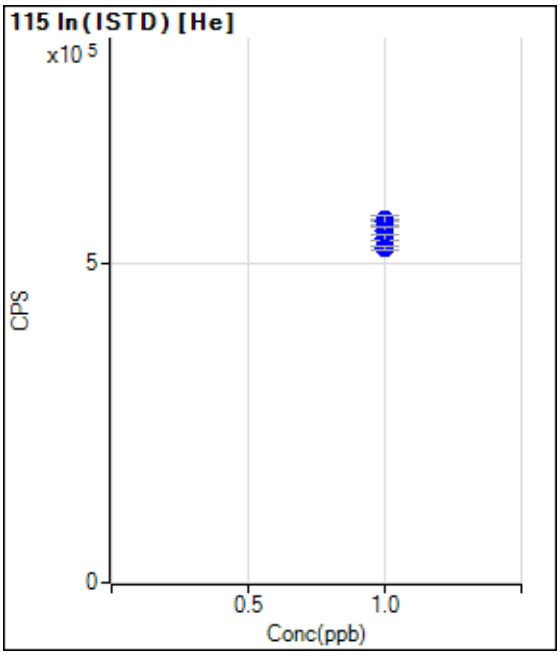


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		395690.43		P	1.9
2	☐	1.000		405182.39		P	1.2
3	☐	1.000		401477.83		P	0.9
4	☐	1.000		395177.94		P	0.4
5	☐	1.000		385580.03		P	0.3
6	☐	1.000		372463.67		P	1.0
7	☐	1.000					

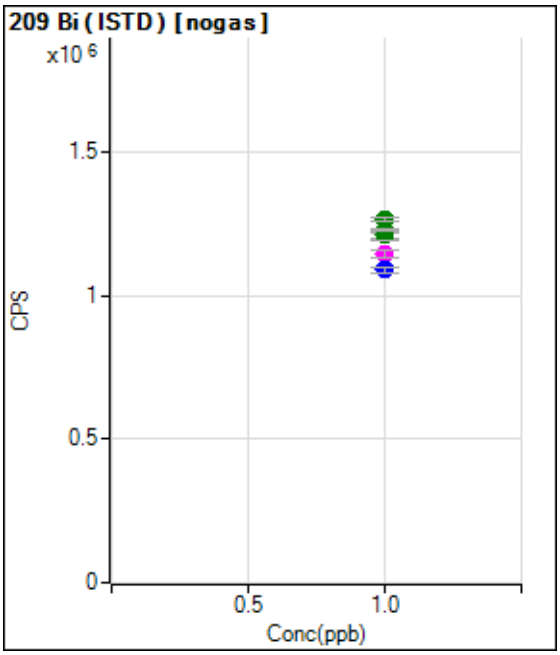


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1497103.28		A	1.5
2	☐	1.000		1516563.30		A	2.6
3	☐	1.000		1532062.63		A	1.9
4	☐	1.000		1499098.26		A	2.6
5	☐	1.000		1471031.34		A	1.0
6	☐	1.000		1427550.26		A	1.5
7	☐	1.000					

Calibration for 020_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		559996.79		P	0.7
2	☐	1.000		569648.32		P	0.8
3	☐	1.000		567347.79		P	2.8
4	☐	1.000		552725.58		P	1.8
5	☐	1.000		540682.77		P	1.7
6	☐	1.000		525459.94		P	1.5
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1210057.56		A	1.6
2	☐	1.000		1209342.54		A	3.2
3	☐	1.000		1263277.46		A	1.2
4	☐	1.000		1228305.68		A	0.5
5	☐	1.000		1144799.49		M	2.9
6	☐	1.000		1089744.98		P	1.7
7	☐	1.000					

Calibration Blank Report

Sample Table

Sample Name	CAL BLK
Data File Name	013CALB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T11:06:19-06:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	45	74.07
B	11	1	nogas	15038	0.01
Al	27	1	nogas	22811	0.01
P	31	1	nogas	43407	0.00
Ti	47	1	nogas	140	8.84
Cu	63	1	nogas	1807	0.54
Sr	88	1	nogas	717	1.17
Mo	95	1	nogas	30	111.11
Ag	107	1	nogas	53	53.70
Cd	111	1	nogas	3	5196.15
Sn	118	1	nogas	2164	0.27
Sb	121	1	nogas	503	3.40
Ba	137	1	nogas	460	2.84
Tl	205	1	nogas	97	32.69
Pb	208	1	nogas	587	3.50
Li	7	1	nogas	69106	0.00
Si	28	1	nogas	1704572	0.00
Na	23	2	He	50414	0.00
Mg	24	2	He	473	4.05
Al	27	2	He	547	3.11
K	39	2	He	45933	0.00
Ca	43	2	He	3	5196.15
Ca	44	2	He	413	4.55
V	51	2	He	4691	0.04
Cr	52	2	He	3830	0.27
Mn	55	2	He	673	0.34
Fe	56	2	He	10146	0.02
Co	59	2	He	50	69.28
Ni	60	2	He	133	12.99
Cu	63	2	He	733	2.53
Zn	66	2	He	300	4.44
As	75	2	He	119	13.82
Sb	121	2	He	227	7.87
Se	78	2	He	39	61.79

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Ge	72	1	nogas	1488050	2.77

Calibration Blank Report

In	115	1	nogas	1497103	1.55
Li	6	1	nogas	885638	1.20
Bi	209	1	nogas	1210058	1.56
Ge	72	2	He	395690	1.89
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
In	115	2	He	559997	0.69

Calibration Standard Report

Sample Table

Sample Name	2/10/200
Data File Name	014CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T11:08:36-06:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	9619	0.04
B	11	1	nogas	42293	0.00
Al	27	1	nogas	48783	0.00
P	31	1	nogas	48359	0.01
Ti	47	1	nogas	2504	0.26
Cu	63	1	nogas	17268	0.01
Sr	88	1	nogas	34727	0.00
Mo	95	1	nogas	7165	0.05
Ag	107	1	nogas	17542	0.03
Cd	111	1	nogas	3520	0.10
Sn	118	1	nogas	11831	0.03
Sb	121	1	nogas	15220	0.02
Ba	137	1	nogas	5114	0.09
Tl	205	1	nogas	28128	0.00
Pb	208	1	nogas	39439	0.00
Si	28	1	nogas	1736665	0.00
Na	23	2	He	277734	0.00
Mg	24	2	He	124357	0.00
Al	27	2	He	1063	1.43
K	39	2	He	138781	0.00
Ca	43	2	He	327	5.65
Ca	44	2	He	4997	0.09
V	51	2	He	12800	0.03
Cr	52	2	He	13338	0.02
Mn	55	2	He	6795	0.08
Fe	56	2	He	841352	0.00
Co	59	2	He	14499	0.03
Ni	60	2	He	3880	0.05
Cu	63	2	He	10426	0.05
Zn	66	2	He	2133	0.49
As	75	2	He	1178	0.28
Sb	121	2	He	6851	0.02
Se	78	2	He	98	12.67

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag

Calibration Standard Report

Ge	72	1	nogas	1498968	0.82	1488050	100.73	70	120	
In	115	1	nogas	1516563	2.56	1497103	101.30	70	120	
Li	6	1	nogas	885778	1.81	885638	100.02	70	120	
Bi	209	1	nogas	1209343	3.18	1210058	99.94	70	120	
Ge	72	2	He	405182	1.21	395690	102.40	70	120	
In	115	2	He	569648	0.76	559997	101.72	70	120	

Calibration Standard Report

Sample Table

Sample Name	5/25/500
Data File Name	015CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T11:10:52-06:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	23738	0.01
B	11	1	nogas	84012	0.00
Al	27	1	nogas	87297	0.00
P	31	1	nogas	58210	0.00
Ti	47	1	nogas	5561	0.06
Cu	63	1	nogas	39610	0.00
Sr	88	1	nogas	84645	0.00
Mo	95	1	nogas	17759	0.01
Ag	107	1	nogas	42471	0.00
Cd	111	1	nogas	8419	0.05
Sn	118	1	nogas	26053	0.01
Sb	121	1	nogas	36114	0.00
Ba	137	1	nogas	12775	0.01
Tl	205	1	nogas	66024	0.00
Pb	208	1	nogas	97132	0.00
Si	28	1	nogas	1886978	0.00
Na	23	2	He	605505	0.00
Mg	24	2	He	302960	0.00
Al	27	2	He	1893	0.06
K	39	2	He	276641	0.00
Ca	43	2	He	767	3.05
Ca	44	2	He	12154	0.02
V	51	2	He	24534	0.01
Cr	52	2	He	27481	0.01
Mn	55	2	He	16264	0.01
Fe	56	2	He	2093414	0.00
Co	59	2	He	34863	0.00
Ni	60	2	He	9329	0.05
Cu	63	2	He	24563	0.02
Zn	66	2	He	5041	0.10
As	75	2	He	2804	0.13
Sb	121	2	He	15951	0.00
Se	78	2	He	250	4.16

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag

Calibration Standard Report

Ge	72	1	nogas	1507622	1.23	1488050	101.32	70	120	
In	115	1	nogas	1532063	1.85	1497103	102.34	70	120	
Li	6	1	nogas	877887	1.23	885638	99.12	70	120	
Bi	209	1	nogas	1263277	1.16	1210058	104.40	70	120	
Ge	72	2	He	401478	0.92	395690	101.46	70	120	
In	115	2	He	567348	2.79	559997	101.31	70	120	

Calibration Standard Report

Sample Table

Sample Name	10/50/1000
Data File Name	016CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T11:13:07-06:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	47433	0.00
B	11	1	nogas	154949	0.00
Al	27	1	nogas	157131	0.00
P	31	1	nogas	76608	0.00
Ti	47	1	nogas	11033	0.03
Cu	63	1	nogas	77420	0.00
Sr	88	1	nogas	172744	0.00
Mo	95	1	nogas	35930	0.01
Ag	107	1	nogas	85777	0.00
Cd	111	1	nogas	16668	0.02
Sn	118	1	nogas	51693	0.00
Sb	121	1	nogas	72092	0.00
Ba	137	1	nogas	25112	0.01
Tl	205	1	nogas	138164	0.00
Pb	208	1	nogas	196242	0.00
Si	28	1	nogas	1987778	0.00
Na	23	2	He	1201129	0.00
Mg	24	2	He	607787	0.00
Al	27	2	He	3620	0.29
K	39	2	He	502730	0.00
Ca	43	2	He	1387	0.89
Ca	44	2	He	24476	0.01
V	51	2	He	44774	0.00
Cr	52	2	He	52491	0.01
Mn	55	2	He	32192	0.00
Fe	56	2	He	4233357	0.00
Co	59	2	He	70287	0.00
Ni	60	2	He	18206	0.00
Cu	63	2	He	47996	0.00
Zn	66	2	He	8552	0.06
As	75	2	He	5410	0.09
Sb	121	2	He	33626	0.01
Se	78	2	He	452	1.97

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag

Calibration Standard Report

Ge	72	1	nogas	1541804	1.89	1488050	103.61	70	120	
In	115	1	nogas	1499098	2.55	1497103	100.13	70	120	
Li	6	1	nogas	876028	1.51	885638	98.91	70	120	
Bi	209	1	nogas	1228306	0.54	1210058	101.51	70	120	
Ge	72	2	He	395178	0.38	395690	99.87	70	120	
In	115	2	He	552726	1.80	559997	98.70	70	120	

Calibration Standard Report

Sample Table

Sample Name	100/500/10K
Data File Name	017CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T11:15:22-06:00
Sample Type	CalStd
Level	5
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	482716	0.00
B	11	1	nogas	1442995	0.00
Al	27	1	nogas	1376931	0.00
P	31	1	nogas	366035	0.00
Ti	47	1	nogas	114091	0.00
Cu	63	1	nogas	766281	0.00
Sr	88	1	nogas	1800545	0.00
Mo	95	1	nogas	357895	0.00
Ag	107	1	nogas	849884	0.00
Cd	111	1	nogas	169254	0.00
Sn	118	1	nogas	507313	0.00
Sb	121	1	nogas	718684	0.00
Ba	137	1	nogas	254506	0.00
Tl	205	1	nogas	1492388	0.00
Pb	208	1	nogas	1921487	0.00
Si	28	1	nogas	4916957	0.00
Na	23	2	He	11330990	0.00
Mg	24	2	He	6070488	0.00
Al	27	2	He	30906	0.01
K	39	2	He	4682985	0.00
Ca	43	2	He	14356	0.05
Ca	44	2	He	235025	0.00
V	51	2	He	417803	0.00
Cr	52	2	He	481340	0.00
Mn	55	2	He	305666	0.00
Fe	56	2	He	40200838	0.00
Co	59	2	He	685361	0.00
Ni	60	2	He	179430	0.00
Cu	63	2	He	476706	0.00
Zn	66	2	He	84055	0.00
As	75	2	He	54250	0.00
Sb	121	2	He	329174	0.00
Se	78	2	He	4096	0.05

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag

Calibration Standard Report

Ge	72	1	nogas	1484256	1.79	1488050	99.75	70	120	
In	115	1	nogas	1471031	1.04	1497103	98.26	70	120	
Li	6	1	nogas	798542	0.99	885638	90.17	70	120	
Bi	209	1	nogas	1144799	2.86	1210058	94.61	70	120	
Ge	72	2	He	385580	0.34	395690	97.44	70	120	
In	115	2	He	540683	1.74	559997	96.55	70	120	

Calibration Standard Report

Sample Table

Sample Name	200/1000/20K
Data File Name	018CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T11:17:35-06:00
Sample Type	CalStd
Level	6
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	912463	0.00
B	11	1	nogas	2725575	0.00
Al	27	1	nogas	2475523	0.00
P	31	1	nogas	655013	0.00
Ti	47	1	nogas	223594	0.00
Cu	63	1	nogas	1451427	0.00
Sr	88	1	nogas	3383359	0.00
Mo	95	1	nogas	679251	0.00
Ag	107	1	nogas	1650538	0.00
Cd	111	1	nogas	317927	0.00
Sn	118	1	nogas	980099	0.00
Sb	121	1	nogas	1460859	0.00
Ba	137	1	nogas	488336	0.00
Tl	205	1	nogas	2767309	0.00
Pb	208	1	nogas	3777433	0.00
Si	28	1	nogas	7715216	0.00
Na	23	2	He	21100227	0.00
Mg	24	2	He	11498469	0.00
Al	27	2	He	55084	0.00
K	39	2	He	8894580	0.00
Ca	43	2	He	26799	0.01
Ca	44	2	He	451326	0.00
V	51	2	He	794748	0.00
Cr	52	2	He	920183	0.00
Mn	55	2	He	580146	0.00
Fe	56	2	He	76460486	0.00
Co	59	2	He	1369487	0.00
Ni	60	2	He	332030	0.00
Cu	63	2	He	867360	0.00
Zn	66	2	He	155127	0.00
As	75	2	He	103673	0.00
Sb	121	2	He	620283	0.00
Se	78	2	He	8130	0.01

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag

Calibration Standard Report

Ge	72	1	nogas	1430508	1.51	1488050	96.13	70	120	
In	115	1	nogas	1427550	1.51	1497103	95.35	70	120	
Li	6	1	nogas	742563	1.66	885638	83.84	70	120	
Bi	209	1	nogas	1089745	1.74	1210058	90.06	70	120	
Ge	72	2	He	372464	1.01	395690	94.13	70	120	
In	115	2	He	525460	1.48	559997	93.83	70	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV
Data File Name	020_ICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T11:22:01-06:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	nogas	96.047	0.322	463402	0.71	100	96.0	90	110	
B	11	1	nogas	498.540	5.245	1442934	5.45	500	99.7	90	110	
Al	27	1	nogas	105.954	10.404	1367681	4.86	100	106.0	90	110	
P	31	1	nogas	497.178	6.050	355756	2.03	500	99.4	90	110	
Ti	47	1	nogas	97.332	4.424	111120	2.31	100	97.3	90	110	
Cu	63	1	nogas	100.589	5.430	750688	1.38	100	100.6	90	110	
Sr	88	1	nogas	102.501	7.695	1725913	4.86	100	102.5	90	110	
Mo	95	1	nogas	101.634	7.496	342638	1.80	100	101.6	90	110	
Ag	107	1	nogas	99.170	5.223	809353	1.43	100	99.2	90	110	
Cd	111	1	nogas	102.545	4.001	162371	1.84	100	102.5	90	110	
Sn	118	1	nogas	100.474	5.851	488074	0.24	100	100.5	90	110	
Sb	121	1	nogas	93.304	5.334	690593	1.77	100	93.3	90	110	
Ba	137	1	nogas	101.911	7.884	246565	2.18	100	101.9	90	110	
Tl	205	1	nogas	100.622	9.680	1463172	5.69	100	100.6	90	110	
Pb	208	1	nogas	95.064	4.074	1868447	0.79	100	95.1	90	110	
U	238	1	nogas	95.673	7.850	2141060	3.46	100	95.7	90	110	
Li	7	1	nogas	97.650	4.140	1541922	3.47	100	97.7	90	110	
Si	28	1	nogas	4919.500	11.074	4745114	0.89	5000	98.4	90	110	
Tl	203	1	nogas	98.744	7.321	575786	2.92	100	98.7	90	110	
Na	23	2	He	9772.812	1.971	10669875	1.18	10000	97.7	90	110	
Mg	24	2	He	9897.241	2.189	5856407	0.90	10000	99.0	90	110	
Al	27	2	He	104.418	2.211	30184	3.41	100	104.4	90	110	
K	39	2	He	9978.821	1.203	4583365	0.24	10000	99.8	90	110	
Ca	43	2	He	10234.507	3.159	14162	3.72	10000	102.3	90	110	
Ca	44	2	He	9826.017	2.581	227738	1.43	10000	98.3	90	110	
V	51	2	He	96.309	0.806	395465	0.56	100	96.3	90	110	
Cr	52	2	He	98.368	1.740	466465	0.44	100	98.4	90	110	
Mn	55	2	He	100.161	2.321	299173	1.17	100	100.2	90	110	
Fe	56	2	He	10131.828	1.474	39841861	0.50	10000	101.3	90	110	
Co	59	2	He	94.901	1.899	661816	1.11	100	94.9	90	110	
Ni	60	2	He	99.500	1.439	170902	0.17	100	99.5	90	110	
Cu	63	2	He	102.317	1.207	460844	0.25	100	102.3	90	110	
Zn	66	2	He	100.333	2.971	80637	1.91	100	100.3	90	110	
As	75	2	He	98.942	0.452	52746	1.11	100	98.9	90	110	
Sn	118	2	He	96.979	0.807	230125	2.96	100	97.0	90	110	
Sb	121	2	He	99.355	3.183	317537	1.90	100	99.4	90	110	
Se	78	2	He	99.844	0.498	4154	1.66	100	99.8	90	110	
Ti	47	2	He	98.798	3.581	14386	4.87	100	98.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1467889	6.71	1488050	98.65	70	120	
In	115	1	nogas	1414731	5.96	1497103	94.50	70	120	
Li	6	1	nogas	787988	0.73	885638	88.97	70	120	
Bi	209	1	nogas	1142787	4.61	1210058	94.44	70	120	
Ge	72	2	He	381878	1.29	395690	96.51	70	120	
In	115	2	He	542847	2.17	559997	96.94	70	120	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICB
Data File Name	023_ICB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T11:28:42-06:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.010	21.7	98	11.7	1	
B	11	1	nogas	13.941	4.9	58393	3.3	10	ICB Main CR1 Failed
Al	27	1	nogas	2.505	2.7	55615	1.2	5	
P	31	1	nogas	-4.789	-32.4	40657	1.7	10	
Ti	47	1	nogas	0.002	1229.7	143	21.3	2.5	
Cu	63	1	nogas	0.006	183.7	1873	5.7	1	
Sr	88	1	nogas	0.063	14.2	1827	7.0	2.5	
Mo	95	1	nogas	0.063	37.0	253	29.9	2.5	
Ag	107	1	nogas	0.014	41.9	177	31.2	2.5	
Cd	111	1	nogas	0.018	100.5	33	91.7	1	
Sn	118	1	nogas	-0.036	-158.5	1960	12.3	5	
Sb	121	1	nogas	0.047	28.6	867	11.2	2.5	
Ba	137	1	nogas	-0.011	-322.6	427	19.1	2.5	
Tl	205	1	nogas	0.069	5.0	1110	6.8	1	
Pb	208	1	nogas	0.022	14.4	990	7.1	2.5	
U	238	1	nogas	0.015	4.7	367	3.1	2.5	
Si	28	1	nogas	-104.192	-89.3	1651258	3.1	5	
Na	23	2	He	7.181	11.4	57825	2.7	100	
Mg	24	2	He	2.257	15.8	1837	13.0	100	
Al	27	2	He	3.198	7.0	1470	4.7	5	
K	39	2	He	7.377	47.2	48820	1.9	100	
Ca	43	2	He	18.856	1.6	30	0.0	100	
Ca	44	2	He	20.907	18.4	903	9.5	100	
V	51	2	He	-0.481	-5.6	2639	5.5	2.5	
Cr	52	2	He	-0.038	-83.2	3607	5.1	2.5	
Mn	55	2	He	0.312	1.9	1617	0.4	2.5	
Fe	56	2	He	1.858	8.6	17509	2.9	100	
Co	59	2	He	0.018	38.4	180	28.9	2.5	
Ni	60	2	He	0.094	50.0	297	28.1	2.5	
Cu	63	2	He	0.060	37.4	1000	11.4	1	
Zn	66	2	He	1.121	2.6	1217	2.9	2.5	
As	75	2	He	-0.068	-26.8	80	11.0	2.5	
Sb	121	2	He	0.049	43.2	383	19.2	2.5	
Se	78	2	He	-0.227	-45.2	29	16.1	1	
Ti	47	2	He	0.068	114.8	13	86.6	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1499080	0.84	1488050	100.74	70	120	

Initial Calibration Blank (ICB) Report

In	115	1	nogas	1486539	2.52	1497103	99.29	70	120	
Li	6	1	nogas	862536	0.49	885638	97.39	70	120	
Bi	209	1	nogas	1153536	2.28	1210058	95.33	70	120	
Ge	72	2	He	391079	1.43	395690	98.83	70	120	
In	115	2	He	551990	1.08	559997	98.57	70	120	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA
Data File Name	024ICSA.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T11:30:57-06:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.004	55.1	60	16.7	0	ICSA Main CR1 Failed
B	11	1	nogas	10.022	6.6	44291	4.3	0	ICSA Main CR1 Failed
Al	27	1	nogas	91268.328	3.5	1153389743	1.3	0	
P	31	1	nogas	94933.546	3.2	59413652	1.0	0	
Ti	47	1	nogas	2059.425	3.3	2331936	1.3	0	
Cu	63	1	nogas	0.859	12.2	8119	7.9	0	ICSA Main CR1 Failed
Sr	88	1	nogas	0.853	7.5	14353	5.3	0	ICSA Main CR1 Failed
Mo	95	1	nogas	2138.244	4.5	6885258	1.2	0	
Ag	107	1	nogas	0.025	16.0	247	13.0	0	ICSA Main CR1 Failed
Cd	111	1	nogas	2.829	11.1	4277	10.6	0	
Sn	118	1	nogas	0.362	8.0	3619	4.0	0	ICSA Main CR1 Failed
Sb	121	1	nogas	0.167	8.0	1720	3.8	0	ICSA Main CR1 Failed
Ba	137	1	nogas	0.144	17.5	747	8.9	0	ICSA Main CR1 Failed
Tl	205	1	nogas	0.039	11.5	607	11.0	0	ICSA Main CR1 Failed
Pb	208	1	nogas	0.102	4.0	2337	1.6	0	ICSA Main CR1 Failed
Si	28	1	nogas	390.689	15.9	1910373	3.0	0	
Na	23	2	He	104781.173	2.2	107316635	1.5	0	
Mg	24	2	He	102950.058	1.3	57384259	0.5	0	
Al	27	2	He	98867.708	1.6	26445166	1.5	0	
K	39	2	He	104039.014	1.5	44626188	2.2	0	
Ca	43	2	He	99311.965	1.5	129425	2.5	0	
Ca	44	2	He	105553.039	2.9	2301599	3.8	0	
V	51	2	He	-0.335	-8.4	2986	3.6	0	ICSA Main CR1 Failed
Cr	52	2	He	0.390	14.3	5217	4.5	0	ICSA Main CR1 Failed
Mn	55	2	He	0.535	5.2	2113	4.5	0	ICSA Main CR1 Failed
Fe	56	2	He	103924.502	1.7	384868594	0.8	0	
Co	59	2	He	0.343	7.6	2300	8.1	0	ICSA Main CR1 Failed
Ni	60	2	He	0.436	6.4	827	5.5	0	ICSA Main CR1 Failed
Cu	63	2	He	0.448	4.7	2564	3.3	0	ICSA Main CR1 Failed
Zn	66	2	He	0.623	26.2	743	16.8	0	ICSA Main CR1 Failed
As	75	2	He	0.024	29.1	120	2.8	0	ICSA Main CR1 Failed
Sb	121	2	He	0.215	4.0	853	3.4	0	ICSA Main CR1 Failed
Se	78	2	He	0.022	722.5	36	16.7	0	ICSA Main CR1 Failed
Ti	47	2	He	2075.325	0.1	284494	0.8	0	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1455416	2.19	1488050	97.81	70	120	
In	115	1	nogas	1348829	3.71	1497103	90.10	70	120	
Li	6	1	nogas	828772	0.56	885638	93.58	70	120	
Bi	209	1	nogas	1042206	1.63	1210058	86.13	70	120	
Ge	72	2	He	359713	0.94	395690	90.91	70	120	
In	115	2	He	499595	2.03	559997	89.21	70	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB
Data File Name	025ICSB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T11:33:10-06:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	nogas	100.748	3.279	506699	0.26	100	100.7	80	120	
B	11	1	nogas	519.184	4.379	1587465	0.94	100	519.2	80	120	
Al	27	1	nogas	98065.447	2.290	1222651395	0.32	100	98065.4	80	120	ICSB Main CR1 Failed
Ti	47	1	nogas	2249.595	0.776	2513570	1.59	100	2249.6	80	120	ICSB Main CR1 Failed
Cu	63	1	nogas	101.555	1.206	742893	1.09	100	101.6	80	120	
Sr	88	1	nogas	110.978	6.782	1891892	4.57	100	111.0	80	120	
Mo	95	1	nogas	2108.181	2.960	7204409	0.76	100	2108.2	80	120	ICSB Main CR1 Failed
Ag	107	1	nogas	99.166	2.671	819733	1.44	100	99.2	80	120	
Cd	111	1	nogas	109.432	1.333	175454	0.91	100	109.4	80	120	
Sn	118	1	nogas	108.267	2.337	532697	0.63	100	108.3	80	120	
Sb	121	1	nogas	103.372	1.960	749799	0.67	100	103.4	80	120	
Ba	137	1	nogas	108.177	4.116	265288	2.00	100	108.2	80	120	
Tl	205	1	nogas	110.600	4.020	1497542	2.74	100	110.6	80	120	
Pb	208	1	nogas	105.719	0.536	1932263	0.87	100	105.7	80	120	
U	238	1	nogas	113.034	2.675	2354801	1.61	100	113.0	80	120	
Si	28	1	nogas	5949.597	5.160	5283183	1.51	100	5949.6	80	120	ICSB Main CR1 Failed
Na	23	2	He	115682.726	1.815	120404742	2.70	100	115682.7	80	120	
Mg	24	2	He	112874.749	1.431	63926409	0.82	100	112874.7	80	120	
Al	27	2	He	98694.663	0.705	26823718	1.11	100	98694.7	80	120	ICSB Main CR1 Failed
K	39	2	He	113886.004	1.018	49626011	1.14	100	113886.0	80	120	
Ca	43	2	He	109058.002	1.090	144406	2.09	100	109058.0	80	120	
Ca	44	2	He	111628.069	0.468	2472779	1.34	100	111628.1	80	120	ICSB Main CR1 Failed
V	51	2	He	109.129	2.630	428252	1.61	100	109.1	80	120	
Cr	52	2	He	109.237	2.530	495368	1.42	100	109.2	80	120	
Mn	55	2	He	109.658	2.335	313458	1.94	100	109.7	80	120	
Fe	56	2	He	113219.553	2.289	426028034	1.86	100	113219.6	80	120	
Co	59	2	He	104.325	1.664	696383	1.77	100	104.3	80	120	
Ni	60	2	He	107.475	1.319	176700	2.15	100	107.5	80	120	
Cu	63	2	He	105.956	1.139	456749	0.75	100	106.0	80	120	
Zn	66	2	He	110.174	1.213	84732	0.82	100	110.2	80	120	
As	75	2	He	109.748	0.994	55981	0.30	100	109.7	80	120	
Sb	121	2	He	109.265	1.504	334259	0.43	100	109.3	80	120	
Se	78	2	He	111.966	3.904	4453	2.79	100	112.0	80	120	
Ti	47	2	He	2135.540	1.054	297466	1.86	100	2135.5	80	120	ICSB Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1435640	2.27	1488050	96.48	70	120	
In	115	1	nogas	1430523	2.23	1497103	95.55	70	120	
Li	6	1	nogas	833633	3.41	885638	94.13	70	120	
Bi	209	1	nogas	1061474	1.27	1210058	87.72	70	120	
Ge	72	2	He	365492	1.11	395690	92.37	70	120	
In	115	2	He	516853	0.57	559997	92.30	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	032_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T11:55:32-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	93.991	0.983	505335	0.87	100	94.0	90	110	
B	11	1	nogas	474.484	2.899	1552378	2.13	500	94.9	90	110	
Al	27	1	nogas	109.674	2.827	1472732	2.53	100	109.7	90	110	
P	31	1	nogas	526.356	2.417	388614	1.43	500	105.3	90	110	
Ti	47	1	nogas	101.365	2.372	120169	2.36	100	101.4	90	110	
Cu	63	1	nogas	103.533	1.762	802724	2.21	100	103.5	90	110	
Sr	88	1	nogas	101.717	4.375	1834512	0.71	100	101.7	90	110	
Mo	95	1	nogas	100.656	3.768	363777	0.15	100	100.7	90	110	
Ag	107	1	nogas	97.638	5.219	853092	1.34	100	97.6	90	110	
Cd	111	1	nogas	102.739	4.204	174140	1.25	100	102.7	90	110	
Sn	118	1	nogas	100.097	1.327	521302	3.12	100	100.1	90	110	
Sb	121	1	nogas	96.068	1.859	738753	2.71	100	96.1	90	110	
Ba	137	1	nogas	100.736	2.494	261411	1.75	100	100.7	90	110	
Tl	205	1	nogas	102.134	5.740	1564732	0.69	100	102.1	90	110	
Pb	208	1	nogas	95.392	4.089	1973324	1.02	100	95.4	90	110	
U	238	1	nogas	93.858	6.109	2211808	1.08	100	93.9	90	110	
Li	7	1	nogas	92.650	2.396	1657266	3.00	100	92.6	90	110	
Si	28	1	nogas	5222.151	2.065	5129499	0.71	5000	104.4	90	110	
Tl	203	1	nogas	98.874	6.378	606947	1.30	100	98.9	90	110	
Na	23	2	He	10332.061	2.707	11525426	1.28	10000	103.3	90	110	
Mg	24	2	He	10360.084	1.638	6266254	1.33	10000	103.6	90	110	
Al	27	2	He	105.517	2.488	31176	4.39	100	105.5	90	110	
K	39	2	He	10264.092	1.829	4816886	0.22	10000	102.6	90	110	
Ca	43	2	He	10464.805	1.249	14803	3.13	10000	104.6	90	110	
Ca	44	2	He	10024.931	2.100	237485	1.32	10000	100.2	90	110	
V	51	2	He	101.568	1.727	426019	1.63	100	101.6	90	110	
Cr	52	2	He	101.301	1.930	490868	0.98	100	101.3	90	110	
Mn	55	2	He	101.263	2.443	309118	0.42	100	101.3	90	110	
Fe	56	2	He	10254.698	1.888	41213349	0.49	10000	102.5	90	110	
Co	59	2	He	97.695	1.318	696370	0.73	100	97.7	90	110	
Ni	60	2	He	101.914	1.282	178917	0.80	100	101.9	90	110	
Cu	63	2	He	105.106	0.985	483869	1.28	100	105.1	90	110	
Zn	66	2	He	103.100	0.708	84705	1.93	100	103.1	90	110	
As	75	2	He	101.747	1.445	55430	0.62	100	101.7	90	110	
Sb	121	2	He	99.667	2.411	325578	0.67	100	99.7	90	110	
Se	78	2	He	100.232	2.317	4263	4.12	100	100.2	90	110	
Ti	47	2	He	103.382	2.575	15377	0.56	100	103.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1521372	0.91	1488050	102.24	70	120	
In	115	1	nogas	1513563	3.90	1497103	101.10	70	120	
Li	6	1	nogas	890574	1.69	885638	100.56	70	120	
Bi	209	1	nogas	1202976	5.12	1210058	99.41	70	120	
Ge	72	2	He	390342	2.04	395690	98.65	70	120	
In	115	2	He	556813	1.32	559997	99.43	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	033_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T11:57:43-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.035	30.4	252	25.5	1	
B	11	1	nogas	14.902	6.9	67730	4.5	10	CCB Main CR1 Failed
Al	27	1	nogas	2.678	1.5	60159	0.8	5	
P	31	1	nogas	1.212	70.8	46291	1.0	10	
Ti	47	1	nogas	0.047	40.3	203	11.4	2.5	
Cu	63	1	nogas	0.155	22.4	3120	8.6	2	
Sr	88	1	nogas	0.108	16.3	2757	9.9	2.5	
Mo	95	1	nogas	0.252	7.7	970	6.3	2.5	
Ag	107	1	nogas	0.046	16.3	473	15.9	2.5	
Cd	111	1	nogas	0.059	13.0	107	14.3	1	
Sn	118	1	nogas	0.179	93.2	3204	25.7	5	
Sb	121	1	nogas	0.153	5.3	1737	3.7	2.5	
Ba	137	1	nogas	0.009	35.4	503	1.1	2.5	
Tl	205	1	nogas	0.350	17.7	5771	20.6	1	
Pb	208	1	nogas	0.055	16.8	1817	13.5	2.5	
U	238	1	nogas	0.054	24.9	1367	28.6	2.5	
Si	28	1	nogas	-147.415	-38.9	1688025	2.0	5	
Na	23	2	He	21.493	5.7	74843	1.6	100	
Mg	24	2	He	4.499	10.8	3240	8.9	100	
Al	27	2	He	2.751	5.5	1360	3.4	5	
K	39	2	He	13.551	18.6	52477	1.9	100	
Ca	43	2	He	13.907	28.9	23	24.7	100	
Ca	44	2	He	27.131	10.0	1067	5.7	100	
V	51	2	He	-0.415	-3.9	2956	1.9	2.5	
Cr	52	2	He	-0.090	-48.4	3410	6.5	2.5	
Mn	55	2	He	0.393	10.5	1893	6.4	2.5	
Fe	56	2	He	4.862	2.9	30045	1.6	100	
Co	59	2	He	0.038	24.2	327	20.4	2.5	
Ni	60	2	He	0.097	23.4	307	13.6	2.5	
Cu	63	2	He	0.064	17.6	1037	4.8	2	
Zn	66	2	He	1.096	5.6	1213	4.5	2.5	
As	75	2	He	0.038	98.9	140	14.5	2.5	
Sb	121	2	He	0.145	17.9	707	11.8	2.5	
Se	78	2	He	0.137	89.0	45	11.3	2	
Ti	47	2	He	0.110	60.4	20	50.0	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1558370	0.26	1488050	104.73	70	120	
In	115	1	nogas	1562409	1.91	1497103	104.36	70	120	
Li	6	1	nogas	951468	0.90	885638	107.43	70	120	
Bi	209	1	nogas	1266534	3.89	1210058	104.67	70	120	

Continuing Calibration Blank (CCB) Report

Ge	72	2	He	396886	0.45	395690	100.30	70	120	
In	115	2	He	556956	1.73	559997	99.46	70	120	

Sample Report

Sample Table

Sample Name	MBLK-149161
Data File Name	034SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T12:00:46-06:00
Sample Type	Sample
Dilution	1
Comment	DOD TW 149161
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	0.005	0.005	76.08	77	0.01	2000	
B	11	1	nogas	8.527	8.527	6.12	46359	0.02	2000	
Al	27	1	nogas	2.974	2.974	8.57	63500	0.00	2000	
Ti	47	1	nogas	0.073	0.073	57.00	233	0.03	2000	
Cu	63	1	nogas	0.134	0.134	9.71	2927	0.00	2000	
Sr	88	1	nogas	0.066	0.066	15.49	1967	0.00	2000	
Mo	95	1	nogas	0.099	0.099	16.18	400	0.02	2000	
Ag	107	1	nogas	0.011	0.011	54.43	153	0.01	2000	
Cd	111	1	nogas	0.008	0.008	43.21	17	0.05	2000	
Sn	118	1	nogas	0.066	0.066	23.31	2604	0.00	2000	
Sb	121	1	nogas	0.105	0.105	9.95	1343	0.01	2000	
Ba	137	1	nogas	0.124	0.124	18.77	810	0.02	2000	
Tl	205	1	nogas	0.044	0.044	9.54	840	0.01	2000	
Pb	208	1	nogas	0.008	0.008	54.09	817	0.00	2000	
U	238	1	nogas	0.009	0.009	19.53	240	0.00	2000	
Si	28	1	nogas	-2.859	-2.859	-4984.52	1767893	0.00	2000	
Na	23	2	He	21.606	21.606	8.34	75228	0.03	200000	
Mg	24	2	He	5.501	5.501	14.98	3867	0.14	200000	
Al	27	2	He	2.931	2.931	21.43	1417	0.21	2000	
K	39	2	He	18.403	18.403	15.25	54961	0.03	200000	
Ca	43	2	He	43.888	43.888	24.02	67	65.83	200000	
Ca	44	2	He	30.019	30.019	8.27	1140	2.63	200000	
V	51	2	He	-0.139	-0.139	-23.86	4133	0.00	2000	
Cr	52	2	He	-0.062	-0.062	-164.82	3554	0.00	2000	
Mn	55	2	He	1.014	1.014	6.77	3830	0.03	2000	
Fe	56	2	He	1.589	1.589	7.42	16731	0.01	200000	
Co	59	2	He	0.006	0.006	68.06	97	0.01	2000	
Ni	60	2	He	0.122	0.122	6.08	353	0.03	2000	
Cu	63	2	He	0.104	0.104	13.98	1223	0.01	2000	
Zn	66	2	He	2.450	2.450	12.89	2347	0.10	2000	
As	75	2	He	-0.003	-0.003	-1192.16	118	0.00	2000	
Sb	121	2	He	0.138	0.138	7.67	687	0.02	2000	
Se	78	2	He	-0.021	-0.021	-1550.07	38	-0.06	2000	
Ti	47	2	He	0.022	0.022	173.44	7	0.33	2000	

QC ISTD Table

Sample Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1543706	2.70	1488050	103.74	70	120	
In	115	1	nogas	1557743	1.69	1497103	104.05	70	120	
Li	6	1	nogas	966014	1.35	885638	109.08	70	120	
Bi	209	1	nogas	1303158	7.32	1210058	107.69	70	120	
Ge	72	2	He	398269	1.05	395690	100.65	70	120	
Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
In	115	2	He	563670	1.33	559997	100.66	70	120	

Sample Report

Sample Table

Sample Name	LCS-149161
Data File Name	035SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T12:03:45-06:00
Sample Type	Sample
Dilution	1
Comment	DOD TW 149161
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	46.590	46.590	1.76	269013	0.02	2000	
B	11	1	nogas	427.949	427.949	2.86	1505291	0.03	2000	
Al	27	1	nogas	115.799	115.799	1.22	1650041	0.01	2000	
Ti	47	1	nogas	141.957	141.957	1.73	178673	0.08	2000	
Cu	63	1	nogas	49.579	49.579	3.50	409257	0.01	2000	
Sr	88	1	nogas	95.108	95.108	3.48	1840176	0.01	2000	
Mo	95	1	nogas	46.839	46.839	0.81	181611	0.03	2000	
Ag	107	1	nogas	45.709	45.709	0.21	428602	0.01	2000	
Cd	111	1	nogas	50.609	50.609	0.51	92027	0.05	2000	
Sn	118	1	nogas	91.421	91.421	1.30	510575	0.02	2000	
Sb	121	1	nogas	46.845	46.845	1.47	382808	0.01	2000	
Ba	137	1	nogas	48.025	48.025	1.46	133904	0.04	2000	
Tl	205	1	nogas	42.899	42.899	5.42	721924	0.01	2000	
Pb	208	1	nogas	44.968	44.968	4.68	1021672	0.00	2000	
U	238	1	nogas	82.682	82.682	4.16	2141000	0.00	2000	
Si	28	1	nogas	5455.963	5455.963	1.75	5608845	0.10	2000	>LDR
Na	23	2	He	5164.095	5164.095	2.18	6083698	0.08	200000	
Mg	24	2	He	5262.523	5262.523	1.86	3346818	0.16	200000	
Al	27	2	He	110.192	110.192	1.72	34191	0.32	2000	
K	39	2	He	5330.838	5330.838	2.04	2653464	0.20	200000	
Ca	43	2	He	5371.127	5371.127	2.49	7988	67.24	200000	
Ca	44	2	He	5169.057	5169.057	2.55	128952	4.01	200000	
V	51	2	He	50.109	50.109	1.46	223441	0.02	2000	
Cr	52	2	He	50.668	50.668	2.40	260127	0.02	2000	
Mn	55	2	He	51.232	51.232	2.41	164791	0.03	2000	
Fe	56	2	He	5271.653	5271.653	1.58	22282136	0.02	200000	
Co	59	2	He	49.134	49.134	2.43	368247	0.01	2000	
Ni	60	2	He	51.422	51.422	2.20	94984	0.05	2000	
Cu	63	2	He	51.901	51.901	1.47	251601	0.02	2000	
Zn	66	2	He	53.261	53.261	1.16	46152	0.12	2000	
As	75	2	He	50.723	50.723	1.67	29115	0.17	2000	
Sb	121	2	He	49.304	49.304	2.57	169474	0.03	2000	
Se	78	2	He	50.728	50.728	3.84	2287	2.22	2000	
Ti	47	2	He	144.200	144.200	3.03	22551	0.64	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1615662	0.44	1488050	108.58	70	120	

Sample Report

In	115	1	nogas	1622032	0.47	1497103	108.34	70	120	
Li	6	1	nogas	956405	1.41	885638	107.99	70	120	
Bi	209	1	nogas	1320518	3.86	1210058	109.13	70	120	
Ge	72	2	He	410362	0.80	395690	103.71	70	120	
In	115	2	He	576018	1.71	559997	102.86	70	120	

Sample Report

Sample Table

Sample Name	HS19121036-01SD
Data File Name	039SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T12:12:36-06:00
Sample Type	Sample
Dilution	1
Comment	DOD TW 149161
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	0.006	0.006	39.18	92	0.01	2000	
B	11	1	nogas	8.526	8.526	2.70	50223	0.02	2000	
Al	27	1	nogas	36.493	36.493	6.98	546944	0.01	2000	
Ti	47	1	nogas	0.894	0.894	58.03	1297	0.07	2000	
Cu	63	1	nogas	0.349	0.349	8.64	4924	0.01	2000	
Sr	88	1	nogas	797.946	797.946	5.39	15286609	0.01	2000	
Mo	95	1	nogas	0.078	0.078	11.17	330	0.02	2000	
Ag	107	1	nogas	0.008	0.008	19.97	133	0.01	2000	
Cd	111	1	nogas	0.050	0.050	23.68	93	0.05	2000	
Sn	118	1	nogas	-0.112	-0.112	-21.33	1710	-0.01	2000	
Sb	121	1	nogas	0.136	0.136	9.17	1687	0.01	2000	
Ba	137	1	nogas	180.904	180.904	4.40	498324	0.04	2000	
Tl	205	1	nogas	0.024	0.024	12.52	477	0.01	2000	
Pb	208	1	nogas	0.050	0.050	8.70	1643	0.00	2000	
U	238	1	nogas	0.131	0.131	7.77	3164	0.00	2000	
Si	28	1	nogas	23323.030	23323.030	1.11	18248921	0.13	2000	>LDR
Na	23	2	He	49345.088	49345.088	1.22	56686367	0.09	200000	
Mg	24	2	He	15760.182	15760.182	0.78	9850165	0.16	200000	
Al	27	2	He	37.639	37.639	7.96	11835	0.32	2000	
K	39	2	He	203.756	203.756	4.86	144659	0.14	200000	
Ca	43	2	He	46310.756	46310.756	2.76	67640	68.47	200000	
Ca	44	2	He	45212.102	45212.102	6.52	1104593	4.09	200000	
V	51	2	He	0.809	0.809	8.79	8250	0.01	2000	
Cr	52	2	He	0.489	0.489	16.54	6338	0.01	2000	
Mn	55	2	He	34.690	34.690	2.35	109865	0.03	2000	
Fe	56	2	He	31.772	31.772	3.71	142221	0.02	200000	
Co	59	2	He	0.209	0.209	13.22	1587	0.01	2000	
Ni	60	2	He	5.182	5.182	2.61	9533	0.05	2000	
Cu	63	2	He	0.205	0.205	15.45	1723	0.01	2000	
Zn	66	2	He	2.105	2.105	3.41	2087	0.10	2000	
As	75	2	He	0.122	0.122	58.11	189	0.06	2000	
Sb	121	2	He	0.171	0.171	5.52	807	0.02	2000	
Se	78	2	He	-0.139	-0.139	-47.01	33	-0.42	2000	
Ti	47	2	He	0.804	0.804	26.45	127	0.63	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1646034	0.58	1488050	110.62	70	120	

Sample Report

In	115	1	nogas	1608940	4.32	1497103	107.47	70	120	
Li	6	1	nogas	1046554	2.96	885638	118.17	70	120	
Bi	209	1	nogas	1228100	3.01	1210058	101.49	70	120	
Ge	72	2	He	403276	1.55	395690	101.92	70	120	
In	115	2	He	560823	0.61	559997	100.15	70	120	

Sample Report

Sample Table

Sample Name	HS19121036-01MS
Data File Name	040SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T12:14:48-06:00
Sample Type	Sample
Dilution	1
Comment	DOD TW 149161
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	46.824	46.824	2.26	251489	0.02	2000	
B	11	1	nogas	450.879	450.879	3.68	1474300	0.03	2000	
Al	27	1	nogas	353.429	353.429	9.34	4595732	0.01	2000	
Ti	47	1	nogas	151.528	151.528	1.28	176038	0.09	2000	
Cu	63	1	nogas	47.341	47.341	1.17	360791	0.01	2000	
Sr	88	1	nogas	4230.578	4230.578	2.26	73864607	0.01	2000	>LDR
Mo	95	1	nogas	48.884	48.884	3.10	171061	0.03	2000	
Ag	107	1	nogas	42.876	42.876	3.92	362783	0.01	2000	
Cd	111	1	nogas	47.854	47.854	3.11	78528	0.06	2000	
Sn	118	1	nogas	90.487	90.487	1.43	456202	0.02	2000	
Sb	121	1	nogas	46.443	46.443	2.52	350245	0.01	2000	
Ba	137	1	nogas	1027.852	1027.852	3.47	2576846	0.04	2000	
Tl	205	1	nogas	45.085	45.085	1.94	616129	0.01	2000	
Pb	208	1	nogas	48.237	48.237	1.48	889825	0.01	2000	
U	238	1	nogas	92.676	92.676	2.70	1948093	0.00	2000	
Si	28	1	nogas	130425.126	130425.126	3.30	84586739	0.15	2000	>LDR
Na	23	2	He	251333.776	251333.776	0.53	268193336	0.09	200000	>LDR
Mg	24	2	He	84460.783	84460.783	0.87	49059149	0.17	200000	
Al	27	2	He	347.131	347.131	8.95	97259	0.36	2000	
K	39	2	He	6100.727	6100.727	0.65	2767569	0.22	200000	
Ca	43	2	He	236710.410	236710.410	1.41	321410	73.65	200000	>LDR
Ca	44	2	He	234303.824	234303.824	1.11	5322212	4.40	200000	>LDR
V	51	2	He	51.121	51.121	0.58	208138	0.02	2000	
Cr	52	2	He	51.640	51.640	1.64	242104	0.02	2000	
Mn	55	2	He	218.673	218.673	1.07	640470	0.03	2000	
Fe	56	2	He	5167.073	5167.073	1.26	19952482	0.03	200000	
Co	59	2	He	47.099	47.099	0.60	322479	0.01	2000	
Ni	60	2	He	73.770	73.770	0.72	124415	0.06	2000	
Cu	63	2	He	47.774	47.774	1.77	211612	0.02	2000	
Zn	66	2	He	56.994	56.994	1.18	45092	0.13	2000	
As	75	2	He	49.539	49.539	0.38	25979	0.19	2000	
Sb	121	2	He	47.977	47.977	1.20	150667	0.03	2000	
Se	78	2	He	48.274	48.274	2.50	1990	2.43	2000	
Ti	47	2	He	147.233	147.233	3.05	21035	0.70	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1491677	2.65	1488050	100.24	70	120	

Sample Report

In	115	1	nogas	1464587	2.66	1497103	97.83	70	120	
Li	6	1	nogas	889656	1.17	885638	100.45	70	120	
Bi	209	1	nogas	1071031	1.47	1210058	88.51	70	120	
Ge	72	2	He	374838	0.89	395690	94.73	70	120	
In	115	2	He	518367	0.87	559997	92.57	70	120	

Sample Report

Sample Table

Sample Name	HS19121036-01MSD
Data File Name	041SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T12:17:01-06:00
Sample Type	Sample
Dilution	1
Comment	DOD TW 149161
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	45.227	45.227	2.46	244216	0.02	2000	
B	11	1	nogas	442.297	442.297	1.48	1454753	0.03	2000	
Al	27	1	nogas	335.850	335.850	2.58	4468099	0.01	2000	
Ti	47	1	nogas	142.189	142.189	2.31	168742	0.08	2000	
Cu	63	1	nogas	46.290	46.290	1.29	360436	0.01	2000	
Sr	88	1	nogas	4104.176	4104.176	2.18	72236682	0.01	2000	>LDR
Mo	95	1	nogas	47.898	47.898	1.25	168995	0.03	2000	
Ag	107	1	nogas	42.071	42.071	1.92	358975	0.01	2000	
Cd	111	1	nogas	47.111	47.111	1.68	77959	0.06	2000	
Sn	118	1	nogas	87.917	87.917	1.81	446949	0.02	2000	
Sb	121	1	nogas	43.895	43.895	3.03	338240	0.01	2000	
Ba	137	1	nogas	1012.648	1012.648	2.26	2560106	0.04	2000	
Tl	205	1	nogas	45.037	45.037	0.27	620186	0.01	2000	
Pb	208	1	nogas	47.209	47.209	1.35	877477	0.01	2000	
U	238	1	nogas	91.371	91.371	2.92	1935360	0.00	2000	
Si	28	1	nogas	122696.689	122696.689	2.80	81419457	0.15	2000	>LDR
Na	23	2	He	246779.396	246779.396	1.63	262522456	0.09	200000	>LDR
Mg	24	2	He	82163.236	82163.236	2.41	47575576	0.17	200000	
Al	27	2	He	351.352	351.352	3.34	98137	0.36	2000	
K	39	2	He	5944.873	5944.873	1.56	2689932	0.22	200000	
Ca	43	2	He	228683.509	228683.509	1.29	309570	73.87	200000	>LDR
Ca	44	2	He	224894.623	224894.623	1.91	5092771	4.42	200000	>LDR
V	51	2	He	49.992	49.992	1.55	203012	0.02	2000	
Cr	52	2	He	50.330	50.330	2.08	235332	0.02	2000	
Mn	55	2	He	214.961	214.961	0.83	627708	0.03	2000	
Fe	56	2	He	5064.911	5064.911	0.35	19498347	0.03	200000	
Co	59	2	He	45.921	45.921	1.55	313429	0.01	2000	
Ni	60	2	He	69.983	69.983	2.69	117660	0.06	2000	
Cu	63	2	He	46.265	46.265	1.80	204301	0.02	2000	
Zn	66	2	He	54.460	54.460	1.04	42971	0.13	2000	
As	75	2	He	48.227	48.227	1.91	25215	0.19	2000	
Sb	121	2	He	47.364	47.364	1.17	148279	0.03	2000	
Se	78	2	He	47.212	47.212	6.36	1941	2.43	2000	
Ti	47	2	He	142.198	142.198	5.89	20255	0.70	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1523731	1.22	1488050	102.40	70	120	

Sample Report

In	115	1	nogas	1476175	1.06	1497103	98.60	70	120	
Li	6	1	nogas	894592	2.33	885638	101.01	70	120	
Bi	209	1	nogas	1079098	0.36	1210058	89.18	70	120	
Ge	72	2	He	373726	1.41	395690	94.45	70	120	
In	115	2	He	503189	2.08	559997	89.86	70	120	

Sample Report

Sample Table

Sample Name	HS19121036-01PDS
Data File Name	042SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T12:19:12-06:00
Sample Type	Sample
Dilution	1
Comment	DOD TW 149161
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	86.075	86.075	2.15	474296	0.02	2000	
B	11	1	nogas	30.406	30.406	5.25	116423	0.03	2000	
Al	27	1	nogas	307.803	307.803	7.29	4009191	0.01	2000	
Ti	47	1	nogas	105.658	105.658	2.03	122708	0.09	2000	
Cu	63	1	nogas	91.580	91.580	0.60	695892	0.01	2000	
Sr	88	1	nogas	4039.267	4039.267	1.87	70515337	0.01	2000	>LDR
Mo	95	1	nogas	96.599	96.599	3.08	337963	0.03	2000	
Ag	107	1	nogas	82.479	82.479	3.61	697841	0.01	2000	
Cd	111	1	nogas	96.175	96.175	1.46	157851	0.06	2000	
Sn	118	1	nogas	0.119	0.119	19.26	2714	0.00	2000	
Sb	121	1	nogas	81.089	81.089	2.07	610889	0.01	2000	
Ba	137	1	nogas	1035.567	1035.567	5.07	2595904	0.04	2000	
Tl	205	1	nogas	95.823	95.823	2.94	1292571	0.01	2000	
Pb	208	1	nogas	94.092	94.092	2.50	1712802	0.01	2000	
U	238	1	nogas	0.725	0.725	3.94	15064	0.00	2000	
Si	28	1	nogas	118905.378	118905.378	2.45	77241466	0.15	2000	>LDR
Na	23	2	He	255270.458	255270.458	0.89	269115569	0.09	200000	>LDR
Mg	24	2	He	87731.297	87731.297	1.52	50341988	0.17	200000	
Al	27	2	He	316.820	316.820	7.85	87668	0.36	2000	
K	39	2	He	10815.238	10815.238	1.92	4813351	0.22	200000	
Ca	43	2	He	236708.553	236708.553	2.12	317480	74.56	200000	>LDR
Ca	44	2	He	232505.015	232505.015	2.26	5216835	4.46	200000	>LDR
V	51	2	He	97.893	97.893	3.15	389617	0.03	2000	
Cr	52	2	He	97.355	97.355	2.41	447675	0.02	2000	
Mn	55	2	He	259.960	259.960	3.51	751794	0.03	2000	
Fe	56	2	He	9774.726	9774.726	3.69	37262300	0.03	200000	
Co	59	2	He	90.654	90.654	3.51	612881	0.01	2000	
Ni	60	2	He	124.385	124.385	4.18	207063	0.06	2000	
Cu	63	2	He	92.499	92.499	3.25	403959	0.02	2000	
Zn	66	2	He	101.471	101.471	1.96	79083	0.13	2000	
As	75	2	He	98.108	98.108	1.24	50717	0.19	2000	
Sb	121	2	He	84.143	84.143	2.02	260834	0.03	2000	
Se	78	2	He	96.044	96.044	4.58	3874	2.48	2000	
Ti	47	2	He	99.213	99.213	1.91	14009	0.71	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1490710	1.48	1488050	100.18	70	120	

Sample Report

In	115	1	nogas	1464325	1.95	1497103	97.81	70	120	
Li	6	1	nogas	912992	2.65	885638	103.09	70	120	
Bi	209	1	nogas	1057309	1.31	1210058	87.38	70	120	
Ge	72	2	He	370370	2.47	395690	93.60	70	120	
In	115	2	He	497400	0.75	559997	88.82	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	044_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T12:27:54-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	90.473	2.556	504184	0.63	100	90.5	90	110	
B	11	1	nogas	458.985	4.109	1557477	3.91	500	91.8	90	110	
Al	27	1	nogas	106.229	3.692	1480400	2.61	100	106.2	90	110	
P	31	1	nogas	510.892	2.372	392665	1.12	500	102.2	90	110	
Ti	47	1	nogas	98.463	3.670	121058	1.50	100	98.5	90	110	
Cu	63	1	nogas	99.981	1.939	804132	0.46	100	100.0	90	110	
Sr	88	1	nogas	105.260	2.341	1923600	1.06	100	105.3	90	110	
Mo	95	1	nogas	101.343	4.533	370897	1.53	100	101.3	90	110	
Ag	107	1	nogas	97.995	4.824	867314	1.79	100	98.0	90	110	
Cd	111	1	nogas	102.230	3.530	175516	0.51	100	102.2	90	110	
Sn	118	1	nogas	100.113	1.362	527947	1.91	100	100.1	90	110	
Sb	121	1	nogas	95.047	4.107	757828	1.79	100	95.0	90	110	
Ba	137	1	nogas	100.401	3.115	263820	0.26	100	100.4	90	110	
Tl	205	1	nogas	99.040	7.745	1555818	4.88	100	99.0	90	110	
Pb	208	1	nogas	94.565	5.279	2005226	1.12	100	94.6	90	110	
U	238	1	nogas	92.983	5.348	2248207	3.01	100	93.0	90	110	
Li	7	1	nogas	94.454	1.146	1750049	1.64	100	94.5	90	110	
Si	28	1	nogas	4944.022	4.060	5133773	1.23	5000	98.9	90	110	
Tl	203	1	nogas	96.538	5.243	607918	0.65	100	96.5	90	110	
Na	23	2	He	10367.065	1.411	11435045	0.27	10000	103.7	90	110	
Mg	24	2	He	10331.481	1.230	6178205	0.17	10000	103.3	90	110	
Al	27	2	He	100.074	3.665	29243	2.69	100	100.1	90	110	
K	39	2	He	9875.072	1.216	4584261	1.50	10000	98.8	90	110	
Ca	43	2	He	9848.461	1.846	13769	0.71	10000	98.5	90	110	
Ca	44	2	He	9839.146	1.149	230477	1.13	10000	98.4	90	110	
V	51	2	He	100.273	2.094	415850	1.02	100	100.3	90	110	
Cr	52	2	He	99.649	2.134	477450	0.98	100	99.6	90	110	
Mn	55	2	He	98.012	0.361	295896	0.79	100	98.0	90	110	
Fe	56	2	He	10008.878	0.589	39776564	1.10	10000	100.1	90	110	
Co	59	2	He	96.013	0.729	676716	1.63	100	96.0	90	110	
Ni	60	2	He	101.470	1.726	176115	0.61	100	101.5	90	110	
Cu	63	2	He	104.210	1.134	474301	0.41	100	104.2	90	110	
Zn	66	2	He	101.482	1.101	82435	1.83	100	101.5	90	110	
As	75	2	He	99.283	1.181	53484	1.41	100	99.3	90	110	
Sb	121	2	He	100.792	1.321	325568	0.19	100	100.8	90	110	
Se	78	2	He	96.706	5.521	4065	4.50	100	96.7	90	110	
Ti	47	2	He	97.697	3.858	14372	4.45	100	97.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1578585	2.36	1488050	106.08	70	120	
In	115	1	nogas	1532637	3.09	1497103	102.37	70	120	
Li	6	1	nogas	923371	2.42	885638	104.26	70	120	
Bi	209	1	nogas	1233376	4.67	1210058	101.93	70	120	
Ge	72	2	He	385894	1.14	395690	97.52	70	120	
In	115	2	He	530718	2.07	559997	94.77	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	045_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T12:30:06-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.032	8.9	240	3.6	1	
B	11	1	nogas	14.961	1.9	70746	4.7	10	CCB Main CR1 Failed
Al	27	1	nogas	2.895	12.5	63150	4.7	5	
P	31	1	nogas	4.967	101.7	48837	1.7	10	
Ti	47	1	nogas	0.111	88.4	280	39.3	2.5	
Cu	63	1	nogas	0.229	17.7	3707	2.7	2	
Sr	88	1	nogas	0.304	3.9	6601	1.0	2.5	
Mo	95	1	nogas	0.248	6.9	987	4.7	2.5	
Ag	107	1	nogas	0.050	22.2	523	15.4	2.5	
Cd	111	1	nogas	0.052	20.7	97	15.8	1	
Sn	118	1	nogas	0.110	32.1	2930	2.2	5	
Sb	121	1	nogas	0.362	6.0	3380	1.1	2.5	
Ba	137	1	nogas	0.070	60.5	690	18.2	2.5	
Tl	205	1	nogas	0.307	25.5	5351	24.7	1	
Pb	208	1	nogas	0.060	14.9	2040	7.5	2.5	
U	238	1	nogas	0.053	17.9	1417	17.9	2.5	
Si	28	1	nogas	-262.091	-70.7	1612645	2.7	5	
Na	23	2	He	43.369	7.0	97347	2.1	100	
Mg	24	2	He	8.628	7.1	5654	7.0	100	
Al	27	2	He	2.740	5.7	1327	2.9	5	
K	39	2	He	13.515	14.3	51314	2.2	100	
Ca	43	2	He	37.777	42.0	57	40.8	100	
Ca	44	2	He	27.803	6.4	1060	6.2	100	
V	51	2	He	-0.412	-11.8	2902	5.5	2.5	
Cr	52	2	He	-0.043	-28.4	3557	1.4	2.5	
Mn	55	2	He	0.458	18.6	2053	14.8	2.5	
Fe	56	2	He	4.949	6.4	29728	3.1	100	
Co	59	2	He	0.034	10.5	293	7.1	2.5	
Ni	60	2	He	0.099	36.6	303	20.1	2.5	
Cu	63	2	He	0.095	2.0	1153	1.8	2	
Zn	66	2	He	1.026	6.2	1130	4.9	2.5	
As	75	2	He	0.028	160.3	131	16.3	2.5	
Sb	121	2	He	0.388	6.9	1480	4.9	2.5	
Se	78	2	He	-0.075	-393.9	35	33.3	2	
Ti	47	2	He	0.160	66.8	27	57.3	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1563765	6.29	1488050	105.09	70	120	
In	115	1	nogas	1611518	4.48	1497103	107.64	70	120	
Li	6	1	nogas	990472	4.11	885638	111.84	70	120	
Bi	209	1	nogas	1344878	6.44	1210058	111.14	70	120	

Continuing Calibration Blank (CCB) Report

Ge	72	2	He	388227	2.21	395690	98.11	70	120	
In	115	2	He	533454	2.35	559997	95.26	70	120	

Sample Report

Sample Table

Sample Name	HS19121092-01
Data File Name	050SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T12:41:20-06:00
Sample Type	Sample
Dilution	1
Comment	DOD TW 149161
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	0.018	0.018	13.17	175	0.01	2000	
B	11	1	nogas	10.569	10.569	4.53	60769	0.02	2000	
Al	27	1	nogas	292.524	292.524	11.57	3838049	0.01	2000	
Ti	47	1	nogas	15.942	15.942	52.14	18811	0.08	2000	
Cu	63	1	nogas	6.996	6.996	4.67	55380	0.01	2000	
Sr	88	1	nogas	7521.994	7521.994	6.33	131717035	0.01	2000	>LDR
Mo	95	1	nogas	0.168	0.168	13.59	617	0.03	2000	
Ag	107	1	nogas	0.029	0.029	19.01	303	0.01	2000	
Cd	111	1	nogas	0.656	0.656	12.51	1080	0.06	2000	
Sn	118	1	nogas	-0.165	-0.165	-10.50	1293	-0.01	2000	
Sb	121	1	nogas	0.197	0.197	15.87	2000	0.01	2000	
Ba	137	1	nogas	22.289	22.289	7.74	56476	0.04	2000	
Tl	205	1	nogas	0.019	0.019	12.75	330	0.01	2000	
Pb	208	1	nogas	0.335	0.335	2.13	6464	0.01	2000	
U	238	1	nogas	7.684	7.684	2.99	155785	0.00	2000	
Si	28	1	nogas	201663.602	201663.602	7.12	130953121	0.15	2000	>LDR
Na	23	2	He	639195.546	639195.546	5.41	621628244	0.10	200000	>LDR
Mg	24	2	He	269126.233	269126.233	7.13	142371625	0.19	200000	>LDR
Al	27	2	He	326.910	326.910	14.87	83165	0.39	2000	
K	39	2	He	1284.576	1284.576	8.26	561871	0.23	200000	
Ca	43	2	He	397011.281	397011.281	8.25	490700	80.91	200000	>LDR
Ca	44	2	He	387326.740	387326.740	8.05	8009384	4.84	200000	>LDR
V	51	2	He	1.954	1.954	15.61	11126	0.02	2000	
Cr	52	2	He	1.921	1.921	17.92	11362	0.02	2000	
Mn	55	2	He	135.253	135.253	8.85	360722	0.04	2000	
Fe	56	2	He	531.273	531.273	8.23	1875288	0.03	200000	
Co	59	2	He	0.968	0.968	8.04	6074	0.02	2000	
Ni	60	2	He	18.968	18.968	7.29	29224	0.06	2000	
Cu	63	2	He	1.455	1.455	13.71	6465	0.02	2000	
Zn	66	2	He	17.942	17.942	13.32	13071	0.14	2000	
As	75	2	He	0.606	0.606	31.44	388	0.16	2000	
Sb	121	2	He	0.243	0.243	6.88	890	0.03	2000	
Se	78	2	He	0.089	0.089	159.65	37	0.24	2000	
Ti	47	2	He	18.090	18.090	91.01	2264	0.80	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1507951	6.33	1488050	101.34	70	120	

Sample Report

In	115	1	nogas	1472390	6.44	1497103	98.35	70	120	
Li	6	1	nogas	1096725	2.30	885638	123.83	70	120	ISTD Failed
Bi	209	1	nogas	1033293	2.66	1210058	85.39	70	120	
Ge	72	2	He	342509	6.99	395690	86.56	70	120	
In	115	2	He	443534	7.87	559997	79.20	70	120	

Sample Report

Sample Table

Sample Name	HS19121092-02
Data File Name	051SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T12:43:34-06:00
Sample Type	Sample
Dilution	1
Comment	DOD TW 149161
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	0.050	0.050	2.66	355	0.01	2000	
B	11	1	nogas	61.868	61.868	1.98	245300	0.03	2000	
Al	27	1	nogas	30.431	30.431	0.72	417656	0.01	2000	
Ti	47	1	nogas	20.182	20.182	1.86	23595	0.09	2000	
Cu	63	1	nogas	84.202	84.202	4.04	641080	0.01	2000	
Sr	88	1	nogas	4702.267	4702.267	2.55	80410615	0.01	2000	>LDR
Mo	95	1	nogas	0.475	0.475	7.20	1657	0.03	2000	
Ag	107	1	nogas	0.026	0.026	44.03	270	0.01	2000	
Cd	111	1	nogas	0.033	0.033	77.28	57	0.06	2000	
Sn	118	1	nogas	-0.156	-0.156	-20.06	1303	-0.01	2000	
Sb	121	1	nogas	0.280	0.280	8.85	2617	0.01	2000	
Ba	137	1	nogas	444.121	444.121	1.51	1091231	0.04	2000	
Tl	205	1	nogas	0.017	0.017	37.27	303	0.01	2000	
Pb	208	1	nogas	0.133	0.133	6.89	2810	0.00	2000	
U	238	1	nogas	0.852	0.852	0.75	16913	0.01	2000	
Si	28	1	nogas	199955.901	199955.901	0.26	128977988	0.16	2000	>LDR
Na	23	2	He	866027.212	866027.212	1.41	895440627	0.10	200000	>LDR
Mg	24	2	He	152953.150	152953.150	1.42	86100019	0.18	200000	
Al	27	2	He	30.081	30.081	2.49	8629	0.35	2000	
K	39	2	He	531.677	531.677	1.48	272236	0.20	200000	
Ca	43	2	He	221919.613	221919.613	0.50	292035	75.99	200000	>LDR
Ca	44	2	He	213946.815	213946.815	2.03	4709443	4.54	200000	>LDR
V	51	2	He	16.074	16.074	2.47	66370	0.02	2000	
Cr	52	2	He	4.512	4.512	5.38	23712	0.02	2000	
Mn	55	2	He	5450.594	5450.594	1.74	15455297	0.04	2000	>LDR
Fe	56	2	He	57378.677	57378.677	1.51	214612223	0.03	200000	
Co	59	2	He	8.018	8.018	1.00	53240	0.02	2000	
Ni	60	2	He	9.913	9.913	3.63	16304	0.06	2000	
Cu	63	2	He	1.304	1.304	1.03	6251	0.02	2000	
Zn	66	2	He	1.836	1.836	14.00	1673	0.11	2000	
As	75	2	He	15.834	15.834	0.60	8122	0.19	2000	
Sb	121	2	He	0.309	0.309	13.27	1147	0.03	2000	
Se	78	2	He	0.251	0.251	204.94	45	0.55	2000	
Ti	47	2	He	14.874	14.874	7.88	2063	0.72	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1493286	0.70	1488050	100.35	70	120	

Sample Report

In	115	1	nogas	1434448	1.72	1497103	95.81	70	120	
Li	6	1	nogas	1013516	2.80	885638	114.44	70	120	
Bi	209	1	nogas	1010481	1.56	1210058	83.51	70	120	
Ge	72	2	He	363278	1.23	395690	91.81	70	120	
In	115	2	He	484860	0.86	559997	86.58	70	120	

Sample Report

Sample Table

Sample Name	HS19121092-03
Data File Name	053SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T12:49:51-06:00
Sample Type	Sample
Dilution	1
Comment	DOD TW 149161
ISTD Ref FileName	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	0.042	0.042	26.67	288	0.01	2000	
B	11	1	nogas	94.058	94.058	5.04	340071	0.03	2000	
Al	27	1	nogas	53.405	53.405	7.30	724072	0.01	2000	
Ti	47	1	nogas	50.746	50.746	6.38	59829	0.08	2000	
Cu	63	1	nogas	219.875	219.875	5.05	1693805	0.01	2000	
Sr	88	1	nogas	5495.455	5495.455	1.21	92822069	0.01	2000	>LDR
Mo	95	1	nogas	0.925	0.925	4.02	3160	0.03	2000	
Ag	107	1	nogas	0.049	0.049	14.44	453	0.01	2000	
Cd	111	1	nogas	0.238	0.238	20.29	380	0.06	2000	
Sn	118	1	nogas	-0.042	-0.042	-89.64	1843	0.00	2000	
Sb	121	1	nogas	0.537	0.537	12.35	4601	0.01	2000	
Ba	137	1	nogas	569.997	569.997	3.25	1383277	0.04	2000	
Tl	205	1	nogas	0.009	0.009	3.59	183	0.00	2000	
Pb	208	1	nogas	3.897	3.897	2.77	64938	0.01	2000	
U	238	1	nogas	0.254	0.254	7.45	4807	0.01	2000	
Si	28	1	nogas	159641.943	159641.943	7.75	104496402	0.15	2000	>LDR
Na	23	2	He	1635875.703	1635875.703	1.04	1733969787	0.09	200000	>LDR
Mg	24	2	He	199861.628	199861.628	0.97	115337632	0.17	200000	>LDR
Al	27	2	He	54.562	54.562	1.48	15623	0.35	2000	
K	39	2	He	807.886	807.886	1.32	401604	0.20	200000	
Ca	43	2	He	212529.172	212529.172	1.34	286700	74.13	200000	>LDR
Ca	44	2	He	209387.369	209387.369	1.35	4725375	4.43	200000	>LDR
V	51	2	He	35.115	35.115	1.12	143425	0.02	2000	
Cr	52	2	He	17.504	17.504	1.51	83919	0.02	2000	
Mn	55	2	He	4801.470	4801.470	1.33	13957761	0.03	2000	>LDR
Fe	56	2	He	41310.418	41310.418	0.62	158397571	0.03	200000	
Co	59	2	He	5.411	5.411	1.97	36847	0.01	2000	
Ni	60	2	He	28.933	28.933	1.02	48554	0.06	2000	
Cu	63	2	He	11.832	11.832	3.38	52579	0.02	2000	
Zn	66	2	He	5.443	5.443	5.41	4534	0.12	2000	
As	75	2	He	25.283	25.283	0.33	13227	0.19	2000	
Sb	121	2	He	0.515	0.515	5.01	1817	0.03	2000	
Se	78	2	He	1.648	1.648	6.44	103	1.61	2000	
Ti	47	2	He	43.344	43.344	1.01	6154	0.70	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1515639	6.94	1488050	101.85	70	120	
In	115	1	nogas	1416668	2.28	1497103	94.63	70	120	
Li	6	1	nogas	948301	5.42	885638	107.08	70	120	
Bi	209	1	nogas	961491	2.87	1210058	79.46	70	120	
Ge	72	2	He	372389	0.37	395690	94.11	70	120	

Sample Report

In	115	2	He	479405	0.50	559997	85.61	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	056_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T12:58:13-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	84.404	1.394	540484	0.18	100	84.4	90	110	CCV Main CR1-2 Failed
B	11	1	nogas	426.189	0.997	1662852	0.74	500	85.2	90	110	CCV Main CR1-2 Failed
Al	27	1	nogas	107.095	1.207	1633626	0.89	100	107.1	90	110	
P	31	1	nogas	516.737	0.320	434165	0.51	500	103.3	90	110	
Ti	47	1	nogas	99.100	0.855	133405	0.81	100	99.1	90	110	
Cu	63	1	nogas	99.707	0.486	877830	0.34	100	99.7	90	110	
Sr	88	1	nogas	103.641	4.110	2068960	1.88	100	103.6	90	110	
Mo	95	1	nogas	100.031	3.259	400138	0.71	100	100.0	90	110	
Ag	107	1	nogas	96.905	3.690	937385	0.63	100	96.9	90	110	
Cd	111	1	nogas	101.048	2.088	189629	1.28	100	101.0	90	110	
Sn	118	1	nogas	98.183	2.051	565873	3.02	100	98.2	90	110	
Sb	121	1	nogas	91.731	0.968	800888	0.69	100	91.7	90	110	
Ba	137	1	nogas	97.835	4.241	280855	1.25	100	97.8	90	110	
Tl	205	1	nogas	96.845	3.470	1640049	2.51	100	96.8	90	110	
Pb	208	1	nogas	97.197	3.069	2221477	2.60	100	97.2	90	110	
U	238	1	nogas	91.840	5.768	2393764	6.44	100	91.8	90	110	
Li	7	1	nogas	88.626	1.457	1891577	1.17	100	88.6	90	110	CCV Main CR1-2 Failed
Si	28	1	nogas	4941.275	0.387	5618017	0.53	5000	98.8	90	110	
Tl	203	1	nogas	93.432	4.704	634123	4.02	100	93.4	90	110	
Na	23	2	He	10620.487	3.939	12063692	2.03	10000	106.2	90	110	
Mg	24	2	He	10320.336	1.786	6357861	0.88	10000	103.2	90	110	
Al	27	2	He	100.727	2.990	30318	1.04	100	100.7	90	110	
K	39	2	He	10025.091	2.476	4792955	1.08	10000	100.3	90	110	
Ca	43	2	He	10007.068	2.759	14412	1.85	10000	100.1	90	110	
Ca	44	2	He	9779.089	2.169	235959	0.14	10000	97.8	90	110	
V	51	2	He	100.608	1.764	429848	0.92	100	100.6	90	110	
Cr	52	2	He	101.179	2.189	499367	0.84	100	101.2	90	110	
Mn	55	2	He	98.239	2.501	305484	0.94	100	98.2	90	110	
Fe	56	2	He	10111.743	1.821	41395544	1.07	10000	101.1	90	110	
Co	59	2	He	98.636	4.177	715837	1.88	100	98.6	90	110	
Ni	60	2	He	103.503	4.413	184997	2.23	100	103.5	90	110	
Cu	63	2	He	105.469	1.504	494527	1.07	100	105.5	90	110	
Zn	66	2	He	101.571	1.335	84993	1.08	100	101.6	90	110	
As	75	2	He	100.144	1.207	55576	1.33	100	100.1	90	110	
Sb	121	2	He	98.270	1.673	327022	1.13	100	98.3	90	110	
Se	78	2	He	93.417	5.318	4046	3.10	100	93.4	90	110	
Ti	47	2	He	97.524	0.784	14779	1.78	100	97.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1727467	0.31	1488050	116.09	70	120	
In	115	1	nogas	1674774	3.28	1497103	111.87	70	120	
Li	6	1	nogas	1060742	1.49	885638	119.77	70	120	
Bi	209	1	nogas	1327475	1.42	1210058	109.70	70	120	
Ge	72	2	He	397607	2.26	395690	100.48	70	120	
In	115	2	He	539395	0.92	559997	96.32	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	057_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T13:00:25-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	013CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.025	15.1	215	11.6	1	
B	11	1	nogas	10.879	7.2	60963	5.5	10	CCB Main CR1 Failed
Al	27	1	nogas	2.607	6.6	63976	2.3	5	
P	31	1	nogas	4.533	19.9	52460	1.6	10	
Ti	47	1	nogas	0.116	13.2	310	6.5	2.5	
Cu	63	1	nogas	1.016	3.5	10747	0.5	2	
Sr	88	1	nogas	0.308	11.1	7088	9.6	2.5	
Mo	95	1	nogas	0.173	9.9	740	12.0	2.5	
Ag	107	1	nogas	0.034	14.7	397	11.4	2.5	
Cd	111	1	nogas	0.045	44.0	90	40.1	1	
Sn	118	1	nogas	0.064	73.7	2840	7.1	5	
Sb	121	1	nogas	0.150	8.3	1847	7.1	2.5	
Ba	137	1	nogas	0.055	57.3	687	15.6	2.5	
Tl	205	1	nogas	0.270	32.1	4751	33.5	1	
Pb	208	1	nogas	0.044	24.6	1667	16.5	2.5	
U	238	1	nogas	0.037	16.0	1010	17.5	2.5	
Si	28	1	nogas	-245.854	-22.2	1754822	3.2	5	
Na	23	2	He	144.769	0.6	217711	1.6	100	CCB Main CR1 Failed
Mg	24	2	He	10.751	7.3	7208	7.6	100	
Al	27	2	He	2.397	18.5	1277	10.7	5	
K	39	2	He	10.409	6.8	51849	0.6	100	
Ca	43	2	He	33.986	82.3	53	78.1	100	
Ca	44	2	He	30.582	24.2	1170	16.2	100	
V	51	2	He	-0.503	-8.9	2629	8.5	2.5	
Cr	52	2	He	-0.092	-8.6	3454	1.9	2.5	
Mn	55	2	He	0.564	12.6	2464	10.2	2.5	
Fe	56	2	He	7.549	32.9	41788	25.9	100	
Co	59	2	He	0.031	12.1	280	9.4	2.5	
Ni	60	2	He	0.146	23.6	400	15.2	2.5	
Cu	63	2	He	0.095	39.9	1200	15.2	2	
Zn	66	2	He	1.158	4.3	1287	4.3	2.5	
As	75	2	He	-0.026	-31.1	107	3.1	2.5	
Sb	121	2	He	0.179	10.6	837	8.8	2.5	
Se	78	2	He	-0.292	-47.2	27	21.7	2	
Ti	47	2	He	0.021	176.8	7	86.6	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1685305	2.42	1488050	113.26	70	120	
In	115	1	nogas	1708502	2.76	1497103	114.12	70	120	
Li	6	1	nogas	1077614	0.79	885638	121.68	70	120	ISTD Failed
Bi	209	1	nogas	1342518	3.21	1210058	110.95	70	120	

Continuing Calibration Blank (CCB) Report

Ge	72	2	He	403550	1.09	395690	101.99	70	120	
In	115	2	He	543523	0.86	559997	97.06	70	120	

Calibration Blank Report

Sample Table

Sample Name	CAL BLK
Data File Name	077CALB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T13:55:23-06:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	52	10.81
B	11	1	nogas	49340	0.00
Al	27	1	nogas	25945	0.02
P	31	1	nogas	51928	0.00
Ti	47	1	nogas	150	16.03
Cu	63	1	nogas	2817	0.25
Sr	88	1	nogas	817	1.21
Mo	95	1	nogas	113	32.41
Ag	107	1	nogas	63	38.08
Cd	111	1	nogas	17	749.40
Sn	118	1	nogas	2260	0.27
Sb	121	1	nogas	1653	0.52
Ba	137	1	nogas	503	3.17
Tl	205	1	nogas	257	10.11
Pb	208	1	nogas	537	1.12
Li	7	1	nogas	83993	0.00
Si	28	1	nogas	1772209	0.00
Na	23	2	He	68329	0.00
Mg	24	2	He	733	0.84
Al	27	2	He	623	4.83
K	39	2	He	45556	0.00
Ca	43	2	He	23	462.23
Ca	44	2	He	320	1.69
V	51	2	He	3655	0.07
Cr	52	2	He	3440	0.08
Mn	55	2	He	700	3.36
Fe	56	2	He	12468	0.02
Co	59	2	He	90	56.58
Ni	60	2	He	157	4.70
Cu	63	2	He	730	1.35
Zn	66	2	He	313	1.56
As	75	2	He	93	17.54
Sb	121	2	He	660	1.79
Se	78	2	He	35	53.50

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Ge	72	1	nogas	1744975	1.55

Calibration Blank Report

In	115	1	nogas	1707883	0.88
Li	6	1	nogas	1102270	2.18
Bi	209	1	nogas	1372321	0.31
Ge	72	2	He	398222	1.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
In	115	2	He	546301	1.51

Calibration Standard Report

Sample Table

Sample Name	2/10/200
Data File Name	078CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T13:57:37-06:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	077CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	10503	0.02
B	11	1	nogas	76723	0.00
Al	27	1	nogas	66308	0.04
P	31	1	nogas	58551	0.00
Ti	47	1	nogas	2870	0.18
Cu	63	1	nogas	20445	0.01
Sr	88	1	nogas	40543	0.01
Mo	95	1	nogas	8139	0.04
Ag	107	1	nogas	18987	0.02
Cd	111	1	nogas	3840	0.25
Sn	118	1	nogas	13262	0.04
Sb	121	1	nogas	17699	0.02
Ba	137	1	nogas	6001	0.04
Tl	205	1	nogas	29761	0.01
Pb	208	1	nogas	43327	0.00
Si	28	1	nogas	1835157	0.00
Na	23	2	He	296803	0.00
Mg	24	2	He	125281	0.00
Al	27	2	He	1100	0.79
K	39	2	He	136969	0.00
Ca	43	2	He	340	3.12
Ca	44	2	He	4827	0.12
V	51	2	He	12098	0.01
Cr	52	2	He	13418	0.02
Mn	55	2	He	6908	0.07
Fe	56	2	He	833685	0.00
Co	59	2	He	14673	0.02
Ni	60	2	He	4111	0.23
Cu	63	2	He	10453	0.01
Zn	66	2	He	2307	0.07
As	75	2	He	1192	0.53
Sb	121	2	He	7052	0.03
Se	78	2	He	117	0.84

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag

Calibration Standard Report

Ge	72	1	nogas	1743680	2.24	1744975	99.93	70	120	
In	115	1	nogas	1752869	0.92	1707883	102.63	70	120	
Li	6	1	nogas	1107099	3.39	1102270	100.44	70	120	
Bi	209	1	nogas	1400494	1.93	1372321	102.05	70	120	
Ge	72	2	He	400973	2.79	398222	100.69	70	120	
In	115	2	He	550875	0.90	546301	100.84	70	120	

Calibration Standard Report

Sample Table

Sample Name	5/25/500
Data File Name	079CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T13:59:52-06:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	077CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	26635	0.00
B	11	1	nogas	122999	0.00
Al	27	1	nogas	100364	0.00
P	31	1	nogas	70254	0.00
Ti	47	1	nogas	6858	0.03
Cu	63	1	nogas	45871	0.01
Sr	88	1	nogas	99263	0.00
Mo	95	1	nogas	19651	0.02
Ag	107	1	nogas	46736	0.00
Cd	111	1	nogas	9369	0.07
Sn	118	1	nogas	30197	0.01
Sb	121	1	nogas	42044	0.00
Ba	137	1	nogas	14310	0.04
Tl	205	1	nogas	74503	0.00
Pb	208	1	nogas	107595	0.00
Si	28	1	nogas	1921229	0.00
Na	23	2	He	637412	0.00
Mg	24	2	He	307541	0.00
Al	27	2	He	2157	1.38
K	39	2	He	267097	0.00
Ca	43	2	He	677	3.88
Ca	44	2	He	11257	0.00
V	51	2	He	24123	0.00
Cr	52	2	He	27427	0.00
Mn	55	2	He	15580	0.03
Fe	56	2	He	2088709	0.00
Co	59	2	He	35211	0.01
Ni	60	2	He	9586	0.04
Cu	63	2	He	24393	0.01
Zn	66	2	He	4807	0.07
As	75	2	He	2719	0.10
Sb	121	2	He	16428	0.01
Se	78	2	He	225	4.24

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag

Calibration Standard Report

Ge	72	1	nogas	1798700	3.94	1744975	103.08	70	120	
In	115	1	nogas	1754491	6.08	1707883	102.73	70	120	
Li	6	1	nogas	1097503	3.61	1102270	99.57	70	120	
Bi	209	1	nogas	1400061	5.65	1372321	102.02	70	120	
Ge	72	2	He	396272	1.16	398222	99.51	70	120	
In	115	2	He	545993	2.15	546301	99.94	70	120	

Calibration Standard Report

Sample Table

Sample Name	10/50/1000
Data File Name	080CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T14:02:06-06:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	077CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	54169	0.00
B	11	1	nogas	202386	0.00
Al	27	1	nogas	183256	0.00
P	31	1	nogas	91658	0.00
Ti	47	1	nogas	13201	0.01
Cu	63	1	nogas	90757	0.00
Sr	88	1	nogas	201528	0.00
Mo	95	1	nogas	40373	0.01
Ag	107	1	nogas	98984	0.00
Cd	111	1	nogas	19364	0.02
Sn	118	1	nogas	59204	0.00
Sb	121	1	nogas	83141	0.00
Ba	137	1	nogas	28254	0.01
Tl	205	1	nogas	151501	0.00
Pb	208	1	nogas	213441	0.00
Si	28	1	nogas	2141445	0.00
Na	23	2	He	1299620	0.00
Mg	24	2	He	620672	0.00
Al	27	2	He	3397	0.25
K	39	2	He	502850	0.00
Ca	43	2	He	1327	0.87
Ca	44	2	He	23612	0.01
V	51	2	He	46196	0.00
Cr	52	2	He	54340	0.00
Mn	55	2	He	32646	0.01
Fe	56	2	He	4224816	0.00
Co	59	2	He	73975	0.00
Ni	60	2	He	18650	0.02
Cu	63	2	He	50634	0.00
Zn	66	2	He	8806	0.02
As	75	2	He	5605	0.03
Sb	121	2	He	33519	0.00
Se	78	2	He	427	1.99

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag

Calibration Standard Report

Ge	72	1	nogas	1770437	0.98	1744975	101.46	70	120	
In	115	1	nogas	1749172	0.92	1707883	102.42	70	120	
Li	6	1	nogas	1096063	1.22	1102270	99.44	70	120	
Bi	209	1	nogas	1390516	3.37	1372321	101.33	70	120	
Ge	72	2	He	395546	0.34	398222	99.33	70	120	
In	115	2	He	543500	0.70	546301	99.49	70	120	

Calibration Standard Report

Sample Table

Sample Name	100/500/10K
Data File Name	081CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T14:04:20-06:00
Sample Type	CalStd
Level	5
Dilution	1
Comment	
ISTD Ref File Name	077CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	538109	0.00
B	11	1	nogas	1669530	0.00
Al	27	1	nogas	1615552	0.00
P	31	1	nogas	427056	0.00
Ti	47	1	nogas	133638	0.00
Cu	63	1	nogas	875220	0.00
Sr	88	1	nogas	2066978	0.00
Mo	95	1	nogas	398442	0.00
Ag	107	1	nogas	924427	0.00
Cd	111	1	nogas	189367	0.00
Sn	118	1	nogas	575533	0.00
Sb	121	1	nogas	822194	0.00
Ba	137	1	nogas	284856	0.00
Tl	205	1	nogas	1628590	0.00
Pb	208	1	nogas	2127538	0.00
Si	28	1	nogas	5523757	0.00
Na	23	2	He	11510297	0.00
Mg	24	2	He	6216339	0.00
Al	27	2	He	29363	0.01
K	39	2	He	4580529	0.00
Ca	43	2	He	13628	0.02
Ca	44	2	He	230338	0.00
V	51	2	He	413656	0.00
Cr	52	2	He	480291	0.00
Mn	55	2	He	296087	0.00
Fe	56	2	He	40398414	0.00
Co	59	2	He	693739	0.00
Ni	60	2	He	179329	0.00
Cu	63	2	He	479971	0.00
Zn	66	2	He	82800	0.00
As	75	2	He	53703	0.00
Sb	121	2	He	320899	0.00
Se	78	2	He	3930	0.02

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag

Calibration Standard Report

Ge	72	1	nogas	1722210	2.12	1744975	98.70	70	120	
In	115	1	nogas	1637830	1.53	1707883	95.90	70	120	
Li	6	1	nogas	1018260	2.69	1102270	92.38	70	120	
Bi	209	1	nogas	1326695	5.16	1372321	96.68	70	120	
Ge	72	2	He	385467	0.76	398222	96.80	70	120	
In	115	2	He	532893	0.19	546301	97.55	70	120	

Calibration Standard Report

Sample Table

Sample Name	200/1000/20K
Data File Name	082CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T14:06:32-06:00
Sample Type	CalStd
Level	6
Dilution	1
Comment	
ISTD Ref File Name	077CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	1024684	0.00
B	11	1	nogas	3168613	0.00
Al	27	1	nogas	2897300	0.00
P	31	1	nogas	760296	0.00
Ti	47	1	nogas	256071	0.00
Cu	63	1	nogas	1619750	0.00
Sr	88	1	nogas	3941087	0.00
Mo	95	1	nogas	780149	0.00
Ag	107	1	nogas	1892686	0.00
Cd	111	1	nogas	359223	0.00
Sn	118	1	nogas	1120280	0.00
Sb	121	1	nogas	1676124	0.00
Ba	137	1	nogas	539091	0.00
Tl	205	1	nogas	3162626	0.00
Pb	208	1	nogas	4287756	0.00
Si	28	1	nogas	8720365	0.00
Na	23	2	He	21753878	0.00
Mg	24	2	He	11611941	0.00
Al	27	2	He	52386	0.00
K	39	2	He	8761477	0.00
Ca	43	2	He	25958	0.01
Ca	44	2	He	435954	0.00
V	51	2	He	804392	0.00
Cr	52	2	He	931582	0.00
Mn	55	2	He	563394	0.00
Fe	56	2	He	76978454	0.00
Co	59	2	He	1407498	0.00
Ni	60	2	He	340375	0.00
Cu	63	2	He	899508	0.00
Zn	66	2	He	156285	0.00
As	75	2	He	102397	0.00
Sb	121	2	He	607768	0.00
Se	78	2	He	7523	0.01

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag

Calibration Standard Report

Ge	72	1	nogas	1655675	5.79	1744975	94.88	70	120	
In	115	1	nogas	1626044	5.36	1707883	95.21	70	120	
Li	6	1	nogas	987921	1.56	1102270	89.63	70	120	
Bi	209	1	nogas	1359095	8.98	1372321	99.04	70	120	
Ge	72	2	He	377362	0.44	398222	94.76	70	120	
In	115	2	He	516285	1.13	546301	94.51	70	120	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICCB
Data File Name	087_ICB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T14:23:34-06:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	077CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.020	17.7	155	14.1	1	
B	11	1	nogas	6.269	37.1	66193	3.0	10	
Al	27	1	nogas	1.141	10.9	40113	1.5	5	
P	31	1	nogas	0.548	742.3	48299	0.7	10	
Ti	47	1	nogas	0.009	160.9	150	13.3	2.5	
Cu	63	1	nogas	0.043	71.7	2940	5.3	1	
Sr	88	1	nogas	0.055	39.4	1707	15.1	2.5	
Mo	95	1	nogas	0.049	24.9	277	11.6	2.5	
Ag	107	1	nogas	0.016	65.7	190	45.6	2.5	
Cd	111	1	nogas	0.012	71.6	33	34.6	1	
Sn	118	1	nogas	0.081	75.9	2387	8.2	5	
Sb	121	1	nogas	-0.002	-219.3	1517	4.4	2.5	
Ba	137	1	nogas	-0.006	-549.8	423	9.8	2.5	
Tl	205	1	nogas	0.058	22.2	1060	4.9	1	
Pb	208	1	nogas	0.020	34.8	860	3.1	2.5	
U	238	1	nogas	0.013	19.5	333	8.7	2.5	
Si	28	1	nogas	132.059	176.7	1724565	4.8	5	ICB Main CR1 Failed
Na	23	2	He	0.744	29.9	67854	0.8	100	
Mg	24	2	He	1.551	11.1	1660	6.5	100	
Al	27	2	He	0.609	37.2	777	7.1	5	
K	39	2	He	11.329	5.6	49799	1.1	100	
Ca	43	2	He	5.492	361.7	30	88.2	100	
Ca	44	2	He	15.426	31.2	663	15.7	100	
V	51	2	He	-0.279	-5.7	2428	3.5	2.5	
Cr	52	2	He	-0.068	-27.0	3047	3.8	2.5	
Mn	55	2	He	0.516	9.6	2197	5.9	2.5	
Fe	56	2	He	1.170	7.2	16908	2.1	100	
Co	59	2	He	0.009	41.1	150	17.6	2.5	
Ni	60	2	He	0.134	12.2	390	6.8	2.5	
Cu	63	2	He	0.028	84.5	847	13.3	1	
Zn	66	2	He	1.016	14.5	1133	10.3	2.5	
As	75	2	He	-0.030	-151.8	76	31.9	2.5	
Sb	121	2	He	-0.001	-2044.5	643	11.2	2.5	
Se	78	2	He	-0.120	-167.6	29	27.6	1	
Ti	47	2	He	-0.023	0.0	0	#DIV/0!	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag

Initial Calibration Blank (ICB) Report

Ge	72	1	nogas	1613140	5.57	1744975	92.44	70	120	
In	115	1	nogas	1500932	9.19	1707883	87.88	70	120	
Li	6	1	nogas	1030361	8.06	1102270	93.48	70	120	
Bi	209	1	nogas	1235352	12.59	1372321	90.02	70	120	
Ge	72	2	He	390494	0.88	398222	98.06	70	120	
In	115	2	He	546239	1.80	546301	99.99	70	120	

Sample Report

Sample Table

Sample Name	HS19121036-01SD
Data File Name	092SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T14:36:51-06:00
Sample Type	Sample
Dilution	100
Comment	DOD TW 149161
ISTD Ref FileName	077CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	-0.003	-0.271	-149.56	37	-0.01	2000	
B	11	1	nogas	-1.105	-110.492	-38.89	45793	0.00	2000	
Al	27	1	nogas	3.231	323.116	6.60	74708	0.00	2000	
Ti	47	1	nogas	0.027	2.665	113.05	183	0.01	2000	
Cu	63	1	nogas	0.711	71.052	7.82	8816	0.01	2000	
Sr	88	1	nogas	41.415	4141.473	2.84	895929	0.00	2000	
Mo	95	1	nogas	-0.003	-0.316	-266.12	103	0.00	2000	
Ag	107	1	nogas	-0.002	-0.182	-194.73	47	0.00	2000	
Cd	111	1	nogas	0.001	0.104	1242.23	20	0.01	2000	
Sn	118	1	nogas	-0.145	-14.536	-14.17	1453	-0.01	2000	
Sb	121	1	nogas	0.008	0.816	7.85	1710	0.00	2000	
Ba	137	1	nogas	10.342	1034.171	5.67	31092	0.03	2000	
Tl	205	1	nogas	-0.004	-0.423	-78.67	193	0.00	2000	
Pb	208	1	nogas	-0.001	-0.140	-141.69	520	0.00	2000	
U	238	1	nogas	0.013	1.323	8.83	387	0.00	2000	
Si	28	1	nogas	1637.172	163717.186	21.26	2957572	0.06	2000	
Na	23	2	He	2738.175	273817.473	2.12	3374184	0.08	200000	
Mg	24	2	He	832.202	83220.201	0.19	539661	0.15	200000	
Al	27	2	He	3.098	309.796	19.92	1553	0.20	2000	
K	39	2	He	21.690	2169.028	9.74	58174	0.04	200000	
Ca	43	2	He	2379.389	237938.858	7.34	3450	68.96	200000	
Ca	44	2	He	2459.983	245998.305	1.58	59936	4.10	200000	
V	51	2	He	0.251	25.116	19.42	4937	0.01	2000	
Cr	52	2	He	-0.020	-2.041	-108.73	3497	0.00	2000	
Mn	55	2	He	1.846	184.569	3.40	6501	0.03	2000	
Fe	56	2	He	3.886	388.650	6.14	29671	0.01	200000	
Co	59	2	He	0.003	0.295	289.26	117	0.00	2000	
Ni	60	2	He	0.216	21.645	13.20	573	0.04	2000	
Cu	63	2	He	0.420	41.998	11.44	2867	0.01	2000	
Zn	66	2	He	0.336	33.629	32.79	620	0.05	2000	
As	75	2	He	0.065	6.472	48.18	134	0.05	2000	
Sb	121	2	He	-0.001	-0.139	-801.30	687	0.00	2000	
Se	78	2	He	-0.327	-32.701	-9.10	23	-1.44	2000	
Ti	47	2	He	0.043	4.273	153.59	10	0.43	2000	

QC ISTD Table

Sample Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1728716	6.03	1744975	99.07	70	120	
In	115	1	nogas	1767600	3.51	1707883	103.50	70	120	
Li	6	1	nogas	1109967	2.68	1102270	100.70	70	120	
Bi	209	1	nogas	1408469	1.83	1372321	102.63	70	120	
Ge	72	2	He	416878	0.78	398222	104.68	70	120	
In	115	2	He	567822	0.09	546301	103.94	70	120	

Sample Report

Sample Table

Sample Name	HS19121036-01PDS
Data File Name	093SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T14:39:05-06:00
Sample Type	Sample
Dilution	20
Comment	DOD TW 149161
ISTD Ref FileName	077CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	112.805	2256.105	5.47	612824	0.02	2000	
B	11	1	nogas	-0.866	-17.316	-70.45	43882	0.00	2000	
Al	27	1	nogas	128.818	2576.360	1.49	1887020	0.01	2000	
Ti	47	1	nogas	119.592	2391.845	4.36	152498	0.08	2000	
Cu	63	1	nogas	117.409	2348.184	2.19	951902	0.01	2000	
Sr	88	1	nogas	170.673	3413.460	2.99	3401287	0.01	2000	
Mo	95	1	nogas	115.349	2306.978	5.02	452288	0.03	2000	
Ag	107	1	nogas	104.380	2087.601	4.26	984310	0.01	2000	
Cd	111	1	nogas	120.340	2406.806	4.27	218685	0.06	2000	
Sn	118	1	nogas	0.003	0.063	6795.71	2193	0.00	2000	
Sb	121	1	nogas	107.585	2151.710	1.69	888689	0.01	2000	
Ba	137	1	nogas	159.198	3183.950	4.92	434325	0.04	2000	
Tl	205	1	nogas	116.907	2338.132	6.24	1746418	0.01	2000	
Pb	208	1	nogas	121.375	2427.495	5.30	2441982	0.00	2000	
U	238	1	nogas	0.033	0.659	3.31	787	0.00	2000	
Si	28	1	nogas	5165.367	103307.344	1.90	5307483	0.10	2000	>LDR
Na	23	2	He	22115.934	442318.676	1.05	24439558	0.09	200000	
Mg	24	2	He	15015.235	300304.699	1.06	8885319	0.17	200000	
Al	27	2	He	125.132	2502.633	2.21	33881	0.37	2000	
K	39	2	He	11701.696	234033.919	1.40	5212109	0.22	200000	
Ca	43	2	He	21257.190	425143.796	2.16	27998	75.92	200000	
Ca	44	2	He	21175.360	423507.203	1.36	469095	4.51	200000	
V	51	2	He	117.705	2354.105	1.98	479563	0.02	2000	
Cr	52	2	He	117.103	2342.053	1.71	552683	0.02	2000	
Mn	55	2	He	124.908	2498.156	2.27	357459	0.03	2000	
Fe	56	2	He	11884.476	237689.513	1.71	46437263	0.03	200000	
Co	59	2	He	111.460	2229.192	1.61	786310	0.01	2000	
Ni	60	2	He	118.500	2369.996	0.76	204934	0.06	2000	
Cu	63	2	He	116.971	2339.416	0.32	536116	0.02	2000	
Zn	66	2	He	119.384	2387.679	1.10	94981	0.13	2000	
As	75	2	He	116.559	2331.186	2.07	60591	0.19	2000	
Sb	121	2	He	110.485	2209.706	0.95	341452	0.03	2000	
Se	78	2	He	117.261	2345.217	4.48	4482	2.62	2000	
Ti	47	2	He	117.595	2351.896	3.80	16231	0.72	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1644529	0.67	1744975	94.24	70	120	

Sample Report

In	115	1	nogas	1629591	3.62	1707883	95.42	70	120	
Li	6	1	nogas	1045569	5.57	1102270	94.86	70	120	
Bi	209	1	nogas	1270521	5.69	1372321	92.58	70	120	
Ge	72	2	He	380947	0.63	398222	95.66	70	120	
In	115	2	He	526523	1.18	546301	96.38	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	098_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T14:50:11-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	077CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	105.546	0.496	562915	1.17	100	105.5	90	110	
B	11	1	nogas	523.614	1.148	1744834	0.63	500	104.7	90	110	
Al	27	1	nogas	108.418	3.902	1654023	2.26	100	108.4	90	110	
P	31	1	nogas	538.504	2.357	447967	0.33	500	107.7	90	110	
Ti	47	1	nogas	105.467	1.668	139790	0.60	100	105.5	90	110	
Cu	63	1	nogas	104.816	1.111	883496	1.26	100	104.8	90	110	
Sr	88	1	nogas	104.584	3.270	2175883	1.98	100	104.6	90	110	
Mo	95	1	nogas	104.574	2.686	428324	2.59	100	104.6	90	110	
Ag	107	1	nogas	101.470	1.836	999450	2.52	100	101.5	90	110	
Cd	111	1	nogas	106.744	0.679	202605	1.49	100	106.7	90	110	
Sn	118	1	nogas	101.232	1.543	596295	0.31	100	101.2	90	110	
Sb	121	1	nogas	100.066	1.579	859092	0.57	100	100.1	90	110	
Ba	137	1	nogas	103.803	2.429	295956	1.61	100	103.8	90	110	
Tl	205	1	nogas	107.110	5.208	1739024	2.66	100	107.1	90	110	
Pb	208	1	nogas	107.761	3.034	2356440	0.72	100	107.8	90	110	
U	238	1	nogas	108.126	3.921	2599387	1.35	100	108.1	90	110	
Li	7	1	nogas	105.877	1.951	2018808	2.50	100	105.9	90	110	
Si	28	1	nogas	5282.852	3.592	5600695	1.08	5000	105.7	90	110	
Tl	203	1	nogas	99.766	4.678	677551	2.11	100	99.8	90	110	
Na	23	2	He	10610.408	2.081	12080001	0.87	10000	106.1	90	110	
Mg	24	2	He	10483.759	3.228	6372897	2.14	10000	104.8	90	110	
Al	27	2	He	108.126	2.880	30158	1.39	100	108.1	90	110	
K	39	2	He	10366.654	1.735	4748858	0.78	10000	103.7	90	110	
Ca	43	2	He	10838.911	2.705	14679	2.72	10000	108.4	90	110	
Ca	44	2	He	10345.999	0.907	235662	1.97	10000	103.5	90	110	
V	51	2	He	106.459	1.274	445976	0.39	100	106.5	90	110	
Cr	52	2	He	106.798	3.257	518068	1.94	100	106.8	90	110	
Mn	55	2	He	107.370	2.348	315756	0.92	100	107.4	90	110	
Fe	56	2	He	10427.543	1.785	41860476	0.65	10000	104.3	90	110	
Co	59	2	He	100.448	0.646	728103	1.12	100	100.4	90	110	
Ni	60	2	He	105.905	1.802	188190	1.89	100	105.9	90	110	
Cu	63	2	He	105.596	1.766	497279	1.48	100	105.6	90	110	
Zn	66	2	He	106.770	0.404	87307	1.68	100	106.8	90	110	
As	75	2	He	104.993	0.252	56091	1.62	100	105.0	90	110	
Sb	121	2	He	105.154	1.724	333868	0.56	100	105.2	90	110	
Se	78	2	He	105.920	4.165	4162	3.37	100	105.9	90	110	
Ti	47	2	He	101.611	2.015	14412	2.60	100	101.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1709168	1.74	1744975	97.95	70	120	
In	115	1	nogas	1700297	1.31	1707883	99.56	70	120	
Li	6	1	nogas	1024359	0.73	1102270	92.93	70	120	
Bi	209	1	nogas	1378884	2.77	1372321	100.48	70	120	
Ge	72	2	He	391405	1.49	398222	98.29	70	120	
In	115	2	He	538021	0.69	546301	98.48	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	099_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T14:52:22-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	077CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.040	17.7	278	9.9	1	
B	11	1	nogas	7.268	24.5	74634	4.6	10	
Al	27	1	nogas	2.726	6.8	69426	1.4	5	
P	31	1	nogas	-0.111	-2658.1	53115	0.3	10	
Ti	47	1	nogas	0.058	61.5	233	19.3	2.5	
Cu	63	1	nogas	0.181	14.8	4477	4.8	2	
Sr	88	1	nogas	0.107	14.1	3180	7.4	2.5	
Mo	95	1	nogas	0.167	9.7	837	8.5	2.5	
Ag	107	1	nogas	0.033	12.5	410	13.6	2.5	
Cd	111	1	nogas	0.026	58.8	70	42.9	1	
Sn	118	1	nogas	0.130	20.8	3164	2.9	5	
Sb	121	1	nogas	0.151	20.4	3040	5.2	2.5	
Ba	137	1	nogas	0.045	52.3	660	9.9	2.5	
Tl	205	1	nogas	0.357	20.5	6371	20.7	1	
Pb	208	1	nogas	0.061	19.6	1963	15.0	2.5	
U	238	1	nogas	0.047	21.7	1247	21.3	2.5	
Si	28	1	nogas	-134.268	-77.8	1712499	0.6	5	
Na	23	2	He	14.624	13.8	87651	4.5	100	
Mg	24	2	He	3.471	15.7	2960	10.7	100	
Al	27	2	He	2.275	22.1	1293	13.2	5	
K	39	2	He	10.782	23.3	51969	2.1	100	
Ca	43	2	He	35.404	102.0	73	67.3	100	
Ca	44	2	He	18.258	16.6	763	8.7	100	
V	51	2	He	-0.388	-8.0	2069	5.8	2.5	
Cr	52	2	He	-0.004	-509.5	3520	5.1	2.5	
Mn	55	2	He	0.358	13.2	1817	6.3	2.5	
Fe	56	2	He	3.880	4.1	29123	3.6	100	
Co	59	2	He	0.016	34.2	217	20.8	2.5	
Ni	60	2	He	0.115	53.5	373	29.6	2.5	
Cu	63	2	He	0.040	85.6	950	19.5	2	
Zn	66	2	He	1.112	6.2	1270	2.8	2.5	
As	75	2	He	0.039	122.9	118	24.4	2.5	
Sb	121	2	He	0.186	18.8	1297	11.1	2.5	
Se	78	2	He	-0.037	-877.9	34	36.7	2	
Ti	47	2	He	0.066	55.5	13	43.3	2.5	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1789444	4.56	1744975	102.55	70	120	
In	115	1	nogas	1786028	3.17	1707883	104.58	70	120	
Li	6	1	nogas	1103403	4.70	1102270	100.10	70	120	
Bi	209	1	nogas	1449519	4.74	1372321	105.63	70	120	
Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	2	He	409612	2.15	398222	102.86	70	120	
In	115	2	He	558677	1.16	546301	102.27	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	110_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T15:16:54-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	077CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	107.918	0.830	555408	0.89	100	107.9	90	110	
B	11	1	nogas	543.651	3.141	1746322	2.23	500	108.7	90	110	
Al	27	1	nogas	110.738	1.833	1662462	2.37	100	110.7	90	110	CCV Main CR1-2 Failed
P	31	1	nogas	525.086	0.945	431105	0.56	500	105.0	90	110	
Ti	47	1	nogas	104.682	3.120	136520	2.45	100	104.7	90	110	
Cu	63	1	nogas	105.405	2.119	874115	1.35	100	105.4	90	110	
Sr	88	1	nogas	101.416	3.475	2099692	1.95	100	101.4	90	110	
Mo	95	1	nogas	100.858	3.767	410977	2.02	100	100.9	90	110	
Ag	107	1	nogas	97.169	3.667	952058	1.96	100	97.2	90	110	
Cd	111	1	nogas	105.177	2.546	198627	1.53	100	105.2	90	110	
Sn	118	1	nogas	101.727	1.131	596403	1.96	100	101.7	90	110	
Sb	121	1	nogas	99.511	1.988	840632	1.22	100	99.5	90	110	
Ba	137	1	nogas	102.467	1.317	290779	1.51	100	102.5	90	110	
Tl	205	1	nogas	102.439	4.230	1660143	0.93	100	102.4	90	110	
Pb	208	1	nogas	106.017	2.043	2314350	1.57	100	106.0	90	110	
U	238	1	nogas	106.393	2.753	2553692	2.20	100	106.4	90	110	
Li	7	1	nogas	105.240	2.397	1936829	2.58	100	105.2	90	110	
Si	28	1	nogas	5260.671	0.811	5495811	0.25	5000	105.2	90	110	
Tl	203	1	nogas	95.488	3.775	647347	1.05	100	95.5	90	110	
Na	23	2	He	10370.634	1.403	11899381	1.13	10000	103.7	90	110	
Mg	24	2	He	10213.379	1.116	6256941	1.12	10000	102.1	90	110	
Al	27	2	He	111.069	0.753	31203	0.36	100	111.1	90	110	CCV Main CR1-2 Failed
K	39	2	He	10302.358	1.152	4755945	1.23	10000	103.0	90	110	
Ca	43	2	He	10514.536	2.124	14349	2.20	10000	105.1	90	110	
Ca	44	2	He	10476.961	0.605	240435	1.00	10000	104.8	90	110	
V	51	2	He	104.917	0.647	442923	0.35	100	104.9	90	110	
Cr	52	2	He	105.774	2.688	517111	2.29	100	105.8	90	110	
Mn	55	2	He	106.548	1.638	315762	1.24	100	106.5	90	110	
Fe	56	2	He	10333.183	0.140	41800989	0.41	10000	103.3	90	110	
Co	59	2	He	99.128	0.748	723983	0.89	100	99.1	90	110	
Ni	60	2	He	104.421	1.247	186958	0.95	100	104.4	90	110	
Cu	63	2	He	102.949	2.066	488551	2.37	100	102.9	90	110	
Zn	66	2	He	107.177	2.490	88299	2.57	100	107.2	90	110	
As	75	2	He	104.521	0.695	56259	0.63	100	104.5	90	110	
Sb	121	2	He	105.456	2.747	337403	2.81	100	105.5	90	110	
Se	78	2	He	106.196	1.571	4206	1.80	100	106.2	90	110	
Ti	47	2	He	103.027	2.287	14723	2.18	100	103.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1681632	0.78	1744975	96.37	70	120	
In	115	1	nogas	1692162	1.79	1707883	99.08	70	120	
Li	6	1	nogas	988535	0.94	1102270	89.68	70	120	
Bi	209	1	nogas	1376343	3.22	1372321	100.29	70	120	
Ge	72	2	He	394351	0.41	398222	99.03	70	120	
In	115	2	He	545002	0.86	546301	99.76	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	111_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T15:19:06-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	077CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.026	33.7	190	25.1	1	
B	11	1	nogas	11.043	7.0	82925	3.1	10	CCB Main CR1 Failed
Al	27	1	nogas	2.467	11.1	62365	6.2	5	
P	31	1	nogas	0.182	816.5	50915	2.4	10	
Ti	47	1	nogas	0.028	188.7	183	38.3	2.5	
Cu	63	1	nogas	0.431	5.7	6365	3.1	2	
Sr	88	1	nogas	0.976	3.8	21583	4.0	2.5	
Mo	95	1	nogas	0.186	13.2	893	12.3	2.5	
Ag	107	1	nogas	0.029	23.0	360	18.2	2.5	
Cd	111	1	nogas	0.027	37.0	70	28.6	1	
Sn	118	1	nogas	0.060	46.5	2660	6.5	5	
Sb	121	1	nogas	-0.039	-12.4	1287	2.7	2.5	
Ba	137	1	nogas	0.290	16.4	1357	10.9	2.5	
Tl	205	1	nogas	0.331	44.6	5675	44.3	1	
Pb	208	1	nogas	0.066	10.2	1987	8.5	2.5	
U	238	1	nogas	0.055	25.2	1390	25.9	2.5	
Si	28	1	nogas	-40.604	-98.6	1703270	2.1	5	
Na	23	2	He	135.443	1.9	224522	1.9	100	CCB Main CR1 Failed
Mg	24	2	He	17.665	2.7	11667	2.6	100	
Al	27	2	He	2.371	35.8	1283	18.5	5	
K	39	2	He	13.659	3.2	51888	0.4	100	
Ca	43	2	He	111.496	37.2	177	32.2	100	CCB Main CR1 Failed
Ca	44	2	He	103.822	13.0	2724	11.2	100	CCB Main CR1 Failed
V	51	2	He	0.428	5.0	5465	1.1	2.5	
Cr	52	2	He	0.026	299.1	3567	10.0	2.5	
Mn	55	2	He	0.175	24.7	1223	11.2	2.5	
Fe	56	2	He	2.107	14.0	21086	6.3	100	
Co	59	2	He	0.017	43.8	213	25.8	2.5	
Ni	60	2	He	0.070	5.2	283	2.0	2.5	
Cu	63	2	He	0.304	3.3	2187	2.3	2	
Zn	66	2	He	0.731	19.3	920	12.3	2.5	
As	75	2	He	0.078	14.6	136	5.1	2.5	
Sb	121	2	He	-0.050	-4.9	500	2.0	2.5	
Se	78	2	He	-0.151	-69.6	29	14.5	2	
Ti	47	2	He	0.092	43.2	17	34.6	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1705837	0.70	1744975	97.76	70	120	

Continuing Calibration Blank (CCB) Report

In	115	1	nogas	1737327	0.77	1707883	101.72	70	120	
Li	6	1	nogas	1039705	0.04	1102270	94.32	70	120	
Bi	209	1	nogas	1383085	2.14	1372321	100.78	70	120	
Ge	72	2	He	398440	0.60	398222	100.05	70	120	
In	115	2	He	551493	0.61	546301	100.95	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	122_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T15:43:29-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	077CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	109.396	2.208	598836	0.34	100	109.4	90	110	
B	11	1	nogas	574.530	2.697	1960426	0.34	500	114.9	90	110	CCV Main CR1-2 Failed
Al	27	1	nogas	107.258	3.754	1779775	1.32	100	107.3	90	110	
P	31	1	nogas	521.636	1.810	473713	1.02	500	104.3	90	110	
Ti	47	1	nogas	103.934	2.565	149808	0.85	100	103.9	90	110	
Cu	63	1	nogas	103.667	0.735	950469	1.95	100	103.7	90	110	
Sr	88	1	nogas	101.327	3.955	2322436	2.96	100	101.3	90	110	
Mo	95	1	nogas	99.820	1.363	450402	0.43	100	99.8	90	110	
Ag	107	1	nogas	96.668	1.401	1049016	2.61	100	96.7	90	110	
Cd	111	1	nogas	104.763	2.726	219105	3.95	100	104.8	90	110	
Sn	118	1	nogas	102.149	2.555	662829	1.93	100	102.1	90	110	
Sb	121	1	nogas	99.884	2.820	932464	0.43	100	99.9	90	110	
Ba	137	1	nogas	102.617	2.801	322286	1.05	100	102.6	90	110	
Tl	205	1	nogas	105.878	2.598	1826945	2.51	100	105.9	90	110	
Pb	208	1	nogas	107.018	1.599	2486099	1.07	100	107.0	90	110	
U	238	1	nogas	107.478	2.771	2744944	1.27	100	107.5	90	110	
Li	7	1	nogas	106.923	3.351	2091323	1.05	100	106.9	90	110	
Si	28	1	nogas	4881.582	4.599	5771358	1.34	5000	97.6	90	110	
Tl	203	1	nogas	97.726	4.186	705165	3.27	100	97.7	90	110	
Na	23	2	He	10383.382	2.174	12975053	1.29	10000	103.8	90	110	
Mg	24	2	He	10210.225	3.107	6811120	1.70	10000	102.1	90	110	
Al	27	2	He	107.852	2.187	33016	0.89	100	107.9	90	110	
K	39	2	He	10190.155	3.794	5122511	2.29	10000	101.9	90	110	
Ca	43	2	He	10656.269	3.166	15837	2.69	10000	106.6	90	110	
Ca	44	2	He	10388.466	3.126	259600	1.81	10000	103.9	90	110	
V	51	2	He	105.291	2.331	484045	0.86	100	105.3	90	110	
Cr	52	2	He	105.605	2.617	562269	1.48	100	105.6	90	110	
Mn	55	2	He	107.841	1.971	348094	2.07	100	107.8	90	110	
Fe	56	2	He	10425.879	2.109	45932188	1.47	10000	104.3	90	110	
Co	59	2	He	100.302	1.420	797825	0.91	100	100.3	90	110	
Ni	60	2	He	106.617	2.187	207881	0.91	100	106.6	90	110	
Cu	63	2	He	103.705	0.875	535979	0.74	100	103.7	90	110	
Zn	66	2	He	105.639	1.717	94801	2.30	100	105.6	90	110	
As	75	2	He	104.533	0.864	61281	0.82	100	104.5	90	110	
Sb	121	2	He	104.593	1.965	364435	0.55	100	104.6	90	110	
Se	78	2	He	108.283	2.580	4669	1.54	100	108.3	90	110	
Ti	47	2	He	102.428	2.142	15940	1.11	100	102.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1859054	2.51	1744975	106.54	70	120	
In	115	1	nogas	1873232	1.80	1707883	109.68	70	120	
Li	6	1	nogas	1051792	2.51	1102270	95.42	70	120	
Bi	209	1	nogas	1464329	2.01	1372321	106.70	70	120	
Ge	72	2	He	429536	1.46	398222	107.86	70	120	
In	115	2	He	592581	0.23	546301	108.47	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	122_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T15:43:29-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	077CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	109.396	2.208	598836	0.34	100	109.4	90	110	
B	11	1	nogas	574.530	2.697	1960426	0.34	500	114.9	90	110	CCV Main CR1-2 Failed
Al	27	1	nogas	107.258	3.754	1779775	1.32	100	107.3	90	110	
P	31	1	nogas	521.636	1.810	473713	1.02	500	104.3	90	110	
Ti	47	1	nogas	103.934	2.565	149808	0.85	100	103.9	90	110	
Cu	63	1	nogas	103.667	0.735	950469	1.95	100	103.7	90	110	
Sr	88	1	nogas	101.327	3.955	2322436	2.96	100	101.3	90	110	
Mo	95	1	nogas	99.820	1.363	450402	0.43	100	99.8	90	110	
Ag	107	1	nogas	96.668	1.401	1049016	2.61	100	96.7	90	110	
Cd	111	1	nogas	104.763	2.726	219105	3.95	100	104.8	90	110	
Sn	118	1	nogas	102.149	2.555	662829	1.93	100	102.1	90	110	
Sb	121	1	nogas	99.884	2.820	932464	0.43	100	99.9	90	110	
Ba	137	1	nogas	102.617	2.801	322286	1.05	100	102.6	90	110	
Tl	205	1	nogas	105.878	2.598	1826945	2.51	100	105.9	90	110	
Pb	208	1	nogas	107.018	1.599	2486099	1.07	100	107.0	90	110	
U	238	1	nogas	107.478	2.771	2744944	1.27	100	107.5	90	110	
Li	7	1	nogas	106.923	3.351	2091323	1.05	100	106.9	90	110	
Si	28	1	nogas	4881.582	4.599	5771358	1.34	5000	97.6	90	110	
Tl	203	1	nogas	97.726	4.186	705165	3.27	100	97.7	90	110	
Na	23	2	He	10383.382	2.174	12975053	1.29	10000	103.8	90	110	
Mg	24	2	He	10210.225	3.107	6811120	1.70	10000	102.1	90	110	
Al	27	2	He	107.852	2.187	33016	0.89	100	107.9	90	110	
K	39	2	He	10190.155	3.794	5122511	2.29	10000	101.9	90	110	
Ca	43	2	He	10656.269	3.166	15837	2.69	10000	106.6	90	110	
Ca	44	2	He	10388.466	3.126	259600	1.81	10000	103.9	90	110	
V	51	2	He	105.291	2.331	484045	0.86	100	105.3	90	110	
Cr	52	2	He	105.605	2.617	562269	1.48	100	105.6	90	110	
Mn	55	2	He	107.841	1.971	348094	2.07	100	107.8	90	110	
Fe	56	2	He	10425.879	2.109	45932188	1.47	10000	104.3	90	110	
Co	59	2	He	100.302	1.420	797825	0.91	100	100.3	90	110	
Ni	60	2	He	106.617	2.187	207881	0.91	100	106.6	90	110	
Cu	63	2	He	103.705	0.875	535979	0.74	100	103.7	90	110	
Zn	66	2	He	105.639	1.717	94801	2.30	100	105.6	90	110	
As	75	2	He	104.533	0.864	61281	0.82	100	104.5	90	110	
Sb	121	2	He	104.593	1.965	364435	0.55	100	104.6	90	110	
Se	78	2	He	108.283	2.580	4669	1.54	100	108.3	90	110	
Ti	47	2	He	102.428	2.142	15940	1.11	100	102.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1859054	2.51	1744975	106.54	70	120	
In	115	1	nogas	1873232	1.80	1707883	109.68	70	120	
Li	6	1	nogas	1051792	2.51	1102270	95.42	70	120	
Bi	209	1	nogas	1464329	2.01	1372321	106.70	70	120	
Ge	72	2	He	429536	1.46	398222	107.86	70	120	
In	115	2	He	592581	0.23	546301	108.47	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	123_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T15:45:40-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	077CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.033	18.2	238	12.6	1	
B	11	1	nogas	30.642	6.1	153050	2.0	10	CCB Main CR1 Failed
Al	27	1	nogas	1.575	11.5	51484	3.8	5	
P	31	1	nogas	4.241	71.3	56652	2.5	10	
Ti	47	1	nogas	0.036	96.6	203	23.2	2.5	
Cu	63	1	nogas	0.560	7.6	7835	6.4	2	
Sr	88	1	nogas	1.362	3.3	30990	1.4	2.5	
Mo	95	1	nogas	0.188	23.8	940	22.6	2.5	
Ag	107	1	nogas	0.039	22.2	470	17.4	2.5	
Cd	111	1	nogas	0.013	24.4	43	13.3	1	
Sn	118	1	nogas	0.066	53.7	2804	7.3	5	
Sb	121	1	nogas	-0.032	-23.9	1417	4.3	2.5	
Ba	137	1	nogas	0.617	11.5	2404	10.0	2.5	
Tl	205	1	nogas	0.285	39.7	5174	39.2	1	
Pb	208	1	nogas	0.058	16.1	1900	12.8	2.5	
U	238	1	nogas	0.051	20.7	1357	21.4	2.5	
Si	28	1	nogas	-153.472	-28.6	1704407	3.3	5	
Na	23	2	He	217.733	1.8	339477	0.9	100	CCB Main CR1 Failed
Mg	24	2	He	25.623	0.6	17642	2.8	100	
Al	27	2	He	1.346	14.9	1060	3.3	5	
K	39	2	He	10.485	19.5	53593	0.6	100	
Ca	43	2	He	144.952	4.9	237	2.4	100	CCB Main CR1 Failed
Ca	44	2	He	132.316	1.8	3597	1.1	100	CCB Main CR1 Failed
V	51	2	He	0.460	4.6	5954	1.6	2.5	
Cr	52	2	He	0.025	72.3	3790	3.3	2.5	
Mn	55	2	He	0.143	51.9	1193	17.2	2.5	
Fe	56	2	He	1.669	21.9	20525	9.4	100	
Co	59	2	He	0.007	76.2	150	29.1	2.5	
Ni	60	2	He	0.042	131.9	247	43.4	2.5	
Cu	63	2	He	0.400	11.2	2810	5.9	2	
Zn	66	2	He	0.580	22.4	843	11.3	2.5	
As	75	2	He	0.046	103.8	126	20.6	2.5	
Sb	121	2	He	-0.020	-133.6	633	12.0	2.5	
Se	78	2	He	-0.271	-58.6	25	25.4	2	
Ti	47	2	He	0.019	380.2	7	173.2	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1793620	1.74	1744975	102.79	70	120	
In	115	1	nogas	1809137	1.93	1707883	105.93	70	120	
Li	6	1	nogas	1079652	2.18	1102270	97.95	70	120	
Bi	209	1	nogas	1454897	1.77	1372321	106.02	70	120	

Continuing Calibration Blank (CCB) Report

Ge	72	2	He	423616	2.30	398222	106.38	70	120	
In	115	2	He	596737	1.36	546301	109.23	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	123_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T15:45:40-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	077CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.033	18.2	238	12.6	1	
B	11	1	nogas	30.642	6.1	153050	2.0	10	CCB Main CR1 Failed
Al	27	1	nogas	1.575	11.5	51484	3.8	5	
P	31	1	nogas	4.241	71.3	56652	2.5	10	
Ti	47	1	nogas	0.036	96.6	203	23.2	2.5	
Cu	63	1	nogas	0.560	7.6	7835	6.4	2	
Sr	88	1	nogas	1.362	3.3	30990	1.4	2.5	
Mo	95	1	nogas	0.188	23.8	940	22.6	2.5	
Ag	107	1	nogas	0.039	22.2	470	17.4	2.5	
Cd	111	1	nogas	0.013	24.4	43	13.3	1	
Sn	118	1	nogas	0.066	53.7	2804	7.3	5	
Sb	121	1	nogas	-0.032	-23.9	1417	4.3	2.5	
Ba	137	1	nogas	0.617	11.5	2404	10.0	2.5	
Tl	205	1	nogas	0.285	39.7	5174	39.2	1	
Pb	208	1	nogas	0.058	16.1	1900	12.8	2.5	
U	238	1	nogas	0.051	20.7	1357	21.4	2.5	
Si	28	1	nogas	-153.472	-28.6	1704407	3.3	5	
Na	23	2	He	217.733	1.8	339477	0.9	100	CCB Main CR1 Failed
Mg	24	2	He	25.623	0.6	17642	2.8	100	
Al	27	2	He	1.346	14.9	1060	3.3	5	
K	39	2	He	10.485	19.5	53593	0.6	100	
Ca	43	2	He	144.952	4.9	237	2.4	100	CCB Main CR1 Failed
Ca	44	2	He	132.316	1.8	3597	1.1	100	CCB Main CR1 Failed
V	51	2	He	0.460	4.6	5954	1.6	2.5	
Cr	52	2	He	0.025	72.3	3790	3.3	2.5	
Mn	55	2	He	0.143	51.9	1193	17.2	2.5	
Fe	56	2	He	1.669	21.9	20525	9.4	100	
Co	59	2	He	0.007	76.2	150	29.1	2.5	
Ni	60	2	He	0.042	131.9	247	43.4	2.5	
Cu	63	2	He	0.400	11.2	2810	5.9	2	
Zn	66	2	He	0.580	22.4	843	11.3	2.5	
As	75	2	He	0.046	103.8	126	20.6	2.5	
Sb	121	2	He	-0.020	-133.6	633	12.0	2.5	
Se	78	2	He	-0.271	-58.6	25	25.4	2	
Ti	47	2	He	0.019	380.2	7	173.2	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1793620	1.74	1744975	102.79	70	120	
In	115	1	nogas	1809137	1.93	1707883	105.93	70	120	
Li	6	1	nogas	1079652	2.18	1102270	97.95	70	120	
Bi	209	1	nogas	1454897	1.77	1372321	106.02	70	120	

Continuing Calibration Blank (CCB) Report

Ge	72	2	He	423616	2.30	398222	106.38	70	120	
In	115	2	He	596737	1.36	546301	109.23	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	134_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T16:16:56-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	077CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	111.246	2.116	610541	1.20	100	111.2	90	110	CCV Main CR1-2 Failed
B	11	1	nogas	590.971	3.761	2019831	0.47	500	118.2	90	110	CCV Main CR1-2 Failed
Al	27	1	nogas	107.945	1.077	1780086	2.40	100	107.9	90	110	
P	31	1	nogas	538.470	2.392	483939	0.75	500	107.7	90	110	
Ti	47	1	nogas	103.183	2.146	147754	1.34	100	103.2	90	110	
Cu	63	1	nogas	103.573	2.168	943081	1.02	100	103.6	90	110	
Sr	88	1	nogas	100.402	4.095	2304357	3.69	100	100.4	90	110	
Mo	95	1	nogas	101.297	3.289	457577	2.47	100	101.3	90	110	
Ag	107	1	nogas	99.373	3.132	1079338	2.24	100	99.4	90	110	
Cd	111	1	nogas	106.353	0.771	222639	0.43	100	106.4	90	110	
Sn	118	1	nogas	100.426	3.323	652549	3.36	100	100.4	90	110	
Sb	121	1	nogas	99.255	1.508	920612	0.34	100	99.3	90	110	
Ba	137	1	nogas	102.217	1.124	321486	0.65	100	102.2	90	110	
Tl	205	1	nogas	105.108	3.598	1853727	3.13	100	105.1	90	110	
Pb	208	1	nogas	107.097	2.591	2542950	1.74	100	107.1	90	110	
U	238	1	nogas	106.827	1.835	2789210	1.10	100	106.8	90	110	
Li	7	1	nogas	109.294	1.297	2142307	2.45	100	109.3	90	110	
Si	28	1	nogas	5035.047	3.556	5855106	1.45	5000	100.7	90	110	
Tl	203	1	nogas	98.907	2.774	729605	2.10	100	98.9	90	110	
Na	23	2	He	10344.311	3.131	13134097	2.67	10000	103.4	90	110	
Mg	24	2	He	10262.608	2.760	6956288	1.57	10000	102.6	90	110	
Al	27	2	He	108.873	3.759	33851	2.01	100	108.9	90	110	
K	39	2	He	10186.028	2.436	5203403	1.17	10000	101.9	90	110	
Ca	43	2	He	10473.797	3.058	15814	1.33	10000	104.7	90	110	
Ca	44	2	He	10185.469	3.020	258610	1.26	10000	101.9	90	110	
V	51	2	He	104.317	3.778	487222	2.11	100	104.3	90	110	
Cr	52	2	He	103.587	2.909	560401	1.14	100	103.6	90	110	
Mn	55	2	He	104.982	2.141	344274	0.74	100	105.0	90	110	
Fe	56	2	He	10229.658	2.008	45789173	0.60	10000	102.3	90	110	
Co	59	2	He	98.460	1.837	795733	1.35	100	98.5	90	110	
Ni	60	2	He	105.039	3.683	208057	2.04	100	105.0	90	110	
Cu	63	2	He	101.602	2.711	533456	1.22	100	101.6	90	110	
Zn	66	2	He	106.665	2.116	97234	0.36	100	106.7	90	110	
As	75	2	He	104.245	0.834	62094	0.95	100	104.2	90	110	
Sb	121	2	He	106.105	3.538	375584	2.40	100	106.1	90	110	
Se	78	2	He	106.772	2.033	4679	0.31	100	106.8	90	110	
Ti	47	2	He	102.907	5.933	16267	4.88	100	102.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1846436	1.40	1744975	105.81	70	120	
In	115	1	nogas	1875407	1.17	1707883	109.81	70	120	
Li	6	1	nogas	1054623	3.35	1102270	95.68	70	120	
Bi	209	1	nogas	1496657	0.87	1372321	109.06	70	120	
Ge	72	2	He	436443	1.73	398222	109.60	70	120	
In	115	2	He	603494	2.01	546301	110.47	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	135_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\010
Acq Date Time	2020-01-03T16:19:08-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	077CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.027	17.5	210	12.6	1	
B	11	1	nogas	40.492	3.5	193647	1.6	10	CCB Main CR1 Failed
Al	27	1	nogas	1.621	5.3	53669	1.5	5	
P	31	1	nogas	5.956	32.3	59574	0.4	10	
Ti	47	1	nogas	0.097	38.1	297	19.2	2.5	
Cu	63	1	nogas	0.651	2.5	8879	3.6	2	
Sr	88	1	nogas	1.414	1.1	33271	3.3	2.5	
Mo	95	1	nogas	0.156	34.0	830	29.0	2.5	
Ag	107	1	nogas	0.030	2.3	390	4.4	2.5	
Cd	111	1	nogas	0.016	88.2	53	60.3	1	
Sn	118	1	nogas	0.104	33.1	3147	4.6	5	
Sb	121	1	nogas	0.010	61.4	1843	1.1	2.5	
Ba	137	1	nogas	0.488	11.5	2080	6.8	2.5	
Tl	205	1	nogas	0.280	30.7	5234	32.4	1	
Pb	208	1	nogas	0.052	35.7	1833	27.0	2.5	
U	238	1	nogas	0.048	22.5	1320	23.6	2.5	
Si	28	1	nogas	-171.571	-24.4	1736205	0.7	5	
Na	23	2	He	192.505	1.0	319473	1.3	100	CCB Main CR1 Failed
Mg	24	2	He	23.969	0.8	17135	1.7	100	
Al	27	2	He	0.872	22.4	953	6.8	5	
K	39	2	He	9.603	25.6	55037	1.6	100	
Ca	43	2	He	143.653	42.4	243	38.2	100	CCB Main CR1 Failed
Ca	44	2	He	130.631	12.2	3680	10.8	100	CCB Main CR1 Failed
V	51	2	He	0.263	7.7	5246	1.0	2.5	
Cr	52	2	He	-0.042	-63.6	3564	5.0	2.5	
Mn	55	2	He	0.199	19.2	1427	9.7	2.5	
Fe	56	2	He	2.089	5.8	23125	3.1	100	
Co	59	2	He	0.010	42.6	180	20.0	2.5	
Ni	60	2	He	0.061	32.3	293	14.2	2.5	
Cu	63	2	He	0.352	5.3	2657	2.8	2	
Zn	66	2	He	0.429	14.8	737	8.6	2.5	
As	75	2	He	0.096	25.2	160	9.1	2.5	
Sb	121	2	He	0.010	316.3	763	15.6	2.5	
Se	78	2	He	-0.217	-43.8	29	14.5	2	
Ti	47	2	He	0.061	157.6	13	114.6	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	1842841	2.15	1744975	105.61	70	120	
In	115	1	nogas	1871829	2.65	1707883	109.60	70	120	
Li	6	1	nogas	1119303	1.53	1102270	101.55	70	120	
Bi	209	1	nogas	1491894	3.21	1372321	108.71	70	120	

Continuing Calibration Blank (CCB) Report

Ge	72	2	He	438499	0.98	398222	110.11	70	120	
In	115	2	He	609937	0.88	546301	111.65	70	120	

Tune Report

Batch Folder C:\Agilent\ICPMH\1\DATA\010320A.b
Report Comment
Instrument Name G3281A JP11080910

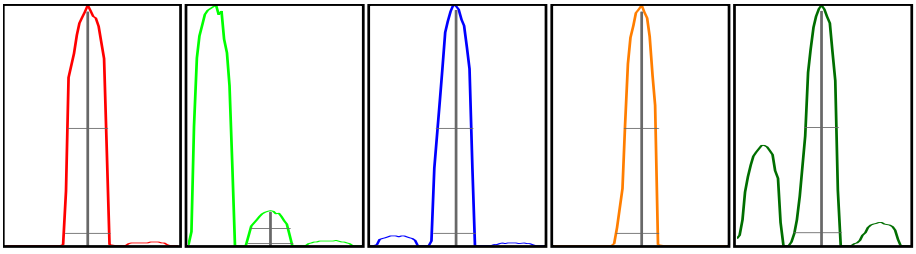
[nogas]

Mass	Range	Count (Actual)	Response (Actual) [cps/ug/l]	Response (Required) [cps/ug/l]	Response (Flag)	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
9		24390				NaN	-	
24		56822				NaN	-	
59		64009				NaN	-	
115		77043				NaN	-	
208		46572				NaN	-	

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)	Background (Actual)	Background (Required)	Background (Flag)
9	0.99	5.00				
24	0.28	5.00				
59	0.72	5.00				
115	0.46	5.00				
208	0.45	5.00				

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
9	24101	24248	24349	24716	24539
24	56608	56914	56717	57011	56860
59	63280	63989	64459	63964	64354
115	76638	77236	77538	77009	76794
208	46478	46536	46298	46713	46834

Integration Time [sec] 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	W-50%	W-X% (Actual)	W-X% (Required)	W-X% (Flag)
9	3869.03	8.95	8.9 - 9.1		0.66	0.784		
24	9465.90	23.95	23.9 - 24.1		0.64	0.785		
59	11207.41	59.00	58.9 - 59.1		0.60	0.737		
115	14439.09	115.05	114.9 - 115.1		0.56	0.716		
208	8418.73	208.00	207.9 - 208.1		0.56	0.782		

X = 5 **Integration Time [sec]** 0.1 **Acquisition Time [sec]** 168.5 **Y Axis** Linear

Tune Parameters

Plasma Paramters

RF Power	1600 W	Carrier Gas	0.45 L/min	S/C Temp	2 ℃
RF Matching	1.70 V	Option Gas	0.0 %	Makeup/Dilution Gas	0.50 L/min
Smpl Depth	8.0 mm	Nebulizer Pump	0.10 rps	Gas Switch	Dilution Gas

Lenses Parameters

Extract 1	0.0 V	Omega Lens	8.0 V	Deflect	10.0 V
Extract 2	-200.0 V	Cell Entrance	-30 V	Plate Bias	-50 V
Omega Bias	-100 V	Cell Exit	-50 V		

Cell Parameters

OctP Bias	-8.0 V	He Flow	0.0 mL/min	Energy Discrimination	5.0 V
OctP RF	190 V	H2 Flow	0.0 mL/min		
Use Gas	false	3rd Gas Flow	0 %		

Tune Report

[He]

Mass	Range	Count (Actual)	Response (Actual) [cps/ug/l]	Response (Required) [cps/ug/l]	Response (Flag)	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
9		585				NaN	-	
24		3878				NaN	-	
59		35181				NaN	-	

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)	Background (Actual)	Background (Required)	Background (Flag)
9	2.85	5.00				
24	0.82	5.00				
59	0.53	5.00				

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
9	595	574	602	562	594
24	3846	3859	3906	3918	3863
59	35037	35071	35382	35025	35390

Integration Time [sec] 0.1

Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	W-50%	W-X% (Actual)	W-X% (Required)	W-X% (Flag)
9	96.48	8.95	8.9 - 9.1		0.66	0.778		
24	652.69	23.95	23.9 - 24.1		0.63	0.778		
59	6248.10	59.00	58.9 - 59.1		0.59	0.733		

X = 5 **Integration Time [sec]** 0.1 **Acquisition Time [sec]** 100.6 **Y Axis** Linear

Tune Parameters

Plasma Paramters

RF Power	1600 W	Carrier Gas	0.45 L/min	S/C Temp	2 ℃
RF Matching	1.70 V	Option Gas	0.0 %	Makeup/Dilution Gas	0.50 L/min
Smpl Depth	8.0 mm	Nebulizer Pump	0.10 rps	Gas Switch	Dilution Gas

Lenses Parameters

Extract 1	0.0 V	Omega Lens	8.0 V	Deflect	2.0 V
Extract 2	-200.0 V	Cell Entrance	-40 V	Plate Bias	-60 V
Omega Bias	-100 V	Cell Exit	-60 V		

Cell Parameters

OctP Bias	-18.0 V	He Flow	4.3 mL/min	Energy Discrimination	5.0 V
OctP RF	190 V	H2 Flow	0.0 mL/min		
Use Gas	true	3rd Gas Flow	0 %		

HS19121092 Wet Chem Raw Data

ALS WO# HS19121092

Sequence: 010220
Last Update Operator: alshs.nouser

HS19121092

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method	ng	me	Status	Inject Time
	CCV		Unknown	BA5	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/4/2020 6:06:01 PM -06:00
	CCB		Unknown	BA6	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/4/2020 6:22:37 PM -06:00
	WBLKW3-010320	9056_W	Unknown	RA1	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/4/2020 6:39:20 PM -06:00
	WLCSW3-010320		Unknown	RA2	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/4/2020 6:55:55 PM -06:00
	WLCSDW3-010320		Unknown	RA3	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/4/2020 7:12:30 PM -06:00
	HS19121121-01		Unknown	RA4	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/4/2020 7:29:07 PM -06:00
	HS19121121-01MS		Unknown	RA5	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/4/2020 7:45:45 PM -06:00
	HS19121121-01MSD		Unknown	RA6	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/4/2020 8:02:21 PM -06:00
	HS19121121-02DF500		Unknown	RA7	500.0000		Anions Pro	Anions Pr	5.0	Finished	1/4/2020 8:18:56 PM -06:00
	HS19121121-03DF500		Unknown	RA8	500.0000		Anions Pro	Anions Pr	5.0	Finished	1/4/2020 8:35:31 PM -06:00
	HS19121121-04DF500		Unknown	RB1	500.0000		Anions Pro	Anions Pr	5.0	Finished	1/4/2020 8:52:10 PM -06:00
	HS19121121-05DF500		Unknown	RB2	500.0000		Anions Pro	Anions Pr	5.0	Finished	1/4/2020 9:08:45 PM -06:00
	CCV1		Unknown	BA7	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/4/2020 9:25:21 PM -06:00
	CCB		Unknown	BA8	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/4/2020 9:41:56 PM -06:00
	HS19121121-06DF500		Unknown	RB3	500.0000		Anions Pro	Anions Pr	5.0	Finished	1/4/2020 9:58:33 PM -06:00
	HS19121121-08DF500		Unknown	RB4	500.0000		Anions Pro	Anions Pr	5.0	Finished	1/4/2020 10:15:09 PM -06:00
	HS19121121-09DF500		Unknown	RB5	500.0000		Anions Pro	Anions Pr	5.0	Finished	1/4/2020 10:31:45 PM -06:00
	HS19121092-01DF50		Unknown	RB6	50.0000		Anions Pro	Anions Pr	5.0	Finished	1/4/2020 10:48:21 PM -06:00
	HS19121092-02DF50		Unknown	RB7	50.0000		Anions Pro	Anions Pr	5.0	Finished	1/4/2020 11:04:58 PM -06:00
	HS19121092-03DF50		Unknown	RB8	50.0000		Anions Pro	Anions Pr	5.0	Finished	1/4/2020 11:21:34 PM -06:00
	HS19121092-04DF50		Unknown	RC1	50.0000		Anions Pro	Anions Pr	5.0	Finished	1/4/2020 11:38:10 PM -06:00
	HS19121092-05DF50		Unknown	RC2	50.0000		Anions Pro	Anions Pr	5.0	Finished	1/4/2020 11:54:45 PM -06:00
	HS19121092-06DF50		Unknown	RC3	50.0000		Anions Pro	Anions Pr	5.0	Finished	1/5/2020 12:11:27 AM -06:00
	HS19121155-01		Unknown	RC4	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/5/2020 12:28:03 AM -06:00
	CCV		Unknown	BA5	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/5/2020 12:44:42 AM -06:00
	CCB		Unknown	BA6	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/5/2020 1:01:17 AM -06:00
	HS19121155-02		Unknown	RC5	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/5/2020 1:17:55 AM -06:00
	HS19121155-03DF20		Unknown	RC6	20.0000		Anions Pro	Anions Pr	5.0	Finished	1/5/2020 1:34:30 AM -06:00
	HS19121155-04DF20		Unknown	RC7	20.0000		Anions Pro	Anions Pr	5.0	Finished	1/5/2020 1:51:05 AM -06:00
	HS19121155-05DF50		Unknown	RC8	50.0000		Anions Pro	Anions Pr	5.0	Finished	1/5/2020 2:07:40 AM -06:00
	CCV1		Unknown	BA7	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/5/2020 2:24:19 AM -06:00
	CCB		Unknown	BA8	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/5/2020 2:40:54 AM -06:00

Sequence: 010220
Injection #6: STD6

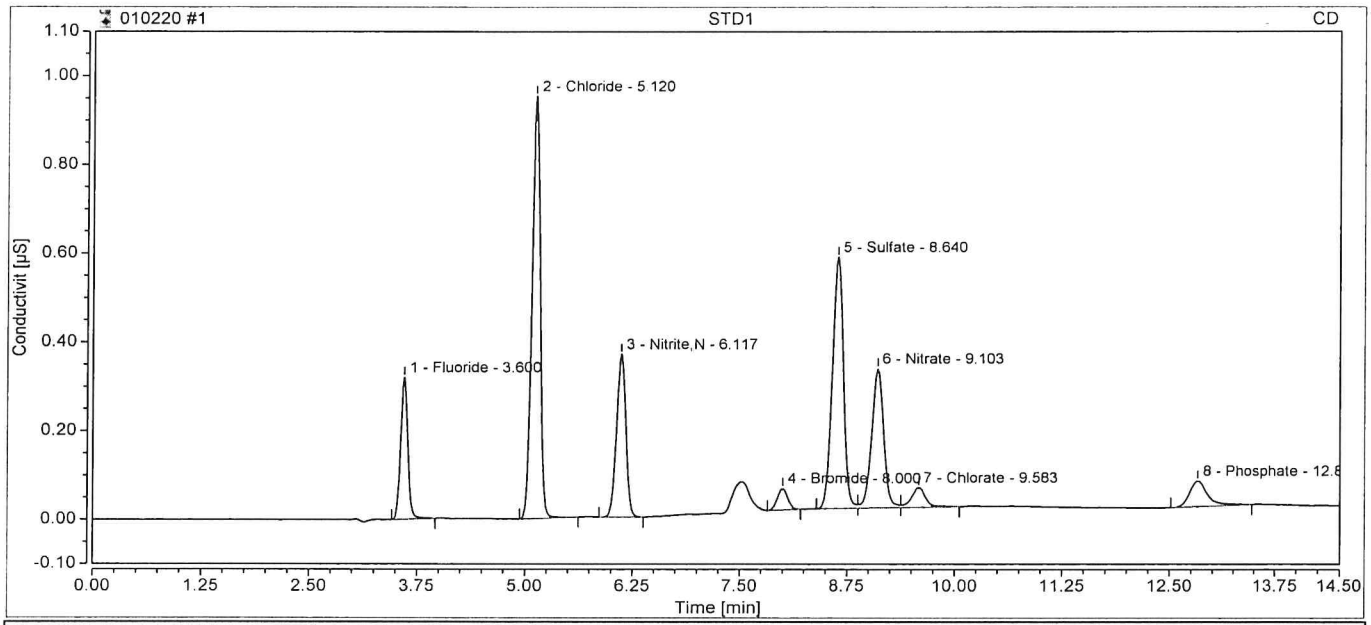
Calibration

Peak No.	Peak Name	Cal.Type	Eval.Type	Number of Points	Rel.Std.Dev. %	Coeff.of Determination	C0 (Offset)	C1 (Slope)	C2 (Curve)
1	*Fluoride*	*Lin, WithOffset, 1/x*	*Area*	*5*	*10.1532*	*0.99927*	*-0.0056*	*0.3716*	*0.0000*
2	Chloride	Lin, WithOffset, 1/x	Area	6	0.2804	1.00000	-0.0135	0.2355	0.0000
3	Nitrite,N	Lin, WithOffset, 1/x	Area	5	15.1147	0.99824	0.0003	0.5120	0.0000
4	Bromide	Lin, WithOffset, 1/x	Area	6	14.0217	0.99919	-0.0052	0.1009	0.0000
5	Sulfate	Lin, WithOffset, 1/x	Area	6	1.1258	0.99999	-0.0022	0.1717	0.0000
6	Nitrate	Lin, WithOffset, 1/x	Area	6	2.2249	0.99998	-0.0102	0.5876	0.0000
7	Chlorate	Lin, WithOffset, 1/x	Area	6	10.0265	0.99953	-0.0024	0.0944	0.0000
8	Phosphate	Lin, WithOffset, 1/x	Area	6	6.6198	0.99981	-0.0110	0.2321	0.0000
Maximum					**15.1147**	1.00000			
Minimum					0.2804	**0.99824**			

1 STD1

Sample Name:	**STD1**	*Injection Volume:*	**5.00**
Vial Number:	**GA1**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 14:08**	*Sample Weight:*	**1.0000**

Run Time:

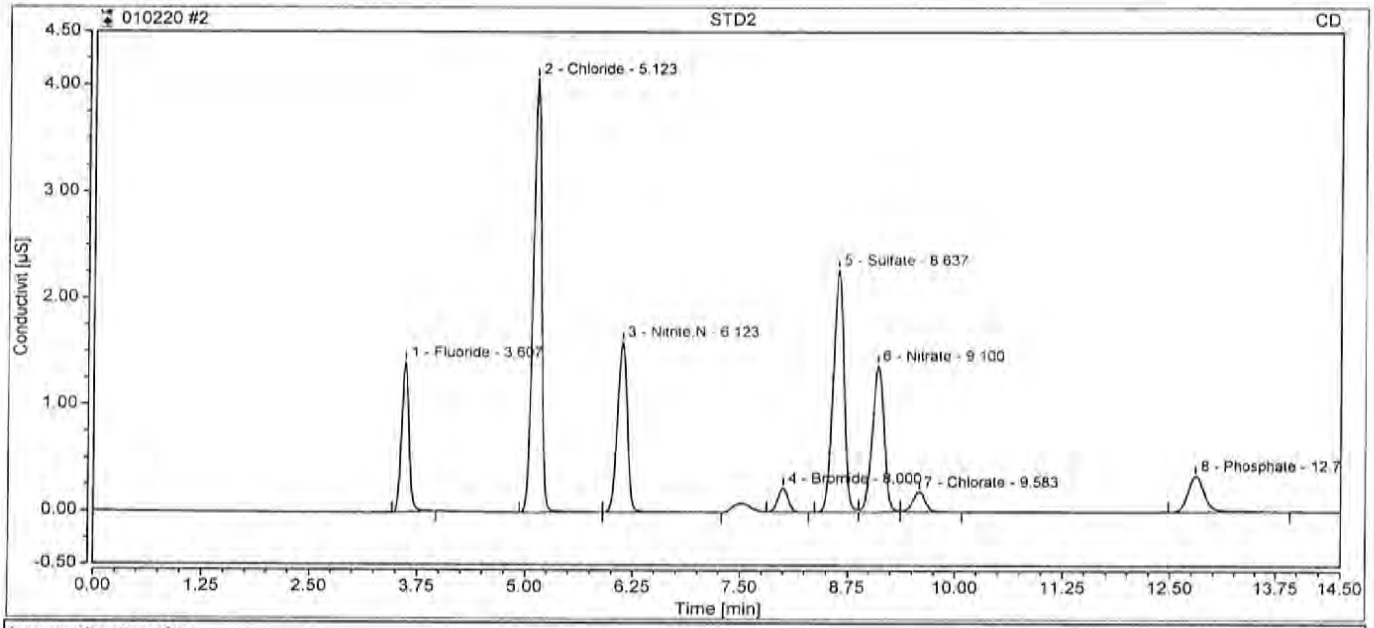


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.60	Fluoride	BMB	0.031	0.0973	0.0973	1.0000
2	5.12	Chloride	BMB	0.105	0.5026	0.5026	1.0000
3	6.12	Nitrite,N	BMB	0.046	0.0893	0.0893	1.0000
4	8.00	Bromide	BMB	0.007	0.1192	0.1192	1.0000
5	8.64	Sulfate	BM	0.084	0.5042	0.5042	1.0000
6	9.10	Nitrate	M	0.051	0.1034	0.1034	1.0000
7	9.58	Chlorate	MB	0.008	0.1143	0.1143	1.0000
8	12.83	Phosphate	BMB	0.014	0.1085	0.1085	1.0000
Total:			**0.000**	**0.346**		**1.64**	

2 STD2

Sample Name:	STD2	Injection Volume	5.00
Vial Number:	GA2	Channel:	CD
Sample Type	Calibration Standard	Wavelength:	210
Control Program:	Anions Program 08092019	Bandwidth:	n.a.
Quantif. Method:	Anions Processing Method	Dilution Factor:	1.0000
Recording Time:	08/12/2019 14:24	Sample Weight:	1.0000
Run Time:			

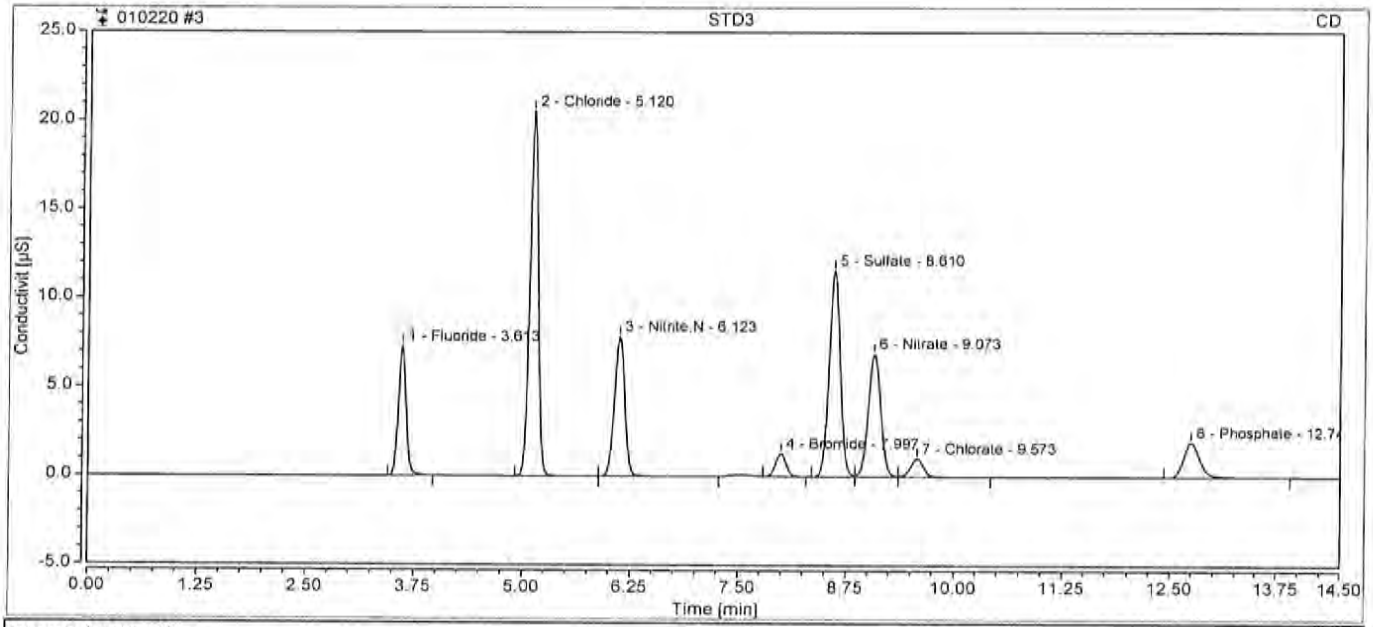


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.61	Fluoride	BMB	0.140	0.3929	0.3929	1.0000
2	5.12	Chloride	BMB	0.456	1.9918	1.9918	1.0000
3	6.12	Nitrite,N	BMB	0.211	0.4119	0.4119	1.0000
4	8.00	Bromide	BMB	0.031	0.3593	0.3593	1.0000
5	8.64	Sulfate	BM	0.337	1.9733	1.9733	1.0000
6	9.10	Nitrate	M	0.220	0.3917	0.3917	1.0000
7	9.58	Chlorate	MB	0.033	0.3704	0.3704	1.0000
8	12.80	Phosphate	BMB	0.078	0.3841	0.3841	1.0000
Total:			**0.000**	**1.506**		**6.28**	

3 STD3

Sample Name:	STD3	Injection Volume:	5.00
Vial Number:	GA3	Channel:	CD
Sample Type:	Calibration Standard	Wavelength:	210
Control Program:	Anions Program 08092019	Bandwidth:	n.a.
Quantif. Method:	Anions Processing Method	Dilution Factor:	1.0000
Recording Time:	08/12/2019 14:41	Sample Weight:	1.0000
Run Time:			



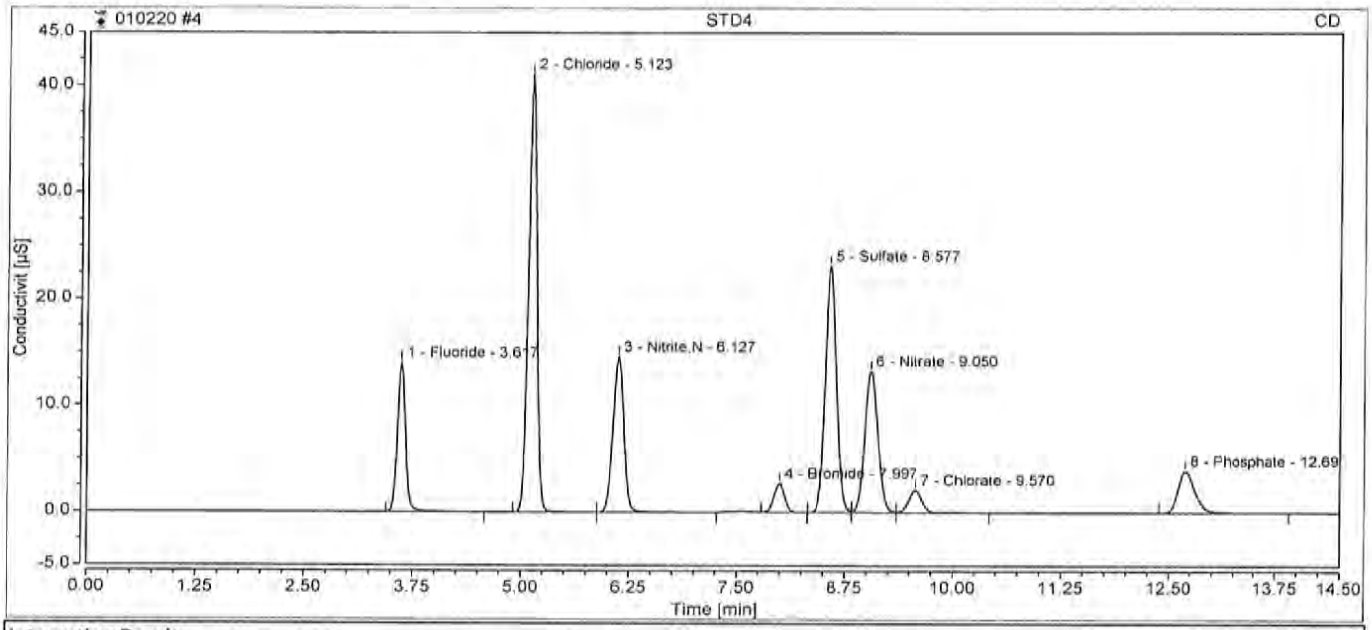
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.61	Fluoride	BMB	0.758	2.0551	2.0551	1.0000
2	5.12	Chloride	BMB	2.339	9.9888	9.9888	1.0000
3	6.12	Nitrite,N	BMB	1.091	2.1305	2.1305	1.0000
4	8.00	Bromide	BMB	0.182	1.8590	1.8590	1.0000
5	8.61	Sulfate	BM	1.715	10.0007	10.0007	1.0000
6	9.07	Nitrate	M	1.153	1.9792	1.9792	1.0000
7	9.57	Chlorate	MB	0.176	1.8940	1.8940	1.0000
8	12.75	Phosphate	BMB	0.436	1.9269	1.9269	1.0000
Total:			0.000	7.851		31.83	

4 STD4

Sample Name:	**STD4**	*Injection Volume:*	**5.00**
Vial Number:	**GA4**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 14:57**	*Sample Weight:*	**1.0000**

Run Time



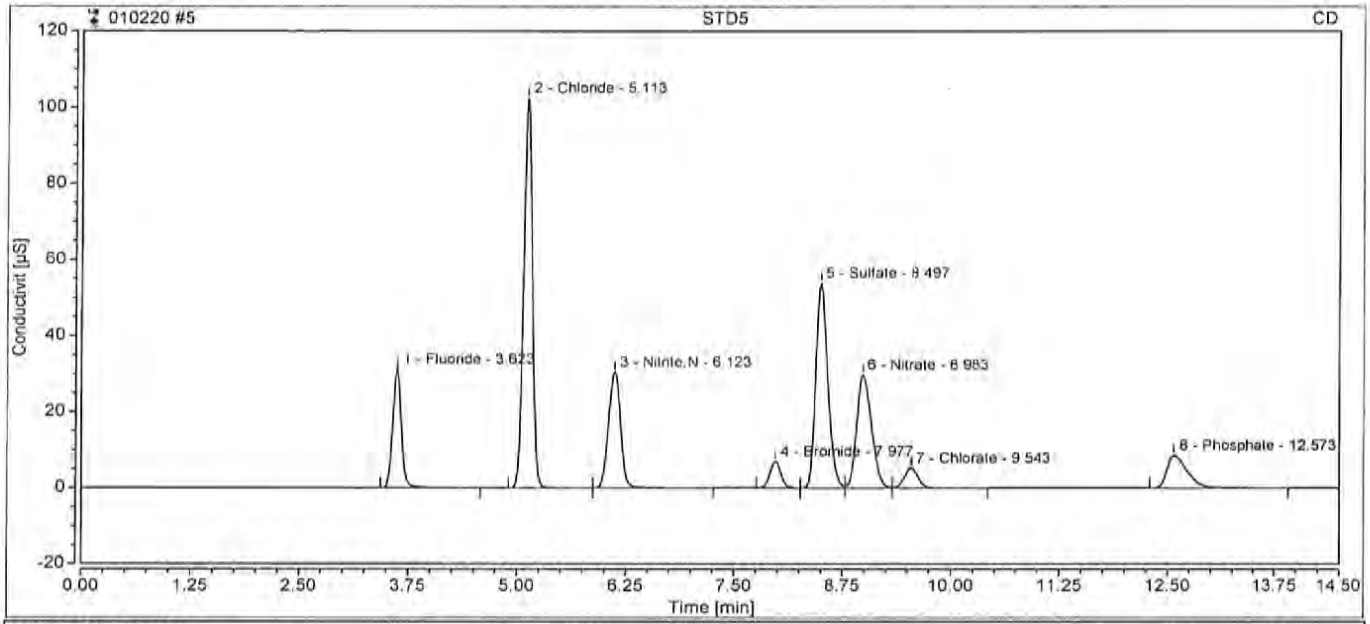
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	1.535	4.1457	4.1457	1.0000
2	5.12	Chloride	BMB	4.695	19.9948	19.9948	1.0000
3	6.13	Nitrite,N	BMB	2.133	4.1659	4.1659	1.0000
4	8.00	Bromide	BMB	0.385	3.8642	3.8642	1.0000
5	8.58	Sulfate	BM	3.451	20.1082	20.1082	1.0000
6	9.05	Nitrate	M	2.330	3.9823	3.9823	1.0000
7	9.57	Chlorate	MB	0.365	3.8956	3.8956	1.0000
8	12.69	Phosphate	BMB	0.903	3.9395	3.9395	1.0000
Total:			**0.000**	**15.798**		**64.10**	

5 STD5

Sample Name:	STD5	Injection Volume:	5.00
Vial Number:	GA5	Channel:	CD
Sample Type:	Calibration Standard	Wavelength:	210
Control Program:	Anions Program 08092019	Bandwidth:	n.a.
Quantif. Method:	Anions Processing Method	Dilution Factor:	1.0000
Recording Time:	08/12/2019 15:14	Sample Weight:	1.0000

Run Time:



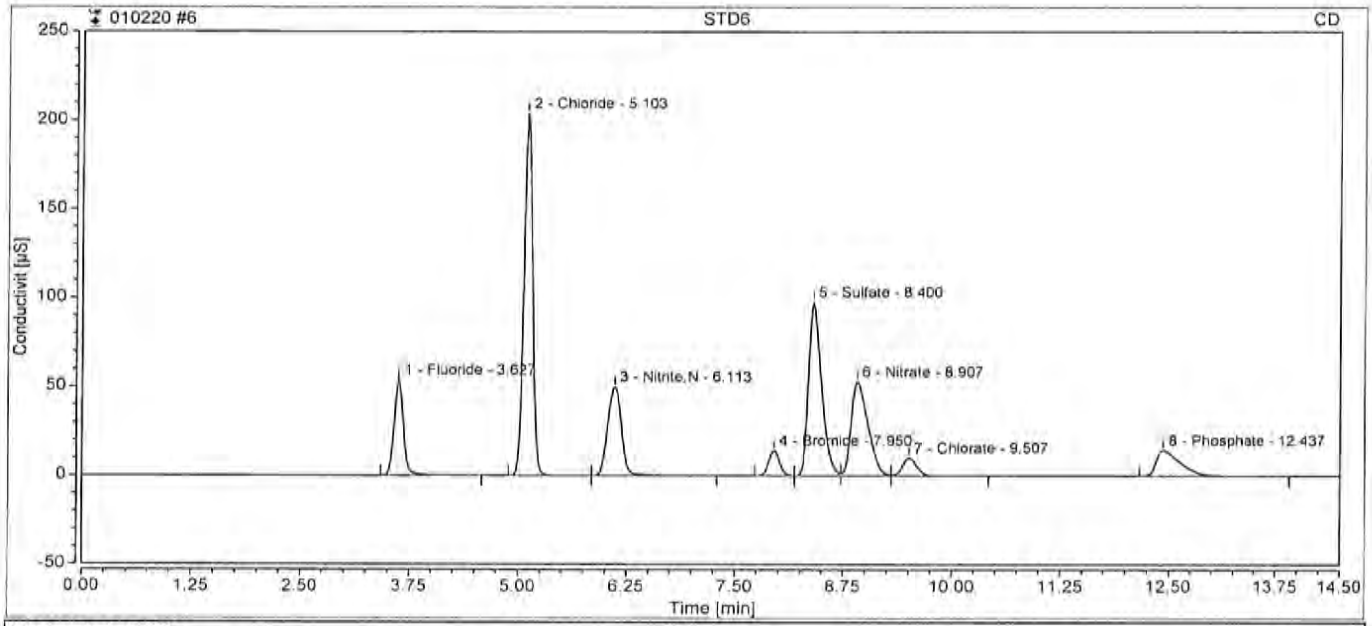
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	3.639	9.8090	9.8090	1.0000
2	5.11	Chloride	BMB	11.762	49.9996	49.9996	1.0000
3	6.12	Nitrite,N	BMB	4.968	9.7023	9.7023	1.0000
4	7.98	Bromide	BMB	1.001	9.9786	9.9786	1.0000
5	8.50	Sulfate	BM	8.590	50.0271	50.0271	1.0000
6	8.98	Nitrate	M	5.854	9.9805	9.9805	1.0000
7	9.54	Chlorate	MB	0.939	9.9670	9.9670	1.0000
8	12.57	Phosphate	BMB	2.305	9.9803	9.9803	1.0000
Total:			0.000	39.057		159.44	

6 STD6

Sample Name:	**STD6**	*Injection Volume:*	**5.00**
Vial Number:	**GB8**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 18:37**	*Sample Weight:*	**1.0000**

Run Time:



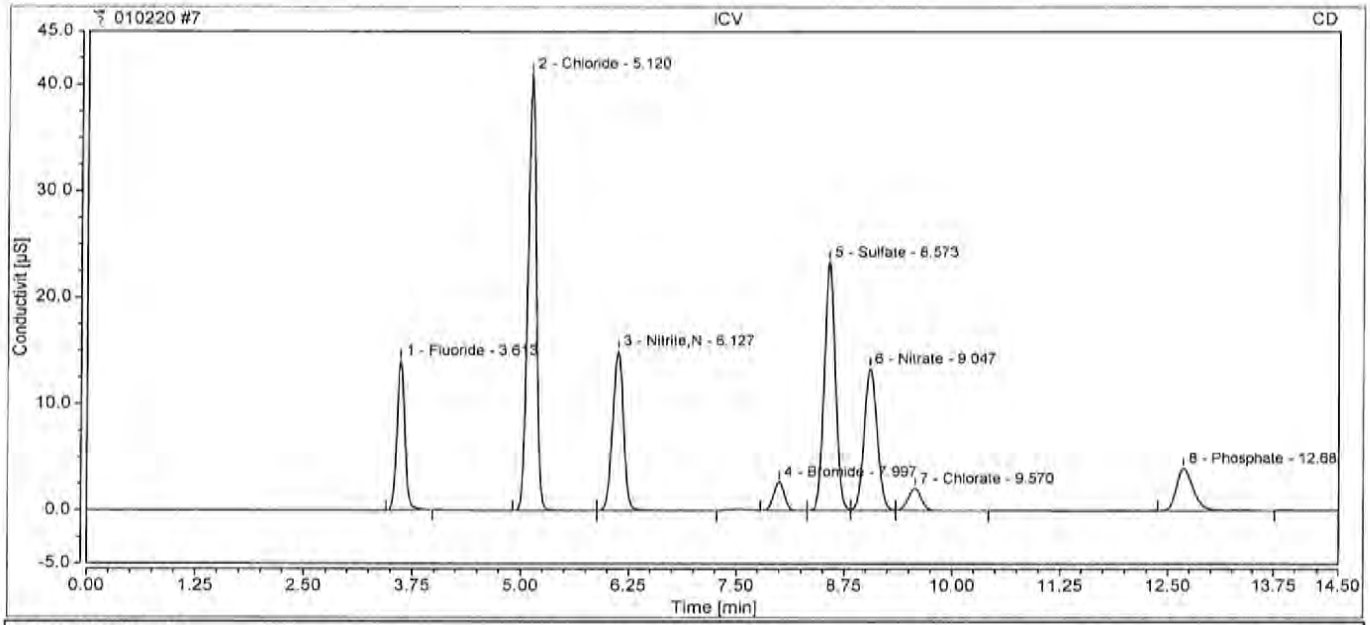
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.63	Fluoride	BMB	6.773	18.2418	18.2418	1.0000
2	5.10	Chloride	BMB	23.542	100.0224	100.0224	1.0000
3	6.11	Nitrite,N	BMB	9.157	17.8850	17.8850	1.0000
4	7.95	Bromide	BM	2.045	20.3197	20.3197	1.0000
5	8.40	Sulfate	M	17.153	99.8863	99.8863	1.0000
6	8.91	Nitrate	M	11.778	20.0629	20.0629	1.0000
7	9.51	Chlorate	MB	1.910	20.2586	20.2586	1.0000
8	12.44	Phosphate	BMB	4.668	20.1606	20.1606	1.0000
Total:			**0.000**	**77.025**		**316.84**	

7 ICV

Sample Name:	**ICV**	*Injection Volume:*	**5.00**
Vial Number:	**GA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 18:54**	*Sample Weight:*	**1.0000**

Run Time:



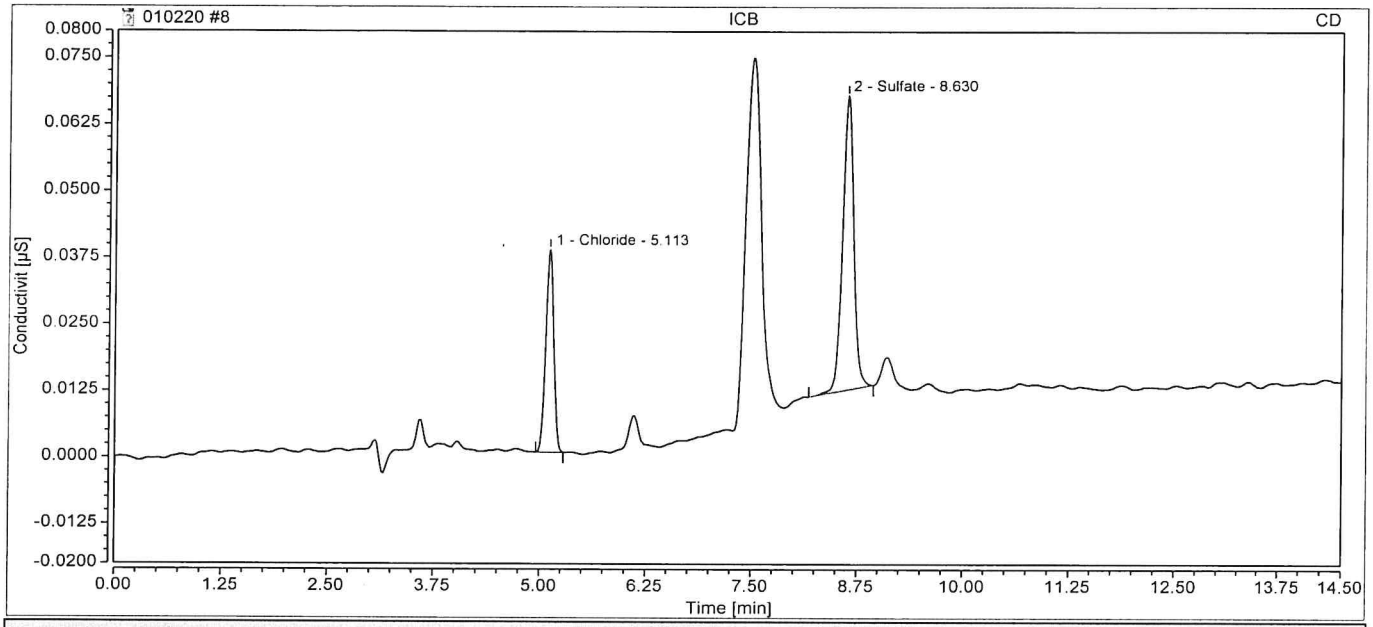
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.61	Fluoride	BMB	1.495	4.0374	4.0374	1.0000
2	5.12	Chloride	BMB	4.681	19.9333	19.9333	1.0000
3	6.13	Nitrite,N	BMB	2.195	4.2858	4.2858	1.0000
4	8.00	Bromide	BMB	0.384	3.8585	3.8585	1.0000
5	8.57	Sulfate	BM	3.469	20.2132	20.2132	1.0000
6	9.05	Nitrate	M	2.340	3.9993	3.9993	1.0000
7	9.57	Chlorate	MB	0.367	3.9104	3.9104	1.0000
8	12.68	Phosphate	BMB	0.911	3.9732	3.9732	1.0000
Total:			**0.000**	**15.841**		**64.21**	

8 ICB

Sample Name:	**ICB**	*Injection Volume:*	**5.00**
Vial Number:	**GB8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 19:29**	*Sample Weight:*	**1.0000**

Run Time:

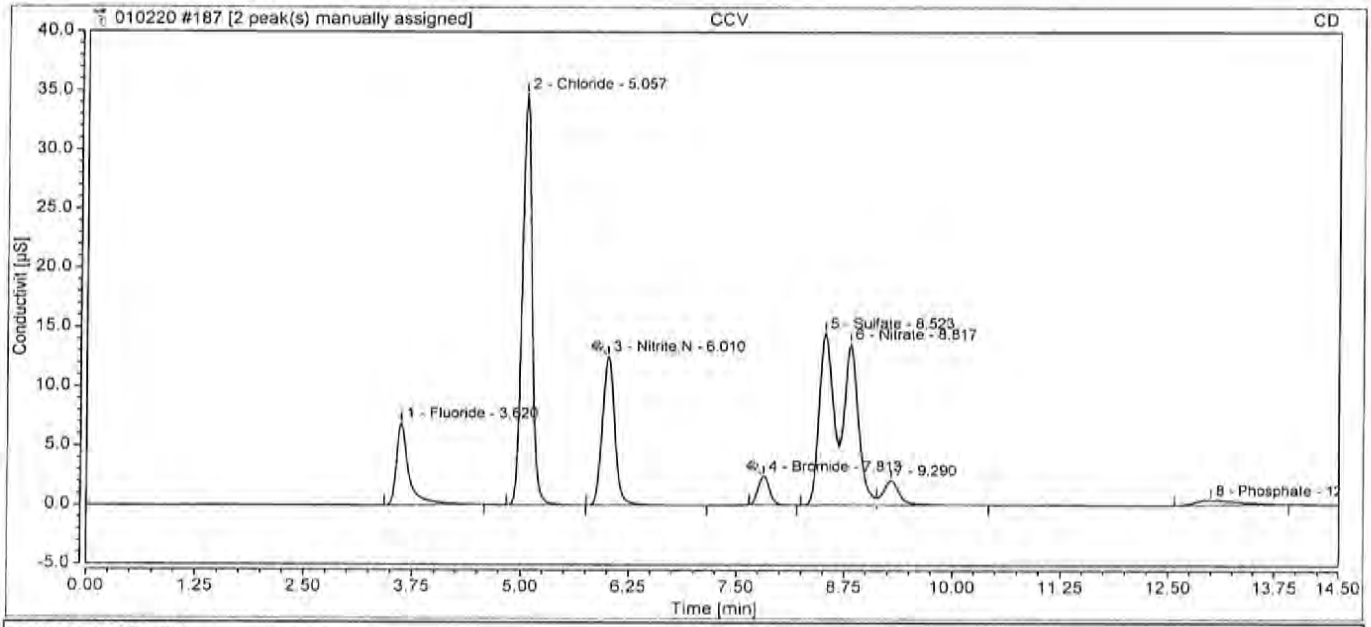


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.11	Chloride	BMB	0.004	0.0748	0.0748	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
2	8.63	Sulfate	BMB	0.008	0.0618	0.0618	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.013**		**0.14**	

187 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/04/2020 18:06**	*Sample Weight:*	**1.0000**
Run Time:			



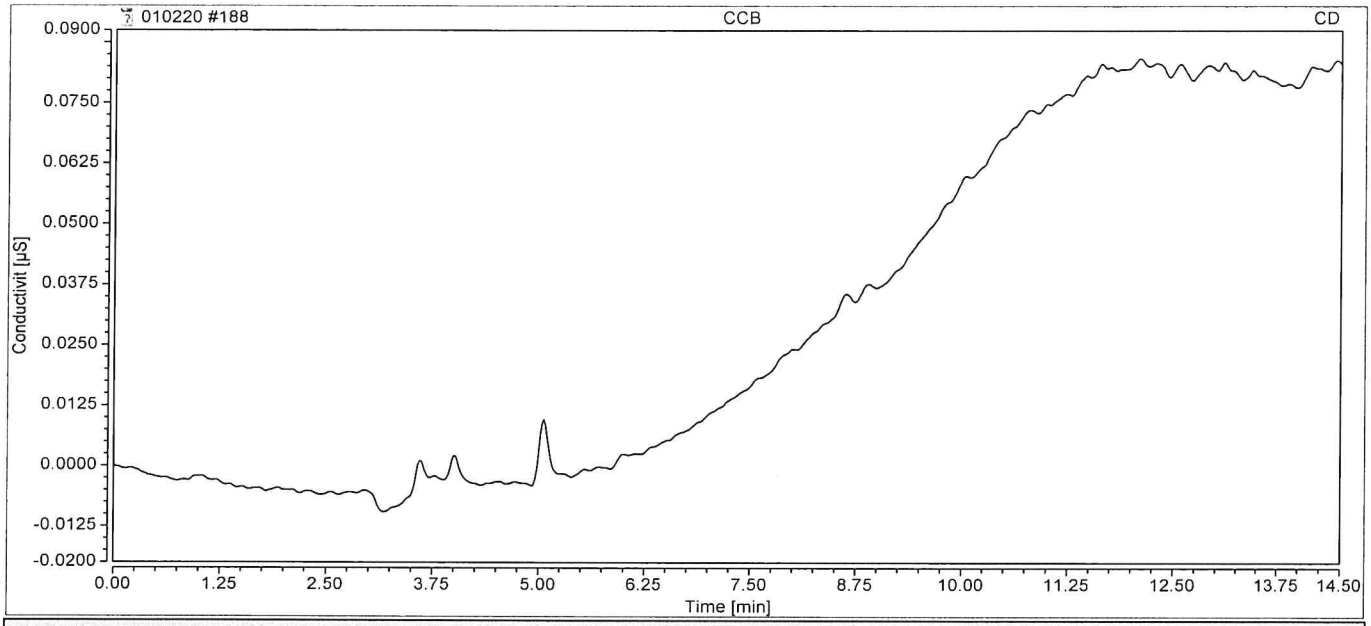
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	1.154	3.1218	3.1218	1.0000
2	5.06	Chloride	BMB	4.581	19.5095	19.5095	1.0000
3	6.01	Nitrite,N	BMB^	2.076	4.0542	4.0542	1.0000
4	7.81	Bromide	BMB^	0.367	3.6922	3.6922	1.0000
5	8.52	Sulfate	BM	2.733	15.9243	15.9243	1.0000
6	8.82	Nitrate	M	2.662	4.5476	4.5476	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
8	13.00	Phosphate	BMB	0.252	1.1353	1.1353	1.0000
Total:			**0.000**	**13.826**		**51.98**	

188 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/04/2020 18:22**	*Sample Weight:*	**1.0000**

Run Time:

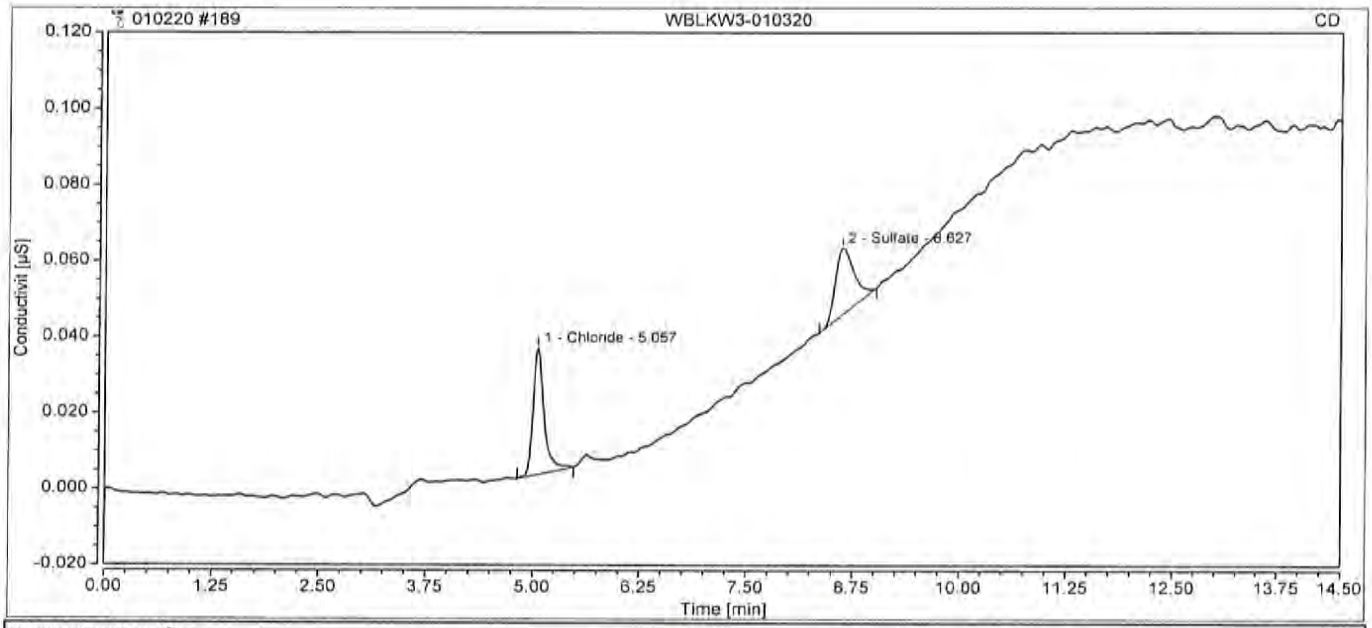


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.000**		**0.00**	

189 WBLKW3-010320

Sample Name:	**WBLKW3-010320**	*Injection Volume:*	**5.00**
Vial Number:	**RA1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/04/2020 18:39**	*Sample Weight:*	**1.0000**
Run Time:			



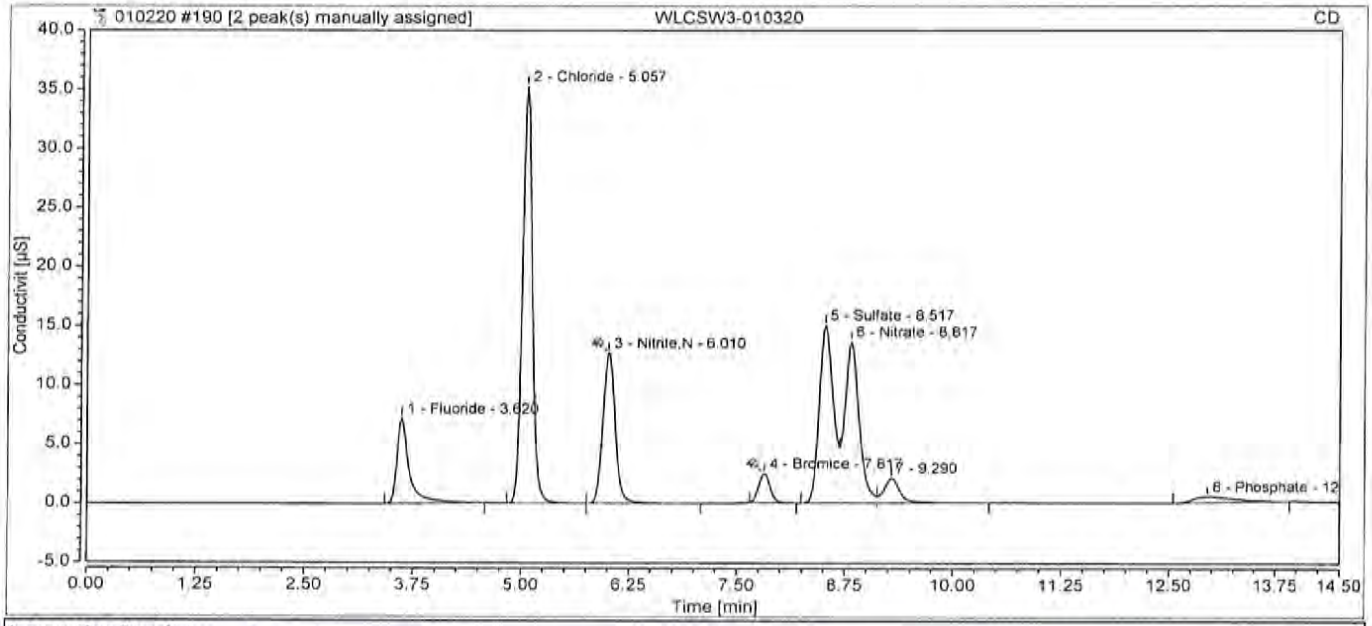
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.06	Chloride	BMB	0.005	0.0783	0.0783	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
2	8.63	Sulfate	BMB	0.004	0.0382	0.0382	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.009**		**0.12**	

190 WLCSW3-010320

Sample Name:	WLCSW3-010320	Injection Volume:	5.00
Vial Number:	RA2	Channel:	CD
Sample Type:	Unknown	Wavelength:	210
Control Program:	Anions Program 08092019	Bandwidth:	n.a.
Quantif. Method:	Anions Processing Method	Dilution Factor:	1.0000
Recording Time:	01/04/2020 18:55	Sample Weight:	1.0000

Run Time:



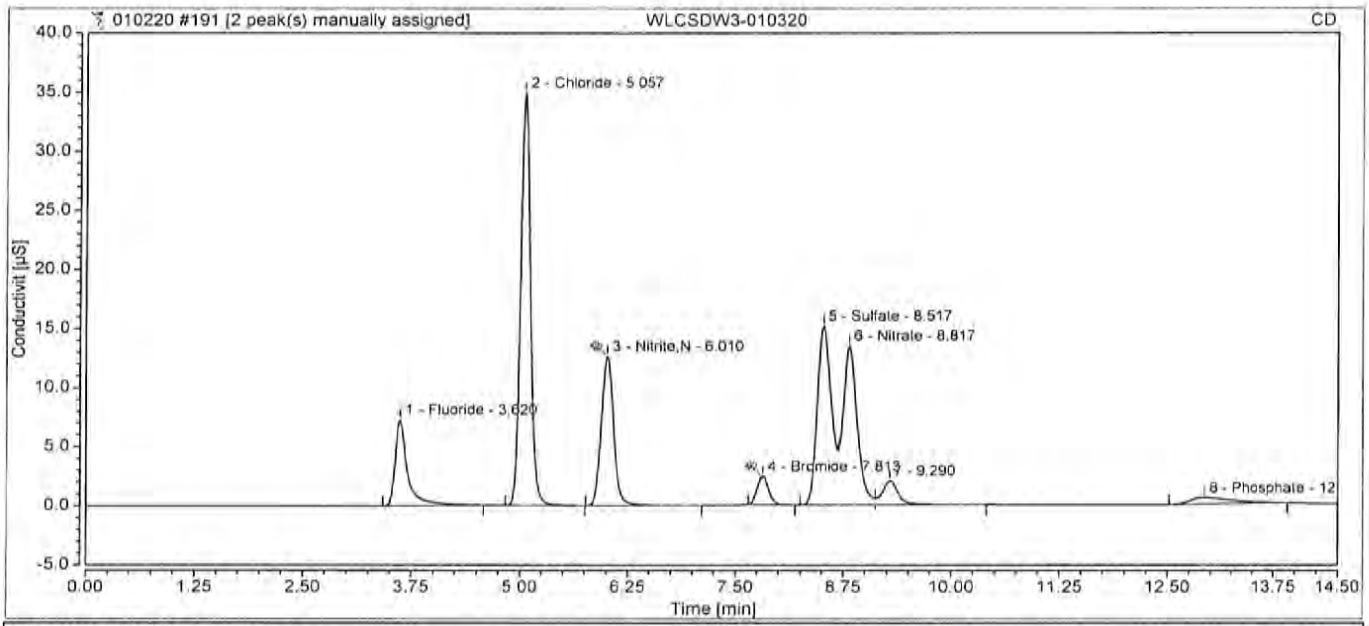
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	1.196	3.2325	3.2325	1.0000
2	5.06	Chloride	BMB	4.639	19.7557	19.7557	1.0000
3	6.01	Nitrite,N	BMB^	2.102	4.1055	4.1055	1.0000
4	7.82	Bromide	BMB^	0.371	3.7331	3.7331	1.0000
5	8.52	Sulfate	BM	2.833	16.5078	16.5078	1.0000
6	8.82	Nitrate	M	2.653	4.5331	4.5331	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
8	12.95	Phosphate	BMB	0.287	1.2862	1.2862	1.0000
Total:			0.000	14.082		53.15	

191 WLCSDW3-010320

Sample Name:	**WLCSDW3-010320**	*Injection Volume:*	**5.00**
Vial Number:	**RA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/04/2020 19:12**	*Sample Weight:*	**1.0000**

Run Time:

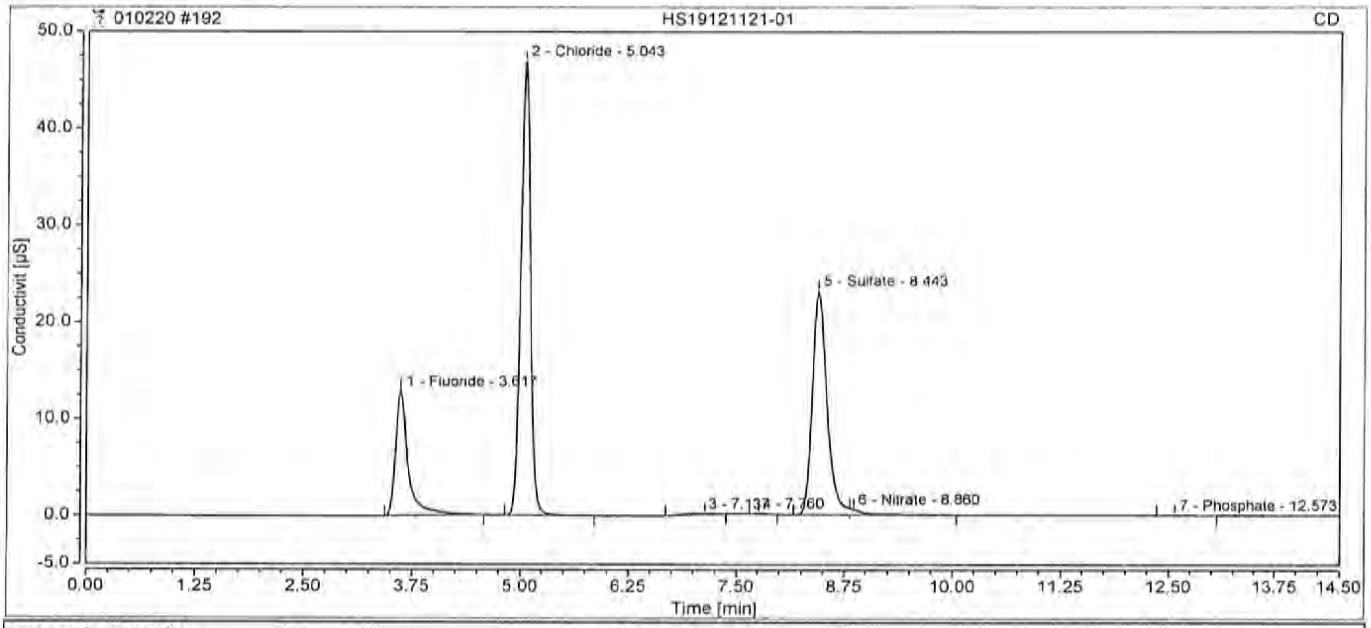


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	1.207	3.2627	3.2627	1.0000
2	5.06	Chloride	BMB	4.589	19.5435	19.5435	1.0000
3	6.01	Nitrite,N	BMB^	2.082	4.0665	4.0665	1.0000
4	7.81	Bromide	BMB^	0.367	3.6882	3.6882	1.0000
5	8.52	Sulfate	BM	2.859	16.6566	16.6566	1.0000
6	8.82	Nitrate	M	2.598	4.4387	4.4387	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
8	12.93	Phosphate	BMB	0.318	1.4189	1.4189	1.0000
Total:			**0.000**	**14.020**		**53.08**	

192 HS19121121-01

Sample Name:	HS19121121-01	Injection Volume:	5.00
Vial Number:	RA4	Channel:	CD
Sample Type:	Unknown	Wavelength:	210
Control Program:	Anions Program 08092019	Bandwidth:	n.a.
Quantif. Method:	Anions Processing Method	Dilution Factor:	1.0000
Recording Time:	01/04/2020 19:29	Sample Weight:	1.0000
Run Time:			



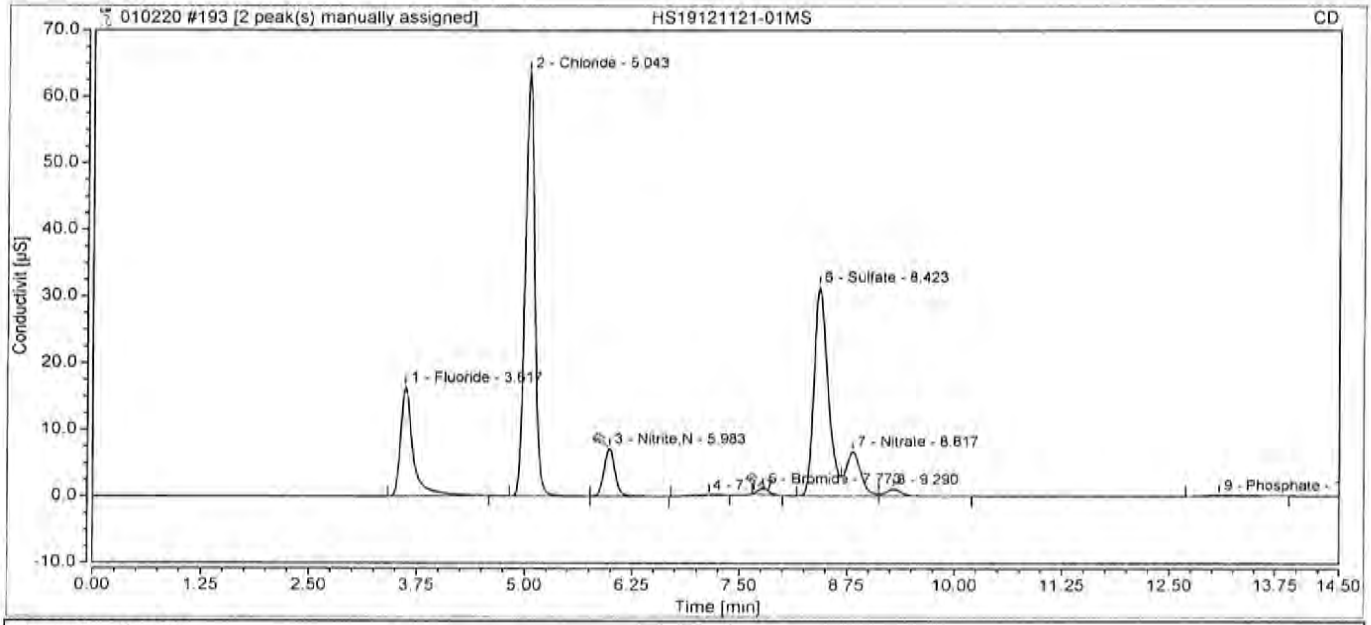
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	2.188	5.9026	5.9026	1.0000
2	5.04	Chloride	BMB	6.070	25.8311	25.8311	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
5	8.44	Sulfate	BM	4.527	26.3734	26.3734	1.0000
6	8.86	Nitrate	MB	0.112	0.2072	0.2072	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
7	12.57	Phosphate	BMB	0.005	0.0695	0.0695	1.0000
Total:			**0.000**	**12.901**		**58.38**	

193 HS19121121-01MS

Sample Name:	HS19121121-01MS	Injection Volume:	5.00
Vial Number:	RA5	Channel:	CD
Sample Type:	Unknown	Wavelength:	210
Control Program:	Anions Program 08092019	Bandwidth:	n.a.
Quantif. Method:	Anions Processing Method	Dilution Factor:	1.0000
Recording Time:	01/04/2020 19:45	Sample Weight:	1.0000

Run Time:

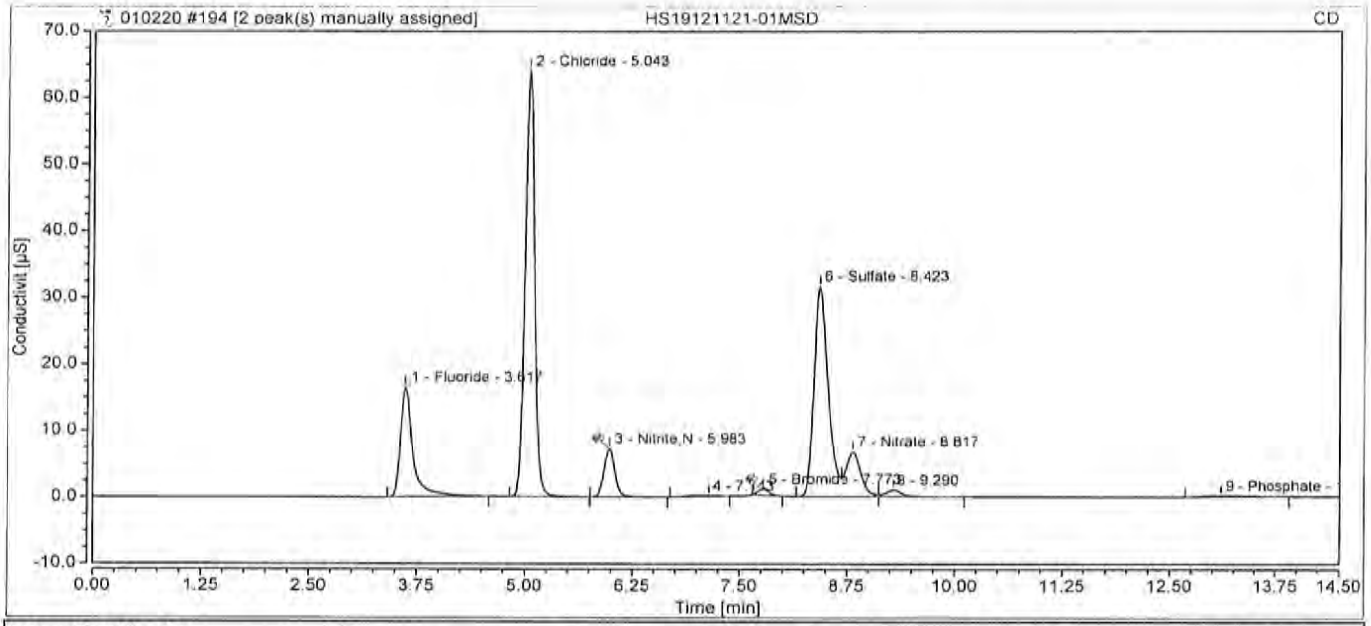


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	2.762	7.4481	7.4481	1.0000
2	5.04	Chloride	BMB	8.252	35.0966	35.0966	1.0000
3	5.98	Nitrite,N	BMB^	1.054	2.0588	2.0588	1.0000
5	7.77	Bromide	BMB^	0.139	1.4339	1.4339	1.0000
6	8.42	Sulfate	BM	5.930	34.5411	34.5411	1.0000
7	8.82	Nitrate	M	1.357	2.3278	2.3278	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
9	13.08	Phosphate	BMB	0.099	0.4733	0.4733	1.0000
Total:			0.000	19.594		83.38	

194 HS19121121-01MSD

Sample Name:	**HS19121121-01MSD**	*Injection Volume:*	**5.00**
Vial Number:	**RA6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/04/2020 20:02**	*Sample Weight:*	**1.0000**
Run Time:			



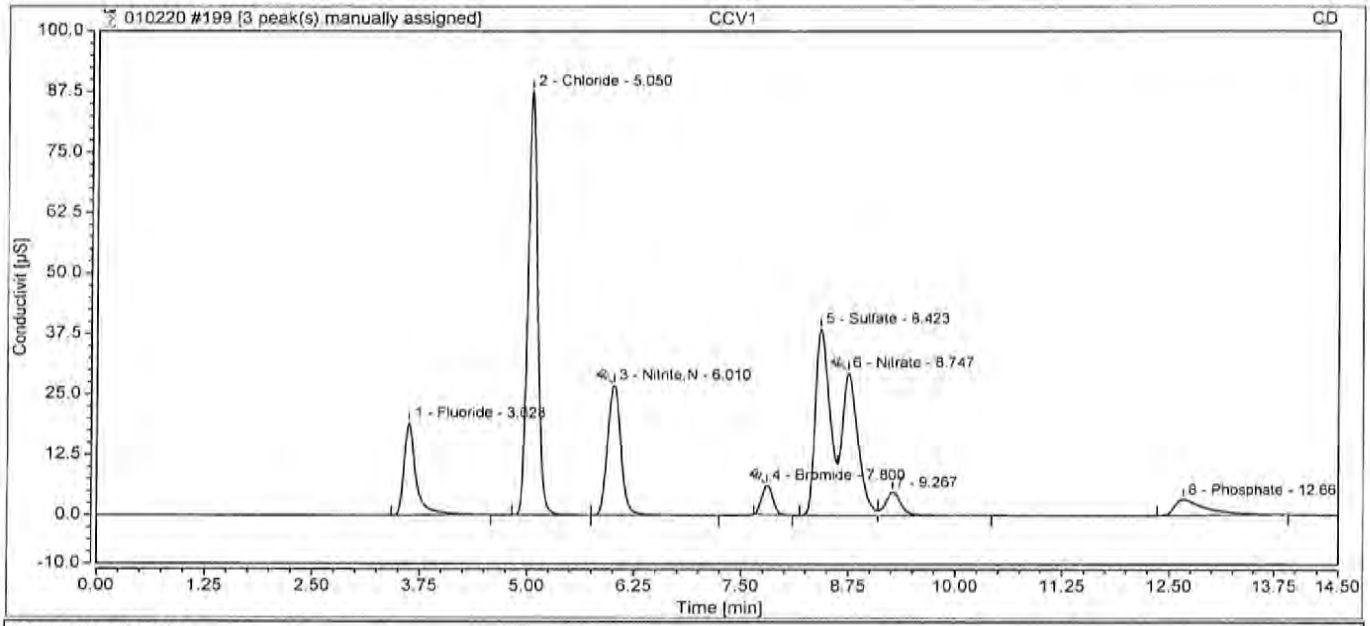
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	2.792	7.5300	7.5300	1.0000
2	5.04	Chloride	BMB	8.291	35.2642	35.2642	1.0000
3	5.98	Nitrite,N	BMB^	1.070	2.0894	2.0894	1.0000
5	7.77	Bromide	BMB^	0.141	1.4483	1.4483	1.0000
6	8.42	Sulfate	BM	5.990	34.8874	34.8874	1.0000
7	8.82	Nitrate	M	1.364	2.3395	2.3395	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
9	13.10	Phosphate	BMB	0.108	0.5132	0.5132	1.0000
Total:			**0.000**	**19.757**		**84.07**	

199 CCV1

Sample Name:	CCV1	Injection Volume:	5.00
Vial Number:	BA7	Channel:	CD
Sample Type:	Unknown	Wavelength:	210
Control Program:	Anions Program 08092019	Bandwidth:	n.a.
Quantif. Method:	Anions Processing Method	Dilution Factor:	1.0000
Recording Time:	01/04/2020 21:25	Sample Weight:	1.0000

Run Time:



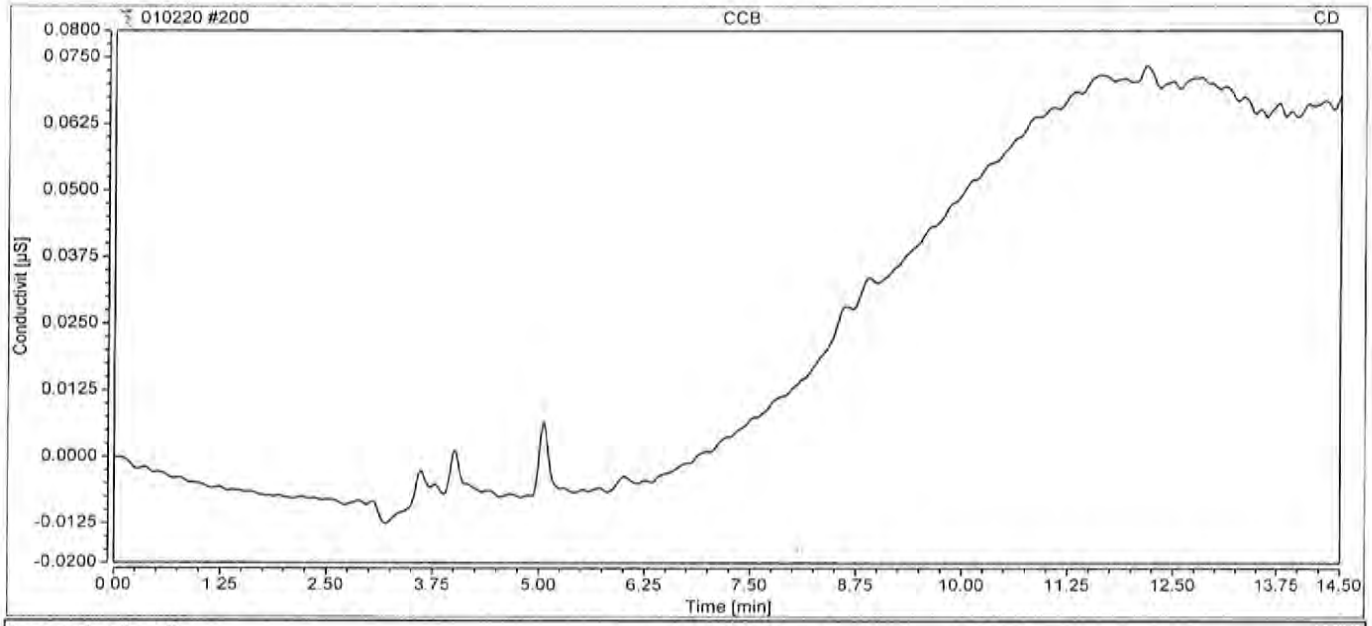
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	3.125	8.4260	8.4260	1.0000
2	5.05	Chloride	BMB	11.525	48.9944	48.9944	1.0000
3	6.01	Nitrite,N	BMB^	4.878	9.5263	9.5263	1.0000
4	7.80	Bromide	BMB^	0.927	9.2380	9.2380	1.0000
5	8.42	Sulfate	BM	7.491	43.6302	43.6302	1.0000
6	8.75	Nitrate	M ^	6.416	10.9378	10.9378	1.0000
n.a	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
8	12.66	Phosphate	BMB	1.452	6.3043	6.3043	1.0000
Total:			**0.000**	**35.814**		**137.06**	

200 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/04/2020 21:41**	*Sample Weight:*	**1.0000**

Run Time:



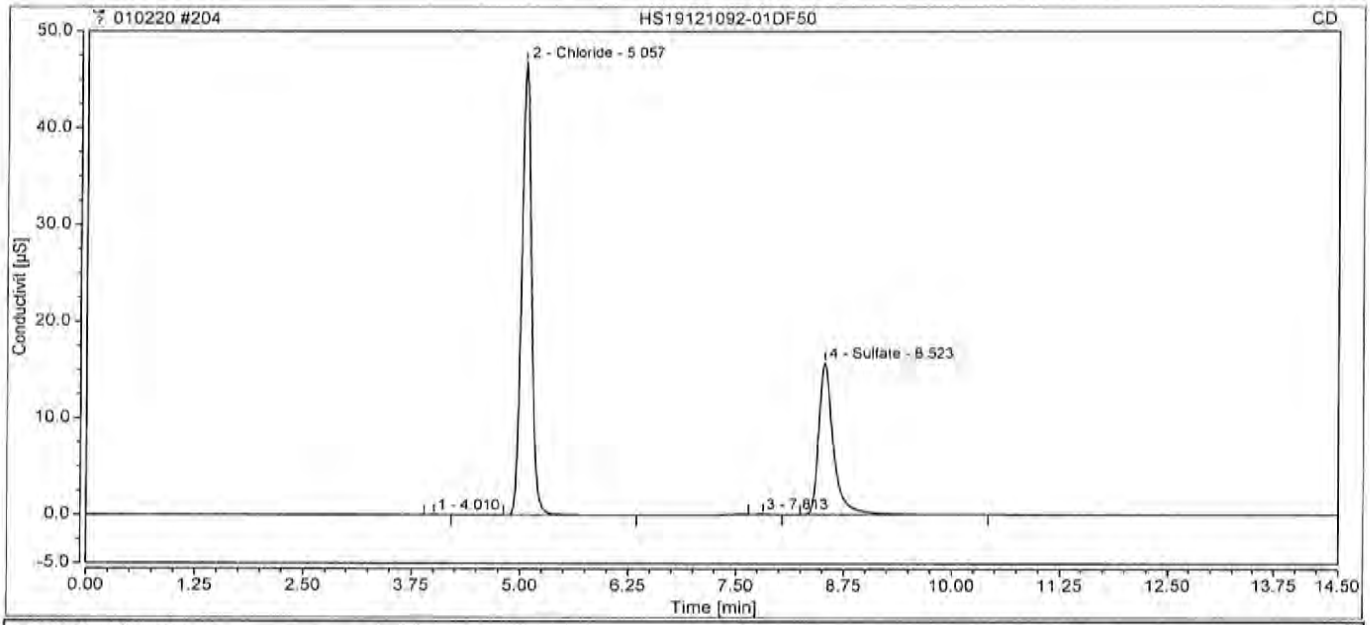
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.000**		**0.00**	

204 HS19121092-01DF50

Sample Name:	**HS19121092-01DF50**	*Injection Volume:*	**5.00**
Vial Number:	**RB6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**50.0000**
Recording Time:	**01/04/2020 22:48**	*Sample Weight:*	**1.0000**

Run Time:



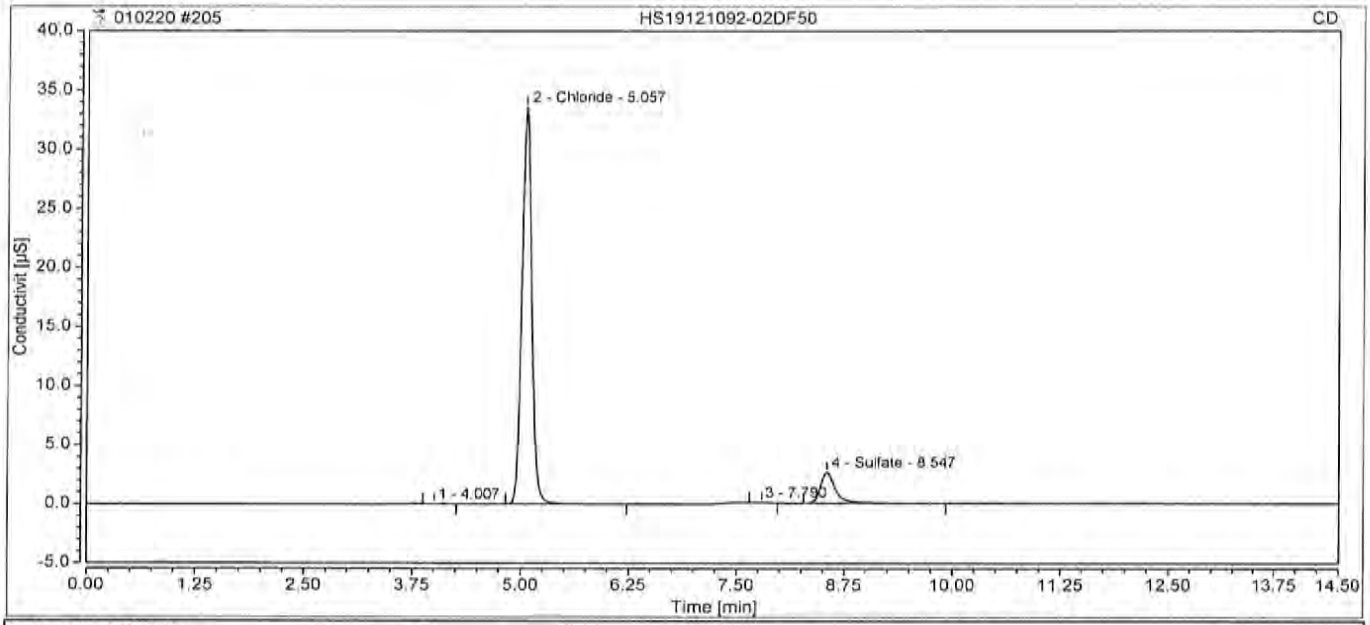
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	50.0000
2	5.06	Chloride	BMB	6.180	26.2991	1314.9539	50.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	50.0000
4	8.52	Sulfate	BMB	3.151	18.3586	917.9279	50.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	50.0000
Total:			**0.000**	**9.331**		**2232.88**	

205 HS19121092-02DF50

Sample Name:	HS19121092-02DF50	Injection Volume:	5.00
Vial Number:	RB7	Channel:	CD
Sample Type:	Unknown	Wavelength:	210
Control Program:	Anions Program 08092019	Bandwidth:	n.a.
Quantif. Method:	Anions Processing Method	Dilution Factor:	50.0000
Recording Time:	01/04/2020 23:04	Sample Weight:	1.0000

Run Time:



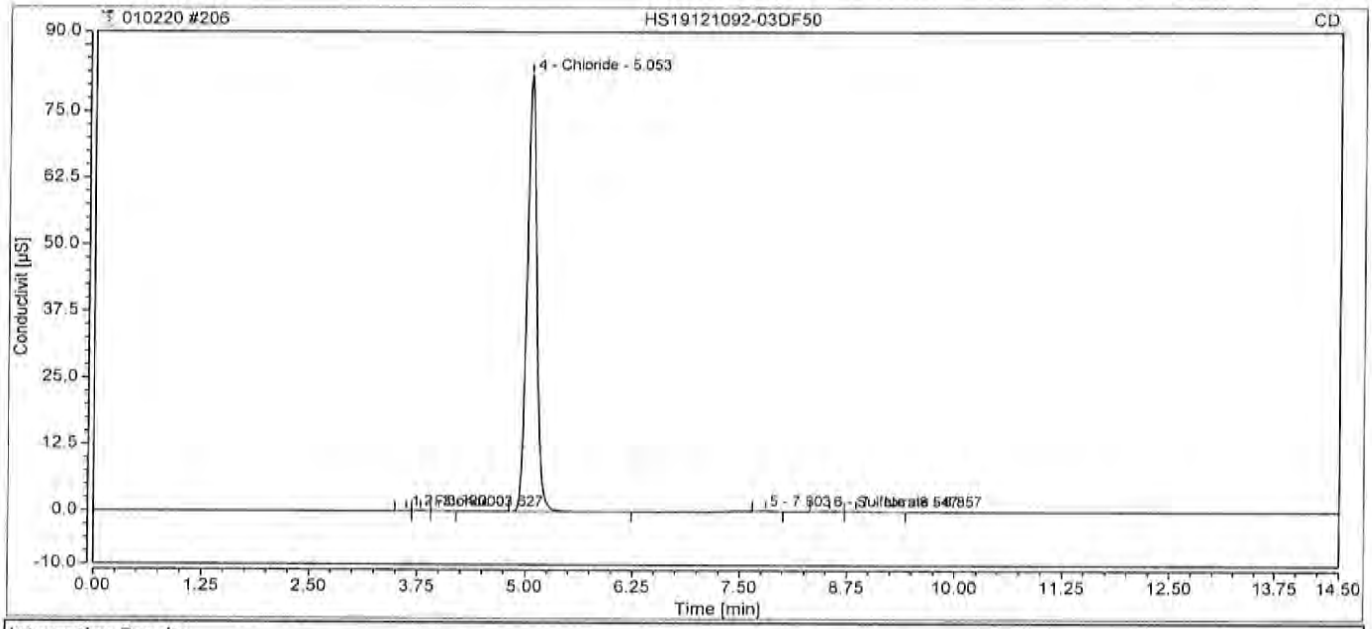
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	50.0000
2	5.06	Chloride	BMB	4.411	18.7895	939.4773	50.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	50.0000
4	8.55	Sulfate	BMB	0.539	3.1504	157.5180	50.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	50.0000
Total:			**0.000**	**4.950**		**1097.00**	

206 HS19121092-03DF50

Sample Name:	**HS19121092-03DF50**	*Injection Volume:*	**5.00**
Vial Number:	**RB8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**50.0000**
Recording Time:	**01/04/2020 23:21**	*Sample Weight:*	**1.0000**

Run Time:

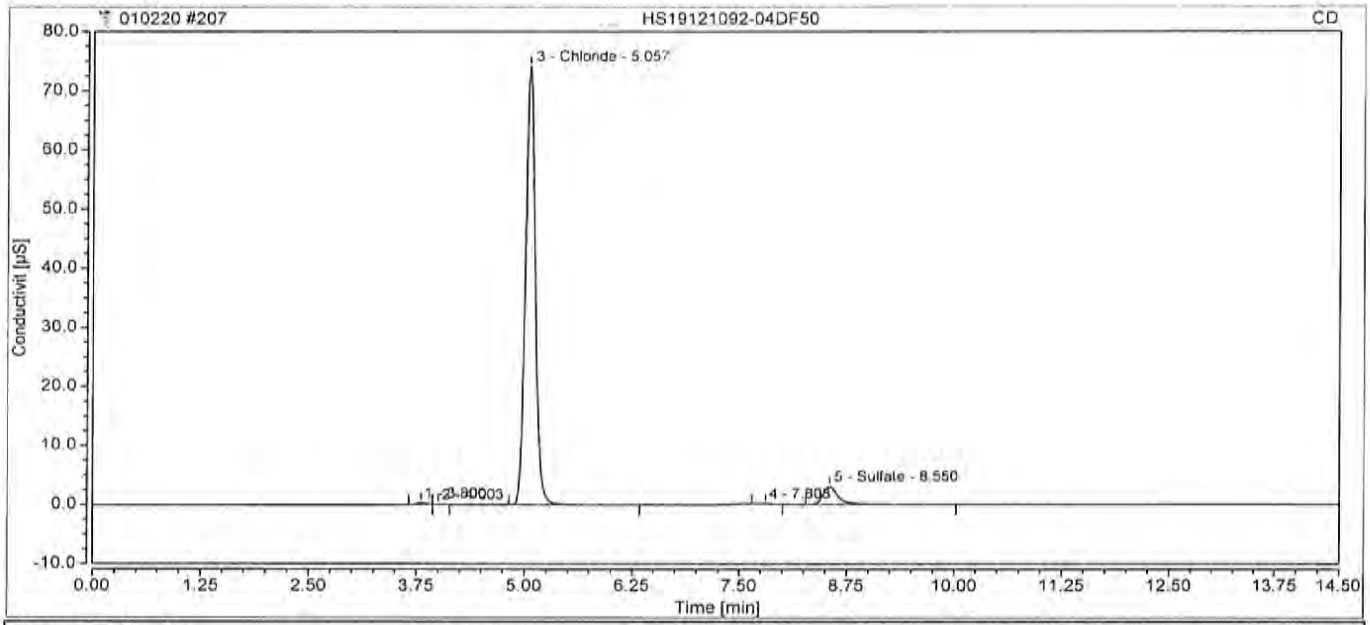


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.63	Fluoride	BMB	0.002	0.0209	1.0470	50.0000
4	5.05	Chloride	BMB	10.789	45.8692	2293.4584	50.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	50.0000
6	8.55	Sulfate	BM	0.019	0.1257	6.2858	50.0000
7	8.86	Nitrate	MB	0.016	0.0440	2.2016	50.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	50.0000
Total:			**0.000**	**10.826**		**2302.99**	

207 HS19121092-04DF50

Sample Name:	HS19121092-04DF50	Injection Volume:	5.00
Vial Number:	RC1	Channel:	CD
Sample Type:	Unknown	Wavelength:	210
Control Program:	Anions Program 08092019	Bandwidth:	n.a.
Quantif. Method:	Anions Processing Method	Dilution Factor:	50.0000
Recording Time:	01/04/2020 23:38	Sample Weight:	1.0000
Run Time:			

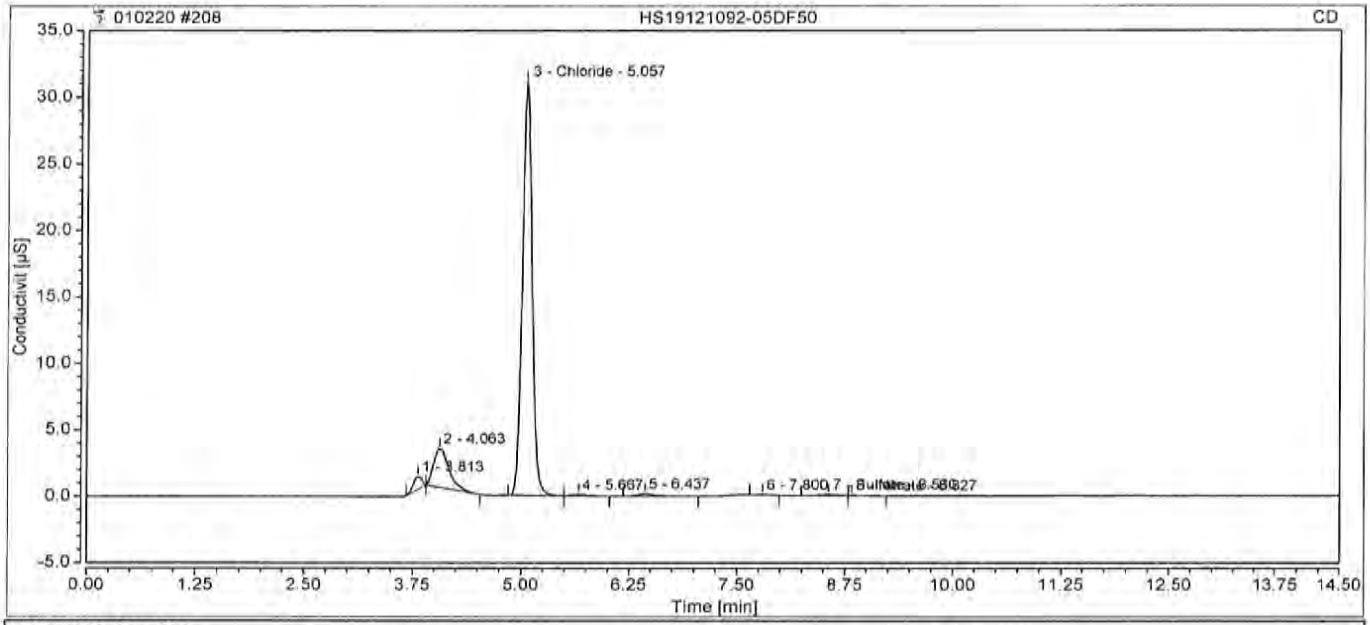


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	50.0000
3	5.06	Chloride	BMB	9.764	41.5169	2075.8461	50.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	50.0000
5	8.55	Sulfate	BMB	0.625	3.6516	182.5797	50.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	50.0000
Total:			**0.000**	**10.389**		**2258.43**	

208 HS19121092-05DF50

Sample Name:	HS19121092-05DF50	Injection Volume:	5.00
Vial Number:	RC2	Channel:	CD
Sample Type:	Unknown	Wavelength:	210
Control Program:	Anions Program 08092019	Bandwidth:	n.a.
Quantif. Method:	Anions Processing Method	Dilution Factor:	50.0000
Recording Time:	01/04/2020 23:54	Sample Weight:	1.0000
Run Time:			



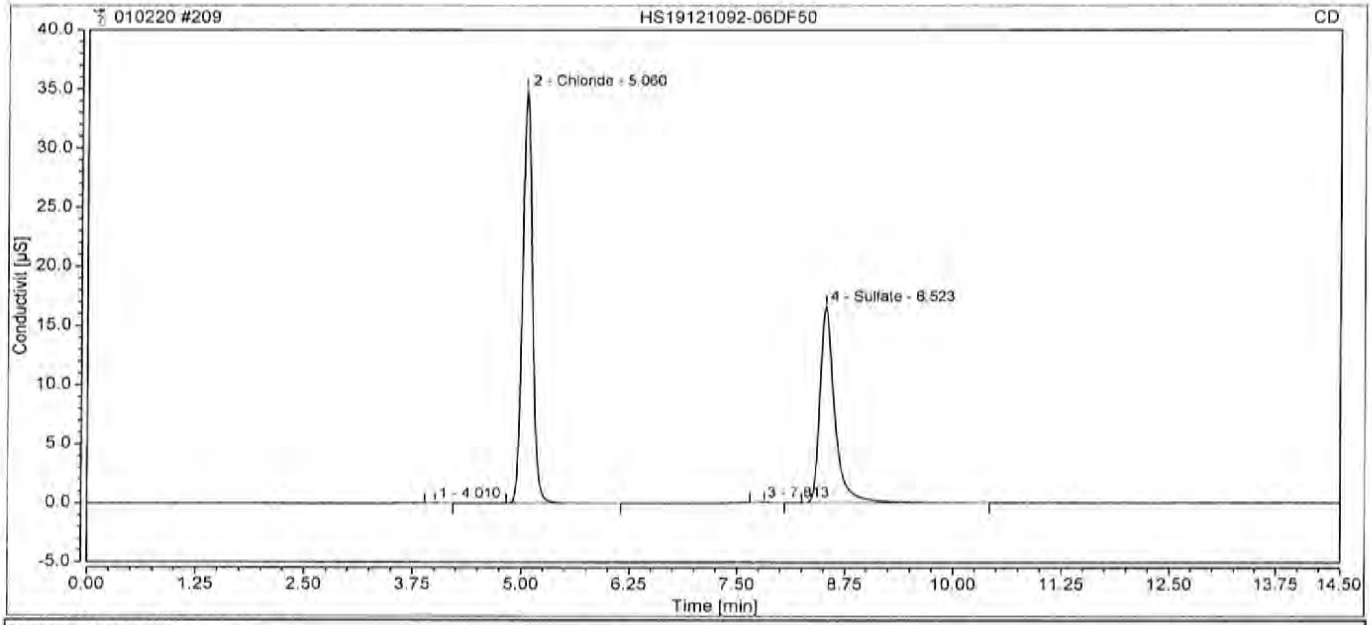
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	50.0000
3	5.06	Chloride	BMB	4.075	17.3605	868.0261	50.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	50.0000
7	8.56	Sulfate	BM	0.021	0.1344	6.7192	50.0000
8	8.83	Nitrate	MB	0.004	0.0250	1.2523	50.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	50.0000
Total:			**0.000**	**4.100**		**876.00**	

209 HS19121092-06DF50

Sample Name:	**HS19121092-06DF50**	*Injection Volume:*	**5.00**
Vial Number:	**RC3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**50.0000**
Recording Time:	**01/05/2020 00:11**	*Sample Weight:*	**1.0000**

Run Time:



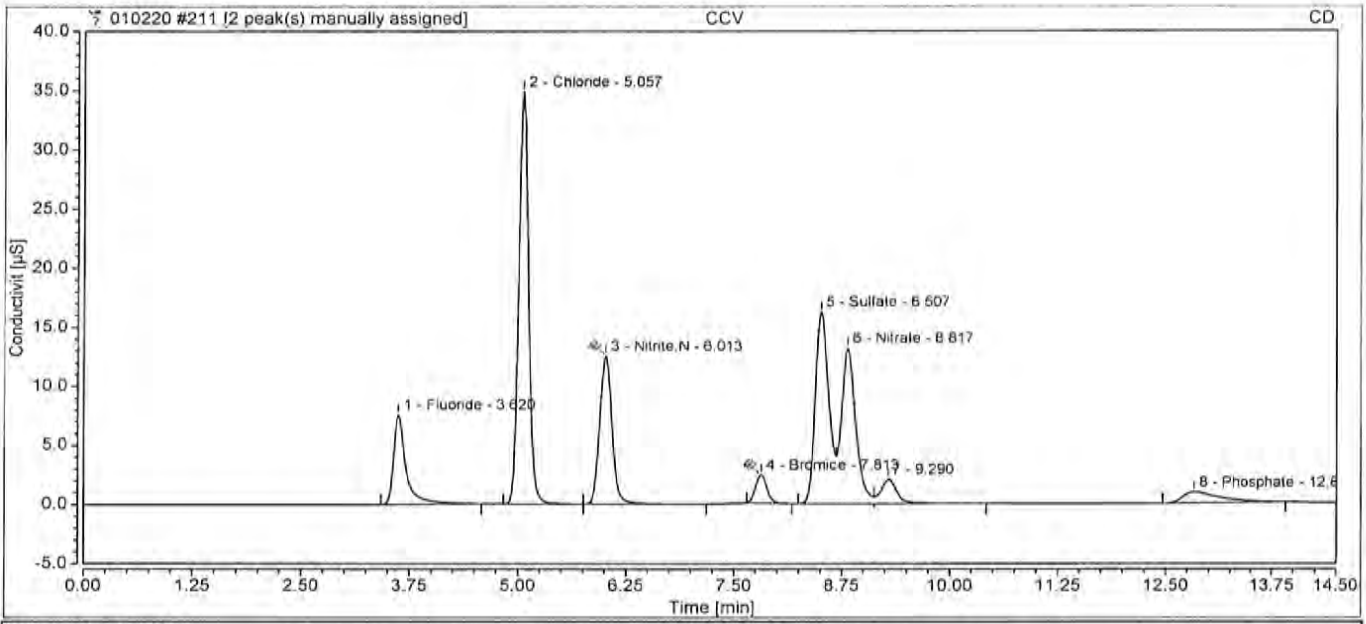
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	50.0000
2	5.06	Chloride	BMB	4.599	19.5858	979.2890	50.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	50.0000
4	8.52	Sulfate	BMB	3.307	19.2689	963.4451	50.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	50.0000
Total:			**0.000**	**7.906**		**1942.73**	

211 CCV

Sample Name:	**CCV**	*Injection Volume:*	**5.00**
Vial Number:	**BA5**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/05/2020 00:44**	*Sample Weight:*	**1.0000**

Run Time:



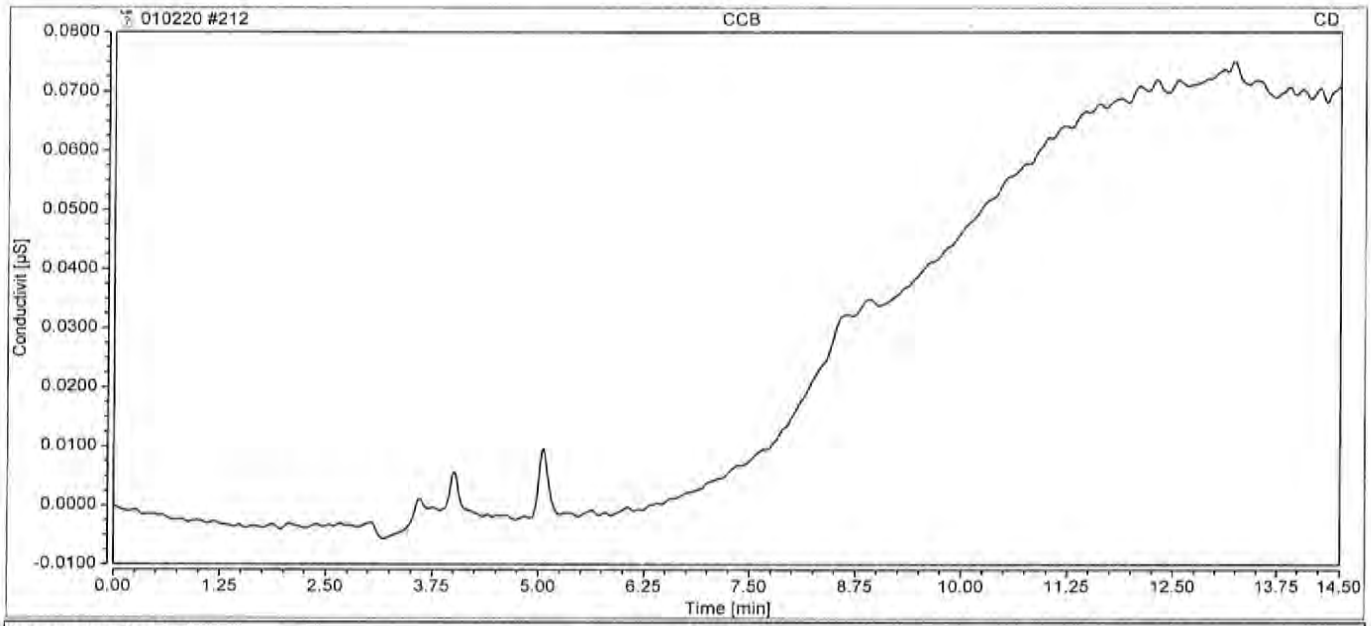
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	1.258	3.4008	3.4008	1.0000
2	5.06	Chloride	BMB	4.588	19.5408	19.5408	1.0000
3	6.01	Nitrite,N	BMB^	2.071	4.0451	4.0451	1.0000
4	7.81	Bromide	BMB^	0.360	3.6228	3.6228	1.0000
5	8.51	Sulfate	BM	2.940	17.1318	17.1318	1.0000
6	8.82	Nitrate	M	2.562	4.3776	4.3776	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
8	12.83	Phosphate	BMB	0.470	2.0746	2.0746	1.0000
Total:			**0.000**	**14.251**		**54.19**	

212 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/05/2020 01:01**	*Sample Weight:*	**1.0000**

Run Time:



Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.000**		**0.00**	

Sequence: 010220
Last Update Operator: alshs.nouser

HS19121092

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method	ng	me	Status	Inject Time
	STD1	2970209205	Calibration	GA1	1.0000	1	Anions Pro	Anions Pr	5.0	Finished	8/12/2019 2:08:06 PM -05:00
	STD2		Calibration	GA2	1.0000	2	Anions Pro	Anions Pr	5.0	Finished	8/12/2019 2:24:42 PM -05:00
	STD3		Calibration	GA3	1.0000	3	Anions Pro	Anions Pr	5.0	Finished	8/12/2019 2:41:19 PM -05:00
	STD4		Calibration	GA4	1.0000	4	Anions Pro	Anions Pr	5.0	Finished	8/12/2019 2:57:54 PM -05:00
	STD5		Calibration	GA5	1.0000	5	Anions Pro	Anions Pr	5.0	Finished	8/12/2019 3:14:30 PM -05:00
	STD6	F, NO2 MAX 10PPM	Calibration	GB8	1.0000	6	Anions Pro	Anions Pr	5.0	Finished	8/12/2019 6:37:32 PM -05:00
	ICV	2970209123	Unknown	GA7	1.0000		Anions Pro	Anions Pr	5.0	Finished	8/12/2019 6:54:07 PM -05:00
	ICB		Unknown	GB8	1.0000		Anions Pro	Anions Pr	5.0	Finished	8/12/2019 7:29:52 PM -05:00
	CCV1		Unknown	BA7	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 10:48:48 AM -06:00
	CCB		Unknown	BA6	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 11:05:27 AM -06:00
	WBLKW3-010320	9056_W	Unknown	RA1	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 11:22:08 AM -06:00
	WLCSW3-010320	RERUN BATCH	Unknown	RA2	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 11:38:47 AM -06:00
	WLCSDW3-010320		Unknown	RA3	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 11:55:24 AM -06:00
	HS19121121-01		Unknown	RA4	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 12:11:59 PM -06:00
	HS19121121-01MS		Unknown	RA5	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 12:28:35 PM -06:00
	HS19121121-01MSD		Unknown	RA6	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 12:45:11 PM -06:00
	HS19121092-01DF50		Unknown	RB6	50.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 1:01:48 PM -06:00
	HS19121092-06DF50		Unknown	RC3	50.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 1:18:24 PM -06:00
	HS19121155-05DF50		Unknown	RC8	50.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 1:34:59 PM -06:00
	HS19121142-06DF100		Unknown	BD3	100.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 1:51:39 PM -06:00
	CCV		Unknown	BA5	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 2:08:17 PM -06:00
	CCB		Unknown	BA6	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 2:24:53 PM -06:00
	HS19121142-07DF200		Unknown	RD2	200.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 2:41:29 PM -06:00
	HS19121142-09DF100		Unknown	RD3	100.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 2:58:05 PM -06:00
	HS19121142-10DF200		Unknown	RD4	200.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 3:14:42 PM -06:00
	HS19121142-11DF200		Unknown	RD5	200.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 3:31:18 PM -06:00
	CCV1		Unknown	BA7	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 3:47:53 PM -06:00
	CCB		Unknown	BA6	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 4:04:29 PM -06:00
	HS19121186-01DF20		Unknown	BE1	20.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 4:21:11 PM -06:00
	HS19121186-02DF5		Unknown	RD1	5.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 4:37:54 PM -06:00
	CCV		Unknown	BA5	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 5:16:23 PM -06:00
	CCB		Unknown	BA6	1.0000		Anions Pro	Anions Pr	5.0	Finished	1/6/2020 5:32:59 PM -06:00

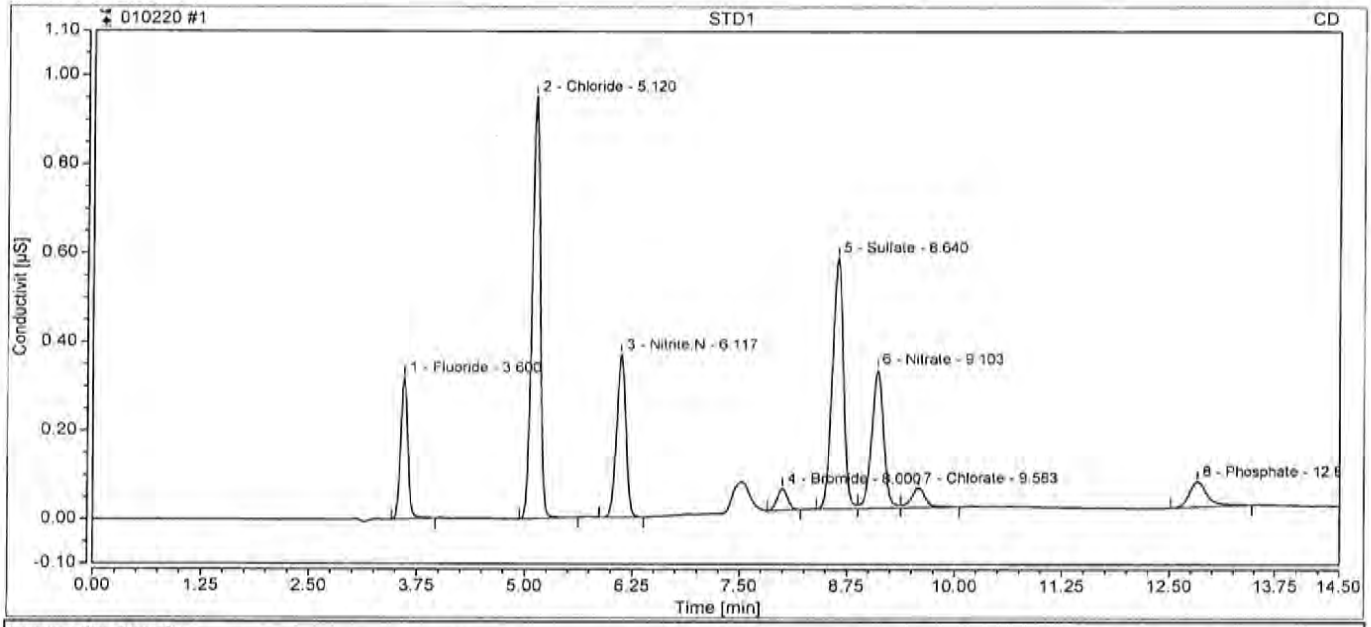
Sequence: 010220
Injection #6: STD6

Calibration

Peak No.	Peak Name	Cal.Type	Eval.Type	Number of Points	Rel.Std.Dev. %	Coeff.of Determination	C0 (Offset)	C1 (Slope)	C2 (Curve)
1	*Fluoride*	*Lin, WithOffset, 1/*	*Area*	*5*	*10.1532*	*0.99927*	*-0.0056*	*0.3716*	*0.0000*
2	Chloride	Lin, WithOffset, 1/	Area	6	0.2804	1.00000	-0.0135	0.2355	0.0000
3	Nitrite,N	Lin, WithOffset, 1/	Area	5	15.1147	0.99824	0.0003	0.5120	0.0000
4	Bromide	Lin, WithOffset, 1/	Area	6	14.0217	0.99919	-0.0052	0.1009	0.0000
5	Sulfate	Lin, WithOffset, 1/	Area	6	1.1258	0.99999	-0.0022	0.1717	0.0000
6	Nitrate	Lin, WithOffset, 1/	Area	6	2.2249	0.99998	-0.0102	0.5876	0.0000
7	Chlorate	Lin, WithOffset, 1/	Area	6	10.0265	0.99953	-0.0024	0.0944	0.0000
8	Phosphate	Lin, WithOffset, 1/	Area	6	6.6198	0.99981	-0.0110	0.2321	0.0000
Maximum					**15.1147**	1.00000			
Minimum					0.2804	**0.99824**			

1 STD1

Sample Name:	STD1	Injection Volume:	5.00
Vial Number:	GA1	Channel:	CD
Sample Type:	Calibration Standard	Wavelength:	210
Control Program:	Anions Program 08092019	Bandwidth:	n.a.
Quantif. Method:	Anions Processing Method	Dilution Factor:	1.0000
Recording Time:	08/12/2019 14:08	Sample Weight:	1.0000
Run Time:			



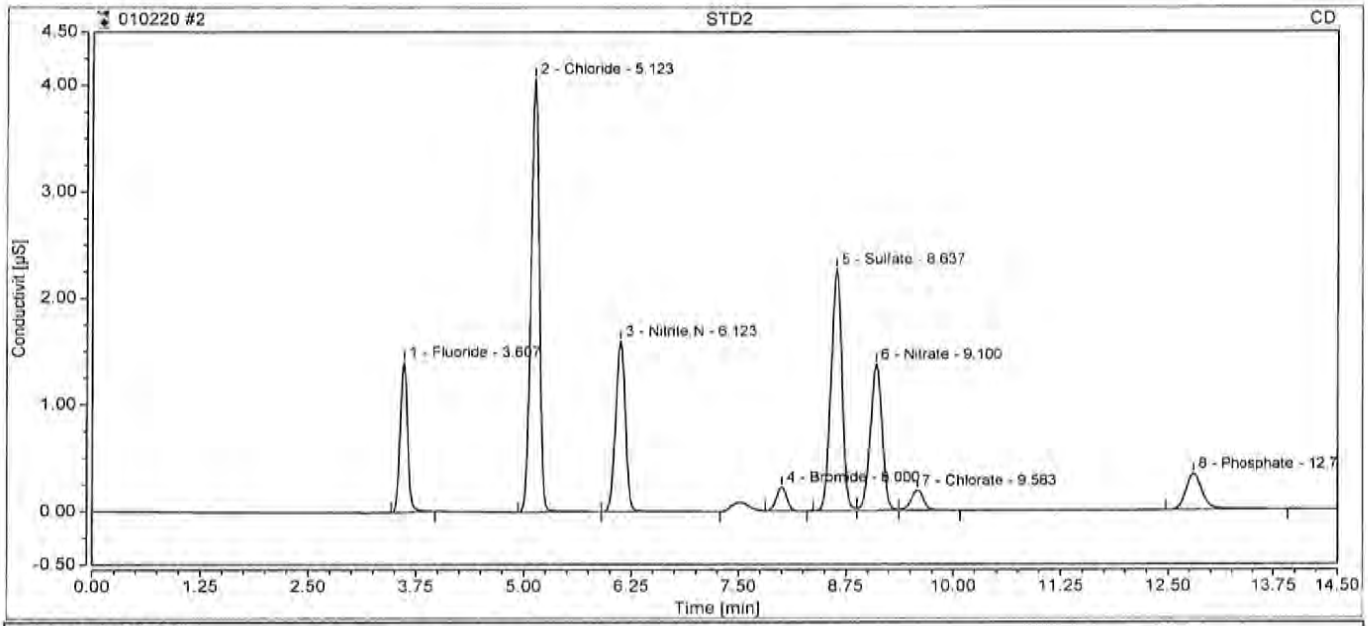
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.60	Fluoride	BMB	0.031	0.0973	0.0973	1.0000
2	5.12	Chloride	BMB	0.105	0.5026	0.5026	1.0000
3	6.12	Nitrite,N	BMB	0.046	0.0893	0.0893	1.0000
4	8.00	Bromide	BMB	0.007	0.1192	0.1192	1.0000
5	8.64	Sulfate	BM	0.084	0.5042	0.5042	1.0000
6	9.10	Nitrate	M	0.051	0.1034	0.1034	1.0000
7	9.58	Chlorate	MB	0.008	0.1143	0.1143	1.0000
8	12.83	Phosphate	BMB	0.014	0.1085	0.1085	1.0000
Total:			**0.000**	**0.346**		**1.64**	

2 STD2

Sample Name:	**STD2**	*Injection Volume:*	**5.00**
Vial Number:	**GA2**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 14:24**	*Sample Weight:*	**1.0000**

Run Time:



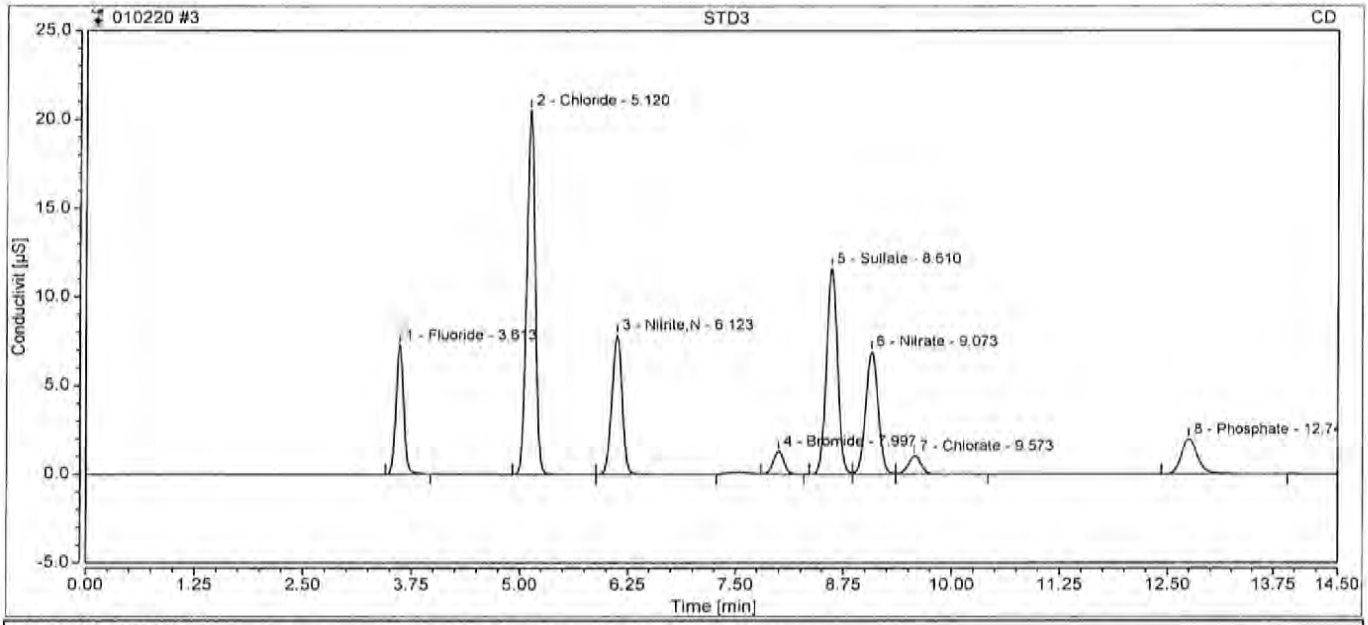
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.61	Fluoride	BMB	0.140	0.3929	0.3929	1.0000
2	5.12	Chloride	BMB	0.456	1.9918	1.9918	1.0000
3	6.12	Nitrite,N	BMB	0.211	0.4119	0.4119	1.0000
4	8.00	Bromide	BMB	0.031	0.3593	0.3593	1.0000
5	8.64	Sulfate	BM	0.337	1.9733	1.9733	1.0000
6	9.10	Nitrate	M	0.220	0.3917	0.3917	1.0000
7	9.58	Chlorate	MB	0.033	0.3704	0.3704	1.0000
8	12.80	Phosphate	BMB	0.078	0.3841	0.3841	1.0000
Total:			**0.000**	**1.506**		**6.28**	

3 STD3

Sample Name:	STD3	*Injection Volume:*	5.00
Vial Number:	GA3	*Channel:*	CD
Sample Type:	Calibration Standard	*Wavelength:*	210
Control Program:	Anions Program 08092019	*Bandwidth:*	n.a.
Quantif. Method:	Anions Processing Method	*Dilution Factor:*	1.0000
Recording Time:	08/12/2019 14:41	*Sample Weight:*	1.0000

Run Time:



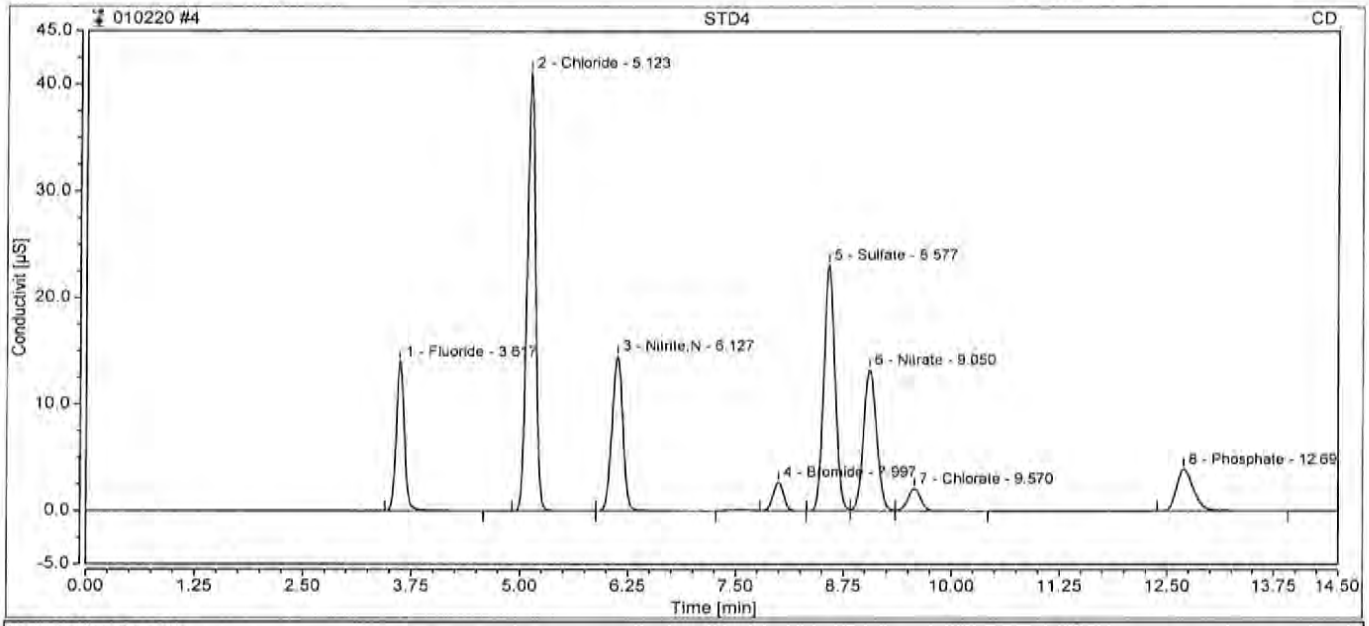
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.61	Fluoride	BMB	0.758	2.0551	2.0551	1.0000
2	5.12	Chloride	BMB	2.339	9.9888	9.9888	1.0000
3	6.12	Nitrite,N	BMB	1.091	2.1305	2.1305	1.0000
4	8.00	Bromide	BMB	0.182	1.8590	1.8590	1.0000
5	8.61	Sulfate	BM	1.715	10.0007	10.0007	1.0000
6	9.07	Nitrate	M	1.153	1.9792	1.9792	1.0000
7	9.57	Chlorate	MB	0.176	1.8940	1.8940	1.0000
8	12.75	Phosphate	BMB	0.436	1.9269	1.9269	1.0000
Total:			**0.000**	**7.851**		**31.83**	

4 STD4

Sample Name:	**STD4**	*Injection Volume:*	**5.00**
Vial Number:	**GA4**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 14:57**	*Sample Weight:*	**1.0000**

Run Time:



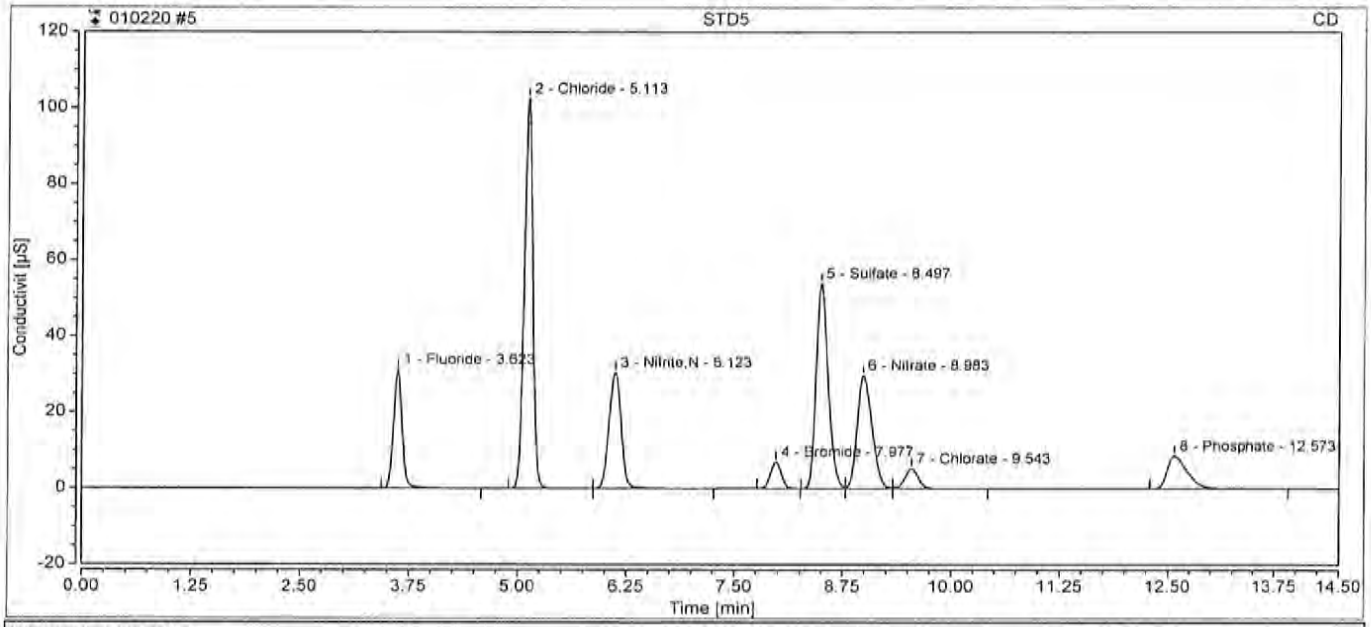
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	1.535	4.1457	4.1457	1.0000
2	5.12	Chloride	BMB	4.695	19.9948	19.9948	1.0000
3	6.13	Nitrite,N	BMB	2.133	4.1659	4.1659	1.0000
4	8.00	Bromide	BMB	0.385	3.8642	3.8642	1.0000
5	8.58	Sulfate	BM	3.451	20.1082	20.1082	1.0000
6	9.05	Nitrate	M	2.330	3.9823	3.9823	1.0000
7	9.57	Chlorate	MB	0.365	3.8956	3.8956	1.0000
8	12.69	Phosphate	BMB	0.903	3.9395	3.9395	1.0000
Total:			**0.000**	**15.798**		**64.10**	

5 STD5

Sample Name:	**STD5**	*Injection Volume:*	**5.00**
Vial Number:	**GA5**	*Channel:*	**CD**
Sample Type:	**Calibration Standard**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 15:14**	*Sample Weight:*	**1.0000**

Run Time:



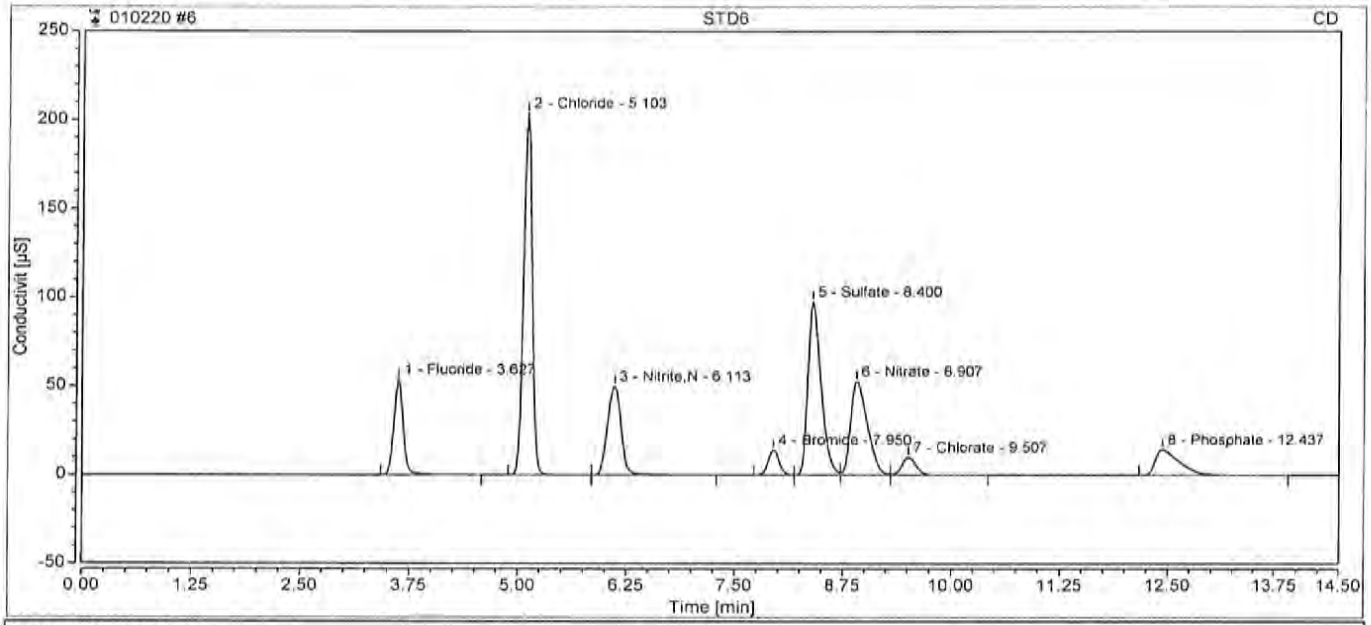
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	3.639	9.8090	9.8090	1.0000
2	5.11	Chloride	BMB	11.762	49.9996	49.9996	1.0000
3	6.12	Nitrite,N	BMB	4.968	9.7023	9.7023	1.0000
4	7.98	Bromide	BMB	1.001	9.9786	9.9786	1.0000
5	8.50	Sulfate	BM	8.590	50.0271	50.0271	1.0000
6	8.98	Nitrate	M	5.854	9.9805	9.9805	1.0000
7	9.54	Chlorate	MB	0.939	9.9670	9.9670	1.0000
8	12.57	Phosphate	BMB	2.305	9.9803	9.9803	1.0000
Total:			**0.000**	**39.057**		**159.44**	

6 STD6

Sample Name:	STD6	Injection Volume:	5.00
Vial Number:	GB8	Channel:	CD
Sample Type:	Calibration Standard	Wavelength:	210
Control Program:	Anions Program 08092019	Bandwidth:	n.a.
Quantif. Method:	Anions Processing Method	Dilution Factor:	1.0000
Recording Time:	08/12/2019 18:37	Sample Weight:	1.0000

Run Time:



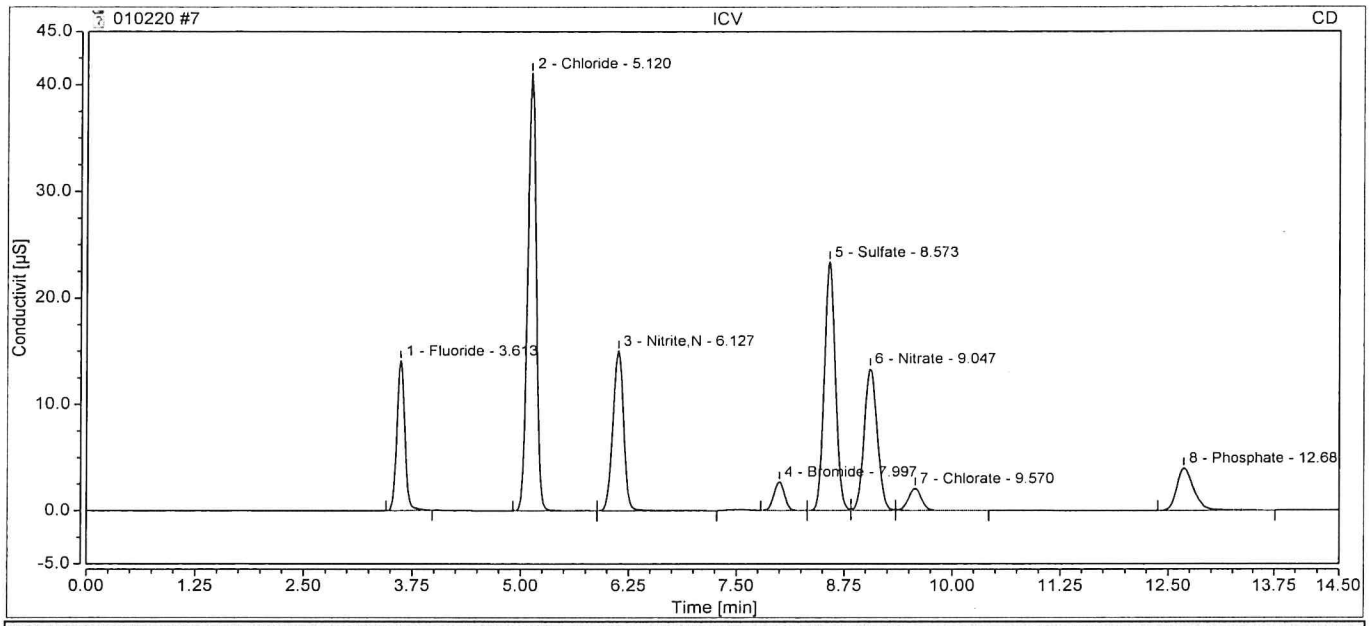
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.63	Fluoride	BMB	6.773	18.2418	18.2418	1.0000
2	5.10	Chloride	BMB	23.542	100.0224	100.0224	1.0000
3	6.11	Nitrite,N	BMB	9.157	17.8850	17.8850	1.0000
4	7.95	Bromide	BM	2.045	20.3197	20.3197	1.0000
5	8.40	Sulfate	M	17.153	99.8863	99.8863	1.0000
6	8.91	Nitrate	M	11.778	20.0629	20.0629	1.0000
7	9.51	Chlorate	MB	1.910	20.2586	20.2586	1.0000
8	12.44	Phosphate	BMB	4.668	20.1606	20.1606	1.0000
Total:			0.000	77.025		316.84	

7 *ICV*

Sample Name:	**ICV**	*Injection Volume:*	**5.00**
Vial Number:	**GA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 18:54**	*Sample Weight:*	**1.0000**

Run Time:



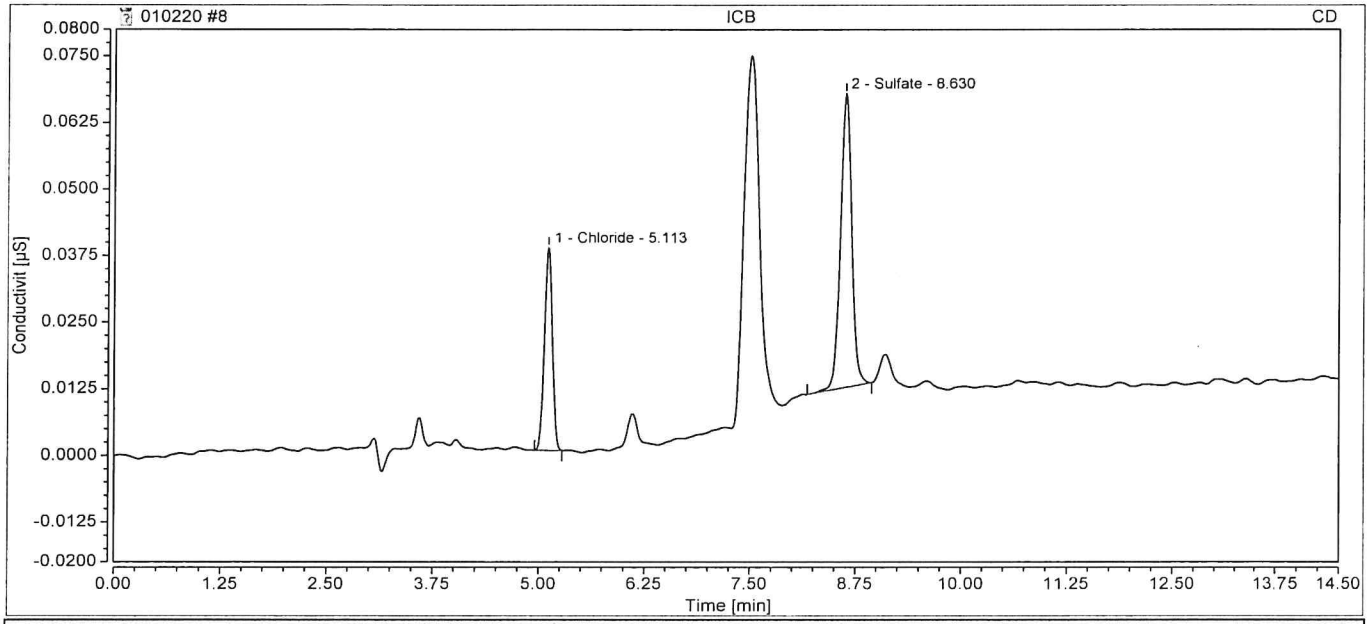
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.61	Fluoride	BMB	1.495	4.0374	4.0374	1.0000
2	5.12	Chloride	BMB	4.681	19.9333	19.9333	1.0000
3	6.13	Nitrite,N	BMB	2.195	4.2858	4.2858	1.0000
4	8.00	Bromide	BMB	0.384	3.8585	3.8585	1.0000
5	8.57	Sulfate	BM	3.469	20.2132	20.2132	1.0000
6	9.05	Nitrate	M	2.340	3.9993	3.9993	1.0000
7	9.57	Chlorate	MB	0.367	3.9104	3.9104	1.0000
8	12.68	Phosphate	BMB	0.911	3.9732	3.9732	1.0000
Total:			**0.000**	**15.841**		**64.21**	

8 ICB

Sample Name:	**ICB**	*Injection Volume:*	**5.00**
Vial Number:	**GB8**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/12/2019 19:29**	*Sample Weight:*	**1.0000**

Run Time:



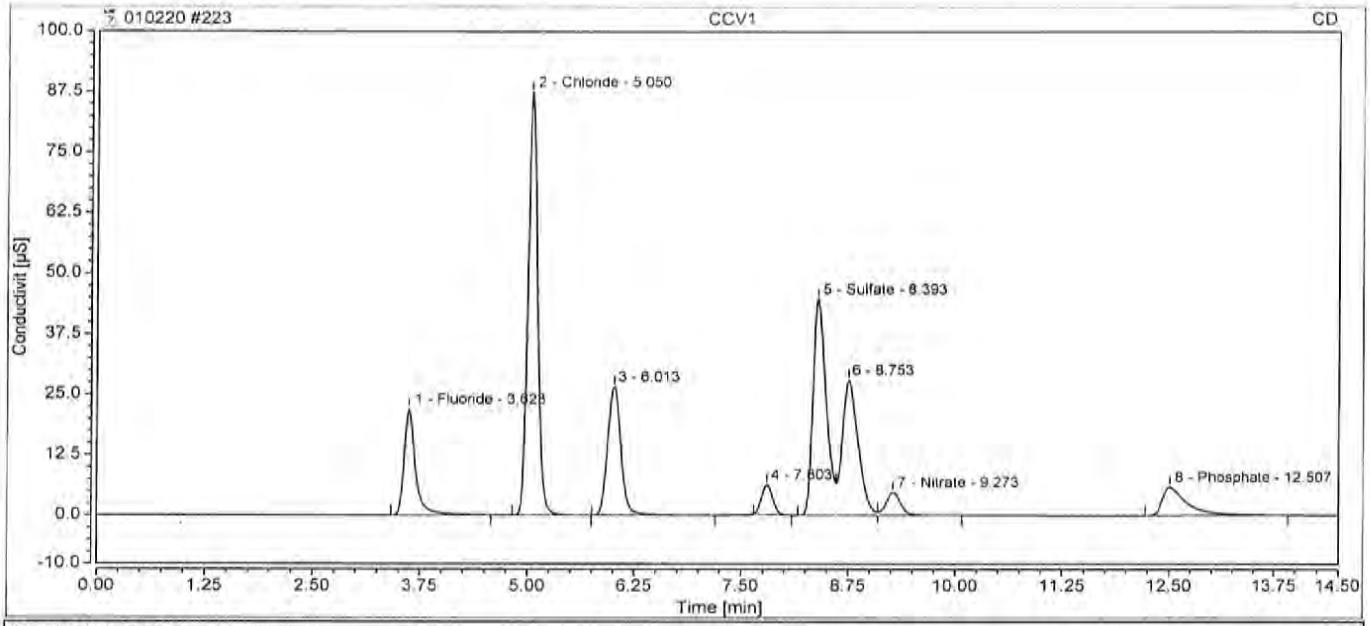
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.11	Chloride	BMB	0.004	0.0748	0.0748	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
2	8.63	Sulfate	BMB	0.008	0.0618	0.0618	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.013**		**0.14**	

223 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/06/2020 10:48**	*Sample Weight:*	**1.0000**

Run Time:



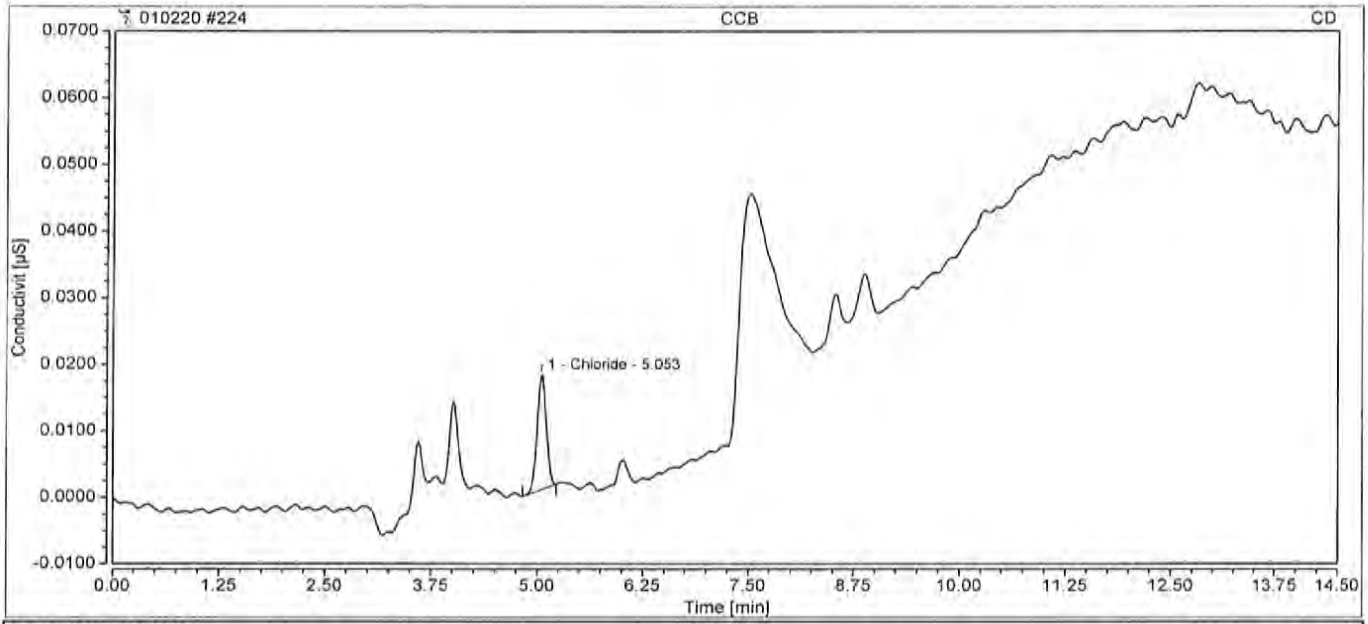
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	3.401	9.1686	9.1686	1.0000
2	5.05	Chloride	BMB	11.482	48.8122	48.8122	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
5	8.39	Sulfate	BM	7.992	46.5484	46.5484	1.0000
7	9.27	Nitrate	MB	0.954	1.6405	1.6405	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
8	12.51	Phosphate	BMB	1.997	8.6532	8.6532	1.0000
Total:			**0.000**	**25.826**		**114.82**	

224 CCB

Sample Name:	CCB	Injection Volume:	5.00
Vial Number:	BA6	Channel:	CD
Sample Type:	Unknown	Wavelength:	210
Control Program:	Anions Program 08092019	Bandwidth:	n.a.
Quantif. Method:	Anions Processing Method	Dilution Factor:	1.0000
Recording Time:	01/06/2020 11:05	Sample Weight:	1.0000

Run Time:



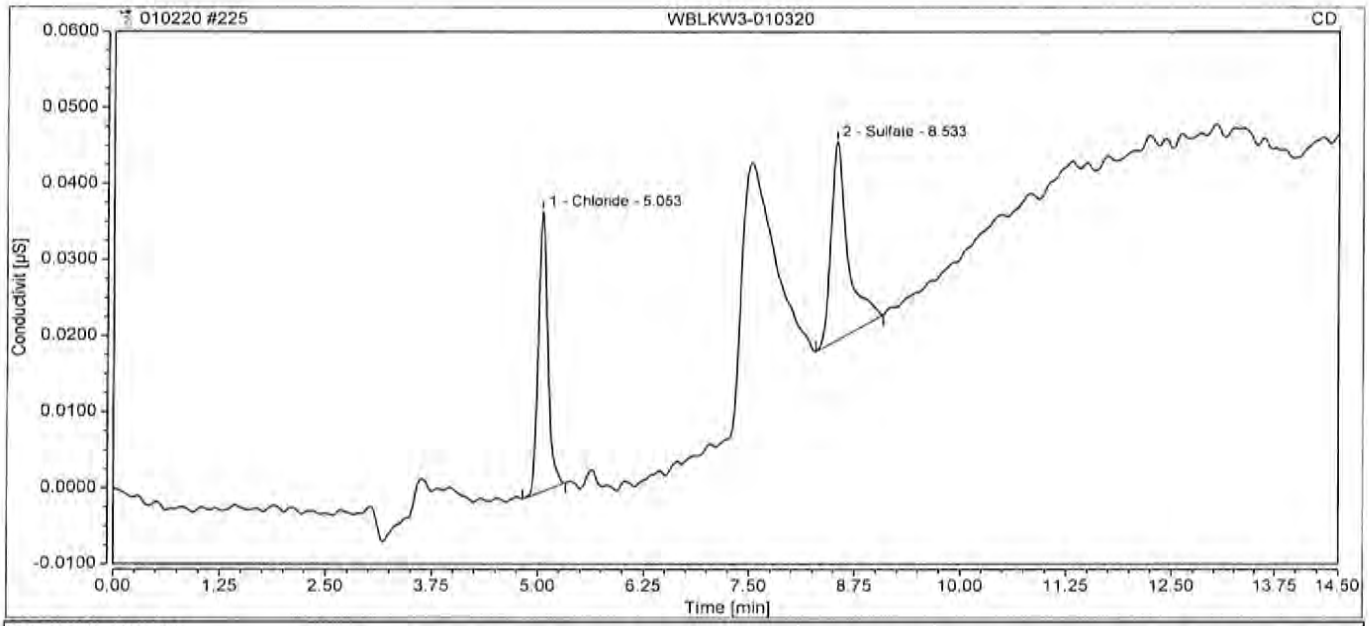
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.05	Chloride	BMB	0.002	0.0666	0.0666	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			0.000	0.002		0.07	

225 WBLKW3-010320

Sample Name:	**WBLKW3-010320**	*Injection Volume:*	**5.00**
Vial Number:	**RA1**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/06/2020 11:22**	*Sample Weight:*	**1.0000**

Run Time:



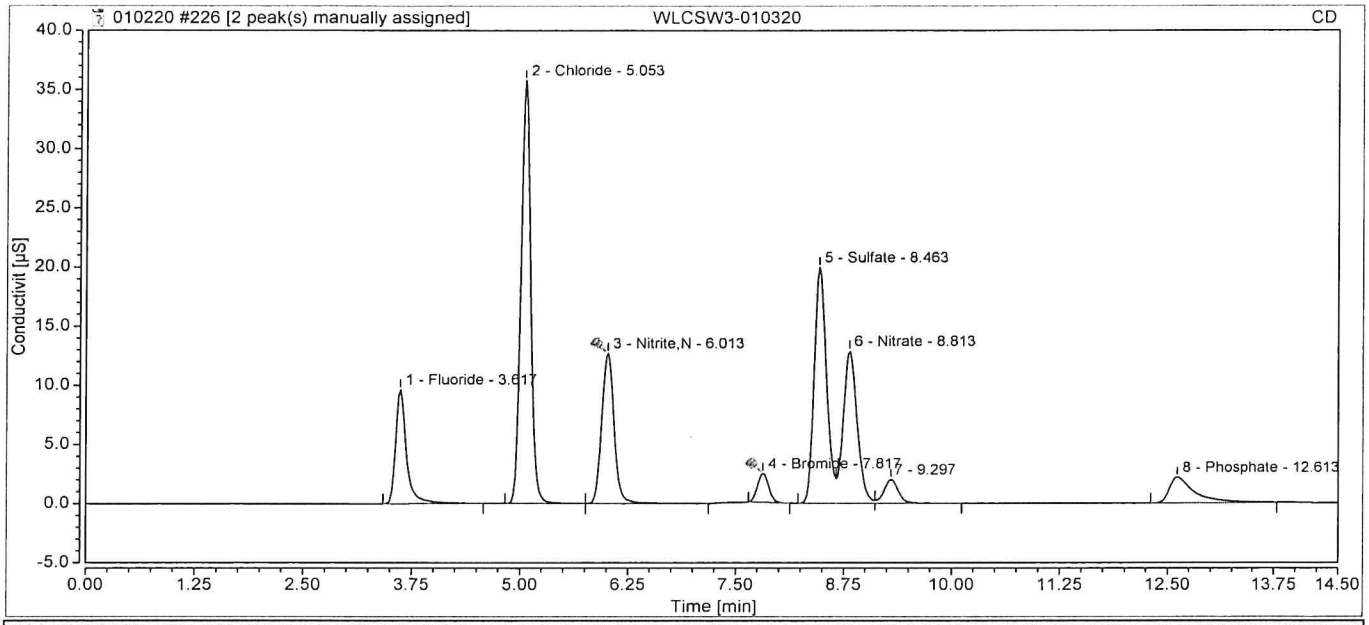
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
1	5.05	Chloride	BMB	0.005	0.0779	0.0779	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
2	8.53	Sulfate	BMB	0.006	0.0479	0.0479	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.011**		**0.13**	

226 *WLCSW3-010320*

Sample Name:	**WLCSW3-010320**	*Injection Volume:*	**5.00**
Vial Number:	**RA2**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/06/2020 11:38**	*Sample Weight:*	**1.0000**

Run Time:



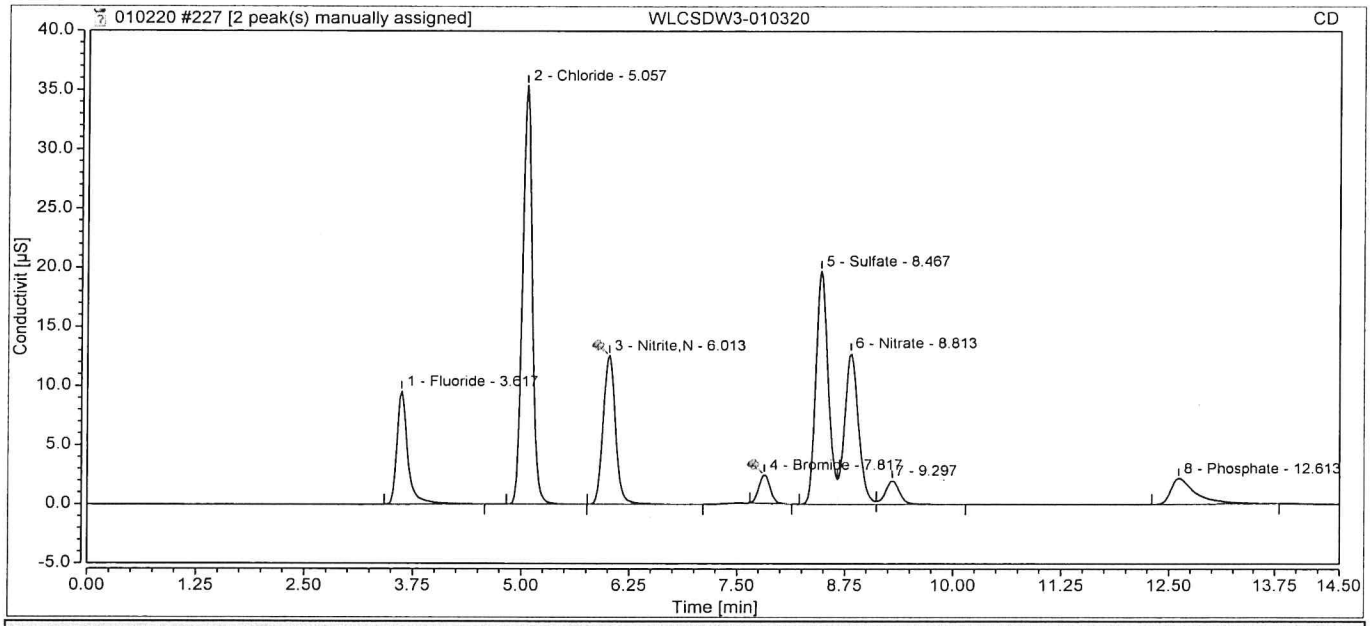
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	1.408	3.8043	3.8043	1.0000
2	5.05	Chloride	BMB	4.676	19.9109	19.9109	1.0000
3	6.01	Nitrite,N	BMB^	2.108	4.1162	4.1162	1.0000
4	7.82	Bromide	BMB^	0.368	3.7020	3.7020	1.0000
5	8.46	Sulfate	BM	3.313	19.3001	19.3001	1.0000
6	8.81	Nitrate	M	2.420	4.1357	4.1357	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
8	12.61	Phosphate	BMB	0.744	3.2542	3.2542	1.0000
Total:			**0.000**	**15.036**		**58.22**	

227 *WLCSDW3-010320*

Sample Name:	**WLCSDW3-010320**	*Injection Volume:*	**5.00**
Vial Number:	**RA3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/06/2020 11:55**	*Sample Weight:*	**1.0000**

Run Time:



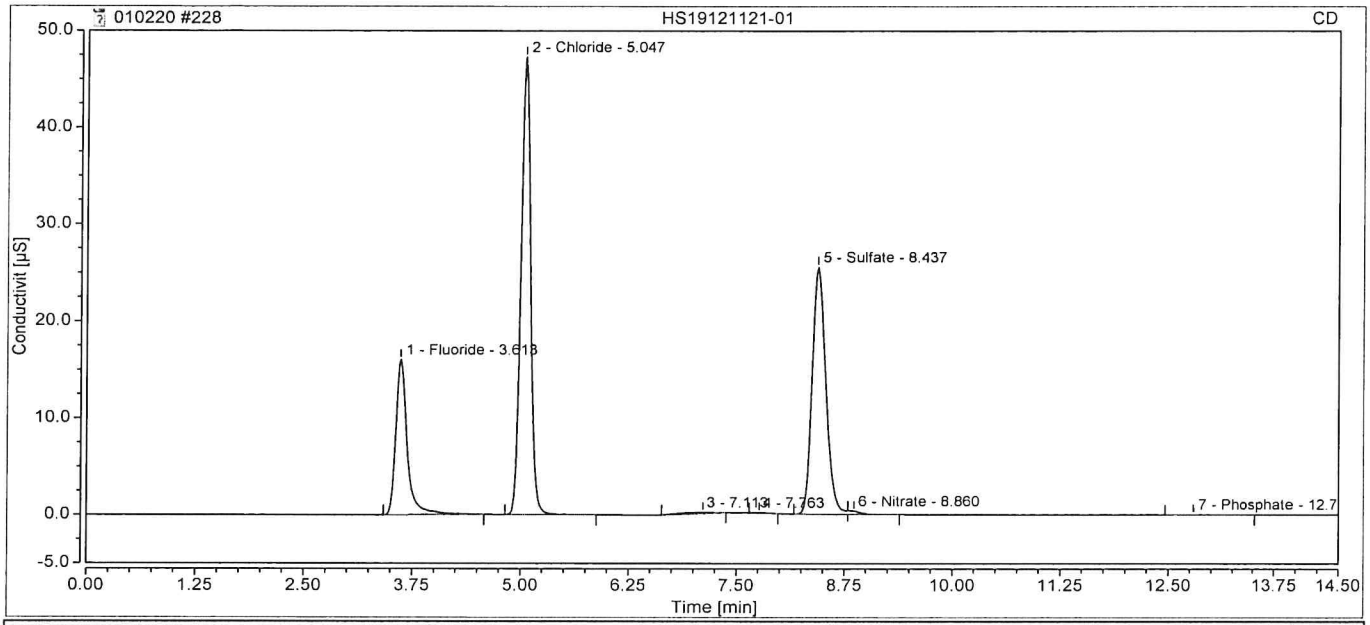
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	1.391	3.7577	3.7577	1.0000
2	5.06	Chloride	BMB	4.627	19.7044	19.7044	1.0000
3	6.01	Nitrite,N	BMB^	2.084	4.0704	4.0704	1.0000
4	7.82	Bromide	BMB^	0.364	3.6568	3.6568	1.0000
5	8.47	Sulfate	BM	3.267	19.0328	19.0328	1.0000
6	8.81	Nitrate	M	2.391	4.0875	4.0875	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
8	12.61	Phosphate	BMB	0.743	3.2508	3.2508	1.0000
Total:			**0.000**	**14.867**		**57.56**	

228 HS19121121-01

Sample Name:	**HS19121121-01**	*Injection Volume:*	**5.00**
Vial Number:	**RA4**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/06/2020 12:11**	*Sample Weight:*	**1.0000**

Run Time:



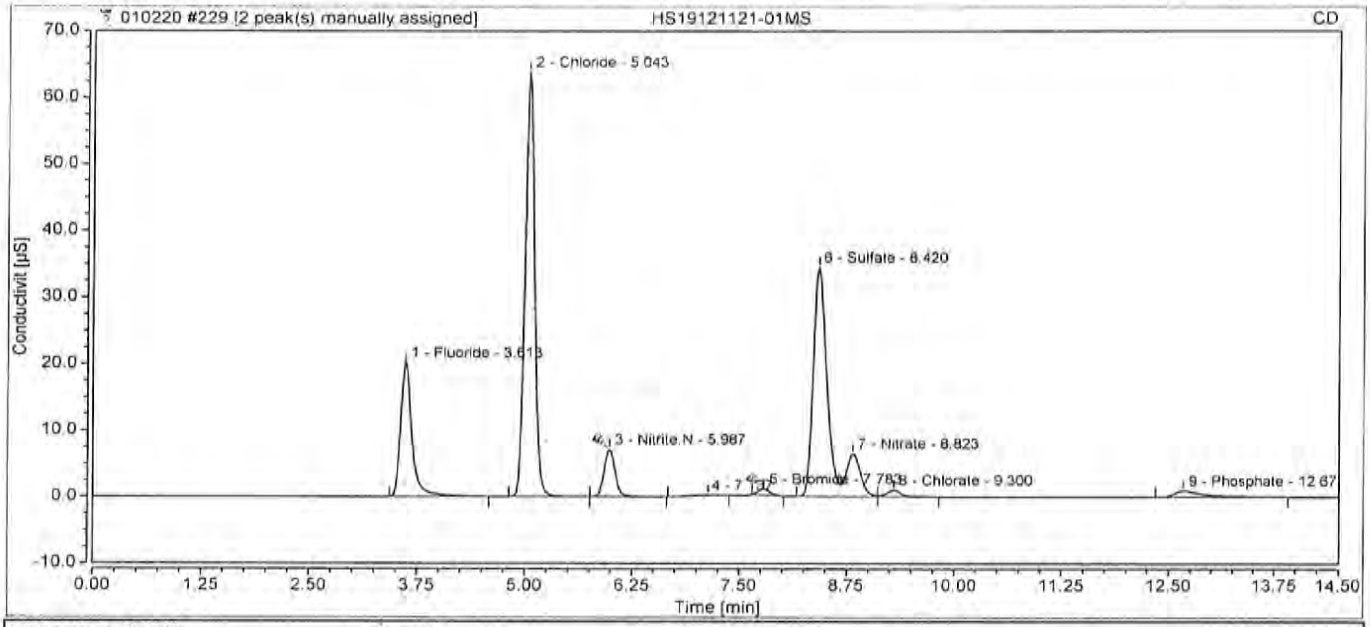
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.61	Fluoride	BMB	2.459	6.6331	6.6331	1.0000
2	5.05	Chloride	BMB	6.098	25.9506	25.9506	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
5	8.44	Sulfate	BM	4.664	27.1707	27.1707	1.0000
6	8.86	Nitrate	MB	0.055	0.1106	0.1106	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
7	12.79	Phosphate	BMB	0.010	0.0913	0.0913	1.0000
Total:			**0.000**	**13.286**		**59.96**	

229 HS19121121-01MS

Sample Name:	HS19121121-01MS	Injection Volume:	5.00
Vial Number:	RA5	Channel:	CD
Sample Type:	Unknown	Wavelength:	210
Control Program:	Anions Program 08092019	Bandwidth:	n.a.
Quantif. Method:	Anions Processing Method	Dilution Factor:	1.0000
Recording Time:	01/06/2020 12:28	Sample Weight:	1.0000

Run Time:



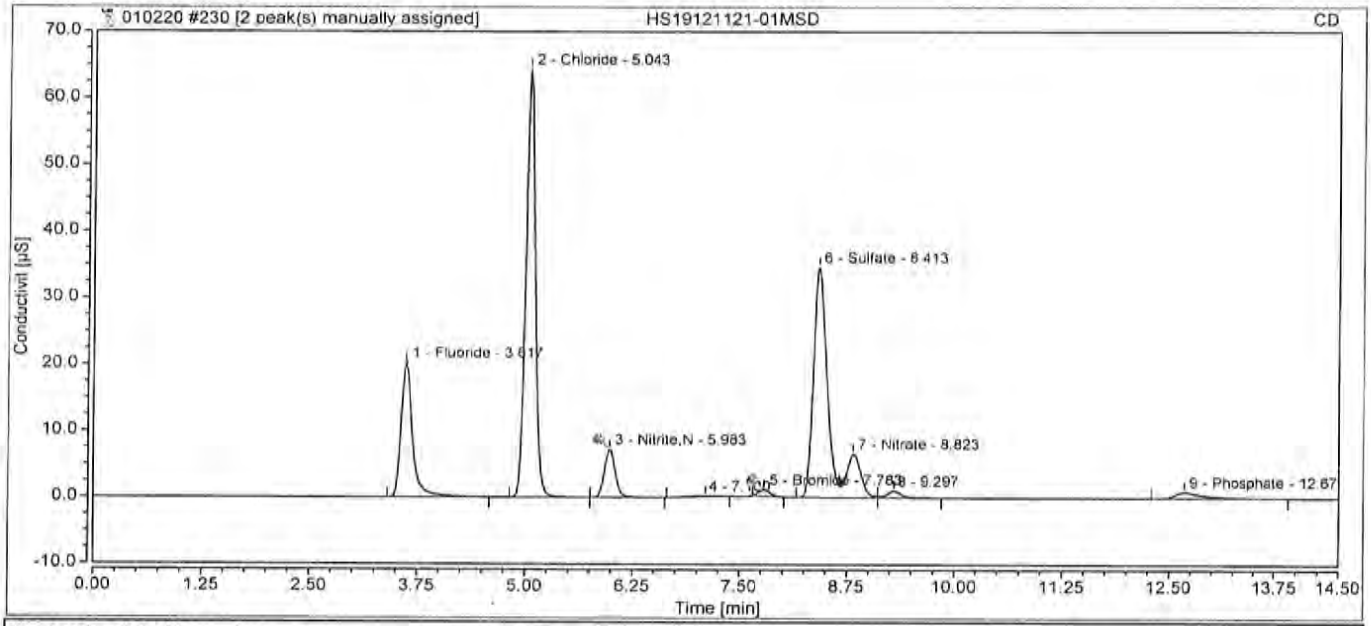
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.61	Fluoride	BMB	3.090	8.3299	8.3299	1.0000
2	5.04	Chloride	BMB	8.268	35.1653	35.1653	1.0000
3	5.99	Nitrite,N	BMB^	1.050	2.0511	2.0511	1.0000
5	7.78	Bromide	BMB^	0.145	1.4893	1.4893	1.0000
6	8.42	Sulfate	BM	6.187	36.0372	36.0372	1.0000
7	8.82	Nitrate	M	1.238	2.1250	2.1250	1.0000
8	9.30	Chlorate	MB	0.186	1.9967	1.9967	1.0000
9	12.67	Phosphate	BMB	0.347	1.5447	1.5447	1.0000
Total:				0.000	20.512	88.74	

230 HS19121121-01MSD

Sample Name:	HS19121121-01MSD	Injection Volume:	5.00
Vial Number:	RA6	Channel:	CD
Sample Type:	Unknown	Wavelength:	210
Control Program:	Anions Program 08092019	Bandwidth:	n.a.
Quantif. Method:	Anions Processing Method	Dilution Factor:	1.0000
Recording Time:	01/06/2020 12:45	Sample Weight:	1.0000

Run Time:

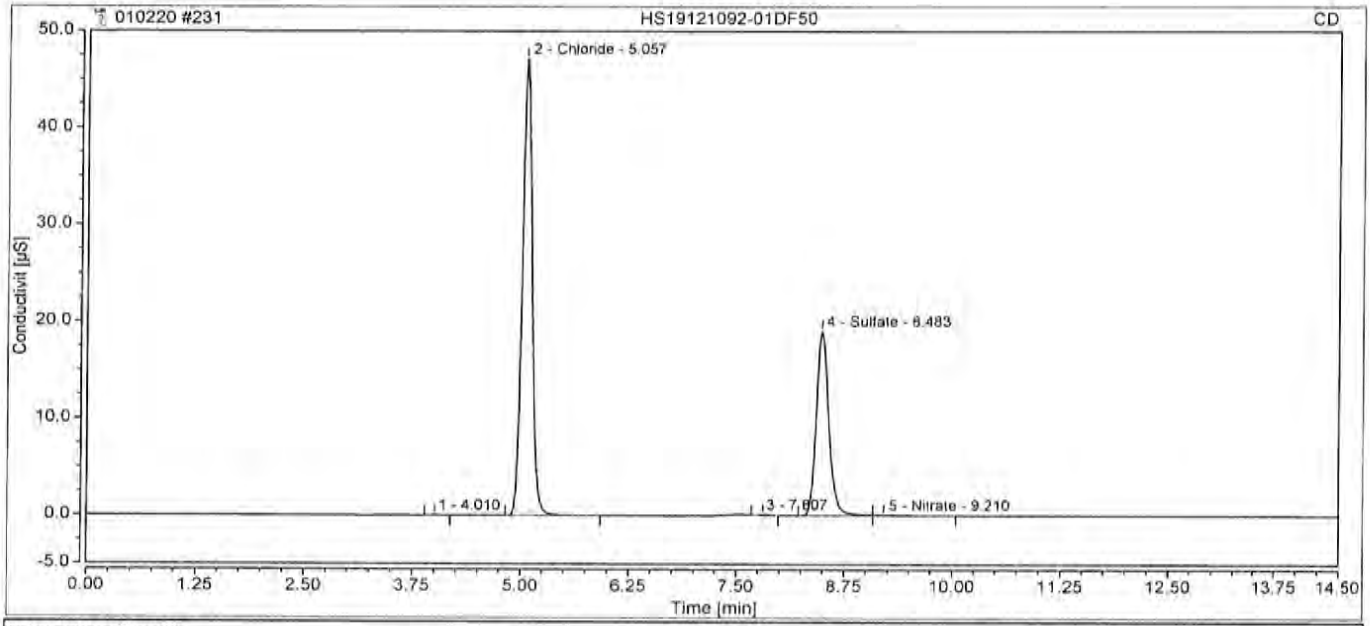


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	3.110	8.3859	8.3859	1.0000
2	5.04	Chloride	BMB	8.318	35.3782	35.3782	1.0000
3	5.98	Nitrite,N	BMB^	1.067	2.0827	2.0827	1.0000
5	7.78	Bromide	BMB^	0.147	1.5088	1.5088	1.0000
6	8.41	Sulfate	BM	6.226	36.2665	36.2665	1.0000
7	8.82	Nitrate	M	1.261	2.1631	2.1631	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
9	12.68	Phosphate	BMB	0.352	1.5658	1.5658	1.0000
Total:			**0.000**	**20.482**		**87.35**	

231 HS19121092-01DF50

Sample Name:	**HS19121092-01DF50**	*Injection Volume:*	**5.00**
Vial Number:	**RB6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**50.0000**
Recording Time:	**01/06/2020 13:01**	*Sample Weight:*	**1.0000**
Run Time:			



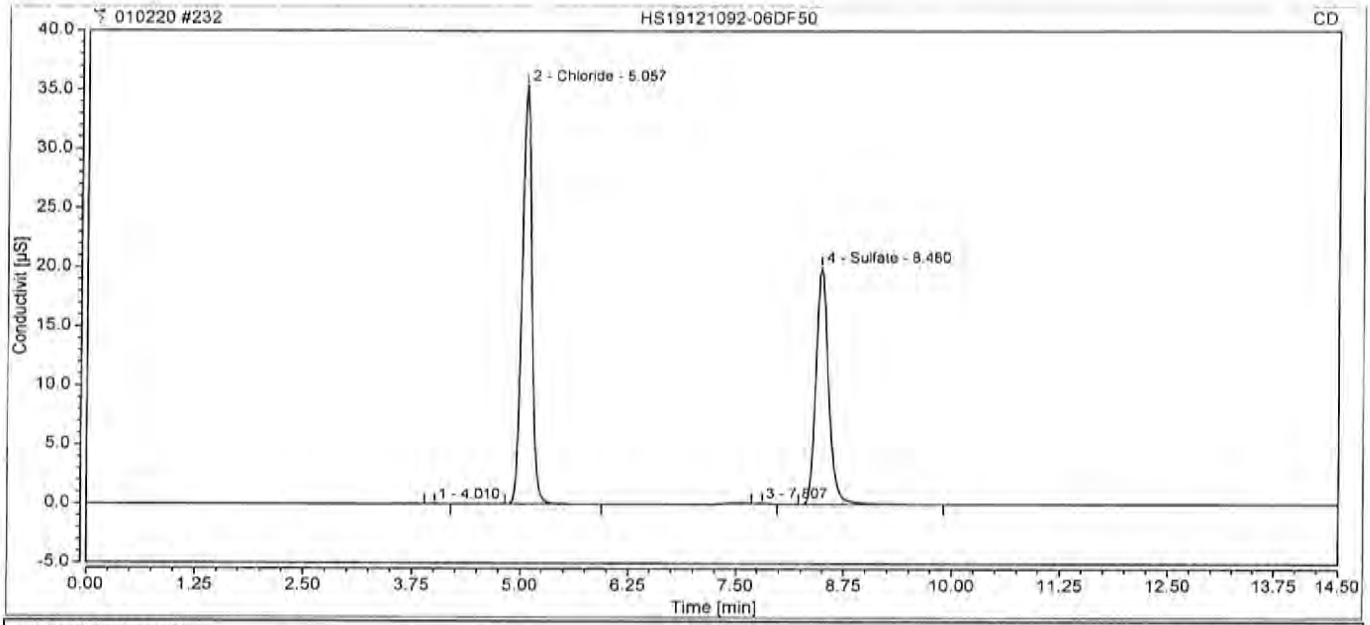
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	50.0000
2	5.06	Chloride	BMB	6.164	26.2304	1311.5188	50.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	50.0000
4	8.48	Sulfate	BM	3.227	18.8033	940.1667	50.0000
5	9.21	Nitrate	MB	0.026	0.0616	3.0810	50.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	50.0000
Total:			**0.000**	**9.417**		**2254.77**	

232 *HS19121092-06DF50*

Sample Name:	**HS19121092-06DF50**	*Injection Volume:*	**5.00**
Vial Number:	**RC3**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**50.0000**
Recording Time:	**01/06/2020 13:18**	*Sample Weight:*	**1.0000**

Run Time:

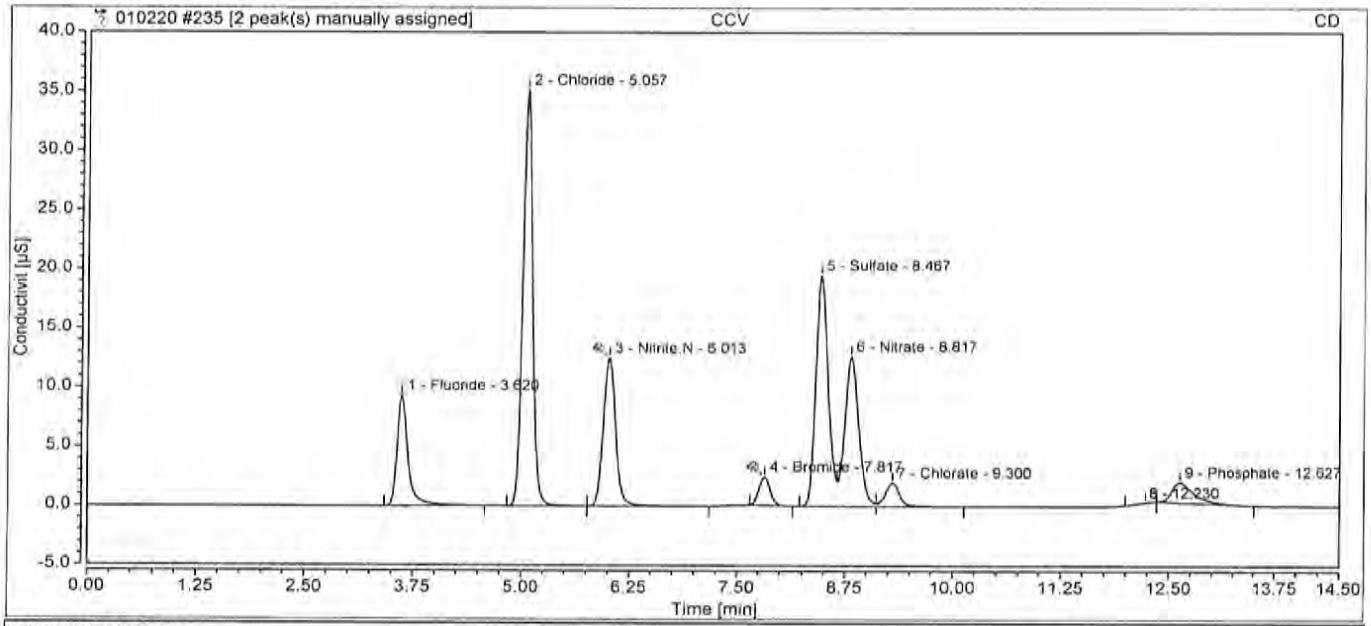


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	50.0000
2	5.06	Chloride	BMB	4.620	19.6732	983.6609	50.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	50.0000
4	8.48	Sulfate	BMB	3.423	19.9412	997.0591	50.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	50.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	50.0000
Total:			**0.000**	**8.042**		**1980.72**	

235 CCV

Sample Name:	CCV	Injection Volume:	5.00
Vial Number:	BA5	Channel:	CD
Sample Type:	Unknown	Wavelength:	210
Control Program:	Anions Program 08092019	Bandwidth:	n.a.
Quantit. Method:	Anions Processing Method	Dilution Factor:	1.0000
Recording Time:	01/06/2020 14:08	Sample Weight:	1.0000
Run Time:			



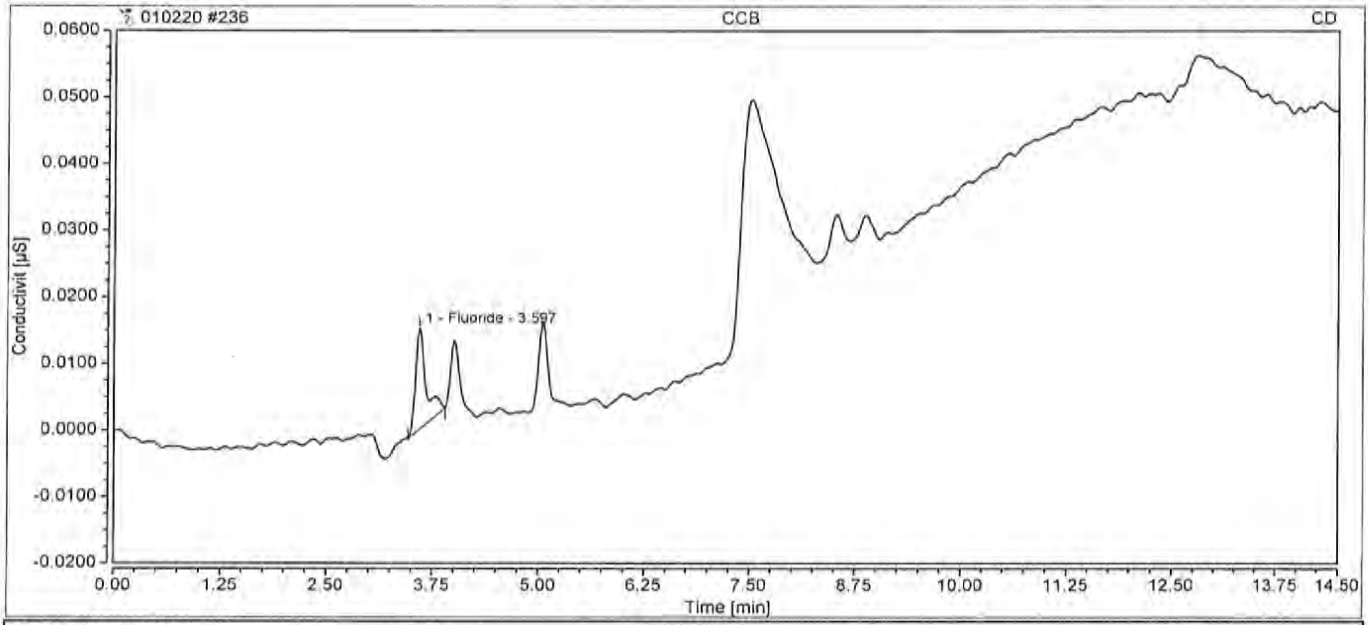
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	1.370	3.7007	3.7007	1.0000
2	5.06	Chloride	BMB	4.584	19.5211	19.5211	1.0000
3	6.01	Nitrite,N	BMB^	2.072	4.0460	4.0460	1.0000
4	7.82	Bromide	BMB^	0.360	3.6232	3.6232	1.0000
5	8.47	Sulfate	BM	3.235	18.8464	18.8464	1.0000
6	8.82	Nitrate	M	2.382	4.0715	4.0715	1.0000
7	9.30	Chlorate	MB	0.378	4.0283	4.0283	1.0000
9	12.63	Phosphate	BMB	0.518	2.2815	2.2815	1.0000
Total:			0.000	14.898		60.12	

236 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/06/2020 14:24**	*Sample Weight:*	**1.0000**

Run Time:



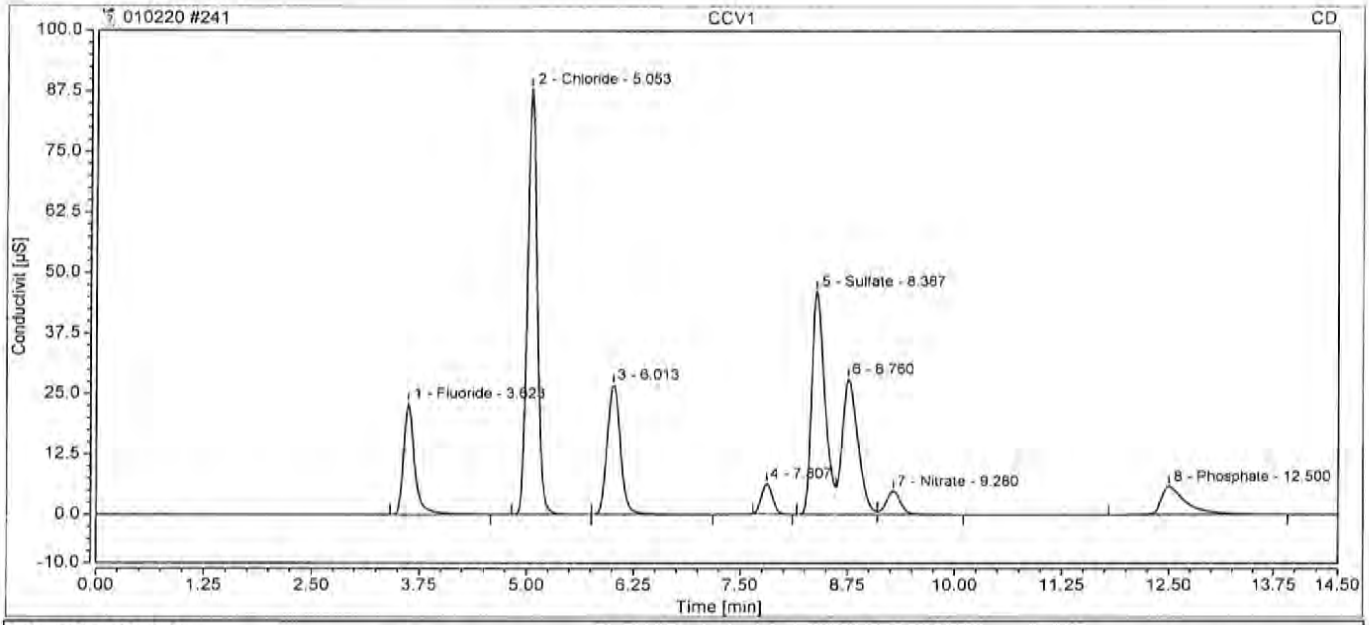
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.60	Fluoride	BMB	0.002	0.0209	0.0209	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.002**		**0.02**	

241 CCV1

Sample Name:	**CCV1**	*Injection Volume:*	**5.00**
Vial Number:	**BA7**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/06/2020 15:47**	*Sample Weight:*	**1.0000**

Run Time:

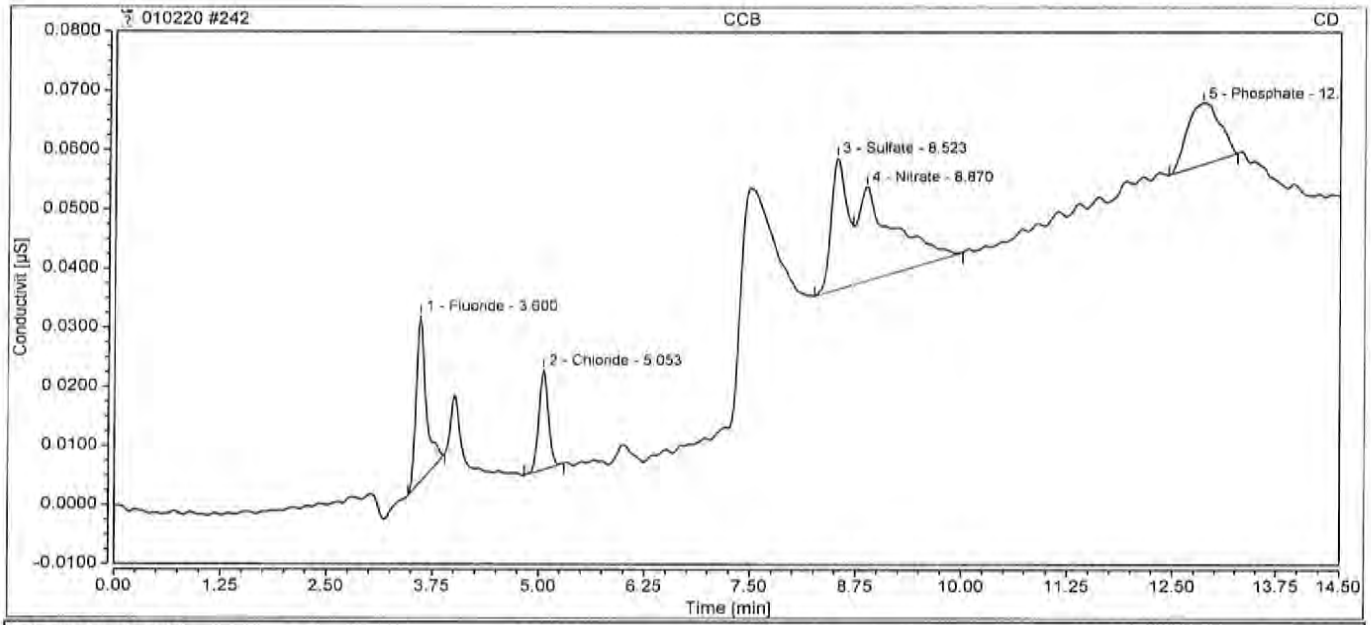


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.62	Fluoride	BMB	3.473	9.3603	9.3603	1.0000
2	5.05	Chloride	BMB	11.583	49.2399	49.2399	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
5	8.39	Sulfate	BM	8.221	47.8815	47.8815	1.0000
7	9.28	Nitrate	MB	0.965	1.6599	1.6599	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
8	12.50	Phosphate	BMB	1.998	8.6578	8.6578	1.0000
Total:			**0.000**	**26.240**		**116.80**	

242 CCB

Sample Name:	CCB	Injection Volume:	5.00
Vial Number:	BA6	Channel:	CD
Sample Type:	Unknown	Wavelength:	210
Control Program:	Anions Program 08092019	Bandwidth:	n.a.
Quantif. Method:	Anions Processing Method	Dilution Factor:	1.0000
Recording Time:	01/06/2020 16:04	Sample Weight:	1.0000
Run Time:			

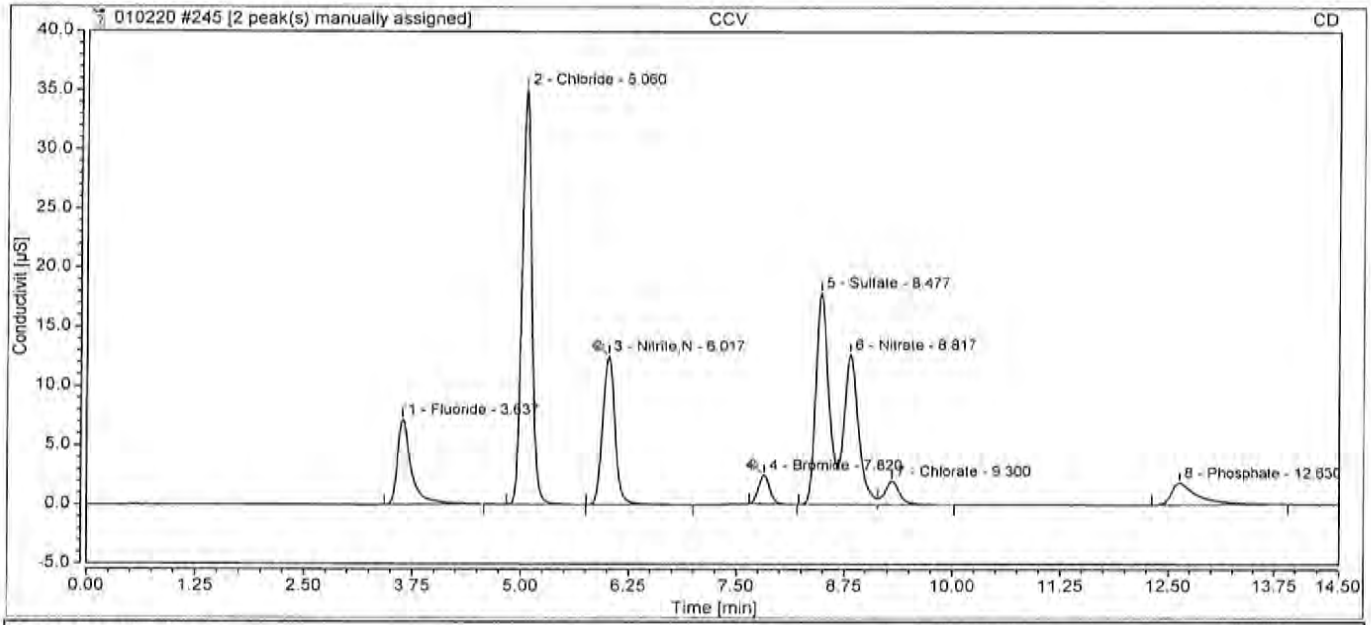


Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.60	Fluoride	BMB	0.004	0.0253	0.0253	1.0000
2	5.05	Chloride	BMB	0.002	0.0665	0.0665	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
3	8.52	Sulfate	BM	0.005	0.0415	0.0415	1.0000
4	8.87	Nitrate	MB	0.008	0.0310	0.0310	1.0000
n.a.	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
5	12.85	Phosphate	BMB	0.005	0.0678	0.0678	1.0000
Total:			**0.000**	**0.024**		**0.23**	

245 CCV

Sample Name:	CCV	Injection Volume:	5.00
Vial Number:	BA5	Channel:	CD
Sample Type:	Unknown	Wavelength:	210
Control Program:	Anions Program 08092019	Bandwidth:	n.a.
Quantif. Method:	Anions Processing Method	Dilution Factor:	1.0000
Recording Time:	01/06/2020 17:16	Sample Weight:	1.0000
Run Time:			



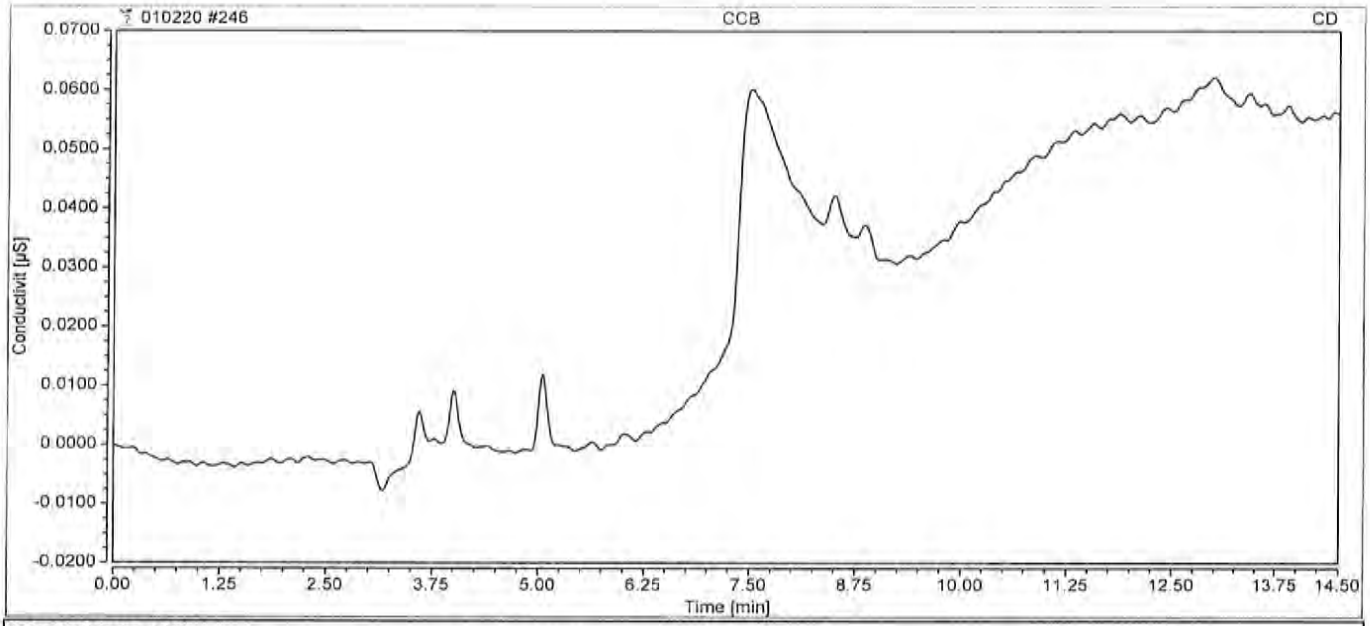
Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
1	3.64	Fluoride	BMB	1.338	3.6169	3.6169	1.0000
2	5.06	Chloride	BMB	4.615	19.6526	19.6526	1.0000
3	6.02	Nitrite,N	BMB^	2.076	4.0537	4.0537	1.0000
4	7.82	Bromide	BMB^	0.372	3.7352	3.7352	1.0000
5	8.48	Sulfate	BM	3.097	18.0440	18.0440	1.0000
6	8.82	Nitrate	M	2.502	4.2754	4.2754	1.0000
7	9.30	Chlorate	MB	0.400	4.2600	4.2600	1.0000
8	12.63	Phosphate	BMB	0.674	2.9531	2.9531	1.0000
Total:			**0.000**	**15.073**		**60.59**	

246 CCB

Sample Name:	**CCB**	*Injection Volume:*	**5.00**
Vial Number:	**BA6**	*Channel:*	**CD**
Sample Type:	**Unknown**	*Wavelength:*	**210**
Control Program:	**Anions Program 08092019**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions Processing Method**	*Dilution Factor:*	**1.0000**
Recording Time:	**01/06/2020 17:32**	*Sample Weight:*	**1.0000**

Run Time:



Integration Results

No.	Retention min	Peak Name	Peak Type	Area µS*min	Amount ppm	Concentration ppm	Dilution
n.a.	n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Nitrate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a	n.a.	Chlorate	n.a.	n.a.	n.a.	n.a.	1.0000
n.a.	n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	1.0000
Total:			**0.000**	**0.000**		**0.00**	

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WorkOrder: HS19121155

LHAAP-58

Bhate Environmental Associates, Inc.

Marcia Olive
445 Union Blvd Ste 129
Lakewood CO 80228

30-Jan-2020

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HS19121155 LHAAP58 REV01 Final

ALS WO# HS19121155

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January 10, 2020

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS19121155**

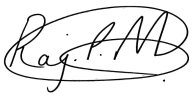
Laboratory Results for: **LHAAP-58**

Dear Marcia,

ALS Environmental received 9 sample(s) on Dec 20, 2019 for the analysis presented in the following report.

This is a REVISED REPORT. Please see the Case Narrative for discussion concerning this revision.

Regards,



Generated By: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Work Order: HS19121155

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS19121155-01	35AWW10-121919	Groundwater		19-Dec-2019 08:35	20-Dec-2019 10:03	☐
HS19121155-02	35AWW10-121919_a	Groundwater		19-Dec-2019 08:35	20-Dec-2019 10:03	☐
HS19121155-03	35AWW20-121919	Groundwater		19-Dec-2019 09:40	20-Dec-2019 10:03	☐
HS19121155-04	35AWW06-121919	Groundwater		19-Dec-2019 10:35	20-Dec-2019 10:03	☐
HS19121155-05	LHSMW07-121919	Groundwater		19-Dec-2019 11:30	20-Dec-2019 10:03	☐
HS19121155-06	35AWW16-121919	Groundwater		19-Dec-2019 12:25	20-Dec-2019 10:03	☐
HS19121155-07	35AWW24-121919	Groundwater		19-Dec-2019 13:10	20-Dec-2019 10:03	☐
HS19121155-08	35AWW14-121919	Groundwater		19-Dec-2019 13:20	20-Dec-2019 10:03	☐
HS19121155-09	Trip Blank	Water		19-Dec-2019 00:00	20-Dec-2019 10:03	☐

Revision:1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: LHAAP-58
Work Order: HS19121155

Work Order Comments

- Revised to include VFA results as LOQ/LOD/MDL.

Work Order Comments

- The analysis for TOC was subcontracted to ALS Kelso, WA. Final report attached.
- The analysis for DHC/DHB were subcontracted to Microbial Insights in Knoxville TN. Final report attached.
- The analysis for VFA was subcontracted to ALS Rochester, NY. Final report attached.
- The analysis for MEE plus CO2 was subcontracted to ALS Simi Valley, CA. Final report attached.

GCMS Volatiles by Method SW8260

Batch ID: R353734

Sample ID: CCV

- Carbon Disulfide exceeded %D limits for CCV. Samples are ND for this compound.

Sample ID: CCV-END

- The internal standard amount was 2 times our normal added amount due to auto addition from the autosampler, causing low compound recoveries

Sample ID: VLCSW-200102

- 1,2,3_Trichlorobenzene exceeded QC limits for LCS. CCV is OK.

Sample ID: HS19121257-01MSD

- MSD is for an unrelated sample

WetChemistry by Method SW9056

Batch ID: R353393

Sample ID: LHSMW07-121919 (HS19121155-05)

- The reporting limit is elevated due to dilution for high concentrations of non-target analytes. (Nitrogen, Nitrate (As N))

Batch ID: R353865,R353906

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW10-121919
Collection Date: 19-Dec-2019 08:35

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:34
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:34
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 13:34
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:34
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:34
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:34
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:34
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:34
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 13:34
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 13:34
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:34
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:34
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:34
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 13:34
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:34
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 13:34
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:34
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:34
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:34
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:34
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:34
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	02-Jan-2020 13:34
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:34
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	02-Jan-2020 13:34
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:34
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:34
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	02-Jan-2020 13:34
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	02-Jan-2020 13:34
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	02-Jan-2020 13:34
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:34

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW10-121919
Collection Date: 19-Dec-2019 08:35

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:34
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:34
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:34
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	02-Jan-2020 13:34
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	02-Jan-2020 13:34
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:34
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:34
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:34
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:34
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:34
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:34
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:34
Surr: 1,2-Dichloroethane-d4	*92.9*			**0**	*81-118*	*%REC*	*1*	*02-Jan-2020 13:34*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*02-Jan-2020 13:34*
Surr: Dibromofluoromethane	*94.3*			**0**	*80-119*	*%REC*	*1*	*02-Jan-2020 13:34*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*1*	*02-Jan-2020 13:34*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**4.46**		**0.200**	**0.500**	**0.500**	**mg/L**	1	05-Jan-2020 00:28
Nitrogen, Nitrate (As N)	**0.115**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	20-Dec-2019 14:28
Sulfate	**46.1**		**0.200**	**0.500**	**0.500**	**mg/L**	1	20-Dec-2019 14:28
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUBCA
Subcontract Analysis	See Attached		0	0		NA	1	08-Jan-2020 10:00
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	03-Jan-2020 18:34

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW10-121919
Collection Date: 19-Dec-2019 08:35

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - VOLATILE FATTY ACIDS	**Method:NA**							Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Dec-2019 10:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW10-121919_a
Collection Date: 19-Dec-2019 08:35

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:58
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:58
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 13:58
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:58
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:58
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:58
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:58
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:58
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 13:58
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 13:58
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:58
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:58
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:58
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 13:58
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:58
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 13:58
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:58
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:58
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:58
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:58
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:58
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	02-Jan-2020 13:58
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:58
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	02-Jan-2020 13:58
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:58
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:58
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	02-Jan-2020 13:58
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	02-Jan-2020 13:58
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	02-Jan-2020 13:58
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:58

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW10-121919_a
Collection Date: 19-Dec-2019 08:35

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:58
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:58
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:58
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	02-Jan-2020 13:58
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	02-Jan-2020 13:58
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:58
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:58
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:58
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:58
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:58
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:58
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:58
Surr: 1,2-Dichloroethane-d4	*91.3*			**0**	*81-118*	*%REC*	*1*	*02-Jan-2020 13:58*
Surr: 4-Bromofluorobenzene	*89.5*			**0**	*85-114*	*%REC*	*1*	*02-Jan-2020 13:58*
Surr: Dibromofluoromethane	*94.2*			**0**	*80-119*	*%REC*	*1*	*02-Jan-2020 13:58*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*1*	*02-Jan-2020 13:58*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**5.43**		**0.200**	**0.500**	**0.500**	**mg/L**	1	05-Jan-2020 01:17
Nitrogen, Nitrate (As N)	**0.115**		**0.0300**	**0.100**	**0.100**	**mg/L**	1	20-Dec-2019 15:18
Sulfate	**46.5**		**0.200**	**0.500**	**0.500**	**mg/L**	1	20-Dec-2019 15:18
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUBCA
Subcontract Analysis	See Attached		0	0		NA	1	08-Jan-2020 10:00
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	03-Jan-2020 18:34

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW10-121919_a
Collection Date: 19-Dec-2019 08:35

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - VOLATILE FATTY ACIDS	**Method:NA**							Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Dec-2019 10:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW20-121919
Collection Date: 19-Dec-2019 09:40

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	5.0	U	3.0	5.0	10	UG/L	10	02-Jan-2020 16:46
1,1,1-Trichloroethane	5.0	U	2.0	5.0	10	UG/L	10	02-Jan-2020 16:46
1,1,2,2-Tetrachloroethane	5.0	U	5.0	5.0	10	UG/L	10	02-Jan-2020 16:46
1,1,2-Trichloroethane	**75**		**3.0**	**5.0**	**10**	**UG/L**	10	02-Jan-2020 16:46
1,1-Dichloroethane	**640**		**2.0**	**5.0**	**10**	**UG/L**	10	02-Jan-2020 16:46
1,1-Dichloroethene	**970**		**2.0**	**5.0**	**10**	**UG/L**	10	02-Jan-2020 16:46
1,1-Dichloropropene	5.0	U	3.0	5.0	10	UG/L	10	02-Jan-2020 16:46
1,2,3-Trichlorobenzene	5.0	U	4.0	5.0	10	UG/L	10	02-Jan-2020 16:46
1,2,3-Trichloropropane	5.0	U	5.0	5.0	10	UG/L	10	02-Jan-2020 16:46
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	10	UG/L	10	02-Jan-2020 16:46
1,2,4-Trimethylbenzene	5.0	U	3.0	5.0	10	UG/L	10	02-Jan-2020 16:46
1,2-Dibromo-3-chloropropane	5.0	U	2.0	5.0	10	UG/L	10	02-Jan-2020 16:46
1,2-Dibromoethane	5.0	U	2.0	5.0	10	UG/L	10	02-Jan-2020 16:46
1,2-Dichlorobenzene	**17**		**5.0**	**5.0**	**10**	**UG/L**	10	02-Jan-2020 16:46
1,2-Dichloroethane	**19**		**2.0**	**5.0**	**10**	**UG/L**	10	02-Jan-2020 16:46
1,2-Dichloropropane	5.0	U	5.0	5.0	10	UG/L	10	02-Jan-2020 16:46
1,3,5-Trimethylbenzene	5.0	U	3.0	5.0	10	UG/L	10	02-Jan-2020 16:46
1,3-Dichlorobenzene	5.0	U	4.0	5.0	10	UG/L	10	02-Jan-2020 16:46
1,3-Dichloropropane	5.0	U	3.0	5.0	10	UG/L	10	02-Jan-2020 16:46
1,4-Dichlorobenzene	5.0	U	4.0	5.0	10	UG/L	10	02-Jan-2020 16:46
2,2-Dichloropropane	5.0	U	2.0	5.0	10	UG/L	10	02-Jan-2020 16:46
2-Butanone	10	U	5.0	10	20	UG/L	10	02-Jan-2020 16:46
2-Chlorotoluene	5.0	U	3.0	5.0	10	UG/L	10	02-Jan-2020 16:46
2-Hexanone	10	U	10	10	20	UG/L	10	02-Jan-2020 16:46
4-Chlorotoluene	5.0	U	4.0	5.0	10	UG/L	10	02-Jan-2020 16:46
4-Isopropyltoluene	5.0	U	3.0	5.0	10	UG/L	10	02-Jan-2020 16:46
4-Methyl-2-pentanone	10	U	7.0	10	20	UG/L	10	02-Jan-2020 16:46
Acetone	10	U	4.0	10	20	UG/L	10	02-Jan-2020 16:46
Benzene	**9.0**	J	**2.0**	**5.0**	**10**	**UG/L**	10	02-Jan-2020 16:46
Bromobenzene	5.0	U	4.0	5.0	10	UG/L	10	02-Jan-2020 16:46
Bromochloromethane	5.0	U	2.0	5.0	10	UG/L	10	02-Jan-2020 16:46
Bromodichloromethane	5.0	U	2.0	5.0	10	UG/L	10	02-Jan-2020 16:46
Bromoform	5.0	U	4.0	5.0	10	UG/L	10	02-Jan-2020 16:46
Bromomethane	5.0	U	4.0	5.0	10	UG/L	10	02-Jan-2020 16:46
Carbon disulfide	10	U	6.0	10	20	UG/L	10	02-Jan-2020 16:46
Carbon tetrachloride	5.0	U	5.0	5.0	10	UG/L	10	02-Jan-2020 16:46
Chlorobenzene	5.0	U	3.0	5.0	10	UG/L	10	02-Jan-2020 16:46
Chloroethane	5.0	U	3.0	5.0	10	UG/L	10	02-Jan-2020 16:46
Chloroform	5.0	U	2.0	5.0	10	UG/L	10	02-Jan-2020 16:46

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW20-121919
Collection Date: 19-Dec-2019 09:40

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	5.0	U	2.0	5.0	10	UG/L	10	02-Jan-2020 16:46
cis-1,2-Dichloroethene	**70**		**2.0**	**5.0**	**10**	**UG/L**	10	02-Jan-2020 16:46
cis-1,3-Dichloropropene	5.0	U	1.0	5.0	10	UG/L	10	02-Jan-2020 16:46
Dibromochloromethane	5.0	U	3.0	5.0	10	UG/L	10	02-Jan-2020 16:46
Dibromomethane	5.0	U	2.0	5.0	10	UG/L	10	02-Jan-2020 16:46
Dichlorodifluoromethane	5.0	U	3.0	5.0	10	UG/L	10	02-Jan-2020 16:46
Ethylbenzene	5.0	U	3.0	5.0	10	UG/L	10	02-Jan-2020 16:46
Hexachlorobutadiene	5.0	U	10	5.0	10	UG/L	10	02-Jan-2020 16:46
Isopropylbenzene	5.0	U	3.0	5.0	10	UG/L	10	02-Jan-2020 16:46
m,p-Xylene	10	U	5.0	10	20	UG/L	10	02-Jan-2020 16:46
Methylene chloride	10	U	4.0	10	20	UG/L	10	02-Jan-2020 16:46
n-Butylbenzene	5.0	U	4.0	5.0	10	UG/L	10	02-Jan-2020 16:46
n-Propylbenzene	5.0	U	3.0	5.0	10	UG/L	10	02-Jan-2020 16:46
Naphthalene	5.0	U	3.0	5.0	10	UG/L	10	02-Jan-2020 16:46
o-Xylene	5.0	U	3.0	5.0	10	UG/L	10	02-Jan-2020 16:46
sec-Butylbenzene	5.0	U	3.0	5.0	10	UG/L	10	02-Jan-2020 16:46
Styrene	5.0	U	3.0	5.0	10	UG/L	10	02-Jan-2020 16:46
tert-Butylbenzene	5.0	U	3.0	5.0	10	UG/L	10	02-Jan-2020 16:46
Tetrachloroethene	5.0	U	3.0	5.0	10	UG/L	10	02-Jan-2020 16:46
Toluene	5.0	U	2.0	5.0	10	UG/L	10	02-Jan-2020 16:46
trans-1,2-Dichloroethene	**9.1**	J	**2.0**	**5.0**	**10**	**UG/L**	10	02-Jan-2020 16:46
trans-1,3-Dichloropropene	5.0	U	2.0	5.0	10	UG/L	10	02-Jan-2020 16:46
Trichloroethene	**99**		**2.0**	**5.0**	**10**	**UG/L**	10	02-Jan-2020 16:46
Trichlorofluoromethane	5.0	U	3.0	5.0	10	UG/L	10	02-Jan-2020 16:46
Vinyl chloride	**2,800**		**20**	**50**	**100**	**UG/L**	100	02-Jan-2020 17:59
Surr: 1,2-Dichloroethane-d4	*99.7*			**0**	*81-118*	*%REC*	*100*	*02-Jan-2020 17:59*
Surr: 1,2-Dichloroethane-d4	*98.2*			**0**	*81-118*	*%REC*	*10*	*02-Jan-2020 16:46*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*10*	*02-Jan-2020 16:46*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*100*	*02-Jan-2020 17:59*
Surr: Dibromofluoromethane	*98.5*			**0**	*80-119*	*%REC*	*100*	*02-Jan-2020 17:59*
Surr: Dibromofluoromethane	*97.5*			**0**	*80-119*	*%REC*	*10*	*02-Jan-2020 16:46*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*10*	*02-Jan-2020 16:46*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*100*	*02-Jan-2020 17:59*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**821**		**4.00**	**10.0**	**10.0**	**mg/L**	20	05-Jan-2020 01:34
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	20-Dec-2019 15:34
Sulfate	**1,170**		**4.00**	**10.0**	**10.0**	**mg/L**	20	20-Dec-2019 15:51
SUBCONTRACT ANALYSIS - DHC/DHB		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Dec-2019 10:33

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW20-121919
Collection Date: 19-Dec-2019 09:40

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUBCA
Subcontract Analysis	See Attached		0	0		NA	1	08-Jan-2020 10:00
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	03-Jan-2020 18:34
SUBCONTRACT ANALYSIS - VOLATILE FATTY ACIDS		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Dec-2019 10:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW06-121919
Collection Date: 19-Dec-2019 10:35

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:23
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:23
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 18:23
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:23
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:23
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:23
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:23
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 18:23
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 18:23
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 18:23
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:23
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:23
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:23
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 18:23
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:23
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 18:23
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:23
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 18:23
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:23
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 18:23
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:23
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	02-Jan-2020 18:23
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:23
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	02-Jan-2020 18:23
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 18:23
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:23
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	02-Jan-2020 18:23
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	02-Jan-2020 18:23
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	02-Jan-2020 18:23
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW06-121919
Collection Date: 19-Dec-2019 10:35

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:23
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:23
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:23
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	02-Jan-2020 18:23
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	02-Jan-2020 18:23
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 18:23
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:23
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:23
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:23
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:23
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:23
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:23
Surr: 1,2-Dichloroethane-d4	*98.4*			**0**	*81-118*	*%REC*	*1*	*02-Jan-2020 18:23*
Surr: 4-Bromofluorobenzene	*103*			**0**	*85-114*	*%REC*	*1*	*02-Jan-2020 18:23*
Surr: Dibromofluoromethane	*97.6*			**0**	*80-119*	*%REC*	*1*	*02-Jan-2020 18:23*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*1*	*02-Jan-2020 18:23*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**935**		**4.00**	**10.0**	**10.0**	**mg/L**	20	05-Jan-2020 01:51
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	20-Dec-2019 16:07
Sulfate	**0.845**		**0.200**	**0.500**	**0.500**	**mg/L**	1	20-Dec-2019 16:07
SUBCONTRACT ANALYSIS - DHC/DHB		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Dec-2019 10:33
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUBCA
Subcontract Analysis	See Attached		0	0		NA	1	08-Jan-2020 10:00

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW06-121919
Collection Date: 19-Dec-2019 10:35

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	03-Jan-2020 18:34
SUBCONTRACT ANALYSIS - VOLATILE FATTY ACIDS		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Dec-2019 10:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: LHSMW07-121919
Collection Date: 19-Dec-2019 11:30

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:47
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:47
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 18:47
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:47
1,1-Dichloroethane	**13**		**0.20**	**0.50**	**1.0**	**UG/L**	1	02-Jan-2020 18:47
1,1-Dichloroethene	**46**		**0.20**	**0.50**	**1.0**	**UG/L**	1	02-Jan-2020 18:47
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:47
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 18:47
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 18:47
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 18:47
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:47
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:47
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:47
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 18:47
1,2-Dichloroethane	**0.64**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	02-Jan-2020 18:47
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 18:47
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:47
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 18:47
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:47
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 18:47
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:47
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	02-Jan-2020 18:47
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:47
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	02-Jan-2020 18:47
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 18:47
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:47
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	02-Jan-2020 18:47
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	02-Jan-2020 18:47
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:47
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 18:47
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:47
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:47
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 18:47
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 18:47
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	02-Jan-2020 18:47
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 18:47
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:47
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:47
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:47

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: LHSMW07-121919
Collection Date: 19-Dec-2019 11:30

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:47
cis-1,2-Dichloroethene	**1.2**		**0.20**	**0.50**	**1.0**	**UG/L**	1	02-Jan-2020 18:47
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	02-Jan-2020 18:47
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:47
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:47
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:47
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:47
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	UG/L	1	02-Jan-2020 18:47
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:47
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	02-Jan-2020 18:47
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	02-Jan-2020 18:47
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 18:47
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:47
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:47
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:47
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:47
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:47
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:47
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:47
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:47
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:47
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 18:47
Trichloroethene	**3.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	02-Jan-2020 18:47
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 18:47
Vinyl chloride	**42**		**0.20**	**0.50**	**1.0**	**UG/L**	1	02-Jan-2020 18:47
Surr: 1,2-Dichloroethane-d4	*98.6*			**0**	*81-118*	*%REC*	*1*	*02-Jan-2020 18:47*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*1*	*02-Jan-2020 18:47*
Surr: Dibromofluoromethane	*98.1*			**0**	*80-119*	*%REC*	*1*	*02-Jan-2020 18:47*
Surr: Toluene-d8	*102*			**0**	*89-112*	*%REC*	*1*	*02-Jan-2020 18:47*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**1,770**		**10.0**	**25.0**	**25.0**	**mg/L**	50	05-Jan-2020 02:07
Nitrogen, Nitrate (As N)	0.500	U	0.150	0.500	0.500	mg/L	5	20-Dec-2019 16:40
Sulfate	**2,560**		**10.0**	**25.0**	**25.0**	**mg/L**	50	06-Jan-2020 13:34
SUBCONTRACT ANALYSIS - DHC/DHB		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Dec-2019 10:33
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUBCA
Subcontract Analysis	See Attached		0	0		NA	1	08-Jan-2020 10:00

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: LHSMW07-121919
Collection Date: 19-Dec-2019 11:30

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	03-Jan-2020 18:34
SUBCONTRACT ANALYSIS - VOLATILE FATTY ACIDS		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	31-Dec-2019 10:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW16-121919
Collection Date: 19-Dec-2019 12:25

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:11
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:11
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 19:11
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:11
1,1-Dichloroethane	**0.65**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	02-Jan-2020 19:11
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:11
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:11
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 19:11
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 19:11
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 19:11
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:11
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:11
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:11
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 19:11
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:11
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 19:11
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:11
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 19:11
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:11
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 19:11
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:11
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	02-Jan-2020 19:11
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:11
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	02-Jan-2020 19:11
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 19:11
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:11
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	02-Jan-2020 19:11
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	02-Jan-2020 19:11
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	02-Jan-2020 19:11
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:11

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW16-121919
Collection Date: 19-Dec-2019 12:25

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:11
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:11
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:11
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	02-Jan-2020 19:11
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	02-Jan-2020 19:11
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 19:11
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:11
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:11
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:11
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:11
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:11
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:11
Surr: 1,2-Dichloroethane-d4	*99.7*			**0**	*81-118*	*%REC*	*1*	*02-Jan-2020 19:11*
Surr: 4-Bromofluorobenzene	*104*			**0**	*85-114*	*%REC*	*1*	*02-Jan-2020 19:11*
Surr: Dibromofluoromethane	*97.8*			**0**	*80-119*	*%REC*	*1*	*02-Jan-2020 19:11*
Surr: Toluene-d8	*102*			**0**	*89-112*	*%REC*	*1*	*02-Jan-2020 19:11*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW24-121919
Collection Date: 19-Dec-2019 13:10

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:35
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:35
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 19:35
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:35
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:35
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:35
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:35
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 19:35
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 19:35
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 19:35
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:35
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:35
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:35
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 19:35
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:35
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 19:35
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:35
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 19:35
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:35
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 19:35
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:35
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	02-Jan-2020 19:35
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:35
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	02-Jan-2020 19:35
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 19:35
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:35
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	02-Jan-2020 19:35
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	02-Jan-2020 19:35
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	02-Jan-2020 19:35
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:35

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW24-121919
Collection Date: 19-Dec-2019 13:10

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:35
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:35
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:35
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	02-Jan-2020 19:35
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	02-Jan-2020 19:35
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 19:35
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:35
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:35
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:35
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:35
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:35
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 19:35
Surr: 1,2-Dichloroethane-d4	*98.5*			**0**	*81-118*	*%REC*	*1*	*02-Jan-2020 19:35*
Surr: 4-Bromofluorobenzene	*100*			**0**	*85-114*	*%REC*	*1*	*02-Jan-2020 19:35*
Surr: Dibromofluoromethane	*98.0*			**0**	*80-119*	*%REC*	*1*	*02-Jan-2020 19:35*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*1*	*02-Jan-2020 19:35*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW14-121919
Collection Date: 19-Dec-2019 13:20

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 15:58
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 15:58
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 15:58
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 15:58
1,1-Dichloroethane	**9.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	02-Jan-2020 15:58
1,1-Dichloroethene	**15**		**0.20**	**0.50**	**1.0**	**UG/L**	1	02-Jan-2020 15:58
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 15:58
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 15:58
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 15:58
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 15:58
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 15:58
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 15:58
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 15:58
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 15:58
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 15:58
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 15:58
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 15:58
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 15:58
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 15:58
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 15:58
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 15:58
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	02-Jan-2020 15:58
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 15:58
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	02-Jan-2020 15:58
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 15:58
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 15:58
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	02-Jan-2020 15:58
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	02-Jan-2020 15:58
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 15:58
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 15:58
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 15:58
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 15:58
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 15:58
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 15:58
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	02-Jan-2020 15:58
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 15:58
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 15:58
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 15:58
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 15:58

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: 35AWW14-121919
Collection Date: 19-Dec-2019 13:20

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 15:58
cis-1,2-Dichloroethene	**3.7**		**0.20**	**0.50**	**1.0**	**UG/L**	1	02-Jan-2020 15:58
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	02-Jan-2020 15:58
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 15:58
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 15:58
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 15:58
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 15:58
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	UG/L	1	02-Jan-2020 15:58
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 15:58
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	02-Jan-2020 15:58
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	02-Jan-2020 15:58
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 15:58
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 15:58
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 15:58
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 15:58
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 15:58
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 15:58
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 15:58
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 15:58
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 15:58
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 15:58
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 15:58
Trichloroethene	**11**		**0.20**	**0.50**	**1.0**	**UG/L**	1	02-Jan-2020 15:58
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 15:58
Vinyl chloride	**0.75**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	02-Jan-2020 15:58
Surr: 1,2-Dichloroethane-d4	*84.9*			**0**	*81-118*	*%REC*	*1*	*02-Jan-2020 15:58*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*1*	*02-Jan-2020 15:58*
Surr: Dibromofluoromethane	*83.3*			**0**	*80-119*	*%REC*	*1*	*02-Jan-2020 15:58*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*1*	*02-Jan-2020 15:58*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: Trip Blank
Collection Date: 19-Dec-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-09
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:10
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:10
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 13:10
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:10
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:10
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:10
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:10
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:10
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 13:10
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 13:10
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:10
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:10
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:10
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 13:10
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:10
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 13:10
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:10
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:10
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:10
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:10
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:10
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	02-Jan-2020 13:10
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:10
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	02-Jan-2020 13:10
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:10
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:10
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	02-Jan-2020 13:10
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	02-Jan-2020 13:10
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	02-Jan-2020 13:10
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Sample ID: Trip Blank
Collection Date: 19-Dec-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19121155
Lab ID:HS19121155-09
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:10
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:10
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:10
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	02-Jan-2020 13:10
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	02-Jan-2020 13:10
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	02-Jan-2020 13:10
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:10
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:10
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:10
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:10
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:10
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	02-Jan-2020 13:10
Surr: 1,2-Dichloroethane-d4	*93.1*			**0**	*81-118*	*%REC*	*1*	*02-Jan-2020 13:10*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*02-Jan-2020 13:10*
Surr: Dibromofluoromethane	*95.0*			**0**	*80-119*	*%REC*	*1*	*02-Jan-2020 13:10*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*1*	*02-Jan-2020 13:10*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121155

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R353393 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS19121155-01	35AWW10-121919	19 Dec 2019 08:35			20 Dec 2019 14:28	1
HS19121155-02	35AWW10-121919_a	19 Dec 2019 08:35			20 Dec 2019 15:18	1
HS19121155-03	35AWW20-121919	19 Dec 2019 09:40			20 Dec 2019 15:51	20
HS19121155-03	35AWW20-121919	19 Dec 2019 09:40			20 Dec 2019 15:34	1
HS19121155-04	35AWW06-121919	19 Dec 2019 10:35			20 Dec 2019 16:07	1
HS19121155-05	LHSMW07-121919	19 Dec 2019 11:30			20 Dec 2019 16:40	5
Batch ID: R353574 (0)	**Test Name :** SUBCONTRACT ANALYSIS - VOLATILE FATTY ACIDS				**Matrix:** Groundwater	
HS19121155-01	35AWW10-121919	19 Dec 2019 08:35			31 Dec 2019 10:18	1
HS19121155-02	35AWW10-121919_a	19 Dec 2019 08:35			31 Dec 2019 10:18	1
HS19121155-03	35AWW20-121919	19 Dec 2019 09:40			31 Dec 2019 10:18	1
HS19121155-04	35AWW06-121919	19 Dec 2019 10:35			31 Dec 2019 10:18	1
HS19121155-05	LHSMW07-121919	19 Dec 2019 11:30			31 Dec 2019 10:18	1
Batch ID: R353580 (0)	**Test Name :** SUBCONTRACT ANALYSIS - DHC/DHB				**Matrix:** Groundwater	
HS19121155-03	35AWW20-121919	19 Dec 2019 09:40			31 Dec 2019 10:33	1
HS19121155-04	35AWW06-121919	19 Dec 2019 10:35			31 Dec 2019 10:33	1
HS19121155-05	LHSMW07-121919	19 Dec 2019 11:30			31 Dec 2019 10:33	1
Batch ID: R353734 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS19121155-09	Trip Blank	19 Dec 2019 00:00			02 Jan 2020 13:10	1
Batch ID: R353734 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS19121155-01	35AWW10-121919	19 Dec 2019 08:35			02 Jan 2020 13:34	1
HS19121155-02	35AWW10-121919_a	19 Dec 2019 08:35			02 Jan 2020 13:58	1
HS19121155-03	35AWW20-121919	19 Dec 2019 09:40			02 Jan 2020 17:59	100
HS19121155-03	35AWW20-121919	19 Dec 2019 09:40			02 Jan 2020 16:46	10
HS19121155-04	35AWW06-121919	19 Dec 2019 10:35			02 Jan 2020 18:23	1
HS19121155-05	LHSMW07-121919	19 Dec 2019 11:30			02 Jan 2020 18:47	1
HS19121155-06	35AWW16-121919	19 Dec 2019 12:25			02 Jan 2020 19:11	1
HS19121155-07	35AWW24-121919	19 Dec 2019 13:10			02 Jan 2020 19:35	1
HS19121155-08	35AWW14-121919	19 Dec 2019 13:20			02 Jan 2020 15:58	1
Batch ID: R353817 (0)	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS				**Matrix:** Groundwater	
HS19121155-01	35AWW10-121919	19 Dec 2019 08:35			03 Jan 2020 18:34	1
HS19121155-02	35AWW10-121919_a	19 Dec 2019 08:35			03 Jan 2020 18:34	1
HS19121155-03	35AWW20-121919	19 Dec 2019 09:40			03 Jan 2020 18:34	1
HS19121155-04	35AWW06-121919	19 Dec 2019 10:35			03 Jan 2020 18:34	1
HS19121155-05	LHSMW07-121919	19 Dec 2019 11:30			03 Jan 2020 18:34	1

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121155

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R353865 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS19121155-01	35AWW10-121919	19 Dec 2019 08:35			05 Jan 2020 00:28	1
HS19121155-02	35AWW10-121919_a	19 Dec 2019 08:35			05 Jan 2020 01:17	1
HS19121155-03	35AWW20-121919	19 Dec 2019 09:40			05 Jan 2020 01:34	20
HS19121155-04	35AWW06-121919	19 Dec 2019 10:35			05 Jan 2020 01:51	20
HS19121155-05	LHSMW07-121919	19 Dec 2019 11:30			05 Jan 2020 02:07	50
Batch ID: R353906 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS19121155-05	LHSMW07-121919	19 Dec 2019 11:30			06 Jan 2020 13:34	50
Batch ID: R354011 (0)	**Test Name :** SUBCONTRACT ANALYSIS - RSK				**Matrix:** Groundwater	
HS19121155-01	35AWW10-121919	19 Dec 2019 08:35			08 Jan 2020 10:00	1
HS19121155-02	35AWW10-121919_a	19 Dec 2019 08:35			08 Jan 2020 10:00	1
HS19121155-03	35AWW20-121919	19 Dec 2019 09:40			08 Jan 2020 10:00	1
HS19121155-04	35AWW06-121919	19 Dec 2019 10:35			08 Jan 2020 10:00	1
HS19121155-05	LHSMW07-121919	19 Dec 2019 11:30			08 Jan 2020 10:00	1

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121155

QC BATCH REPORT

Batch ID: R353734 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-200102** Units: **UG/L** Analysis Date: **02-Jan-2020 12:46**
Client ID: Run ID: **VOA6_353734** SeqNo: **5421202** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	0.50	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	0.50	1.0								U
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	0.50	1.0								U
1,2,3-Trichlorobenzene	0.50	1.0								U
1,2,3-Trichloropropane	0.50	1.0								U
1,2,4-Trichlorobenzene	0.50	1.0								U
1,2,4-Trimethylbenzene	0.50	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	0.50	1.0								U
1,3,5-Trimethylbenzene	0.50	1.0								U
1,3-Dichlorobenzene	0.50	1.0								U
1,3-Dichloropropane	0.50	1.0								U
1,4-Dichlorobenzene	0.50	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	0.50	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	0.50	1.0								U
4-Isopropyltoluene	0.50	1.0								U
4-Methyl-2-pentanone	1.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	0.50	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	0.50	1.0								U
Bromomethane	0.50	1.0								U

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121155

QC BATCH REPORT

Batch ID: R353734 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-200102** Units: **UG/L** Analysis Date: **02-Jan-2020 12:46**
Client ID: Run ID: **VOA6_353734** SeqNo: **5421202** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	0.50	1.0								U
Chlorobenzene	0.50	1.0								U
Chloroethane	0.50	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	0.50	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	0.50	1.0								U
Ethylbenzene	0.50	1.0								U
Hexachlorobutadiene	0.50	1.0								U
Isopropylbenzene	0.50	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	0.50	1.0								U
n-Butylbenzene	0.50	1.0								U
n-Propylbenzene	0.50	1.0								U
o-Xylene	0.50	1.0								U
sec-Butylbenzene	0.50	1.0								U
Styrene	0.50	1.0								U
tert-Butylbenzene	0.50	1.0								U
Tetrachloroethene	0.50	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*46.95*	*1.0*	*50*	*0*	*93.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.6*	*1.0*	*50*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*47.85*	*1.0*	*50*	*0*	*95.7*	*80 - 119*				
Surr: Toluene-d8	*51.33*	*1.0*	*50*	*0*	*103*	*89 - 112*				

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121155

QC BATCH REPORT

Batch ID: R353734 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-200102** Units: **UG/L** Analysis Date: **02-Jan-2020 11:58**
Client ID: Run ID: **VOA6_353734** SeqNo: **5421201** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.51	1.0	20	0	103	78 - 124				
1,1,1-Trichloroethane	20.78	1.0	20	0	104	74 - 131				
1,1,2,2-Tetrachloroethane	21.78	1.0	20	0	109	71 - 121				
1,1,2-Trichloroethane	21.13	1.0	20	0	106	80 - 119				
1,1-Dichloroethane	23.41	1.0	20	0	117	77 - 125				
1,1-Dichloroethene	18.5	1.0	20	0	92.5	71 - 131				
1,1-Dichloropropene	21.22	1.0	20	0	106	78 - 125				
1,2,3-Trichlorobenzene	26.79	1.0	20	0	134	69 - 129				S
1,2,3-Trichloropropane	22.17	1.0	20	0	111	73 - 122				
1,2,4-Trichlorobenzene	23.14	1.0	20	0	116	69 - 130				
1,2,4-Trimethylbenzene	22.04	1.0	20	0	110	76 - 124				
1,2-Dibromo-3-chloropropane	20.77	1.0	20	0	104	62 - 128				
1,2-Dibromoethane	20.49	1.0	20	0	102	77 - 121				
1,2-Dichlorobenzene	20.59	1.0	20	0	103	80 - 119				
1,2-Dichloroethane	20.41	1.0	20	0	102	73 - 128				
1,2-Dichloropropane	21.89	1.0	20	0	109	78 - 122				
1,3,5-Trimethylbenzene	22.48	1.0	20	0	112	75 - 124				
1,3-Dichlorobenzene	20.89	1.0	20	0	104	80 - 119				
1,3-Dichloropropane	21.56	1.0	20	0	108	80 - 119				
1,4-Dichlorobenzene	20.56	1.0	20	0	103	79 - 118				
2,2-Dichloropropane	21.09	1.0	20	0	105	60 - 139				
2-Butanone	45.04	2.0	40	0	113	56 - 143				
2-Chlorotoluene	23.4	1.0	20	0	117	79 - 122				
2-Hexanone	41.42	2.0	40	0	104	57 - 139				
4-Chlorotoluene	22.1	1.0	20	0	111	78 - 122				
4-Isopropyltoluene	21.78	1.0	20	0	109	77 - 127				
4-Methyl-2-pentanone	41.53	2.0	40	0	104	67 - 130				
Acetone	45.36	2.0	40	0	113	39 - 160				
Benzene	22.85	1.0	20	0	114	79 - 120				
Bromobenzene	21.04	1.0	20	0	105	80 - 120				
Bromochloromethane	21.54	1.0	20	0	108	78 - 123				
Bromodichloromethane	20.7	1.0	20	0	104	79 - 125				
Bromoform	19.48	1.0	20	0	97.4	66 - 130				
Bromomethane	15.08	1.0	20	0	75.4	53 - 141				

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121155

QC BATCH REPORT

Batch ID: R353734 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-200102** Units: **UG/L** Analysis Date: **02-Jan-2020 11:58**
Client ID: Run ID: **VOA6_353734** SeqNo: **5421201** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	47.72	2.0	40	0	119	64 - 133				
Carbon tetrachloride	19.13	1.0	20	0	95.6	72 - 136				
Chlorobenzene	20.34	1.0	20	0	102	82 - 118				
Chloroethane	19.4	1.0	20	0	97.0	60 - 138				
Chloroform	20.49	1.0	20	0	102	79 - 124				
Chloromethane	19.08	1.0	20	0	95.4	50 - 139				
cis-1,2-Dichloroethene	22.6	1.0	20	0	113	78 - 123				
cis-1,3-Dichloropropene	22.01	1.0	20	0	110	75 - 124				
Dibromochloromethane	20.37	1.0	20	0	102	74 - 126				
Dibromomethane	20.47	1.0	20	0	102	79 - 123				
Dichlorodifluoromethane	21.42	1.0	20	0	107	32 - 152				
Ethylbenzene	21.13	1.0	20	0	106	79 - 121				
Hexachlorobutadiene	20.81	1.0	20	0	104	66 - 134				
Isopropylbenzene	20.72	1.0	20	0	104	72 - 131				
m,p-Xylene	42.02	2.0	40	0	105	80 - 121				
Methylene chloride	22.02	2.0	20	0	110	74 - 124				
Naphthalene	21.46	1.0	20	0	107	61 - 128				
n-Butylbenzene	21.66	1.0	20	0	108	75 - 128				
n-Propylbenzene	22.54	1.0	20	0	113	76 - 126				
o-Xylene	20.89	1.0	20	0	104	78 - 122				
sec-Butylbenzene	21.89	1.0	20	0	109	77 - 126				
Styrene	21.01	1.0	20	0	105	78 - 123				
tert-Butylbenzene	21.97	1.0	20	0	110	78 - 124				
Tetrachloroethene	19.33	1.0	20	0	96.6	74 - 129				
Toluene	21.62	1.0	20	0	108	80 - 121				
trans-1,2-Dichloroethene	22.47	1.0	20	0	112	75 - 124				
trans-1,3-Dichloropropene	21.64	1.0	20	0	108	73 - 127				
Trichloroethene	20.57	1.0	20	0	103	79 - 123				
Trichlorofluoromethane	18.39	1.0	20	0	91.9	65 - 141				
Vinyl chloride	21.77	1.0	20	0	109	58 - 137				
Surr: 1,2-Dichloroethane-d4	*52.11*	*1.0*	*50*	*0*	*104*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.92*	*1.0*	*50*	*0*	*104*	*85 - 114*				
Surr: Dibromofluoromethane	*51.17*	*1.0*	*50*	*0*	*102*	*80 - 119*				
Surr: Toluene-d8	*49.02*	*1.0*	*50*	*0*	*98.0*	*89 - 112*				

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121155

QC BATCH REPORT

Batch ID: R353734 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS19121257-01MS** Units: **UG/L** Analysis Date: **02-Jan-2020 17:11**
Client ID: Run ID: **VOA6_353734** SeqNo: **5422710** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.85	1.0	20	0	99.2	78 - 124				
1,1,1-Trichloroethane	19.9	1.0	20	0	99.5	74 - 131				
1,1,2,2-Tetrachloroethane	21.6	1.0	20	0	108	71 - 121				
1,1,2-Trichloroethane	20.5	1.0	20	0	102	80 - 119				
1,1-Dichloroethane	21.56	1.0	20	0	108	77 - 125				
1,1-Dichloroethene	18.21	1.0	20	0	91.1	71 - 131				
1,1-Dichloropropene	21	1.0	20	0	105	78 - 125				
1,2,3-Trichlorobenzene	25.55	1.0	20	0	128	69 - 129				
1,2,3-Trichloropropane	21.96	1.0	20	0	110	73 - 122				
1,2,4-Trichlorobenzene	22.84	1.0	20	0	114	69 - 130				
1,2,4-Trimethylbenzene	22.78	1.0	20	0	114	76 - 124				
1,2-Dibromo-3-chloropropane	20.7	1.0	20	0	103	62 - 128				
1,2-Dibromoethane	19.57	1.0	20	0	97.9	77 - 121				
1,2-Dichlorobenzene	20.61	1.0	20	0	103	80 - 119				
1,2-Dichloroethane	19.09	1.0	20	0	95.5	73 - 128				
1,2-Dichloropropane	20.85	1.0	20	0	104	78 - 122				
1,3,5-Trimethylbenzene	23.37	1.0	20	0	117	75 - 124				
1,3-Dichlorobenzene	21.65	1.0	20	0	108	80 - 119				
1,3-Dichloropropane	20.68	1.0	20	0	103	80 - 119				
1,4-Dichlorobenzene	20.88	1.0	20	0	104	79 - 118				
2,2-Dichloropropane	20.13	1.0	20	0	101	60 - 139				
2-Butanone	37.73	2.0	40	0	94.3	56 - 143				
2-Chlorotoluene	24.36	1.0	20	0	122	79 - 122				
2-Hexanone	39.14	2.0	40	0	97.9	57 - 139				
4-Chlorotoluene	22.94	1.0	20	0	115	78 - 122				
4-Isopropyltoluene	23.16	1.0	20	0	116	77 - 127				
4-Methyl-2-pentanone	41.97	2.0	40	0	105	67 - 130				
Acetone	27.69	2.0	40	0	69.2	39 - 160				
Benzene	21.47	1.0	20	0	107	79 - 120				
Bromobenzene	21.32	1.0	20	0	107	80 - 120				
Bromochloromethane	18.92	1.0	20	0	94.6	78 - 123				
Bromodichloromethane	19.15	1.0	20	0	95.7	79 - 125				
Bromoform	18.43	1.0	20	0	92.2	66 - 130				
Bromomethane	12.02	1.0	20	0	60.1	53 - 141				

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121155

QC BATCH REPORT

Batch ID: R353734 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS19121257-01MS** Units: **UG/L** Analysis Date: **02-Jan-2020 17:11**
Client ID: Run ID: **VOA6_353734** SeqNo: **5422710** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	46.13	2.0	40	0	115	64 - 133				
Carbon tetrachloride	19.34	1.0	20	0	96.7	72 - 136				
Chlorobenzene	19.95	1.0	20	0	99.8	82 - 118				
Chloroethane	18.38	1.0	20	0	91.9	60 - 138				
Chloroform	18.87	1.0	20	0	94.4	79 - 124				
Chloromethane	18.66	1.0	20	0	93.3	50 - 139				
cis-1,2-Dichloroethene	21.05	1.0	20	0	105	78 - 123				
cis-1,3-Dichloropropene	20.5	1.0	20	0	102	75 - 124				
Dibromochloromethane	19.65	1.0	20	0	98.3	74 - 126				
Dibromomethane	18.61	1.0	20	0	93.0	79 - 123				
Dichlorodifluoromethane	22.57	1.0	20	0	113	32 - 152				
Ethylbenzene	21.03	1.0	20	0	105	79 - 121				
Hexachlorobutadiene	20.68	1.0	20	0	103	66 - 134				
Isopropylbenzene	21.08	1.0	20	0	105	72 - 131				
m,p-Xylene	41.88	2.0	40	0	105	80 - 121				
Methylene chloride	19.86	2.0	20	0	99.3	74 - 124				
Naphthalene	21.13	1.0	20	0	106	61 - 128				
n-Butylbenzene	23.26	1.0	20	0	116	75 - 128				
n-Propylbenzene	23.99	1.0	20	0	120	76 - 126				
o-Xylene	20.42	1.0	20	0	102	78 - 122				
sec-Butylbenzene	23.75	1.0	20	0	119	77 - 126				
Styrene	20.08	1.0	20	0	100	78 - 123				
tert-Butylbenzene	23.59	1.0	20	0	118	78 - 124				
Tetrachloroethene	19.67	1.0	20	0	98.3	74 - 129				
Toluene	21.49	1.0	20	0	107	80 - 121				
trans-1,2-Dichloroethene	21.24	1.0	20	0	106	75 - 124				
trans-1,3-Dichloropropene	19.8	1.0	20	0	99.0	73 - 127				
Trichloroethene	19.76	1.0	20	0	98.8	79 - 123				
Trichlorofluoromethane	18.46	1.0	20	0	92.3	65 - 141				
Vinyl chloride	22.06	1.0	20	0	110	58 - 137				
Surr: 1,2-Dichloroethane-d4	*48.37*	*1.0*	*50*	*0*	*96.7*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.75*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*48.75*	*1.0*	*50*	*0*	*97.5*	*80 - 119*				
Surr: Toluene-d8	*51.66*	*1.0*	*50*	*0*	*103*	*89 - 112*				

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121155

QC BATCH REPORT

Batch ID: R353734 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS19121257-01MSD** Units: **UG/L** Analysis Date: **02-Jan-2020 17:35**
Client ID: Run ID: **VOA6_353734** SeqNo: **5422711** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.53	1.0	20	0	97.6	78 - 124	19.85	1.63	20	
1,1,1-Trichloroethane	19.2	1.0	20	0	96.0	74 - 131	19.9	3.56	20	
1,1,2,2-Tetrachloroethane	21.21	1.0	20	0	106	71 - 121	21.6	1.84	20	
1,1,2-Trichloroethane	19.88	1.0	20	0	99.4	80 - 119	20.5	3.07	20	
1,1-Dichloroethane	20.78	1.0	20	0	104	77 - 125	21.56	3.7	20	
1,1-Dichloroethene	17.3	1.0	20	0	86.5	71 - 131	18.21	5.16	20	
1,1-Dichloropropene	20.04	1.0	20	0	100	78 - 125	21	4.71	20	
1,2,3-Trichlorobenzene	21.42	1.0	20	0	107	69 - 129	25.55	17.6	20	
1,2,3-Trichloropropane	21.47	1.0	20	0	107	73 - 122	21.96	2.28	20	
1,2,4-Trichlorobenzene	19.08	1.0	20	0	95.4	69 - 130	22.84	17.9	20	
1,2,4-Trimethylbenzene	22.19	1.0	20	0	111	76 - 124	22.78	2.6	20	
1,2-Dibromo-3-chloropropane	18.93	1.0	20	0	94.7	62 - 128	20.7	8.91	20	
1,2-Dibromoethane	19.19	1.0	20	0	95.9	77 - 121	19.57	1.97	20	
1,2-Dichlorobenzene	20.22	1.0	20	0	101	80 - 119	20.61	1.9	20	
1,2-Dichloroethane	18.77	1.0	20	0	93.9	73 - 128	19.09	1.7	20	
1,2-Dichloropropane	20.04	1.0	20	0	100	78 - 122	20.85	3.97	20	
1,3,5-Trimethylbenzene	22.87	1.0	20	0	114	75 - 124	23.37	2.15	20	
1,3-Dichlorobenzene	20.86	1.0	20	0	104	80 - 119	21.65	3.72	20	
1,3-Dichloropropane	20.38	1.0	20	0	102	80 - 119	20.68	1.45	20	
1,4-Dichlorobenzene	20.39	1.0	20	0	102	79 - 118	20.88	2.38	20	
2,2-Dichloropropane	19.29	1.0	20	0	96.4	60 - 139	20.13	4.3	20	
2-Butanone	36.76	2.0	40	0	91.9	56 - 143	37.73	2.62	20	
2-Chlorotoluene	23.67	1.0	20	0	118	79 - 122	24.36	2.91	20	
2-Hexanone	38.23	2.0	40	0	95.6	57 - 139	39.14	2.35	20	
4-Chlorotoluene	22.46	1.0	20	0	112	78 - 122	22.94	2.14	20	
4-Isopropyltoluene	22.35	1.0	20	0	112	77 - 127	23.16	3.57	20	
4-Methyl-2-pentanone	41.18	2.0	40	0	103	67 - 130	41.97	1.91	20	
Acetone	26.05	2.0	40	0	65.1	39 - 160	27.69	6.1	20	
Benzene	20.61	1.0	20	0	103	79 - 120	21.47	4.1	20	
Bromobenzene	21.11	1.0	20	0	106	80 - 120	21.32	1	20	
Bromochloromethane	18.44	1.0	20	0	92.2	78 - 123	18.92	2.55	20	
Bromodichloromethane	18.93	1.0	20	0	94.7	79 - 125	19.15	1.13	20	
Bromoform	17.97	1.0	20	0	89.8	66 - 130	18.43	2.55	20	
Bromomethane	11.7	1.0	20	0	58.5	53 - 141	12.02	2.7	20	

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121155

QC BATCH REPORT

Batch ID: R353734 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS19121257-01MSD** Units: **UG/L** Analysis Date: **02-Jan-2020 17:35**
Client ID: Run ID: **VOA6_353734** SeqNo: **5422711** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	43.46	2.0	40	0	109	64 - 133	46.13	5.95	20	
Carbon tetrachloride	18.58	1.0	20	0	92.9	72 - 136	19.34	3.99	20	
Chlorobenzene	19.29	1.0	20	0	96.5	82 - 118	19.95	3.36	20	
Chloroethane	17.86	1.0	20	0	89.3	60 - 138	18.38	2.85	20	
Chloroform	18.41	1.0	20	0	92.1	79 - 124	18.87	2.48	20	
Chloromethane	17.73	1.0	20	0	88.7	50 - 139	18.66	5.11	20	
cis-1,2-Dichloroethene	19.97	1.0	20	0	99.8	78 - 123	21.05	5.27	20	
cis-1,3-Dichloropropene	19.78	1.0	20	0	98.9	75 - 124	20.5	3.54	20	
Dibromochloromethane	19.1	1.0	20	0	95.5	74 - 126	19.65	2.88	20	
Dibromomethane	18.25	1.0	20	0	91.3	79 - 123	18.61	1.92	20	
Dichlorodifluoromethane	20.89	1.0	20	0	104	32 - 152	22.57	7.74	20	
Ethylbenzene	20.52	1.0	20	0	103	79 - 121	21.03	2.44	20	
Hexachlorobutadiene	16.58	1.0	20	0	82.9	66 - 134	20.68	22	20	R
Isopropylbenzene	20.46	1.0	20	0	102	72 - 131	21.08	2.98	20	
m,p-Xylene	40.86	2.0	40	0	102	80 - 121	41.88	2.47	20	
Methylene chloride	19.05	2.0	20	0	95.3	74 - 124	19.86	4.16	20	
Naphthalene	19.35	1.0	20	0	96.7	61 - 128	21.13	8.82	20	
n-Butylbenzene	22.5	1.0	20	0	113	75 - 128	23.26	3.3	20	
n-Propylbenzene	23.25	1.0	20	0	116	76 - 126	23.99	3.13	20	
o-Xylene	20.08	1.0	20	0	100	78 - 122	20.42	1.68	20	
sec-Butylbenzene	23.08	1.0	20	0	115	77 - 126	23.75	2.85	20	
Styrene	19.82	1.0	20	0	99.1	78 - 123	20.08	1.32	20	
tert-Butylbenzene	22.73	1.0	20	0	114	78 - 124	23.59	3.7	20	
Tetrachloroethene	18.97	1.0	20	0	94.8	74 - 129	19.67	3.61	20	
Toluene	20.73	1.0	20	0	104	80 - 121	21.49	3.58	20	
trans-1,2-Dichloroethene	20.05	1.0	20	0	100	75 - 124	21.24	5.77	20	
trans-1,3-Dichloropropene	19.47	1.0	20	0	97.3	73 - 127	19.8	1.68	20	
Trichloroethene	19.21	1.0	20	0	96.0	79 - 123	19.76	2.83	20	
Trichlorofluoromethane	17.43	1.0	20	0	87.2	65 - 141	18.46	5.69	20	
Vinyl chloride	20.19	1.0	20	0	101	58 - 137	22.06	8.85	20	
Surr: 1,2-Dichloroethane-d4	*48.06*	*1.0*	*50*	*0*	*96.1*	*81 - 118*	*48.37*	*0.655*	*20*	
Surr: 4-Bromofluorobenzene	*50.59*	*1.0*	*50*	*0*	*101*	*85 - 114*	*50.75*	*0.332*	*20*	
Surr: Dibromofluoromethane	*48.53*	*1.0*	*50*	*0*	*97.1*	*80 - 119*	*48.75*	*0.459*	*20*	
Surr: Toluene-d8	*51.47*	*1.0*	*50*	*0*	*103*	*89 - 112*	*51.66*	*0.38*	*20*	

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121155

QC BATCH REPORT

Batch ID: R353734 (0)	Instrument: VOA6	Method: VOLATILES ORGANICS BY METHOD 8260C

The following samples were analyzed in this batch:

HS19121155-01	HS19121155-02	HS19121155-03	HS19121155-04
HS19121155-05	HS19121155-06	HS19121155-07	HS19121155-08
HS19121155-09			

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121155

QC BATCH REPORT

Batch ID: R353393 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY SW9056A

MBLK Sample ID: **WBLKW1-122019** Units: **mg/L** Analysis Date: **20-Dec-2019 11:25**
Client ID: Run ID: **ICS-Integrion_353393** SeqNo: **5412385** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	0.100	0.100								U
Sulfate	0.500	0.500								U

LCS Sample ID: **WLCSW1-122019** Units: **mg/L** Analysis Date: **20-Dec-2019 11:42**
Client ID: Run ID: **ICS-Integrion_353393** SeqNo: **5412386** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	4.044	0.100	4	0	101	80 - 120				
Sulfate	19.27	0.500	20	0	96.3	80 - 120				

LCSD Sample ID: **WLCSDW1-122019** Units: **mg/L** Analysis Date: **20-Dec-2019 11:58**
Client ID: Run ID: **ICS-Integrion_353393** SeqNo: **5412387** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	3.987	0.100	4	0	99.7	80 - 120	4.044	1.42	20	
Sulfate	19.04	0.500	20	0	95.2	80 - 120	19.27	1.19	20	

MS Sample ID: **HS19121155-01MS** Units: **mg/L** Analysis Date: **20-Dec-2019 14:44**
Client ID: **35AWW10-121919** Run ID: **ICS-Integrion_353393** SeqNo: **5412391** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	2.087	0.100	2	0.1151	98.6	80 - 120				
Sulfate	54.38	0.500	10	46.05	83.3	80 - 120				O

MSD Sample ID: **HS19121155-01MSD** Units: **mg/L** Analysis Date: **20-Dec-2019 15:01**
Client ID: **35AWW10-121919** Run ID: **ICS-Integrion_353393** SeqNo: **5412392** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate (As N)	2.11	0.100	2	0.1151	99.8	80 - 120	2.087	1.14	20	
Sulfate	54.78	0.500	10	46.05	87.2	80 - 120	54.38	0.718	20	O

The following samples were analyzed in this batch: HS19121155-01 HS19121155-02 HS19121155-03 HS19121155-04 HS19121155-05

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121155

QC BATCH REPORT

Batch ID: R353865 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **WBLKW3-010320** Units: **mg/L** Analysis Date: **04-Jan-2020 18:39**
Client ID: Run ID: **ICS-Integrion_353865** SeqNo: **5424754** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	0.500	0.500								U

LCS Sample ID: **WLCSW3-010320** Units: **mg/L** Analysis Date: **04-Jan-2020 18:55**
Client ID: Run ID: **ICS-Integrion_353865** SeqNo: **5424755** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.76	0.500	20	0	98.8	80 - 120				

LCSD Sample ID: **WLCSDW3-010320** Units: **mg/L** Analysis Date: **04-Jan-2020 19:12**
Client ID: Run ID: **ICS-Integrion_353865** SeqNo: **5424756** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.54	0.500	20	0	97.7	80 - 120	19.76	1.08	20	

MS Sample ID: **HS19121121-01MS** Units: **mg/L** Analysis Date: **04-Jan-2020 19:45**
Client ID: Run ID: **ICS-Integrion_353865** SeqNo: **5424758** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	35.1	0.500	10	25.83	92.7	80 - 120				

MSD Sample ID: **HS19121121-01MSD** Units: **mg/L** Analysis Date: **04-Jan-2020 20:02**
Client ID: Run ID: **ICS-Integrion_353865** SeqNo: **5424759** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	35.26	0.500	10	25.83	94.3	80 - 120	35.1	0.475	20	

The following samples were analyzed in this batch: HS19121155-01 HS19121155-02 HS19121155-03 HS19121155-04 HS19121155-05

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: HS19121155

QC BATCH REPORT

Batch ID: R353906 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY SW9056A

MBLK Sample ID: **WBLKW3-010320** Units: **mg/L** Analysis Date: **06-Jan-2020 11:22**
Client ID: Run ID: **ICS-Integrion_353906** SeqNo: **5425528** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	0.500	0.500								U

LCS Sample ID: **WLCSW3-010320** Units: **mg/L** Analysis Date: **06-Jan-2020 11:38**
Client ID: Run ID: **ICS-Integrion_353906** SeqNo: **5425529** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	19.3	0.500	20	0	96.5	80 - 120				

LCSD Sample ID: **WLCSDW3-010320** Units: **mg/L** Analysis Date: **06-Jan-2020 11:55**
Client ID: Run ID: **ICS-Integrion_353906** SeqNo: **5425530** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	19.03	0.500	20	0	95.2	80 - 120	19.3	1.39	20	

MS Sample ID: **HS19121121-01MS** Units: **mg/L** Analysis Date: **06-Jan-2020 12:28**
Client ID: Run ID: **ICS-Integrion_353906** SeqNo: **5425532** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	36.04	0.500	10	27.17	88.7	80 - 120				

MSD Sample ID: **HS19121121-01MSD** Units: **mg/L** Analysis Date: **06-Jan-2020 12:45**
Client ID: Run ID: **ICS-Integrion_353906** SeqNo: **5425533** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	36.27	0.500	10	27.17	91.0	80 - 120	36.04	0.634	20	

The following samples were analyzed in this batch: HS19121155-05

Revision: 1

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
WorkOrder: **HS19121155**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	19-028-0	27-Mar-2020
California	2919, 2019-2020	30-Apr-2020
Dept of Defense	ANAB L2231	20-Dec-2021
Florida	E87611-28	30-Jun-2020
Illinois	2000322019-2	09-May-2020
Kansas	E-10352 2019-2020	31-Jul-2020
Kentucky	123043, 2019-2020	30-Apr-2020
Louisiana	03087, 2019-2020	30-Jun-2020
Maryland	343, 2019-2020	30-Jun-2020
North Dakota	R-193 2019-2020	30-Apr-2020
Oklahoma	2019-067	31-Aug-2020
Texas	TX104704231-19-23	30-Apr-2020

ALS Houston, US Date: 10-Jan-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-58
Work Order: HS19121155

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS19121155-01	35AWW10-121919	Login	12/20/2019 12:34:27 PM	JRM	MET049
HS19121155-01	35AWW10-121919	Login	12/20/2019 12:34:27 PM	JRM	WET338
HS19121155-01	35AWW10-121919	Login	12/20/2019 12:34:27 PM	JRM	VOA187
HS19121155-01	35AWW10-121919	Login	12/20/2019 12:34:27 PM	JRM	Sub
HS19121155-01	35AWW10-121919	Login	12/20/2019 12:34:27 PM	JRM	Sub

Revision:1

ALS Houston, US Date: 10-Jan-20

Sample Receipt Checklist

Client Name: Bhate Environmental
Work Order: HS19121155
Date/Time Received: **20-Dec-2019 10:03**
Received by: **JRM**

Checklist completed by: *Paresh M. Giga* eSignature 20-Dec-2019 Date
Reviewed by: *Corey Grandits* eSignature 20-Dec-2019 Date

Matrices: **Water**
Carrier name: **FedEx Priority Overnight**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	1 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:None
Samplers name present on COC?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	

Temperature(s)/Thermometer(s):	1.4°C / 1.4°C UC/C	IR25
Cooler(s)/Kit(s):	54046	
Date/Time sample(s) sent to storage:	12/20/19 12:50	

Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

Bhate

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Page: _____ of _____

Project/Phase No: NWO1312.0150

COC Number(1): _____

LIMS Number: _____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 58

Client Name:

Collected by: Scott Beesinger

Sample Analysis Requested (5) / Quality Assurance Samples (6)

Field Sample ID (30 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code (2)	Sample Number (3)	Sample Matrix (4)	Number of containers	VOC	MEE	TOC	Carbon Dioxide	Anions						Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
35AWW10_121919	19 Dec 2019	0835	-	N		WG	11	X	X	X	X	X									
35AWW10_121919_a	19 Dec 2019	0835	-	FD		WG	11	X	X	X	X	X									
35AWW20_121919	19 Dec 2019	0940	-	N		WG	11	X	X	X	X	X									
35AWW06_121919	19 Dec 2019	1035		N		WG	11	X	X	X	X	X									
3LHSMW07_121919	19 Dec 2019	1130		N		WG	11	X	X	X	X	X									
35AWW16_121919	19 Dec 2019	1225	-	N		WG	3	X													
35AWW24_121919	19 Dec 2019	1310	-	N		WG	3	X													
35AWW14_121919	19 Dec 2019	1320	-	N		WG	3	X													
TRIP BLANK	19 Dec 2019		-	TB		W	2	X													
			-																		
			-																		

COMMENTS: _____

HS19121155

Bhate Environmental Associates, Inc.
LHAAP-58

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	12/19/19	1430	1. J. [illegible]	12/20/19	10:03
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped No.:

Method of Shipment: _____

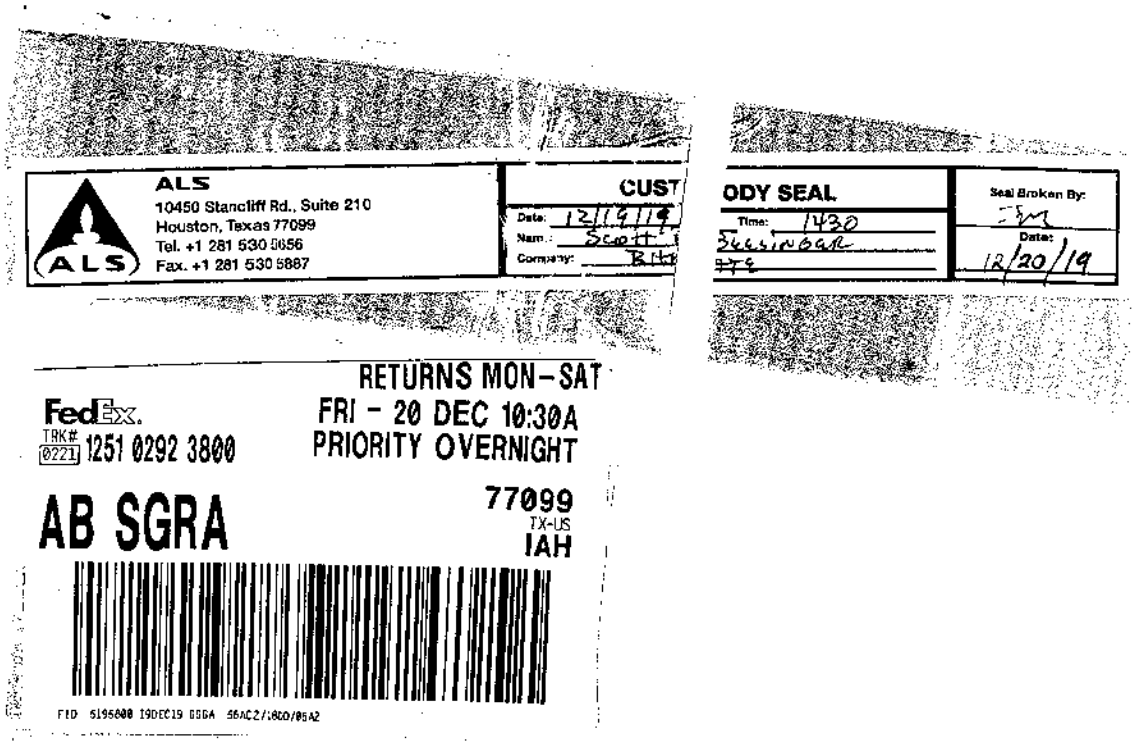
Fed Ex Airbill Number:

Analytical Lab: ALS 10450 Stancliff Rd. Suite 210 Houston, TX 77099 (281) 530-5656

ATTN: SONIA WEST Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)
2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)
3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)
4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks
5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.
6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control

Cooler 54046
Temp 1.4
IR 11
CF 0.0



ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

CUST
Date: 12/19/19
Nam: Scott
Company: Britt

ODY SEAL
Time: 1430
Seal Broken By:
Date: 12/20/19

RETURNS MON-SAT
FRI - 20 DEC 10:30A
PRIORITY OVERNIGHT

FedEx.
TRK# 0221 1251 0292 3800

AB SGRA

77099
TX-US
IAH

FID 5195808 19DEC19 08GA 56AC2/18D0/05A2

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January 03, 2020

Analytical Report for Service Request No: K1912042

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

RE: HS19121155

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory December 21, 2019
For your reference, these analyses have been assigned our service request number **K1912042.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy

Kelley Lovejoy
Project Manager

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ALS Group USA, Corp
1317 South 13th Avenue
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Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

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1317 South 13th Ave, Kelso, WA 98626 | 1-360-577-7222 | www.alsglobal.com

ALS Environmental

Client: ALS Environmental - US
Project: HS19121155
Sample Matrix: Ground Water

Service Request: K1912042
Date Received: 12/21/2019

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Five ground water samples were received for analysis at ALS Environmental on 12/21/2019. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

Method SM 5310 C, 01/01/2020: The Relative Percent Difference (RPD) for the replicate analysis of Total Organic Carbon in sample LHSM07-121919 was outside the normal ALS control limits (14% RPD versus a control limit of 10%). The associated QA/QC results (e.g. control sample, method blank, calibration standards, etc.) indicate the analysis was in control. No further corrective action was appropriate.

Approved by Kelley Lovejoy Date 01/03/2020

Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
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K1912042

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID:** **12927**

SUBCONTRACT TO:

ALS Environmental Kelso
1317 S. 13th Avenue
Kelso, WA 98626

Phone: +1 360 501 3312

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	Jumoke M. Lawal
Email:	jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS19121155
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS19121155-01**	**35AWW10-121919**	**Groundwater**	**19 Dec 2019 08:35**
	TOC Analysis for DOD Level IV/Excel EDD			31 Dec 2019
2.	**HS19121155-02**	**35AWW10-121919_a**	**Groundwater**	**19 Dec 2019 08:35**
	TOC Analysis for DOD Level IV/Excel EDD			31 Dec 2019
3.	**HS19121155-03**	**35AWW20-121919**	**Groundwater**	**19 Dec 2019 09:40**
	TOC Analysis for DOD Level IV/Excel EDD			31 Dec 2019
4.	**HS19121155-04**	**35AWW06-121919**	**Groundwater**	**19 Dec 2019 10:35**
	TOC Analysis for DOD Level IV/Excel EDD			31 Dec 2019
5.	**HS19121155-05**	**LHSMW07-121919**	**Groundwater**	**19 Dec 2019 11:30**
	TOC Analysis for DOD Level IV/Excel EDD			31 Dec 2019

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Received By MRedurso 12/21/19 1205

KL9172412

Subcontract Chain of Custody

SAMPLING STATE: **Texas**

COC ID: **12927**

Relinquished By: _____ Date/Time: 12/20/19 1800.

Received By: Mederson Date/Time: 12/21/19 1205

Cooler ID(s): _____ Temperature(s): _____

01000577

ALS

PC AJ

Cooler Receipt and Preservation Form

K1912042

Client ALS Houston Service Request ~~K19~~ ~~J1907473~~ NP

Received: 12/21/19 Opened: 12/21/19 By: NP Unloaded: 12/21/19 By: NP

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? 2 Front

   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
-0.5	-0.4	0.3	0.4	0.1	323	12927	1251 0293 0753	

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA Y N

   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

RUSH

Notes, Discrepancies, & Resolutions: _____

General Chemistry

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www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	K1912042
Project:	HS19121155	**Date Collected:**	12/19/19
Sample Matrix:	Ground Water	**Date Received:**	12/21/19
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Carbon, Total Organic

Sample Name	Lab Code	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
35AWW10-121919	K1912042-001	**4.44**	0.50	0.20	0.07	1	01/01/20 02:03	
35AWW10-121919_a	K1912042-002	**4.10**	0.50	0.20	0.07	1	01/01/20 02:32	
35AWW20-121919	K1912042-003	**13.1**	0.50	0.20	0.07	1	01/01/20 03:00	
35AWW06-121919	K1912042-004	**13.8**	0.50	0.20	0.07	1	01/01/20 03:28	
LHSM07-121919	K1912042-005	**3.48**	0.50	0.20	0.07	1	01/01/20 03:56	
Method Blank	K1912042-MB	ND U	0.50	0.20	0.07	1	12/31/19 21:04	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K1912042
Project	HS19121155	**Date Collected:**	12/19/19
Sample Matrix:	Ground Water	**Date Received:**	12/21/19
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Carbon, Total Organic

Sample Name:	Lab Code:	LOQ	LOD	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
35AWW10-121919	K1912042-001DUP	0.50	0.20	0.07	4.44	4.41	4.42	<1	10	01/01/20
35AWW10-121919_a	K1912042-002DUP	0.50	0.20	0.07	4.10	4.01	4.05	2	10	01/01/20
35AWW20-121919	K1912042-003DUP1	0.50	0.20	0.07	13.1	13.9	13.5	6	10	12/28/19
35AWW20-121919	K1912042-003DUP2	0.50	0.20	0.07	13.1	13.4	13.2	3	10	01/01/20
35AWW06-121919	K1912042-004DUP	0.50	0.20	0.07	13.8	14.5	14.1	5	10	01/01/20
LHSM07-121919	K1912042-005DUP	0.50	0.20	0.07	3.48	3.01	3.24	14 *	10	01/01/20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	K1912042
Project:	HS19121155	**Date Analyzed:**	12/31/19
Sample Matrix:	Ground Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	665302

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1912042-LCS	25.1	25.0	100	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:** K1912042
Project: HS19121155

Continuing Calibration Verification (CCV) Summary

Carbon, Total Organic

Analysis Method: SM 5310 C **Units:** mg/L

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	665302	KQ1919248-01	12/31/19 20:35	25.0	24.0	96	90-110
CCV2	665302	KQ1919248-02	01/01/20 00:38	25.0	25.1	100	90-110
CCV3	665302	KQ1919248-03	01/01/20 05:48	25.0	24.0	96	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US **Service Request:**K1912042
Project: HS19121155

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic

Analysis Method: SM 5310 C **Units:**mg/L

	Analysis Lot	Lab Code	Date Analyzed	LOQ	LOD	MDL	Result	Q
CCB1	665302	KQ1919248-04	12/31/19 20:49	0.50	0.20	0.07	ND	U
CCB2	665302	KQ1919248-05	01/01/20 00:53	0.50	0.20	0.07	ND	U
CCB3	665302	KQ1919248-06	01/01/20 06:03	0.50	0.20	0.07	ND	U

Raw Data

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General Chemistry

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11914, 11968, 11970, 12040, 12074
IV IV IV IV II

Work Request # Original (_____) K1911762, 11807, 11895, 11934, 11980, 11981, 11995, 11998, 12042, 11810, 11868, 11909, 11910, 11960, 12004
II II I I II II IV IV IV II IV IV II I II

Tier: _____

Date Analyzed: 12/27/2019

Analyst: BCD

Analysis: TOC

Run # TOC: 664898, 664900, 664901, 664902

DATA QUALITY REPORT
INORGANICS

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

1.	Is the method name and number correct and appropriate?	yes/no/NA
2.	Holding times met for all analyses and for all samples?	yes/no/NA
3.	Are calculations correct?	yes/no/NA
4.	Is the reporting basis correct? (Dry Weight)	yes/no/NA
5.	All quality control criteria met?	yes/no
6.	Is the calibration curve correlation coefficient ≥ 0.995?	yes/no/NA
7.	MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency?	yes/no/NA
8.	Are ICVs, CCVs, and CCBs all within acceptance limits?	yes/no/NA
9.	Are results for methods blanks all ND?	yes/no/NA
10.	Are all QC samples within acceptance criteria? (LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.)	yes/no/NA
11.	Are all exceptions explained?	yes/no/NA
12.	Have all applicable service requests been reviewed?	yes/no/NA
13.	Are all samples labeled correctly?	yes/no/NA
14.	Have all instructions on the service request been followed? (e.g. Special MRLs, QC on a specific sample, Form V)	yes/no/NA
15.	Are detection limits and units reported correctly?	yes/no/NA
16.	Is the unused space on the benchsheet crossed out?	yes/no/NA
17.	Was analysis turned in by the due date? (n-2) (If not record SR#)	yes/no/NA

COMMENTS: K1911995-1, 11998-1/2/3/4/5/6, 12042-1/2/3/4/5, 11934-2, 11980-1, 11981-1 sent for RA due to contaminated CCBs.
K1911807-4/4d, 11868-4/4, 11914-7/7, 11970-5/5d report a high % RSD.
However, these samples are less than 5x the MRL

Final Approved by: QC Date: 12/31/19

DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 664898 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K1911762-003	Carbon, Total Organic	N/A		Water	4.08 mg/L	10 ml	408 mg/L	100	7	50			12/28/19 08:10	N	II
K1911762-004	Carbon, Total Organic	N/A		Water	5.35 mg/L	10 ml	535 mg/L	100	7	50			12/28/19 08:38	N	II
K1911762-005	Carbon, Total Organic	N/A		Water	5.51 mg/L	10 ml	551 mg/L	100	7	50			12/28/19 09:06	N	II
K1911807-004	Carbon, Total Organic	N/A		Water	0.66 mg/L	10 ml	0.66 mg/L	1	0.07	0.50			12/28/19 09:34	N	II
K1911895-001	Carbon, Total Organic	N/A		Drinking Water	0.45 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/28/19 07:42	N	I
K1911934-002	Carbon, Total Organic	N/A		Drinking Water	1.04 mg/L	10 ml	1.04 mg/L	1	0.07	0.50			12/28/19 05:19	N	I
K1911980-001	Carbon, Total Organic	N/A		Water	4.22 mg/L	10 ml	4.22 mg/L	1	0.07	0.50			12/28/19 05:47	N	II
K1911981-001	Carbon, Total Organic	N/A		Water	3.74 mg/L	10 ml	3.74 mg/L	1	0.07	0.50			12/28/19 06:15	N	II
K1911995-001	Carbon, Total Organic	N/A		Water	2.64 mg/L	10 ml	2.64 mg/L	1	0.07	0.50			12/27/19 22:43	N	IV
K1911998-001	Carbon, Total Organic	N/A		Ground Water	3.35 mg/L	10 ml	3.35 mg/L	1	0.07	0.50			12/27/19 23:40	N	IV
K1911998-002	Carbon, Total Organic	N/A		Ground Water	1.31 mg/L	10 ml	131 mg/L	100	7	50			12/28/19 00:08	N	IV
K1911998-003	Carbon, Total Organic	N/A		Ground Water	0.32 mg/L	10 ml	320 mg/L J	1000	70	500			12/28/19 00:37	N	IV
K1911998-004	Carbon, Total Organic	N/A		Ground Water	10.95 mg/L	10 ml	10.9 mg/L	1	0.07	0.50			12/28/19 01:05	N	IV
K1911998-005	Carbon, Total Organic	N/A		Ground Water	94.31 mg/L	10 ml	94.3 mg/L	1	0.07	0.50			12/28/19 02:02	N	IV
K1911998-006	Carbon, Total Organic	N/A		Ground Water	6.19 mg/L	10 ml	6.19 mg/L	1	0.07	0.50			12/28/19 02:30	N	IV
K1912042-001	Carbon, Total Organic	N/A		Ground Water	6.24 mg/L	10 ml	6.24 mg/L	1	0.07	0.50			12/28/19 02:59	N	IV
K1912042-002	Carbon, Total Organic	N/A		Ground Water	5.13 mg/L	10 ml	5.13 mg/L	1	0.07	0.50			12/28/19 03:27	N	IV
K1912042-003	Carbon, Total Organic	N/A		Ground Water	14.04 mg/L	10 ml	14.0 mg/L	1	0.07	0.50			12/28/19 03:55	N	IV
K1912042-004	Carbon, Total Organic	N/A		Ground Water	14.68 mg/L	10 ml	14.7 mg/L	1	0.07	0.50			12/28/19 04:23	N	IV
K1912042-005	Carbon, Total Organic	N/A		Ground Water	4.14 mg/L	10 ml	4.14 mg/L	1	0.07	0.50			12/28/19 04:51	N	IV
KQ1919209-01	Carbon, Total Organic	CCV		Water	24.92 mg/L	10 ml	24.9 mg/L	1					12/27/19 21:30	N	IV
KQ1919209-02	Carbon, Total Organic	CCV		Water	26.02 mg/L	10 ml	26.0 mg/L	1					12/28/19 01:33	N	IV
KQ1919209-03	Carbon, Total Organic	CCV		Water	24.62 mg/L	10 ml	24.6 mg/L	1					12/28/19 06:43	N	IV
KQ1919209-04	Carbon, Total Organic	CCV		Water	24.84 mg/L	10 ml	24.8 mg/L	1					12/28/19 11:12	N	IV
KQ1919209-05	Carbon, Total Organic	CCB		Water	0.58 mg/L	10 ml	0.58 mg/L	1	0.07	0.50			12/27/19 21:45	N	IV
KQ1919209-06	Carbon, Total Organic	CCB		Water	0.54 mg/L	10 ml	0.54 mg/L	1	0.07	0.50			12/28/19 01:47	N	IV
KQ1919209-07	Carbon, Total Organic	CCB		Water	0.16 mg/L	10 ml	0.16 mg/L J	1	0.07	0.50			12/28/19 06:58	N	IV
KQ1919209-08	Carbon, Total Organic	CCB		Water	0.15 mg/L	10 ml	0.15 mg/L J	1	0.07	0.50			12/28/19 11:27	N	IV
KQ1919209-09	Carbon, Total Organic	MB		Water	0.03 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/27/19 21:59	N	IV
KQ1919209-10	Carbon, Total Organic	LCS		Water	26.17 mg/L	10 ml	26.2 mg/L	1	0.07	0.50	105		12/27/19 22:14	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 664898 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1919209-11	Carbon, Total Organic	MS	K1911995-001	Water	28.07 mg/L	10 ml	28.1 mg/L	1	0.07	0.50	102		12/27/19 23:11	N	IV
KQ1919209-12	Carbon, Total Organic	DUP	K1911807-004	Water	0.56 mg/L	10 ml	0.56 mg/L	1	0.07	0.50		16*	12/28/19 09:34	N	II
KQ1919209-13	Carbon, Total Organic	DUP	K1911762-003	Water	4.12 mg/L	10 ml	412 mg/L	100	7	50		<1	12/28/19 08:10	N	II
KQ1919209-14	Carbon, Total Organic	DUP	K1911895-001	Drinking Water	0.30 mg/L	10 ml	0.30 mg/L J	1	0.07	0.50		NC	12/28/19 07:42	N	I
KQ1919209-15	Carbon, Total Organic	DUP	K1911762-004	Water	5.35 mg/L	10 ml	535 mg/L	100	7	50		<1	12/28/19 08:38	N	II
KQ1919209-16	Carbon, Total Organic	DUP	K1911934-002	Drinking Water	0.87 mg/L	10 ml	0.87 mg/L	1	0.07	0.50		17*	12/28/19 05:19	N	I
KQ1919209-17	Carbon, Total Organic	DUP	K1911762-005	Water	5.43 mg/L	10 ml	543 mg/L	100	7	50		2	12/28/19 09:06	N	II
KQ1919209-18	Carbon, Total Organic	DUP	K1911980-001	Water	4.17 mg/L	10 ml	4.17 mg/L	1	0.07	0.50		1	12/28/19 05:47	N	II
KQ1919209-19	Carbon, Total Organic	DUP	K1911981-001	Water	3.66 mg/L	10 ml	3.66 mg/L	1	0.07	0.50		2	12/28/19 06:15	N	II
KQ1919209-20	Carbon, Total Organic	DUP	K1911995-001	Water	2.63 mg/L	10 ml	2.63 mg/L	1	0.07	0.50		<1	12/27/19 22:43	N	IV
KQ1919209-21	Carbon, Total Organic	DUP	K1911998-002	Ground Water	1.23 mg/L	10 ml	123 mg/L	100	7	50		6	12/28/19 00:08	N	IV
KQ1919209-22	Carbon, Total Organic	DUP	K1911998-001	Ground Water	3.35 mg/L	10 ml	3.35 mg/L	1	0.07	0.50		<1	12/27/19 23:40	N	IV
KQ1919209-23	Carbon, Total Organic	DUP	K1911998-003	Ground Water	0.30 mg/L	10 ml	300 mg/L J	1000	70	500		5	12/28/19 00:37	N	IV
KQ1919209-24	Carbon, Total Organic	DUP	K1911998-004	Ground Water	10.80 mg/L	10 ml	10.8 mg/L	1	0.07	0.50		1	12/28/19 01:05	N	IV
KQ1919209-25	Carbon, Total Organic	DUP	K1911998-005	Ground Water	94.83 mg/L	10 ml	94.8 mg/L	1	0.07	0.50		<1	12/28/19 02:02	N	IV
KQ1919209-26	Carbon, Total Organic	DUP	K1911998-006	Ground Water	3.61 mg/L	10 ml	3.61 mg/L	1	0.07	0.50		53*	12/28/19 02:30	N	IV
KQ1919209-27	Carbon, Total Organic	DUP	K1912042-002	Ground Water	4.85 mg/L	10 ml	4.84 mg/L	1	0.07	0.50		6	12/28/19 03:27	N	IV
KQ1919209-28	Carbon, Total Organic	DUP	K1912042-001	Ground Water	5.79 mg/L	10 ml	5.79 mg/L	1	0.07	0.50		7	12/28/19 02:59	N	IV
KQ1919209-29	Carbon, Total Organic	DUP	K1912042-003	Ground Water	13.92 mg/L	10 ml	13.9 mg/L	1	0.07	0.50		<1	12/28/19 03:55	N	IV
KQ1919209-30	Carbon, Total Organic	DUP	K1912042-004	Ground Water	14.90 mg/L	10 ml	14.9 mg/L	1	0.07	0.50		1	12/28/19 04:23	N	IV
KQ1919209-31	Carbon, Total Organic	DUP	K1912042-005	Ground Water	3.58 mg/L	10 ml	3.58 mg/L	1	0.07	0.50		14*	12/28/19 04:51	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 664900 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K1911810-001	Carbon, Total Organic	N/A		Water	2.42 mg/L	10 ml	2.42 mg/L	1	0.07	0.50			12/28/19 10:02	N	II
K1911810-002	Carbon, Total Organic	N/A		Water	2.24 mg/L	10 ml	2.24 mg/L	1	0.07	0.50			12/28/19 10:30	N	II
K1911868-001	Carbon, Total Organic	N/A		Ground Water	0.72 mg/L	10 ml	0.72 mg/L	1	0.07	0.50			12/28/19 11:42	N	IV
K1911868-002	Carbon, Total Organic	N/A		Ground Water	0.75 mg/L	10 ml	0.75 mg/L	1	0.07	0.50			12/28/19 12:10	N	IV
K1911868-003	Carbon, Total Organic	N/A		Ground Water	7.88 mg/L	10 ml	7.88 mg/L	1	0.07	0.50			12/28/19 12:38	N	IV
K1911868-004	Carbon, Total Organic	N/A		Ground Water	0.14 mg/L	10 ml	0.14 mg/L J	1	0.07	0.50			12/28/19 13:06	N	IV
K1911909-001	Carbon, Total Organic	N/A		Water	-0.15 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/28/19 13:34	N	IV
K1911910-001	Carbon, Total Organic	N/A		Water	9.84 mg/L	10 ml	98.4 mg/L	10	0.7	5.0			12/28/19 14:02	N	II
K1911960-001	Carbon, Total Organic	N/A		Water	8.94 mg/L	10 ml	8.94 mg/L	1	0.07	0.50			12/28/19 14:59	N	I
K1911960-002	Carbon, Total Organic	N/A		Water	12.64 mg/L	10 ml	12.6 mg/L	1	0.07	0.50			12/28/19 15:27	N	I
K1911960-003	Carbon, Total Organic	N/A		Water	1.80 mg/L	10 ml	1.80 mg/L	1	0.07	0.50			12/28/19 15:55	N	I
K1911960-004	Carbon, Total Organic	N/A		Water	23.35 mg/L	10 ml	23.3 mg/L	1	0.07	0.50			12/28/19 17:22	N	I
K1911960-005	Carbon, Total Organic	N/A		Water	8.92 mg/L	10 ml	8.92 mg/L	1	0.07	0.50			12/28/19 17:50	N	I
K1911960-006	Carbon, Total Organic	N/A		Water	15.47 mg/L	10 ml	15.5 mg/L	1	0.07	0.50			12/28/19 18:18	N	I
K1911960-007	Carbon, Total Organic	N/A		Water	4.86 mg/L	10 ml	38.9 mg/L	8	0.6	4.0			12/28/19 18:46	N	I
K1911960-008	Carbon, Total Organic	N/A		Water	11.31 mg/L	10 ml	11.3 mg/L	1	0.07	0.50			12/28/19 19:14	N	I
K1911960-009	Carbon, Total Organic	N/A		Water	15.59 mg/L	10 ml	15.6 mg/L	1	0.07	0.50			12/28/19 19:42	N	I
K1912004-001	Carbon, Total Organic	N/A		Water	-0.26 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/28/19 14:31	N	II
KQ1919210-01	Carbon, Total Organic	CCV		Water	24.62 mg/L	10 ml	24.6 mg/L	1					12/28/19 06:43	N	II
KQ1919210-02	Carbon, Total Organic	CCV		Water	24.84 mg/L	10 ml	24.8 mg/L	1					12/28/19 11:12	N	II
KQ1919210-03	Carbon, Total Organic	CCV		Water	24.79 mg/L	10 ml	24.8 mg/L	1					12/28/19 16:23	N	II
KQ1919210-04	Carbon, Total Organic	CCV		Water	24.27 mg/L	10 ml	24.3 mg/L	1					12/28/19 21:07	N	II
KQ1919210-05	Carbon, Total Organic	CCB		Water	0.16 mg/L	10 ml	0.16 mg/L J	1	0.07	0.50			12/28/19 06:58	N	II
KQ1919210-06	Carbon, Total Organic	CCB		Water	0.15 mg/L	10 ml	0.15 mg/L J	1	0.07	0.50			12/28/19 11:27	N	II
KQ1919210-07	Carbon, Total Organic	CCB		Water	-0.03 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/28/19 16:38	N	II
KQ1919210-08	Carbon, Total Organic	CCB		Water	-0.25 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/28/19 21:21	N	II
KQ1919210-09	Carbon, Total Organic	MB		Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/28/19 07:12	N	II
KQ1919210-10	Carbon, Total Organic	LCS		Water	25.86 mg/L	10 ml	25.9 mg/L	1	0.07	0.50	103		12/28/19 07:27	N	II
KQ1919210-11	Carbon, Total Organic	MS	K1911810-001	Water	28.47 mg/L	10 ml	28.5 mg/L	1	0.07	0.50	104		12/28/19 10:58	N	II
KQ1919210-12	Carbon, Total Organic	DUP	K1911810-001	Water	2.38 mg/L	10 ml	2.38 mg/L	1	0.07	0.50		2	12/28/19 10:02	N	II
KQ1919210-13	Carbon, Total Organic	DUP	K1911810-002	Water	2.24 mg/L	10 ml	2.24 mg/L	1	0.07	0.50		<1	12/28/19 10:30	N	II
KQ1919210-14	Carbon, Total Organic	DUP	K1911868-001	Ground Water	0.70 mg/L	10 ml	0.70 mg/L	1	0.07	0.50		3	12/28/19 11:42	N	IV
KQ1919210-15	Carbon, Total Organic	DUP	K1911868-002	Ground Water	0.71 mg/L	10 ml	0.71 mg/L	1	0.07	0.50		5	12/28/19 12:10	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 664900 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1919210-16	Carbon, Total Organic	DUP	K1911868-003	Ground Water	7.92 mg/L	10 ml	7.92 mg/L	1	0.07	0.50		<1	12/28/19 12:38	N	IV
KQ1919210-17	Carbon, Total Organic	DUP	K1911868-004	Ground Water	0.09 mg/L	10 ml	0.09 mg/L J	1	0.07	0.50		47*	12/28/19 13:06	N	IV
KQ1919210-18	Carbon, Total Organic	DUP	K1911910-001	Water	9.71 mg/L	10 ml	97.1 mg/L	10	0.7	5.0		1	12/28/19 14:02	N	II
KQ1919210-19	Carbon, Total Organic	DUP	K1911909-001	Water	-0.20 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50		NC	12/28/19 13:34	N	IV
KQ1919210-20	Carbon, Total Organic	DUP	K1911960-001	Water	8.96 mg/L	10 ml	8.96 mg/L	1	0.07	0.50		<1	12/28/19 14:59	N	I
KQ1919210-21	Carbon, Total Organic	DUP	K1911960-002	Water	12.32 mg/L	10 ml	12.3 mg/L	1	0.07	0.50		3	12/28/19 15:27	N	I
KQ1919210-22	Carbon, Total Organic	DUP	K1911960-003	Water	1.67 mg/L	10 ml	1.67 mg/L	1	0.07	0.50		7	12/28/19 15:55	N	I
KQ1919210-23	Carbon, Total Organic	DUP	K1911960-004	Water	23.44 mg/L	10 ml	23.4 mg/L	1	0.07	0.50		<1	12/28/19 17:22	N	I
KQ1919210-24	Carbon, Total Organic	DUP	K1911960-005	Water	8.85 mg/L	10 ml	8.85 mg/L	1	0.07	0.50		<1	12/28/19 17:50	N	I
KQ1919210-25	Carbon, Total Organic	DUP	K1911960-006	Water	15.42 mg/L	10 ml	15.4 mg/L	1	0.07	0.50		<1	12/28/19 18:18	N	I
KQ1919210-26	Carbon, Total Organic	DUP	K1911960-007	Water	4.68 mg/L	10 ml	37.4 mg/L	8	0.6	4.0		4	12/28/19 18:46	N	I
KQ1919210-27	Carbon, Total Organic	DUP	K1911960-008	Water	11.04 mg/L	10 ml	11.0 mg/L	1	0.07	0.50		2	12/28/19 19:14	N	I
KQ1919210-28	Carbon, Total Organic	DUP	K1911960-009	Water	15.45 mg/L	10 ml	15.4 mg/L	1	0.07	0.50		<1	12/28/19 19:42	N	I
KQ1919210-29	Carbon, Total Organic	DUP	K1912004-001	Water	-0.07 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50		NC	12/28/19 14:31	N	II

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 664901 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K1911914-001	Carbon, Total Organic	N/A		Ground Water	0.55 mg/L	10 ml	0.55 mg/L	1	0.07	0.50			12/28/19 23:00	Y	IV
K1911914-002	Carbon, Total Organic	N/A		Ground Water	1.54 mg/L	10 ml	1.54 mg/L	1	0.07	0.50			12/28/19 23:57	N	IV
K1911914-003	Carbon, Total Organic	N/A		Ground Water	3.20 mg/L	10 ml	3.20 mg/L	1	0.07	0.50			12/29/19 00:25	N	IV
K1911914-004	Carbon, Total Organic	N/A		Ground Water	0.52 mg/L	10 ml	0.52 mg/L	1	0.07	0.50			12/29/19 00:53	N	IV
K1911914-005	Carbon, Total Organic	N/A		Ground Water	5.68 mg/L	10 ml	5.68 mg/L	1	0.07	0.50			12/29/19 01:22	N	IV
K1911914-006	Carbon, Total Organic	N/A		Ground Water	9.50 mg/L	10 ml	9.50 mg/L	1	0.07	0.50			12/29/19 02:48	N	IV
K1911914-007	Carbon, Total Organic	N/A		Ground Water	0.33 mg/L	10 ml	0.33 mg/L J	1	0.07	0.50			12/29/19 03:17	N	IV
K1911914-008	Carbon, Total Organic	N/A		Ground Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/29/19 03:45	N	IV
K1911914-009	Carbon, Total Organic	N/A		Ground Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/29/19 04:13	N	IV
K1911968-001	Carbon, Total Organic	N/A		Water	1.23 mg/L	10 ml	1.23 mg/L	1	0.07	0.50			12/28/19 20:11	N	IV
K1911968-002	Carbon, Total Organic	N/A		Water	1.15 mg/L	10 ml	1.15 mg/L	1	0.07	0.50			12/28/19 20:39	N	IV
K1911968-003	Carbon, Total Organic	N/A		Water	0.70 mg/L	10 ml	0.70 mg/L	1	0.07	0.50			12/28/19 21:36	N	IV
KQ1919211-01	Carbon, Total Organic	CCV		Water	24.79 mg/L	10 ml	24.8 mg/L	1					12/28/19 16:23	N	IV
KQ1919211-02	Carbon, Total Organic	CCV		Water	24.27 mg/L	10 ml	24.3 mg/L	1					12/28/19 21:07	N	IV
KQ1919211-03	Carbon, Total Organic	CCV		Water	24.10 mg/L	10 ml	24.1 mg/L	1					12/29/19 01:50	N	IV
KQ1919211-04	Carbon, Total Organic	CCV		Water	23.91 mg/L	10 ml	23.9 mg/L	1					12/29/19 06:21	N	IV
KQ1919211-05	Carbon, Total Organic	CCB		Water	-0.03 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/28/19 16:38	N	IV
KQ1919211-06	Carbon, Total Organic	CCB		Water	-0.25 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/28/19 21:21	N	IV
KQ1919211-07	Carbon, Total Organic	CCB		Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/29/19 02:04	N	IV
KQ1919211-08	Carbon, Total Organic	CCB		Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/29/19 06:35	N	IV
KQ1919211-09	Carbon, Total Organic	MB		Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/28/19 16:53	N	IV
KQ1919211-10	Carbon, Total Organic	LCS		Water	25.70 mg/L	10 ml	25.7 mg/L	1	0.07	0.50	103		12/28/19 17:07	N	IV
KQ1919211-11	Carbon, Total Organic	MS	K1911914-001	Ground Water	27.35 mg/L	10 ml	27.3 mg/L	1	0.07	0.50	107		12/28/19 23:28	N	IV
KQ1919211-12	Carbon, Total Organic	DUP	K1911914-001	Ground Water	0.55 mg/L	10 ml	0.55 mg/L	1	0.07	0.50		<1	12/28/19 23:00	N	IV
KQ1919211-13	Carbon, Total Organic	DUP	K1911914-002	Ground Water	1.47 mg/L	10 ml	1.47 mg/L	1	0.07	0.50		5	12/28/19 23:57	N	IV
KQ1919211-14	Carbon, Total Organic	DUP	K1911914-003	Ground Water	3.11 mg/L	10 ml	3.11 mg/L	1	0.07	0.50		3	12/29/19 00:25	N	IV
KQ1919211-15	Carbon, Total Organic	DUP	K1911914-004	Ground Water	0.48 mg/L	10 ml	0.48 mg/L J	1	0.07	0.50		8	12/29/19 00:53	N	IV
KQ1919211-16	Carbon, Total Organic	DUP	K1911914-005	Ground Water	5.66 mg/L	10 ml	5.66 mg/L	1	0.07	0.50		<1	12/29/19 01:22	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 664901 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1919211-17	Carbon, Total Organic	DUP	K1911914-006	Ground Water	9.42 mg/L	10 ml	9.42 mg/L	1	0.07	0.50		<1	12/29/19 02:48	N	IV
KQ1919211-18	Carbon, Total Organic	DUP	K1911914-007	Ground Water	0.24 mg/L	10 ml	0.24 mg/L J	1	0.07	0.50		32*	12/29/19 03:17	N	IV
KQ1919211-19	Carbon, Total Organic	DUP	K1911914-008	Ground Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50		NC	12/29/19 03:45	N	IV
KQ1919211-20	Carbon, Total Organic	DUP	K1911914-009	Ground Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50		NC	12/29/19 04:13	N	IV
KQ1919211-21	Carbon, Total Organic	DUP	K1911968-001	Water	1.15 mg/L	10 ml	1.15 mg/L	1	0.07	0.50		7	12/28/19 20:11	N	IV
KQ1919211-22	Carbon, Total Organic	DUP	K1911968-002	Water	1.20 mg/L	10 ml	1.20 mg/L	1	0.07	0.50		4	12/28/19 20:39	N	IV
KQ1919211-23	Carbon, Total Organic	DUP	K1911968-003	Water	0.63 mg/L	10 ml	0.63 mg/L	1	0.07	0.50		10	12/28/19 21:36	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 664902 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K1911970-001	Carbon, Total Organic	N/A		Ground Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/29/19 04:41	N	IV
K1911970-002	Carbon, Total Organic	N/A		Ground Water	0.67 mg/L	10 ml	0.67 mg/L	1	0.07	0.50			12/29/19 05:09	N	IV
K1911970-003	Carbon, Total Organic	N/A		Ground Water	0.05 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/29/19 05:38	N	IV
K1911970-004	Carbon, Total Organic	N/A		Ground Water	17.01 mg/L	10 ml	17.0 mg/L	1	0.07	0.50			12/29/19 06:50	N	IV
K1911970-005	Carbon, Total Organic	N/A		Ground Water	0.85 mg/L	10 ml	0.85 mg/L	1	0.07	0.50			12/29/19 07:18	N	IV
K1912040-001	Carbon, Total Organic	N/A		Water	1.23 mg/L	10 ml	1.23 mg/L	1	0.07	0.50			12/29/19 08:43	N	IV
K1912040-002	Carbon, Total Organic	N/A		Water	16.08 mg/L	10 ml	16.1 mg/L	1	0.07	0.50			12/29/19 09:11	N	IV
K1912040-003	Carbon, Total Organic	N/A		Water	2.94 mg/L	10 ml	2.94 mg/L	1	0.07	0.50			12/29/19 09:39	N	IV
K1912074-001	Carbon, Total Organic	N/A		Water	8.38 mg/L	10 ml	838 mg/L	100	7	50			12/29/19 07:46	N	II
K1912074-002	Carbon, Total Organic	N/A		Water	6.55 mg/L	10 ml	655 mg/L	100	7	50			12/29/19 08:15	N	II
KQ1919213-01	Carbon, Total Organic	CCV		Ground Water	24.10 mg/L	10 ml	24.1 mg/L	1					12/29/19 01:50	N	IV
KQ1919213-02	Carbon, Total Organic	CCV		Ground Water	23.91 mg/L	10 ml	23.9 mg/L	1					12/29/19 06:21	N	IV
KQ1919213-03	Carbon, Total Organic	CCV		Ground Water	23.95 mg/L	10 ml	23.9 mg/L	1					12/29/19 10:07	N	IV
KQ1919213-04	Carbon, Total Organic	CCB		Ground Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/29/19 02:04	N	IV
KQ1919213-05	Carbon, Total Organic	CCB		Ground Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/29/19 06:35	N	IV
KQ1919213-06	Carbon, Total Organic	CCB		Ground Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/29/19 10:22	N	IV
KQ1919213-07	Carbon, Total Organic	MB		Ground Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			12/29/19 02:19	N	IV
KQ1919213-08	Carbon, Total Organic	LCS		Ground Water	25.40 mg/L	10 ml	25.4 mg/L	1	0.07	0.50	102		12/29/19 02:34	N	IV
KQ1919213-09	Carbon, Total Organic	MS	K1911970-003	Ground Water	26.71 mg/L	10 ml	26.7 mg/L	1	0.07	0.50	107		12/29/19 06:06	N	IV
KQ1919213-10	Carbon, Total Organic	DUP	K1911970-001	Ground Water	-0.32 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50		NC	12/29/19 04:41	N	IV
KQ1919213-11	Carbon, Total Organic	DUP	K1911970-005	Ground Water	0.75 mg/L	10 ml	0.75 mg/L	1	0.07	0.50		12*	12/29/19 07:18	N	IV
KQ1919213-12	Carbon, Total Organic	DUP	K1911970-002	Ground Water	0.64 mg/L	10 ml	0.64 mg/L	1	0.07	0.50		5	12/29/19 05:09	N	IV
KQ1919213-13	Carbon, Total Organic	DUP	K1911970-003	Ground Water	0.08 mg/L	10 ml	0.08 mg/L J	1	0.07	0.50		NC	12/29/19 05:38	N	IV
KQ1919213-14	Carbon, Total Organic	DUP	K1911970-004	Ground Water	17.18 mg/L	10 ml	17.2 mg/L	1	0.07	0.50		<1	12/29/19 06:50	N	IV
KQ1919213-15	Carbon, Total Organic	DUP	K1912040-002	Water	15.96 mg/L	10 ml	16.0 mg/L	1	0.07	0.50		<1	12/29/19 09:11	N	IV
KQ1919213-16	Carbon, Total Organic	DUP	K1912040-001	Water	1.14 mg/L	10 ml	1.14 mg/L	1	0.07	0.50		7	12/29/19 08:43	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 664902 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1919213-17	Carbon, Total Organic	DUP	K1912040-003	Water	2.87 mg/L	10 ml	2.87 mg/L	1	0.07	0.50		2	12/29/19 09:39	N	IV
KQ1919213-18	Carbon, Total Organic	DUP	K1912074-001	Water	8.44 mg/L	10 ml	844 mg/L	100	7	50		<1	12/29/19 07:46	N	II
KQ1919213-19	Carbon, Total Organic	DUP	K1912074-002	Water	6.51 mg/L	10 ml	651 mg/L	100	7	50		<1	12/29/19 08:15	N	II

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0.901				OBSERVATIONS	13	ABOVE
0.345	0.345	0.345	0.345	STD Deviation	0.33082	0.3446
0.862				AVERAGE	0.26252	ABOVE
0.481	0.481			UCL	0.59335	0.4808
0.000				LCL	-0.06830	0
0.464	0.464					0.4641
0.291	0.291	0.291	0.291			0.2909
0.000				OBSERVATIONS	5	0
0.070	0.070			STD Deviation	0.12251	0.0696
0.000				AVERAGE	0.33000	0
0.000				UCL	0.45251	0
0.000				LCL	0.20749	0
0.000						0
						0
				OBSERVATIONS	2	0
				STD Deviation	0.08838	0
				AVERAGE	0.31775	0
				UCL	0.40613	0
				LCL	0.22937	0
						0
						0
				OBSERVATIONS	2	0
				STD Deviation	0.05370	0
				AVERAGE	0.31775	0
						0
						0
						0
						0
						0
						0

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.241	0.3178	24.9233	24.92325	24.9	12/27/2019
3	ccb	1	0.901	0.3178	0.5831	0.58305	0.6	12/27/2019
4	mb	1	0.345	0.3178	0.0269	0.02685	<0.5	12/27/2019
5	lcs	1	26.489	0.3178	26.1708	26.17075	26.2	12/27/2019
6	K1911995-001	1	2.955	0.3178	2.6369	2.63685	2.64	12/27/2019
7	K1911995-001	1	2.948	0.3178	2.6302	2.63015	2.6	12/27/2019
8	KQ1919209-11	1	28.386	0.3178	28.0678	28.06775	28	12/27/2019
9	K1911998-001	1	3.672	0.3178	3.3540	3.35395	3.35	12/27/2019
10	K1911998-001	1	3.668	0.3178	3.3502	3.35015	3.35	12/27/2019
11	K1911998-002	100	1.625	0.3178	1.3077	130.765	130.8	12/28/2019
12	K1911998-002	100	1.551	0.3178	1.2329	123.285	123.29	12/28/2019
13	K1911998-003	1000	0.637	0.3178	0.3194	319.35	319.35	12/28/2019
14	K1911998-003	1000	0.621	0.3178	0.3030	302.95	302.95	12/28/2019
15	K1911998-004	1	11.265	0.3178	10.9472	10.94715	10.9	12/28/2019
16	K1911998-004	1	11.121	0.3178	10.8035	10.80345	10.8	12/28/2019
17	ccv	1	26.337	0.3178	26.0197	26.01965	26.02	12/28/2019
18	ccb	1	0.862	0.3178	0.5443	0.54425	0.5	12/28/2019
19	K1911998-005	1	94.630	0.3178	94.3122	94.31215	94.3	12/28/2019
20	K1911998-005	1	95.146	0.3178	94.8286	94.82855	94.83	12/28/2019
21	K1911998-006	1	6.508	0.3178	6.1905	6.19045	6.19	12/28/2019
22	K1911998-006	1	3.924	0.3178	3.6058	3.60575	3.6	12/28/2019
23	K1912042-001	1	6.555	0.3178	6.2375	6.23745	6.2	12/28/2019
24	K1912042-001	1	6.107	0.3178	5.7892	5.78915	5.79	12/28/2019
25	K1912042-002	1	5.452	0.3178	5.1345	5.13445	5.13	12/28/2019

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

		date	time
Analyzed By: KCV	Date Analyzed	12/27/19	
Reviewed By: JC	Date Reviewed	12/31/19	

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K1912042-002	1	5.163	0.3178	4.8450	4.84495	4.84	12/28/2019
27	K1912042-003	1	14.359	0.3178	14.0413	14.04125	14.04	12/28/2019
28	K1912042-003	1	14.240	0.3178	13.9223	13.92225	13.9	12/28/2019
29	K1912042-004	1	14.997	0.3178	14.6791	14.67905	14.7	12/28/2019
30	K1912042-004	1	15.218	0.3178	14.9001	14.90005	14.9	12/28/2019
31	K1912042-005	1	4.455	0.3178	4.1372	4.13715	4.1	12/28/2019
32	K1912042-005	1	3.898	0.3178	3.5806	3.58055	3.6	12/28/2019
33	K1911934-002	1	1.353	0.3178	1.0353	1.03525	1.0	12/28/2019
34	K1911934-002	1	1.192	0.3178	0.8746	0.87455	0.9	12/28/2019
35	K1911980-001	1	4.533	0.3178	4.2155	4.21545	4.2	12/28/2019
36	K1911980-001	1	4.484	0.3178	4.1659	4.16585	4.2	12/28/2019
37	K1911981-001	1	4.055	0.3178	3.7372	3.73715	3.7	12/28/2019
38	K1911981-001	1	3.976	0.3178	3.6578	3.65775	3.7	12/28/2019
39	ccv	1	24.936	0.3178	24.6181	24.61805	24.6	12/28/2019
40	ccb	1	0.481	0.3178	0.1631	0.16305	<0.5	12/28/2019
41	K1911895-001	1	0.768	0.3178	0.4502	0.45015	<0.5	12/28/2019
42	K1911895-001	1	0.614	0.3178	0.2964	0.29635	<0.5	12/28/2019
43	K1911762-003	100	4.396	0.3178	4.0784	407.835	407.8	12/28/2019
44	K1911762-003	100	4.433	0.3178	4.1152	411.515	411.5	12/28/2019
45	K1911762-004	100	5.663	0.3178	5.3455	534.545	534.5	12/28/2019
46	K1911762-004	100	5.668	0.3178	5.3498	534.975	535.0	12/28/2019
47	K1911762-005	100	5.831	0.3178	5.5134	551.335	551.3	12/28/2019
48	K1911762-005	100	5.749	0.3178	5.4308	543.075	543.1	12/28/2019
49	K1911807-004	1	0.976	0.3178	0.6581	0.65805	0.7	12/28/2019
50	K1911807-004	1	0.878	0.3178	0.5605	0.56045	0.6	12/28/2019

Analyzed By:	KP	Date Analyzed	12/27/19
Reviewed By:	JC	Date Reviewed	12/31/19

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
51	ccv	1	25.159	0.3178	24.8417	24.84165	24.84	12/28/2019
52	ccb	1	0.464	0.3178	0.1464	0.14635	<0.5	12/28/2019
53		1		0.0000	0.0000	0	<0.5	
54		1		0.0000	0.0000	0	<0.5	
55		1		0.0000	0.0000	0	<0.5	
56		1		0.0000	0.0000	0	<0.5	
57		1		0.0000	0.0000	0	<0.5	
58		1		0.0000	0.0000	0	<0.5	
59		1		0.0000	0.0000	0	<0.5	
60		1		0.0000	0.0000	0	<0.5	
61		1		0.0000	0.0000	0	<0.5	
62		1		0.0000	0.0000	0	<0.5	
63		1		0.0000	0.0000	0	<0.5	
64		1		0.0000	0.0000	0	<0.5	
65		1		0.0000	0.0000	0	<0.5	
66		1		0.0000	0.0000	0	<0.5	
67		1		0.0000	0.0000	0	<0.5	
68		1		0.0000	0.0000	0	<0.5	
69		1		0.0000	0.0000	0	<0.5	
70		1		0.0000	0.0000	0	<0.5	
71		1		0.0000	0.0000	0	<0.5	
72		1		0.0000	0.0000	0	<0.5	
73		1		0.0000	0.0000	0	<0.5	
74		1		0.0000	0.0000	0	<0.5	
75		1		0.0000	0.0000	0	<0.5	

Analyzed By:	BCP	Date Analyzed	12/27/19
Reviewed By:	JC	Date Reviewed	12/31/19

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	24.936	0.3178	24.6181	24.61805	24.6	12/28/2019
3	ccb	1	0.481	0.3178	0.1631	0.16305	<0.5	12/28/2019
4	mb	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/28/2019
5	lcs	1	26.176	0.3178	25.8584	25.85835	25.9	12/28/2019
6	K1911810-001	1	2.742	0.3178	2.4243	2.42425	2.42	12/28/2019
7	K1911810-001	1	2.703	0.3178	2.3848	2.38475	2.4	12/28/2019
8	K1911810-002	1	2.561	0.3178	2.2434	2.24335	2	12/28/2019
9	K1911810-002	1	2.553	0.3178	2.2354	2.23535	2.24	12/28/2019
10	KQ1919210-11	1	28.785	0.3178	28.4677	28.46765	28.47	12/28/2019
11	ccv	1	25.159	0.3178	24.8417	24.84165	24.8	12/28/2019
12	ccb	1	0.464	0.3178	0.1464	0.14635	<0.5	12/28/2019
13	K1911868-001	1	1.037	0.3178	0.7189	0.71885	0.72	12/28/2019
14	K1911868-001	1	1.014	0.3178	0.6965	0.69645	0.70	12/28/2019
15	K1911868-002	1	1.065	0.3178	0.7476	0.74755	0.7	12/28/2019
16	K1911868-002	1	1.031	0.3178	0.7129	0.71285	0.7	12/28/2019
17	K1911868-003	1	8.200	0.3178	7.8822	7.88215	7.88	12/28/2019
18	K1911868-003	1	8.241	0.3178	7.9237	7.92365	7.9	12/28/2019
19	K1911868-004	1	0.455	0.3178	0.1376	0.13755	<0.5	12/28/2019
20	K1911868-004	1	0.403	0.3178	0.0856	0.08555	<0.5	12/28/2019
21	K1911909-001	1	0.164	0.3178	-0.1542	-0.15415	<0.5	12/28/2019
22	K1911909-001	1	0.113	0.3178	-0.2046	-0.20455	<0.5	12/28/2019
23	K1911910-001	10	10.159	0.3178	9.8411	98.4105	98.4	12/28/2019
24	K1911910-001	10	10.027	0.3178	9.7092	97.0915	97.09	12/28/2019
25	K1912004-001	1	0.056	0.3178	-0.2621	-0.26205	<0.5	12/28/2019

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

	date	time
Analyzed By: KP	Date Analyzed 12/27/19	
Reviewed By:	Date Reviewed 12/31/19	

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K1912004-001	1	0.250	0.3178	-0.0683	-0.06825	<0.5	12/28/2019
27	K1911960-001	1	9.254	0.3178	8.9358	8.93575	8.94	12/28/2019
28	K1911960-001	1	9.274	0.3178	8.9559	8.95585	9.0	12/28/2019
29	K1911960-002	1	12.963	0.3178	12.6449	12.64485	12.6	12/28/2019
30	K1911960-002	1	12.640	0.3178	12.3218	12.32175	12.3	12/28/2019
31	K1911960-003	1	2.117	0.3178	1.7992	1.79915	1.8	12/28/2019
32	K1911960-003	1	1.991	0.3178	1.6728	1.67275	1.7	12/28/2019
33	ccv	1	25.104	0.3178	24.7865	24.78645	24.8	12/28/2019
34	ccb	1	0.291	0.3178	-0.0269	-0.02685	<0.5	12/28/2019
35	K1911960-004	1	23.664	0.3178	23.3464	23.34635	23.3	12/28/2019
36	K1911960-004	1	23.753	0.3178	23.4351	23.43505	23.4	12/28/2019
37	K1911960-005	1	9.239	0.3178	8.9215	8.92145	8.9	12/28/2019
38	K1911960-005	1	9.171	0.3178	8.8533	8.85325	8.9	12/28/2019
39	K1911960-006	1	15.788	0.3178	15.4703	15.47025	15.5	12/28/2019
40	K1911960-006	1	15.741	0.3178	15.4229	15.42285	15.4	12/28/2019
41	K1911960-007	8	5.175	0.3178	4.8576	38.8604	38.9	12/28/2019
42	K1911960-007	8	4.998	0.3178	4.6805	37.4436	37.4	12/28/2019
43	K1911960-008	1	11.627	0.3178	11.3094	11.30935	11.3	12/28/2019
44	K1911960-008	1	11.358	0.3178	11.0407	11.04065	11.0	12/28/2019
45	K1911960-009	1	15.908	0.3178	15.5904	15.59035	15.6	12/28/2019
46	K1911960-009	1	15.767	0.3178	15.4491	15.44905	15.4	12/28/2019
47	ccv	1	24.588	0.3178	24.2698	24.26975	24.3	12/28/2019
48	ccb	1	0.070	0.3178	-0.2482	-0.24815	<0.5	12/28/2019
49		1		0.0000	0.0000	0	<0.5	
50		1		0.0000	0.0000	0	<0.5	

Analyzed By:	BCP	Date Analyzed	12/27/19
Reviewed By:	QC	Date Reviewed	12/31/19

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	25.104	0.3178	24.7865	24.78645	24.8	12/28/2019
3	ccb	1	0.291	0.3178	-0.0269	-0.02685	<0.5	12/28/2019
4	mb	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/28/2019
5	lcs	1	26.014	0.3178	25.6966	25.69655	25.7	12/28/2019
6	K1911968-001	1	1.551	0.3178	1.2336	1.23355	1.23	12/28/2019
7	K1911968-001	1	1.469	0.3178	1.1508	1.15075	1.2	12/28/2019
8	K1911968-002	1	1.466	0.3178	1.1482	1.14815	1	12/28/2019
9	K1911968-002	1	1.513	0.3178	1.1955	1.19545	1.20	12/28/2019
10	ccv	1	24.588	0.3178	24.2698	24.26975	24.27	12/28/2019
11	ccb	1	0.070	0.3178	-0.2482	-0.24815	<0.5	12/28/2019
12	K1911968-003	1	1.018	0.3178	0.7005	0.70045	0.70	12/28/2019
13	K1911968-003	1	0.949	0.3178	0.6315	0.63145	0.63	12/28/2019
14	K1911968-004	1	1.361	0.3178	1.0430	1.04295	1.04	12/28/2019
15	K1911968-004	1	1.318	0.3178	1.0003	1.00025	1.0	12/28/2019
16	K1911968-005	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/28/2019
17	K1911968-005	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/28/2019
18	K1911914-001	1	0.868	0.3178	0.5501	0.55005	0.6	12/28/2019
19	K1911914-001	1	0.869	0.3178	0.5512	0.55115	0.6	12/28/2019
20	KQ1919211-11	1	27.664	0.3178	27.3458	27.34575	27.35	12/28/2019
21	K1911914-002	1	1.861	0.3178	1.5430	1.54295	1.54	12/28/2019
22	K1911914-002	1	1.788	0.3178	1.4704	1.47035	1.5	12/28/2019
23	K1911914-003	1	3.520	0.3178	3.2018	3.20175	3.2	12/29/2019
24	K1911914-003	1	3.427	0.3178	3.1096	3.10955	3.11	12/29/2019
25	K1911914-004	1	0.839	0.3178	0.5213	0.52125	0.52	12/29/2019

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

		date	time
Analyzed By:		Date Analyzed	12/27/19
Reviewed By:		Date Reviewed	12/31/19

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K1911914-004	1	0.800	0.3178	0.4826	0.48255	<0.5	12/29/2019
27	K1911914-005	1	5.996	0.3178	5.6786	5.67855	5.68	12/29/2019
28	K1911914-005	1	5.978	0.3178	5.6600	5.65995	5.7	12/29/2019
29	ccv	1	24.413	0.3178	24.0955	24.09545	24.1	12/29/2019
30	ccb	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
31	K1911914-006	1	9.818	0.3178	9.4999	9.49985	9.5	12/29/2019
32	K1911914-006	1	9.738	0.3178	9.4199	9.41985	9.4	12/29/2019
33	K1911914-007	1	0.649	0.3178	0.3317	0.33165	<0.5	12/29/2019
34	K1911914-007	1	0.559	0.3178	0.2408	0.24075	<0.5	12/29/2019
35	K1911914-008	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
36	K1911914-008	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
37	K1911914-009	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
38	K1911914-009	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
39	ccv	1	24.226	0.3178	23.9078	23.90775	23.9	12/29/2019
40	ccb	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
41		1		0.0000	0.0000	0	<0.5	
42		1		0.0000	0.0000	0	<0.5	
43		1		0.0000	0.0000	0	<0.5	
44		1		0.0000	0.0000	0	<0.5	
45		1		0.0000	0.0000	0	<0.5	
46		1		0.0000	0.0000	0	<0.5	
47		1		0.0000	0.0000	0	<0.5	
48		1		0.0000	0.0000	0	<0.5	
49		1		0.0000	0.0000	0	<0.5	
50		1		0.0000	0.0000	0	<0.5	

Analyzed By: BCB	Date Analyzed 12/27/19
Reviewed By: JC	Date Reviewed 12/31/19

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
CBA	RB	1			0.0000	0	<0.5	
2	ccv	1	24.413	0.3178	24.0955	24.09545	24.1	12/29/2019
3	ccb	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
4	mb	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
5	lcs	1	25.715	0.3178	25.3971	25.39705	25.4	12/29/2019
6	K1911970-001	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
7	K1911970-001	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
8	K1911970-002	1	0.990	0.3178	0.6720	0.67195	1	12/29/2019
9	K1911970-002	1	0.959	0.3178	0.6414	0.64135	0.64	12/29/2019
10	K1911970-003	1	0.373	0.3178	0.0548	0.05475	<0.5	12/29/2019
11	K1911970-003	1	0.398	0.3178	0.0800	0.07995	<0.5	12/29/2019
12	KQ1919213-09	1	27.031	0.3178	26.7129	26.71285	26.71	12/29/2019
13	ccv	1	24.226	0.3178	23.9078	23.90775	23.91	12/29/2019
14	ccb	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
15	K1911970-004	1	17.332	0.3178	17.0143	17.01425	17.0	12/29/2019
16	K1911970-004	1	17.495	0.3178	17.1771	17.17705	17.2	12/29/2019
17	K1911970-005	1	1.164	0.3178	0.8466	0.84655	0.85	12/29/2019
18	K1911970-005	1	1.069	0.3178	0.7513	0.75125	0.8	12/29/2019
19	K1912074-001	100	8.699	0.3178	8.3813	838.125	838.1	12/29/2019
20	K1912074-001	100	8.760	0.3178	8.4421	844.205	844.21	12/29/2019
21	K1912074-002	100	6.870	0.3178	6.5525	655.245	655.25	12/29/2019
22	K1912074-002	100	6.824	0.3178	6.5065	650.645	650.6	12/29/2019
23	K1912040-001	1	1.543	0.3178	1.2254	1.22535	1.2	12/29/2019
24	K1912040-001	1	1.461	0.3178	1.1433	1.14325	1.14	12/29/2019
25	K1912040-002	1	16.394	0.3178	16.0760	16.07595	16.08	12/29/2019

ICAL Date 10/20/16 ICAL ID#:11-GEN-05-51A

LCS =24.0 ppm APG 4013 Lot #010615 (REF# 11-GEN-05-50N)

CCV = 25.0 ppm (Ref.#11-GEN-05-52E)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml =25.0 ppm x Dilution Factor (Ref.# 11-GEN-05-51M)

		date	time
Analyzed By: BCB	Date Analyzed	12/27/19	
Reviewed By: JC	Date Reviewed	12/31/19	

ALS ENVIRONMENTAL

Matrix: WATER

Analysis: Total Organic Carbon (WATER) Method:Oxidation EPA 415.1/9060/5310C

Printout	Sample #	Dil. Factor	Solution Conc.,mg/L	Blank Correction, mg/L	Net mg/L	TOC mg/L	Reported TOC mg/L	
26	K1912040-002	1	16.273	0.3178	15.9556	15.95555	15.96	12/29/2019
27	K1912040-003	1	3.257	0.3178	2.9392	2.93915	2.94	12/29/2019
28	K1912040-003	1	3.192	0.3178	2.8743	2.87425	2.9	12/29/2019
29	ccv	1	24.267	0.3178	23.9497	23.94965	23.9	12/29/2019
30	ccb	1	0.000	0.3178	-0.3178	-0.31775	<0.5	12/29/2019
31		1		0.0000	0.0000	0	<0.5	
32		1		0.0000	0.0000	0	<0.5	
33		1		0.0000	0.0000	0	<0.5	
34		1		0.0000	0.0000	0	<0.5	
35		1		0.0000	0.0000	0	<0.5	
36		1		0.0000	0.0000	0	<0.5	
37		1		0.0000	0.0000	0	<0.5	
38		1		0.0000	0.0000	0	<0.5	
39		1		0.0000	0.0000	0	<0.5	
40		1		0.0000	0.0000	0	<0.5	
41		1		0.0000	0.0000	0	<0.5	
42		1		0.0000	0.0000	0	<0.5	
43		1		0.0000	0.0000	0	<0.5	
44		1		0.0000	0.0000	0	<0.5	
45		1		0.0000	0.0000	0	<0.5	
46		1		0.0000	0.0000	0	<0.5	
47		1		0.0000	0.0000	0	<0.5	
48		1		0.0000	0.0000	0	<0.5	
49		1		0.0000	0.0000	0	<0.5	
50		1		0.0000	0.0000	0	<0.5	

Analyzed By:	Date Analyzed 12/27/19
Reviewed By:	Date Reviewed 12/31/19

TOC: 664898, 664900, 664901, 664902

Schedule: 12272019b

Version: 2
Instrument: Fusion1
Last Saved by: Fusion1 (Fusion1)
Last Saved on: 2019/12/27 17:30 - Friday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Blank)	Blank	Reagent/Acid Blank		1	True	Ready
D	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	10	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
3	Sample	K1911995-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
4	Sample	K1911995-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
5	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
6	Sample	K1911998-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
7	Sample	K1911998-002.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
8	Sample	K1911998-003.01 1000x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
9	Sample	K1911998-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
10	Sample	K1911998-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
11	Sample	K1911998-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
12	Sample	K1912042-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
13	Sample	K1912042-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
14	Sample	K1912042-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
15	Sample	K1912042-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
16	Sample	K1912042-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
17	Sample	K1911934-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
18	Sample	K1911980-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
19	Sample	K1911981-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
20	Sample	MB2	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
21	Sample	K1911895-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
22	Sample	K1911762-003.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
23	Sample	K1911762-004.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
24	Sample	K1911762-005.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
25	Sample	K1911807-004.03	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
26	Sample	K1911810-001.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
27	Sample	K1911810-002.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
28	Sample	K1911810-001.02 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
29	Sample	K1911868-001.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
30	Sample	K1911868-002.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
31	Sample	K1911868-003.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
32	Sample	K1911868-004.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
33	Sample	K1911909-001.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
34	Sample	K1911910-001.04 10x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
35	Sample	K1912004-001.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
36	Sample	K1911960-001.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
37	Sample	K1911960-002.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
38	Sample	K1911960-003.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready

Schedule: 12272019b

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
39	Sample	MB3	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
40	Sample	K1911960-004.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
41	Sample	K1911960-005.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
42	Sample	K1911960-006.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
43	Sample	K1911960-007.02 8x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
44	Sample	K1911960-008.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
45	Sample	K1911960-009.02	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
46	Sample	K1911968-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
47	Sample	K1911968-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
48	Sample	K1911968-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
49	Sample	K1911968-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
50	Sample	K1911968-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
51	Sample	K1911914-001.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
52	Sample	K1911914-001.15 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
53	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
54	Sample	K1911914-002.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
55	Sample	K1911914-003.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
56	Sample	K1911914-004.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
57	Sample	K1911914-005.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
58	Sample	MB4	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
59	Sample	K1911914-006.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
60	Sample	K1911914-007.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
61	Sample	K1911914-008.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
62	Sample	K1911914-009.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
63	Sample	K1911970-001.17	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
64	Sample	K1911970-002.17	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
65	Sample	K1911970-003.17	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
66	Sample	K1911970-003.17 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
67	Sample	K1911970-004.17	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
68	Sample	K1911970-005.17	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
69	Sample	K1912074-001.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
70	Sample	K1912074-002.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
71	Sample	K1912040-001.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
72	Sample	K1912040-002.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
73	Sample	K1912040-003.15	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
					False	

Fusion Report - 12272019b
Friday, December 27, 2019 05:30 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2019/12/31 09:22 - Tuesday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	12272019b	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v1) Fusion1 (Fusion1) (v2)		
Comment:			

Report Results

Sample Type: Clean — From Schedule Version 1

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2019/12/27 17:30

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	12.29	16.86	4.57	49.49	05:21
2	TC Clean	6.57	10.18	3.61	49.94	04:02
3	TC Clean	2.92	6.53	3.61	50.03	03:47
4	TC Clean	1.77	5.39	3.62	50.00	03:54

Sample Type: Clean — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2019/12/27 17:52

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.81	4.38	3.57	49.51	05:21
2	TC Clean	6.44	10.21	3.77	50.03	04:04
3	TC Clean	3.63	7.20	3.57	49.98	03:49
4	TC Clean	2.71	6.27	3.56	49.94	03:53

Sample Type: Clean From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2019/12/27 18:14

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.97	4.54	3.57	49.41	05:22
2	TC Clean	8.19	11.96	3.77	50.04	04:00
3	TC Clean	4.38	8.04	3.66	50.03	03:47
4	TC Clean	2.72	6.39	3.67	50.01	03:46

Sample Type: Blank (Creating v1332) From Schedule Version 2

	Pos	Analysis Type	Sample ID	Start Time
◆	(blank)		Reagent/Acid Blank	2019/12/27 18:36

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	1.17	4.75	3.57	49.60	05:23
2	TC Clean	8.55	12.23	3.68	49.94	04:00
3	TC Clean	5.26	8.93	3.67	50.02	03:45
4	TC Clean	3.21	7.06	3.85	49.92	03:44
5	Reagent Blank	18.61	22.61	4.00	49.93	05:04
6	Acid Blank	2.58	6.18	3.60	49.49	05:26

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	D	TOC	RB	0.5662 ppm	0.2739 ppm	48.3700%	2019/12/27 19:09

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2975	12.9750	21.21	25.07	3.85	49.99	10:27
2	TOC	0.7216	7.2162	17.30	21.09	3.79	50.03	10:26
3	TOC	0.5472	5.4720	16.12	19.94	3.82	50.01	10:26
4	TOC	0.4790	4.7899	15.66	19.61	3.95	50.01	10:30
5	TOC	0.4326	4.3258	15.34	19.13	3.79	50.00	10:26
6	TOC	0.4862	4.8621	15.71	19.40	3.69	50.00	10:26
7	TOC	0.4528	4.5276	15.48	19.18	3.70	49.99	10:30

8	TOC	0.4206	4.2065	15.26	18.88	3.62	50.01	10:29
9	TOC	0.4489	4.4893	15.45	18.99	3.54	49.98	10:28
10	TOC	0.3759	3.7586	14.96	18.62	3.67	49.98	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.2410 ppm (PASS)	0.0000 ppm	0%	2019/12/27 21:30

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.2410	252.4101	180.80	184.44	3.64	49.96	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.9008 ppm (PASS)	0.0000 ppm	0%	2019/12/27 21:45

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.9008	9.0079	15.58	19.24	3.66	49.96	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	1	TOC	MB1	0.3446 ppm	0.0000 ppm	0.0000%	2019/12/27 21:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3446	3.4463	14.75	18.44	3.70	49.97	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> LCS From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	26.4885 ppm (PASS)	0.0000 ppm	0%	2019/12/27 22:14

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	26.4885	264.8852	189.26	192.85	3.59	49.94	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	25 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	2	TOC	ICS	1.0163 ppm	0.0000 ppm	0.0000%	2019/12/27 22:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0163	10.1626	19.30	22.94	3.64	49.96	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	3	TOC	K1911995-001.01	2.9512 ppm	0.0047 ppm	0.1600%	2019/12/27 22:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.9546	29.5455	32.46	36.12	3.66	49.94	10:26
2	TOC	2.9479	29.4792	32.42	36.25	3.83	49.93	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	4	TOC	K1911995-001.01 ms	28.3855 ppm	0.0000 ppm	0.0000%	2019/12/27 23:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	28.3855	283.8554	205.09	208.77	3.69	49.92	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time

◆	5	TOC	RB	0.5110 ppm	0.0000 ppm	0.0000%	2019/12/27 23:26

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5110	5.1096	15.88	19.70	3.82	49.93	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	6	TOC	K1911998-001.01	3.6698 ppm	0.0027 ppm	0.0700%	2019/12/27 23:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.6717	36.7171	37.33	41.13	3.80	49.91	10:26
2	TOC	3.6679	36.6788	37.30	41.00	3.69	49.93	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	7	TOC	K1911998-002.01 100x	1.5880 ppm	0.0529 ppm	3.3300%	2019/12/28 00:08

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.6254	16.2543	23.44	27.14	3.70	49.93	10:27
2	TOC	1.5506	15.5059	22.93	26.59	3.65	49.92	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	8	TOC	K1911998-003.01 1000x	0.6289 ppm	0.0116 ppm	1.8400%	2019/12/28 00:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6371	6.3706	16.73	20.36	3.63	49.91	10:27
2	TOC	0.6207	6.2071	16.62	20.38	3.76	49.92	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	9	TOC	K1911998-004.01	11.1931 ppm	0.1016 ppm	0.9100%	2019/12/28 01:05

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	11.2649	112.6488	88.87	92.56	3.68	49.90	10:27
2	TOC	11.1212	111.2124	87.90	91.68	3.78	49.90	10:26

Dilution	Blank Contribution	Method	Calibration

1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	26.3374 ppm (PASS)	0.0000 ppm	0%	2019/12/28 01:33

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.3374	263.3737	188.24	191.98	3.74	49.92	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.8620 ppm (PASS)	0.0000 ppm	0%	2019/12/28 01:47

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.8620	8.6205	15.31	18.91	3.60	49.89	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	10	TOC	K1911998-005.01	94.8881 ppm	0.3651 ppm	0.3800%	2019/12/28 02:02

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	94.6299	946.2993	654.75	658.45	3.70	49.86	10:28
2	TOC	95.1463	951.4628	658.25	662.80	4.54	49.87	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	11	TOC	K1911998-006.01	5.2158 ppm	1.8277 ppm	35.0400%	2019/12/28 02:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	6.5082	65.0821	56.58	60.95	4.37	49.89	10:28
2	TOC	3.9235	39.2348	39.04	42.79	3.75	49.88	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	12	TOC	K1912042-001.01	6.3311 ppm	0.3170 ppm	5.0100%	2019/12/28 02:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	6.5552	65.5520	56.90	60.70	3.79	49.92	10:27
2	TOC	6.1069	61.0691	53.86	57.52	3.66	49.91	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	13	TOC	K1912042-002.01	5.3075 ppm	0.2047 ppm	3.8600%	2019/12/28 03:27

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.4522	54.5222	49.42	52.92	3.51	49.91	10:26
2	TOC	5.1627	51.6273	47.45	50.87	3.42	49.89	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	14	TOC	K1912042-003.01	14.2995 ppm	0.0842 ppm	0.5900%	2019/12/28 03:55

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.3590	143.5904	109.88	113.45	3.57	49.87	10:28
2	TOC	14.2400	142.4001	109.07	112.55	3.48	49.89	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	15	TOC	K1912042-004.01	15.1073 ppm	0.1563 ppm	1.0300%	2019/12/28 04:23

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	14.9968	149.9679	114.20	117.83	3.62	49.88	10:27
2	TOC	15.2178	152.1777	115.70	119.33	3.63	49.86	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC)	CAS_salt_010711	CAS_salt_010711

(v1332) (v4) (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	16	TOC	K1912042-005.01	4.1766 ppm	0.3936 ppm	9.4200%	2019/12/28 04:51

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.4549	44.5486	42.65	46.32	3.67	49.90	10:27
2	TOC	3.8983	38.9829	38.87	42.52	3.66	49.87	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	17	TOC	K1911934-002.01	1.2727 ppm	0.1137 ppm	8.9300%	2019/12/28 05:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.3530	13.5304	21.59	25.06	3.46	49.88	10:31
2	TOC	1.1923	11.9231	20.50	24.01	3.51	49.89	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	18	TOC	K1911980-001.01	4.5084 ppm	0.0351 ppm	0.7800%	2019/12/28 05:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.5332	45.3324	43.18	46.80	3.62	49.88	10:28
2	TOC	4.4836	44.8359	42.84	46.35	3.51	49.88	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	19	TOC	K1911981-001.01	4.0152 ppm	0.0561 ppm	1.4000%	2019/12/28 06:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.0549	40.5489	39.93	43.50	3.57	49.90	10:29
2	TOC	3.9755	39.7548	39.39	42.97	3.58	49.88	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time

◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	24.9358 ppm (PASS)	0.0000 ppm	0%	2019/12/28 06:43

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.9358	249.3577	178.72	182.40	3.68	49.90	10:29

Completion State: Success - Criteria met.
Success Action: Do Nothing
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)
STD Conc - Pos B: 50 ppmC

Sample Type: Check Standard --> CCB — From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.4808 ppm (PASS)	0.0000 ppm	0%	2019/12/28 06:58

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.4808	4.8078	12.73	16.46	3.74	49.90	10:35

Completion State: Success - Criteria met.
Success Action: Do Nothing
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)
STD Conc - Pos D: 0 ppmC

Sample Type: Sample — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	20	TOC	MB2	0.0000 ppm	0.0000 ppm	0.0000%	2019/12/28 07:12

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	12.27	15.90	3.63	49.90	10:30

Dilution: 1:10
Blank Contribution: (TC) 12.4067 (IC) (v1332)
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)

Sample Type: Check Standard --> LCS — From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	26.1761 ppm (PASS)	0.0000 ppm	0%	2019/12/28 07:27

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	26.1761	261.7606	187.14	190.88	3.74	49.91	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	25 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	21	TOC	K1911895-001.01	0.6910 ppm	0.1088 ppm	15.7400%	2019/12/28 07:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7679	7.6788	17.62	21.33	3.71	49.90	10:31
2	TOC	0.6141	6.1408	16.58	20.39	3.81	49.90	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	22	TOC	K1911762-003.01 100x	4.4145 ppm	0.0260 ppm	0.5900%	2019/12/28 08:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.3961	43.9608	42.25	46.00	3.76	49.90	10:29
2	TOC	4.4329	44.3291	42.50	46.24	3.74	49.92	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	23	TOC	K1911762-004.01 100x	5.6653 ppm	0.0030 ppm	0.0500%	2019/12/28 08:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.6632	56.6318	50.85	54.53	3.68	49.90	10:27
2	TOC	5.6675	56.6745	50.88	54.47	3.59	49.93	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	24	TOC	K1911762-005.01 100x	5.7898 ppm	0.0584 ppm	1.0100%	2019/12/28 09:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.8311	58.3113	51.99	55.60	3.61	49.91	10:26
2	TOC	5.7485	57.4848	51.43	55.18	3.75	49.91	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	25	TOC	K1911807-004.03	0.9270 ppm	0.0690 ppm	7.4400%	2019/12/28 09:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9758	9.7575	19.03	22.67	3.64	49.90	10:26
2	TOC	0.8782	8.7822	18.37	22.03	3.66	49.89	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	26	TOC	K1911810-001.02	2.7222 ppm	0.0279 ppm	1.0300%	2019/12/28 10:02

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.7420	27.4197	31.02	34.71	3.69	49.89	10:27
2	TOC	2.7025	27.0249	30.75	34.34	3.59	49.89	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	27	TOC	K1911810-002.02	2.5571 ppm	0.0056 ppm	0.2200%	2019/12/28 10:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.5611	25.6106	29.79	33.53	3.74	49.90	10:26
2	TOC	2.5531	25.5311	29.74	33.46	3.73	49.92	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	28	TOC	K1911810-001.02 ms	28.7854 ppm	0.0000 ppm	0.0000%	2019/12/28 10:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	28.7854	287.8536	207.80	211.55	3.75	49.91	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.1594 ppm (PASS)	0.0000 ppm	0%	2019/12/28 11:12

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.1594	251.5940	180.24	184.00	3.76	49.92	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.4641 ppm (PASS)	0.0000 ppm	0%	2019/12/28 11:27

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.4641	4.6413	12.61	16.27	3.66	49.93	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	29	TOC	K1911868-001.15	1.0254 ppm	0.0158 ppm	1.5400%	2019/12/28 11:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0366	10.3659	19.44	23.20	3.76	49.92	10:30
2	TOC	1.0142	10.1420	19.29	22.99	3.70	49.95	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	30	TOC	K1911868-002.15	1.0479 ppm	0.0246 ppm	2.3500%	2019/12/28 12:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0653	10.6532	19.64	23.28	3.64	49.98	10:31
2	TOC	1.0306	10.3055	19.40	22.93	3.52	49.96	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	31	TOC	K1911868-003.15	8.2207 ppm	0.0294 ppm	0.3600%	2019/12/28 12:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	8.1999	81.9989	68.07	71.60	3.53	49.98	10:28
2	TOC	8.2414	82.4143	68.35	71.85	3.50	49.96	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	32	TOC	K1911868-004.15	0.4293 ppm	0.0368 ppm	8.5700%	2019/12/28 13:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4553	4.5527	15.50	19.14	3.65	49.99	10:28
2	TOC	0.4033	4.0326	15.14	18.65	3.50	50.01	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	33	TOC	K1911909-001.02	0.1384 ppm	0.0356 ppm	25.7400%	2019/12/28 13:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.1636	1.6357	13.52	17.00	3.48	50.00	10:29
2	TOC	0.1132	1.1319	13.18	16.76	3.59	50.04	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	34	TOC	K1911910-001.04 10x	10.0929 ppm	0.0932 ppm	0.9200%	2019/12/28 14:02

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	10.1588	101.5880	81.36	84.88	3.51	49.99	10:28
2	TOC	10.0269	100.2695	80.47	84.18	3.71	50.00	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	35	TOC	K1912004-001.02	0.1526 ppm	0.1370 ppm	89.7700%	2019/12/28 14:31

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0557	0.5574	12.78	16.33	3.55	50.03	10:28
2	TOC	0.2495	2.4946	14.10	17.67	3.57	49.99	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC)	CAS_salt_010711	CAS_salt_010711

(v1332) (v4) (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	36	TOC	K1911960-001.02	9.2635 ppm	0.0142 ppm	0.1500%	2019/12/28 14:59

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	9.2535	92.5352	75.22	78.74	3.52	49.98	10:28
2	TOC	9.2736	92.7355	75.36	79.02	3.67	50.01	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	37	TOC	K1911960-002.02	12.8011 ppm	0.2284 ppm	1.7800%	2019/12/28 15:27

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	12.9626	129.6260	100.40	104.17	3.77	49.97	10:29
2	TOC	12.6395	126.3952	98.20	101.92	3.72	49.99	10:22

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	38	TOC	K1911960-003.02	2.0537 ppm	0.0894 ppm	4.3500%	2019/12/28 15:55

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.1169	21.1689	26.78	30.53	3.76	49.94	10:30
2	TOC	1.9905	19.9049	25.92	29.64	3.73	49.99	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.1042 ppm (PASS)	0.0000 ppm	0%	2019/12/28 16:23

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.1042	251.0415	179.87	183.48	3.61	50.01	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.2909 ppm (PASS)	0.0000 ppm	0%	2019/12/28 16:38

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.2909	2.9089	11.44	15.05	3.61	49.99	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	39	TOC	MB3	0.0000 ppm	0.0000 ppm	0.0000%	2019/12/28 16:53

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	10.91	14.46	3.55	50.00	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> LCS From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	26.0143 ppm (PASS)	0.0000 ppm	0%	2019/12/28 17:07

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	26.0143	260.1430	186.05	189.61	3.56	50.03	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	25 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	40	TOC	K1911960-004.02	23.7084 ppm	0.0627 ppm	0.2600%	2019/12/28 17:22

Rep	Base			Adjusted		Baseline	Pressure	Run

#	Analysis Type	ppm	µg	(Abs)	NDIR (Abs)	(Abs)	(psig)	Time
1	TOC	23.6641	236.6407	173.04	176.72	3.69	50.01	10:27
2	TOC	23.7528	237.5276	173.64	177.22	3.58	50.01	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	41	TOC	K1911960-005.02	9.2051 ppm	0.0482 ppm	0.5200%	2019/12/28 17:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	9.2392	92.3923	75.12	78.86	3.74	49.98	10:29
2	TOC	9.1710	91.7102	74.66	78.30	3.65	50.00	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	42	TOC	K1911960-006.02	15.7643 ppm	0.0335 ppm	0.2100%	2019/12/28 18:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	15.7880	157.8805	119.58	123.29	3.71	49.98	10:30
2	TOC	15.7406	157.4061	119.25	122.89	3.63	49.97	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	43	TOC	K1911960-007.02 8x	5.0867 ppm	0.1252 ppm	2.4600%	2019/12/28 18:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.1753	51.7526	47.54	51.13	3.59	49.98	10:26
2	TOC	4.9982	49.9818	46.33	50.08	3.75	49.97	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	44	TOC	K1911960-008.02	11.4928 ppm	0.1900 ppm	1.6500%	2019/12/28 19:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	11.6271	116.2714	91.33	95.12	3.79	49.94	10:27
2	TOC	11.3584	113.5843	89.51	93.31	3.80	49.94	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	15.9081	159.0811	120.39	124.14	3.75	49.96	10:25
2	TOC	15.7668	157.6683	119.43	123.27	3.84	49.97	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	46	TOC	K1911968-001.01	1.5099 ppm	0.0585 ppm	3.8800%	2019/12/28 20:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.5513	15.5133	22.94	26.64	3.70	49.94	10:27
2	TOC	1.4685	14.6854	22.38	26.13	3.75	49.94	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	47	TOC	K1911968-002.01	1.4895 ppm	0.0334 ppm	2.2400%	2019/12/28 20:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.4659	14.6588	22.36	26.08	3.73	49.93	10:25
2	TOC	1.5132	15.1317	22.68	26.43	3.75	49.92	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	24.5875 ppm (PASS)	0.0000 ppm	0%	2019/12/28 21:07

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.5875	245.8750	176.36	180.03	3.67	49.92	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0696 ppm (PASS)	0.0000 ppm	0%	2019/12/28 21:21

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0696	0.6961	9.94	13.73	3.80	49.92	10:35

Completion State: Success - Criteria met.
Success Action: Do Nothing
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)
STD Conc - Pos D: 0 ppmC

Sample Type: Sample — From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	48	TOC	K1911968-003.01	0.9837 ppm	0.0488 ppm	4.9600%	2019/12/28 21:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0182	10.1818	19.32	22.91	3.59	49.90	10:28
2	TOC	0.9492	9.4923	18.85	22.61	3.76	49.91	10:27

Dilution: 1:10
Blank Contribution: (TC) 12.4067 (IC) (v1332)
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	49	TOC	K1911968-004.01	1.3393 ppm	0.0302 ppm	2.2600%	2019/12/28 22:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.3607	13.6070	21.64	25.30	3.65	49.91	10:28
2	TOC	1.3180	13.1797	21.35	25.07	3.72	49.90	10:26

Dilution: 1:10
Blank Contribution: (TC) 12.4067 (IC) (v1332)
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	50	TOC	K1911968-005.01	0.0000 ppm	0.0000 ppm	0.0000%	2019/12/28 22:32

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	9.84	13.63	3.79	49.92	10:25
2	TOC	0.0000	0.0000	9.88	13.46	3.58	49.91	10:25

Dilution: 1:10
Blank Contribution: (TC) 12.4067 (IC) (v1332)
Method: CAS_salt_010711 (v4)
Calibration: CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time

◆	51	TOC	K1911914-001.15	0.8684 ppm	0.0008 ppm	0.1000%	2019/12/28 23:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8678	8.6776	18.30	21.91	3.62	49.91	10:26
2	TOC	0.8689	8.6894	18.30	21.90	3.60	49.92	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	52	TOC	K1911914-001.15 ms	27.6635 ppm	0.0000 ppm	0.0000%	2019/12/28 23:28

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.6635	276.6352	200.18	203.73	3.54	49.90	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	53	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2019/12/28 23:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	9.34	13.06	3.73	49.90	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	54	TOC	K1911914-002.15	1.8244 ppm	0.0514 ppm	2.8100%	2019/12/28 23:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.8607	18.6070	25.04	28.69	3.65	49.91	10:26
2	TOC	1.7881	17.8807	24.54	28.23	3.69	49.89	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	55	TOC	K1911914-003.15	3.4734 ppm	0.0652 ppm	1.8800%	2019/12/29 00:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.5195	35.1953	36.30	39.92	3.63	49.92	10:27
2	TOC	3.4273	34.2730	35.67	39.10	3.43	49.89	10:23

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8390	8.3904	18.10	21.56	3.46	49.89	10:29
2	TOC	0.8003	8.0029	17.84	21.44	3.60	49.89	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	57	TOC	K1911914-005.15	5.9870 ppm	0.0131 ppm	0.2200%	2019/12/29 01:22

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.9963	59.9627	53.11	56.59	3.48	49.85	10:29
2	TOC	5.9777	59.7771	52.98	56.57	3.58	49.86	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	24.4132 ppm (PASS)	0.0000 ppm	0%	2019/12/29 01:50

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.4132	244.1322	175.18	178.89	3.71	49.83	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2019/12/29 02:04

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	8.80	12.34	3.55	49.79	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D

Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	58	TOC	MB4	0.0000 ppm	0.0000 ppm	0.0000%	2019/12/29 02:19

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.16	11.78	3.61	49.79	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> LCS From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	25.7148 ppm (PASS)	0.0000 ppm	0%	2019/12/29 02:34

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	25.7148	257.1480	184.01	187.45	3.44	49.78	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	25 ppmC

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	59	TOC	K1911914-006.15	9.7776 ppm	0.0566 ppm	0.5800%	2019/12/29 02:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	9.8176	98.1761	79.05	82.68	3.63	49.78	10:25
2	TOC	9.7376	97.3761	78.50	82.20	3.70	49.79	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	60	TOC	K1911914-007.15	0.6040 ppm	0.0643 ppm	10.6400%	2019/12/29 03:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time

1	TOC	0.6494	6.4944	16.81	20.50	3.68	49.78	10:26
2	TOC	0.5585	5.5854	16.20	19.77	3.57	49.77	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	61	TOC	K1911914-008.15	0.0000 ppm	0.0000 ppm	0.0000%	2019/12/29 03:45

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.95	12.59	3.64	49.78	10:26
2	TOC	0.0000	0.0000	8.91	12.36	3.45	49.80	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	62	TOC	K1911914-009.15	0.0000 ppm	0.0000 ppm	0.0000%	2019/12/29 04:13

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.15	11.75	3.60	49.81	10:25
2	TOC	0.0000	0.0000	8.11	11.69	3.58	49.80	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	63	TOC	K1911970-001.17	0.0000 ppm	0.0000 ppm	0.0000%	2019/12/29 04:41

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.88	11.51	3.63	49.83	10:30
2	TOC	0.0000	0.0000	7.73	11.42	3.69	49.84	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	64	TOC	K1911970-002.17	0.9744 ppm	0.0217 ppm	2.2200%	2019/12/29 05:09

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9897	9.8975	19.12	22.79	3.67	49.84	10:30
2	TOC	0.9591	9.5910	18.92	22.49	3.58	49.84	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	65	TOC	K1911970-003.17	0.3851 ppm	0.0178 ppm	4.6300%	2019/12/29 05:38

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3725	3.7247	14.94	18.63	3.70	49.83	10:29
2	TOC	0.3977	3.9767	15.11	18.56	3.46	49.86	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	66	TOC	K1911970-003.17 ms	27.0306 ppm	0.0000 ppm	0.0000%	2019/12/29 06:06

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.0306	270.3063	195.89	199.51	3.62	49.85	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	24.2255 ppm (PASS)	0.0000 ppm	0%	2019/12/29 06:21

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.2255	242.2554	173.90	177.52	3.62	49.84	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2019/12/29 06:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.48	11.18	3.69	49.86	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria	Do Nothing	CAS_salt_010711	CAS_salt_010711	0 ppmC

met.	(v4)	(v30)

Sample Type: Sample From Schedule Version 2

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	67	TOC	K1911970-004.17	17.4134 ppm	0.1151 ppm	0.6600%	2019/12/29 06:50

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	17.3320	173.3196	130.06	133.74	3.69	49.86	10:30
2	TOC	17.4948	174.9475	131.16	134.76	3.60	49.86	10:23

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	68	TOC	K1911970-005.17	1.1167 ppm	0.0674 ppm	6.0400%	2019/12/29 07:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1643	11.6432	20.31	23.95	3.64	49.87	10:28
2	TOC	1.0690	10.6900	19.66	23.22	3.56	49.86	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	69	TOC	K1912074-001.01 100x	8.7294 ppm	0.0430 ppm	0.4900%	2019/12/29 07:46

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	8.6990	86.9901	71.46	75.03	3.58	49.89	10:31
2	TOC	8.7598	87.5985	71.87	75.53	3.66	49.87	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	70	TOC	K1912074-002.01 100x	6.8472 ppm	0.0325 ppm	0.4700%	2019/12/29 08:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	6.8702	68.7017	59.04	62.60	3.55	49.87	10:28
2	TOC	6.8242	68.2421	58.73	62.52	3.79	49.89	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 12.4067 (IC) (v1332)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time

◆	71	TOC	K1912040-001.15	1.5021 ppm	0.0580 ppm	3.8600%	2019/12/29 08:43

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.5431	15.4308	22.88	26.63	3.75	49.87	10:31
2	TOC	1.4610	14.6102	22.32	25.86	3.53	49.86	10:25

Dilution 1:10 | **Blank Contribution** (TC) 12.4067 (IC) (v1332) | **Method** CAS_salt_010711 (v4) | **Calibration** CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	72	TOC	K1912040-002.15	16.3335 ppm	0.0851 ppm	0.5200%	2019/12/29 09:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	16.3937	163.9368	123.69	127.23	3.54	49.87	10:27
2	TOC	16.2733	162.7332	122.87	126.56	3.69	49.87	10:32

Dilution 1:10 | **Blank Contribution** (TC) 12.4067 (IC) (v1332) | **Method** CAS_salt_010711 (v4) | **Calibration** CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	73	TOC	K1912040-003.15	3.2244 ppm	0.0458 ppm	1.4200%	2019/12/29 09:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.2569	32.5685	34.51	38.15	3.64	49.87	10:31
2	TOC	3.1920	31.9203	34.07	37.70	3.62	49.88	10:29

Dilution 1:10 | **Blank Contribution** (TC) 12.4067 (IC) (v1332) | **Method** CAS_salt_010711 (v4) | **Calibration** CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm — From Schedule Version 2

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	24.2674 ppm (PASS)	0.0000 ppm	0%	2019/12/29 10:07

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.2674	242.6738	174.19	177.71	3.52	49.88	10:31

Completion State Success - Criteria met. | **Success Action** Do Nothing | **Method** CAS_salt_010711 (v4) | **Calibration** CAS_salt_010711 (v30) | **STD Conc - Pos B** 50 ppmC

Sample Type: Check Standard --> CCB — From Schedule Version 2

			Concentration			Min / Max				

	Pos	BAT	(ppm)	Dil	Sample ID	(% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2019/12/29 10:22

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.26	10.83	3.57	49.86	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1331	6.0703	3.0960	0.0000	0.0000	0.0000	2019/12/27 15:34	Fusion1 (Fusion1)
v1332	6.2033	2.5850	0.0000	0.0000	0.0000	2019/12/27 19:09	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version:	v30	Calibration curve formula:	TOC: y = 6.788x + 9.463
Ver Creation:	2019/03/05 17:42	r^2 value:	TOC: r^2 = 0.99963
Comment:			
Operator:	Fusion1 (Fusion1)		
Basic Analysis Type	TOC		

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	7.8970	0.0000		2019/03/05 16:15
0.500 ppm	11.5280	0.5000		2019/03/05 16:29
1.0 ppm	14.9760	1.0000		2019/03/05 16:44
5.0 ppm	43.6500	5.0000		2019/03/05 16:58
10 ppm	79.6020	10.0000		2019/03/05 17:12
25 ppm	183.3580	25.0000		2019/03/05 17:26
50 ppm	346.3230	50.0000		2019/03/05 17:40

Methods

Name: CAS_salt_010711 (TOC)

Version: v4 Operator: Fusion1 (Fusion1)
Ver Creation: 2019/02/21 17:57
Comment:

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml
UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml
BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date

1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2019/12/29 10:37

ALS Environmental

StarLIMS Run: 664898, 664900, 664901, 664902

Analysis: DOC/TOC

Method: SM 5310 C, 9060A, 415.1, 9060

CCV: 11-GEN-05-82C 50 ppm LCS: 11-GEN-05-79J 25.0 ppm

ICAL Date: 3/6/19

ICAL ID: 11-GEN-05-76H

ICS ID: 11-GEN-05-78M

ICS TV: 25.0 ppm ICS % R < 1

Spike ID: 11-GEN-05-82C 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor

Sodium Persulfate: 11-GEN-05-83H

21 % H3PO4: 11-GEN-05-83G

Equipment ID: K-TOC-03

PIPETTE ID: 124276B, 129001F, N11314F, Marge

FILTER ID: 16967789

Analyzed By: BCP	Date Analyzed: 12/27/19
Reviewed By: JC	Date Reviewed: 12/31/19

Work Request # Original ( ) K1911934, 11980, 11981, 11995, 11998, 12042, 11912, 11968, 12074, 12105, 12140, 11963

Tier: I II II IV IV IV II IV II IV II II

Date Analyzed: 12/31/19

Analyst: BCP

Analysis: TOC/DOC

TOC: 665302, 665303

Run # DOC: 665304

DATA QUALITY REPORT
INORGANICS

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

1.	Is the method name and number correct and appropriate?	yes/no/NA
2.	Holding times met for all analyses and for all samples?	yes/no/NA
3.	Are calculations correct?	yes/no/NA
4.	Is the reporting basis correct? (Dry Weight)	yes/no/NA
5.	All quality control criteria met?	yes/no
6.	Is the calibration curve correlation coefficient ≥ 0.995?	yes/no/NA
7.	MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency?	yes/no/NA
8.	Are ICVs, CCVs, and CCBs all within acceptance limits?	yes/no/NA
9.	Are results for methods blanks all ND?	yes/no/NA
10.	Are all QC samples within acceptance criteria? (LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.)	yes/no/NA
11.	Are all exceptions explained?	yes/no/NA
12.	Have all applicable service requests been reviewed?	yes/no/NA
13.	Are all samples labeled correctly?	yes/no/NA
14.	Have all instructions on the service request been followed? (e.g. Special MRLs, QC on a specific sample, Form V)	yes/no/NA
15.	Are detection limits and units reported correctly?	yes/no/NA
16.	Is the unused space on the benchsheet crossed out?	yes/no/NA
17.	Was analysis turned in by the due date? (n-2) (If not record SR#)	yes/no/NA

COMMENTS: K1911934-2/2d report a high %RSD. However, these samples are less than 5x the MRL.
K1912042-5/5d report a high %RSD due to suspected non-homogenous sample.
K1911998-3 Sent for RA due to being overdiluted.

Final Approved by: _____ Date: 01/03/20

DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 665302 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K1911934-002	Carbon, Total Organic	N/A		Drinking Water	0.80 mg/L	10 mL	0.80 mg/L	1	0.07	0.50			1/1/20 04:24:00	N	I
K1911980-001	Carbon, Total Organic	N/A		Water	3.94 mg/L	10 mL	3.94 mg/L	1	0.07	0.50			1/1/20 04:52:00	N	II
K1911981-001	Carbon, Total Organic	N/A		Water	3.51 mg/L	10 mL	3.51 mg/L	1	0.07	0.50			1/1/20 05:20:00	N	II
K1911995-001	Carbon, Total Organic	N/A		Water	2.19 mg/L	10 mL	2.19 mg/L	1	0.07	0.50			12/31/19 21:48:00	N	IV
K1911998-001	Carbon, Total Organic	N/A		Ground Water	2.96 mg/L	10 mL	2.96 mg/L	1	0.07	0.50			12/31/19 22:45:00	N	IV
K1911998-002	Carbon, Total Organic	N/A		Ground Water	0.92 mg/L	10 mL	92 mg/L	100	7	50			12/31/19 23:14:00	N	IV
K1911998-003	Carbon, Total Organic	N/A		Ground Water	0.00 mg/L	10 mL	500 mg/L U	1000	70	500			12/31/19 23:42:00	N	IV
K1911998-004	Carbon, Total Organic	N/A		Ground Water	9.94 mg/L	10 mL	9.94 mg/L	1	0.07	0.50			1/1/20 00:10:00	N	IV
K1911998-005	Carbon, Total Organic	N/A		Ground Water	2.54 mg/L	10 mL	127 mg/L	50	4	25			1/1/20 01:07:00	N	IV
K1911998-006	Carbon, Total Organic	N/A		Ground Water	1.75 mg/L	10 mL	1.75 mg/L	1	0.07	0.50			1/1/20 01:35:00	N	IV
K1912042-001	Carbon, Total Organic	N/A		Ground Water	4.44 mg/L	10 mL	4.44 mg/L	1	0.07	0.50			1/1/20 02:03:00	N	IV
K1912042-002	Carbon, Total Organic	N/A		Ground Water	4.10 mg/L	10 mL	4.10 mg/L	1	0.07	0.50			1/1/20 02:32:00	N	IV
K1912042-003	Carbon, Total Organic	N/A		Ground Water	13.05 mg/L	10 mL	13.1 mg/L	1	0.07	0.50			1/1/20 03:00:00	N	IV
K1912042-004	Carbon, Total Organic	N/A		Ground Water	13.77 mg/L	10 mL	13.8 mg/L	1	0.07	0.50			1/1/20 03:28:00	N	IV
K1912042-005	Carbon, Total Organic	N/A		Ground Water	3.48 mg/L	10 mL	3.48 mg/L	1	0.07	0.50			1/1/20 03:56:00	N	IV
KQ1919248-01	Carbon, Total Organic	CCV		Water	23.98 mg/L	10 mL	24.0 mg/L	1					12/31/19 20:35:00	N	IV
KQ1919248-02	Carbon, Total Organic	CCV		Water	25.08 mg/L	10 mL	25.1 mg/L	1					1/1/20 00:38:00	N	IV
KQ1919248-03	Carbon, Total Organic	CCV		Water	24.03 mg/L	10 mL	24.0 mg/L	1					1/1/20 05:48:00	N	IV
KQ1919248-04	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			12/31/19 20:49:00	N	IV
KQ1919248-05	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 00:53:00	N	IV
KQ1919248-06	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 06:03:00	N	IV
KQ1919248-07	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			12/31/19 21:04:00	N	IV
KQ1919248-08	Carbon, Total Organic	LCS		Water	25.12 mg/L	10 mL	25.1 mg/L	1	0.07	0.50	100		12/31/19 21:19:00	N	IV
KQ1919248-09	Carbon, Total Organic	MS	K1911995-001	Water	28.29 mg/L	10 mL	28.3 mg/L	1	0.07	0.50	104		12/31/19 22:16:00	N	IV
KQ1919248-10	Carbon, Total Organic	DUP	K1911934-002	Drinking Water	0.63 mg/L	10 mL	0.63 mg/L	1	0.07	0.50		23*	1/1/20 04:24:00	N	I
KQ1919248-11	Carbon, Total Organic	DUP	K1911980-001	Water	3.92 mg/L	10 mL	3.92 mg/L	1	0.07	0.50		<1	1/1/20 04:52:00	N	II
KQ1919248-12	Carbon, Total Organic	DUP	K1911981-001	Water	3.50 mg/L	10 mL	3.50 mg/L	1	0.07	0.50		<1	1/1/20 05:20:00	N	II
KQ1919248-13	Carbon, Total Organic	DUP	K1911995-001	Water	2.23 mg/L	10 mL	2.23 mg/L	1	0.07	0.50		2	12/31/19 21:48:00	N	IV
KQ1919248-14	Carbon, Total Organic	DUP	K1911998-002	Ground Water	0.88 mg/L	10 mL	88 mg/L	100	7	50		5	12/31/19 23:14:00	N	IV

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

01/03/20

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 665302 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1919248-15	Carbon, Total Organic	DUP	K1911998-001	Ground Water	2.86 mg/L	10 mL	2.86 mg/L	1	0.07	0.50		3	12/31/19 22:45:00	N	IV
KQ1919248-16	Carbon, Total Organic	DUP	K1911998-003	Ground Water	0.00 mg/L	10 mL	500 mg/L U	1000	70	500		NC	12/31/19 23:42:00	N	IV
KQ1919248-17	Carbon, Total Organic	DUP	K1911998-004	Ground Water	9.77 mg/L	10 mL	9.77 mg/L	1	0.07	0.50		2	1/1/20 00:10:00	N	IV
KQ1919248-18	Carbon, Total Organic	DUP	K1911998-005	Ground Water	2.50 mg/L	10 mL	125 mg/L	50	4	25		2	1/1/20 01:07:00	N	IV
KQ1919248-19	Carbon, Total Organic	DUP	K1911998-006	Ground Water	1.77 mg/L	10 mL	1.77 mg/L	1	0.07	0.50		1	1/1/20 01:35:00	N	IV
KQ1919248-20	Carbon, Total Organic	DUP	K1912042-002	Ground Water	4.01 mg/L	10 mL	4.01 mg/L	1	0.07	0.50		2	1/1/20 02:32:00	N	IV
KQ1919248-21	Carbon, Total Organic	DUP	K1912042-001	Ground Water	4.41 mg/L	10 mL	4.41 mg/L	1	0.07	0.50		<1	1/1/20 02:03:00	N	IV
KQ1919248-22	Carbon, Total Organic	DUP	K1912042-003	Ground Water	13.43 mg/L	10 mL	13.4 mg/L	1	0.07	0.50		3	1/1/20 03:00:00	N	IV
KQ1919248-23	Carbon, Total Organic	DUP	K1912042-004	Ground Water	14.50 mg/L	10 mL	14.5 mg/L	1	0.07	0.50		5	1/1/20 03:28:00	N	IV
KQ1919248-24	Carbon, Total Organic	DUP	K1912042-005	Ground Water	3.01 mg/L	10 mL	3.01 mg/L	1	0.07	0.50		14*	1/1/20 03:56:00	N	IV

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Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 665303 **Method/Testcode:** SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K1911912-001	Carbon, Total Organic	N/A		Water	1.32 mg/L	10 mL	1.32 mg/L	1	0.07	0.50			1/1/20 07:44:00	N	II
K1911912-002	Carbon, Total Organic	N/A		Water	0.42 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 08:12:00	N	II
K1911912-003	Carbon, Total Organic	N/A		Water	0.62 mg/L	10 mL	0.62 mg/L	1	0.07	0.50			1/1/20 08:40:00	N	II
K1911912-004	Carbon, Total Organic	N/A		Water	0.35 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 09:08:00	N	II
K1911968-004	Carbon, Total Organic	N/A		Water	1.15 mg/L	10 mL	1.15 mg/L	1	0.07	0.50			1/1/20 09:36:00	N	IV
K1911968-005	Carbon, Total Organic	N/A		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 10:34:00	N	IV
K1912074-003	Carbon, Total Organic	N/A		Water	7.12 mg/L	10 mL	7.12 mg/L	1	0.07	0.50			1/1/20 11:02:00	N	II
K1912105-001	Carbon, Total Organic	N/A		Water	2.46 mg/L	10 mL	2.46 mg/L	1	0.07	0.50			1/1/20 06:47:00	N	IV
K1912140-001	Carbon, Total Organic	N/A		Water	7.36 mg/L	10 mL	7.36 mg/L	1	0.07	0.50			1/1/20 11:30:00	N	II
KQ1919247-01	Carbon, Total Organic	CCV		Water	24.03 mg/L	10 mL	24.0 mg/L	1					1/1/20 05:48:00	N	IV
KQ1919247-02	Carbon, Total Organic	CCV		Water	23.99 mg/L	10 mL	24.0 mg/L	1					1/1/20 10:04:00	N	IV
KQ1919247-03	Carbon, Total Organic	CCV		Water	23.70 mg/L	10 mL	23.7 mg/L	1					1/1/20 15:01:00	N	IV
KQ1919247-04	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 06:03:00	N	IV
KQ1919247-05	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 10:19:00	N	IV
KQ1919247-06	Carbon, Total Organic	CCB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 15:15:00	N	IV
KQ1919247-07	Carbon, Total Organic	MB		Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 06:18:00	N	IV
KQ1919247-08	Carbon, Total Organic	LCS		Water	25.08 mg/L	10 mL	25.1 mg/L	1	0.07	0.50	100		1/1/20 06:32:00	N	IV
KQ1919247-09	Carbon, Total Organic	MS	K1912105-001	Water	28.13 mg/L	10 mL	28.1 mg/L	1	0.07	0.50	103		1/1/20 07:15:00	N	IV
KQ1919247-10	Carbon, Total Organic	DUP	K1911912-001	Water	1.28 mg/L	10 mL	1.28 mg/L	1	0.07	0.50		3	1/1/20 07:44:00	N	II
KQ1919247-11	Carbon, Total Organic	DUP	K1911912-002	Water	0.40 mg/L	10 mL	0.40 mg/L J	1	0.07	0.50		NC	1/1/20 08:12:00	N	II
KQ1919247-12	Carbon, Total Organic	DUP	K1911912-003	Water	0.63 mg/L	10 mL	0.63 mg/L	1	0.07	0.50		2	1/1/20 08:40:00	N	II
KQ1919247-13	Carbon, Total Organic	DUP	K1911912-004	Water	0.35 mg/L	10 mL	0.35 mg/L J	1	0.07	0.50		NC	1/1/20 09:08:00	N	II
KQ1919247-14	Carbon, Total Organic	DUP	K1911968-004	Water	1.21 mg/L	10 mL	1.21 mg/L	1	0.07	0.50		5	1/1/20 09:36:00	N	IV
KQ1919247-15	Carbon, Total Organic	DUP	K1911968-005	Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50		NC	1/1/20 10:34:00	N	IV
KQ1919247-16	Carbon, Total Organic	DUP	K1912074-003	Water	7.18 mg/L	10 mL	7.18 mg/L	1	0.07	0.50		<1	1/1/20 11:02:00	N	II
KQ1919247-17	Carbon, Total Organic	DUP	K1912105-001	Water	2.33 mg/L	10 mL	2.33 mg/L	1	0.07	0.50		5	1/1/20 06:47:00	N	IV
KQ1919247-18	Carbon, Total Organic	DUP	K1912140-001	Water	7.35 mg/L	10 mL	7.35 mg/L	1	0.07	0.50		<1	1/1/20 11:30:00	N	II

01/03/20

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Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 665304 **Method/Testcode:** SM 5310 C/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
K1911963-001	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	2.40 mg/L	10 mL	2.40 mg/L	1	0.07	0.50			1/1/20 12:13:00	N	II
K1911963-002	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	2.38 mg/L	10 mL	2.38 mg/L	1	0.07	0.50			1/1/20 12:41:00	N	II
K1911963-003	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	0.51 mg/L	10 mL	0.51 mg/L	1	0.07	0.50			1/1/20 13:09:00	N	II
K1911963-004	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	1.57 mg/L	10 mL	1.57 mg/L	1	0.07	0.50			1/1/20 13:37:00	N	II
K1911963-005	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	1.50 mg/L	10 mL	1.50 mg/L	1	0.07	0.50			1/1/20 14:05:00	N	II
K1911963-006	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	1.96 mg/L	10 mL	1.96 mg/L	1	0.07	0.50			1/1/20 14:33:00	N	II
K1911963-007	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	2.14 mg/L	10 mL	2.14 mg/L	1	0.07	0.50			1/1/20 16:00:00	N	II
K1911963-008	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	1.92 mg/L	10 mL	1.92 mg/L	1	0.07	0.50			1/1/20 16:28:00	N	II
K1911963-009	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	1.95 mg/L	10 mL	1.95 mg/L	1	0.07	0.50			1/1/20 16:56:00	N	II
K1911963-010	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	2.04 mg/L	10 mL	2.04 mg/L	1	0.07	0.50			1/1/20 17:25:00	N	II
K1911963-011	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	1.93 mg/L	10 mL	1.93 mg/L	1	0.07	0.50			1/1/20 17:53:00	N	II
K1911963-012	Carbon, Dissolved Organic (DOC)	N/A		Surface Water	0.46 mg/L	10 mL	0.46 mg/L J	1	0.07	0.50			1/1/20 18:21:00	N	II
KQ1919246-01	Carbon, Dissolved Organic (DOC)	MS	K1911963-012	Surface Water	27.18 mg/L	10 mL	27.2 mg/L	1	0.07	0.50	107		1/1/20 18:49:00	N	II
KQ1919246-02	Carbon, Dissolved Organic (DOC)	CCV		Surface Water	23.99 mg/L	10 mL	24.0 mg/L	1					1/1/20 10:04:00	N	II
KQ1919246-03	Carbon, Dissolved Organic (DOC)	CCV		Surface Water	23.70 mg/L	10 mL	23.7 mg/L	1					1/1/20 15:01:00	N	II
KQ1919246-04	Carbon, Dissolved Organic (DOC)	CCV		Surface Water	23.80 mg/L	10 mL	23.8 mg/L	1					1/1/20 19:32:00	N	II
KQ1919246-05	Carbon, Dissolved Organic (DOC)	CCB		Surface Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 10:19:00	N	II
KQ1919246-06	Carbon, Dissolved Organic (DOC)	CCB		Surface Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 15:15:00	N	II
KQ1919246-07	Carbon, Dissolved Organic (DOC)	CCB		Surface Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 19:46:00	N	II
KQ1919246-08	Carbon, Dissolved Organic (DOC)	MB		Surface Water	0.00 mg/L	10 mL	0.50 mg/L U	1	0.07	0.50			1/1/20 15:30:00	N	II
KQ1919246-09	Carbon, Dissolved Organic (DOC)	LCS		Surface Water	24.87 mg/L	10 mL	24.9 mg/L	1	0.07	0.50	99		1/1/20 15:45:00	N	II
KQ1919246-10	Carbon, Dissolved Organic (DOC)	DUP	K1911963-001	Surface Water	2.35 mg/L	10 mL	2.35 mg/L	1	0.07	0.50		2	1/1/20 12:13:00	N	II
KQ1919246-11	Carbon, Dissolved Organic (DOC)	DUP	K1911963-002	Surface Water	2.35 mg/L	10 mL	2.35 mg/L	1	0.07	0.50		1	1/1/20 12:41:00	N	II

# indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

01/03/20

Printed 1/3/20 10:19

Results Summary

Analytical Results Summary

Instrument Name: K-TOC-03 **Analyst:** BDITZLER **Analysis Lot:** 665304 **Method/Testcode:** SM 5310 C/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1919246-12	Carbon, Dissolved Organic (DOC)	DUP	K1911963-003	Surface Water	0.51 mg/L	10 mL	0.51 mg/L	1	0.07	0.50		1	1/1/20 13:09:00	N	II
KQ1919246-13	Carbon, Dissolved Organic (DOC)	DUP	K1911963-004	Surface Water	1.53 mg/L	10 mL	1.53 mg/L	1	0.07	0.50		3	1/1/20 13:37:00	N	II
KQ1919246-14	Carbon, Dissolved Organic (DOC)	DUP	K1911963-005	Surface Water	1.40 mg/L	10 mL	1.40 mg/L	1	0.07	0.50		7	1/1/20 14:05:00	N	II
KQ1919246-15	Carbon, Dissolved Organic (DOC)	DUP	K1911963-006	Surface Water	1.93 mg/L	10 mL	1.93 mg/L	1	0.07	0.50		1	1/1/20 14:33:00	N	II
KQ1919246-16	Carbon, Dissolved Organic (DOC)	DUP	K1911963-007	Surface Water	2.00 mg/L	10 mL	2.00 mg/L	1	0.07	0.50		6	1/1/20 16:00:00	N	II
KQ1919246-17	Carbon, Dissolved Organic (DOC)	DUP	K1911963-008	Surface Water	1.89 mg/L	10 mL	1.89 mg/L	1	0.07	0.50		2	1/1/20 16:28:00	N	II
KQ1919246-18	Carbon, Dissolved Organic (DOC)	DUP	K1911963-009	Surface Water	1.82 mg/L	10 mL	1.82 mg/L	1	0.07	0.50		7	1/1/20 16:56:00	N	II
KQ1919246-19	Carbon, Dissolved Organic (DOC)	DUP	K1911963-010	Surface Water	1.90 mg/L	10 mL	1.90 mg/L	1	0.07	0.50		7	1/1/20 17:25:00	N	II
KQ1919246-20	Carbon, Dissolved Organic (DOC)	DUP	K1911963-011	Surface Water	1.88 mg/L	10 mL	1.88 mg/L	1	0.07	0.50		2	1/1/20 17:53:00	N	II
KQ1919246-21	Carbon, Dissolved Organic (DOC)	DUP	K1911963-012	Surface Water	0.46 mg/L	10 mL	0.46 mg/L J	1	0.07	0.50		<1	1/1/20 18:21:00	N	II

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TOC: 665302, 665303
DOC: 665304

Schedule: Daily Run Method 010711

Version: 80
Instrument: Fusion1
Last Saved by: Fusion1 (Fusion1)
Last Saved on: 2019/12/31 16:45 - Tuesday

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Clean)	Clean	Clean		1	True	Ready
(Blank)	Blank	Reagent/Acid Blank		1	True	Ready
D	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	10	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
1	Sample	MB1	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
2	Sample	ICS	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
3	Sample	K1911995-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
4	Sample	K1911995-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
5	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
6	Sample	K1911998-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
7	Sample	K1911998-002.01 100x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
8	Sample	K1911998-003.01 1000x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
9	Sample	K1911998-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
10	Sample	K1911998-005.01 50x	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
11	Sample	K1911998-006.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
12	Sample	K1912042-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
13	Sample	K1912042-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
14	Sample	K1912042-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
15	Sample	K1912042-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
16	Sample	K1912042-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
17	Sample	K1911934-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
18	Sample	K1911980-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
19	Sample	K1911981-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
20	Sample	MB2	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [24.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
21	Sample	K1912105-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
22	Sample	K1912105-001.01 ms	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
23	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
24	Sample	K1911912-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
25	Sample	K1911912-002.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
26	Sample	K1911912-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
27	Sample	K1911912-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
28	Sample	K1911968-004.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
29	Sample	K1911968-005.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
30	Sample	K1912074-003.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
31	Sample	K1912140-001.01	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
32	Sample	FB 12/20/19 1501	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
33	Sample	K1911963-001.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
34	Sample	K1911963-002.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
35	Sample	K1911963-003.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
36	Sample	K1911963-004.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
37	Sample	K1911963-005.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
38	Sample	K1911963-006.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready

01/03/20

Schedule: Daily Run Method 010711

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps	Use	State
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
39	Sample	MB3	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
C	Check Standard	[TOC] LCS [25.0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
40	Sample	K1911963-007.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
41	Sample	K1911963-008.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
42	Sample	K1911963-009.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
43	Sample	K1911963-010.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
44	Sample	K1911963-011.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
45	Sample	K1911963-012.01 doc	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
46	Sample	K1911963-012.01 ms doc	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
47	Sample	RB	CAS_salt_010711 (CAS_salt_010711)	2	True	Ready
B	Check Standard	[TOC] CCV 25 ppm [25 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
D	Check Standard	[TOC] CCB [0 ppm]	CAS_salt_010711 (CAS_salt_010711)	1	True	Ready
					False	

Fusion Report - Daily Run Method 010711
Tuesday, December 31, 2019 04:35 PM

(View - Reps, Unused Reps, Meta-Data, Signature, History)
Printed on 2020/01/03 09:21 - Friday

Report Summary Information

Company Location:	Gen Chem Lab		
Schedule Name:	Daily Run Method 010711	Engine Version:	1.1.5.1
Instrument Name:	Fusion1	Firmware Version:	1.2.0696
Report Version:	1 of 1	Connection:	RS232 COM1
Report Creation by Operators (schedule version):	Fusion1 (Fusion1) (v79) Fusion1 (Fusion1) (v80)		
Comment:			

Report Results

01/03/20

Sample Type: Clean — From Schedule Version 79

	Pos	Analysis Type	Sample ID	Start Time
◈	(clean)		Clean	2019/12/31 16:35

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	13.71	19.28	5.58	49.47	05:23
2	TC Clean	14.29	17.33	3.04	50.01	04:04
3	TC Clean	2.88	6.69	3.81	49.97	03:47
4	TC Clean	2.31	6.12	3.80	50.02	03:53

Sample Type: Clean — From Schedule Version 80

	Pos	Analysis Type	Sample ID	Start Time
◈	(clean)		Clean	2019/12/31 16:57

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	1.21	5.09	3.88	49.61	05:24
2	TC Clean	5.91	9.66	3.76	50.10	04:01
3	TC Clean	2.51	6.24	3.73	50.04	03:45
4	TC Clean	2.01	5.82	3.81	49.94	03:47

Sample Type: Clean From Schedule Version 80

	Pos	Analysis Type	Sample ID	Start Time
◆	(clean)		Clean	2019/12/31 17:19

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	1.28	5.01	3.73	49.37	05:20
2	TC Clean	6.29	10.12	3.84	50.05	04:01
3	TC Clean	2.28	6.27	3.99	50.05	03:44
4	TC Clean	2.20	5.97	3.77	50.08	03:46

Sample Type: Blank (Creating v1333) From Schedule Version 80

	Pos	Analysis Type	Sample ID	Start Time
◆	(blank)		Reagent/Acid Blank	2019/12/31 17:40

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	1.32	5.05	3.72	49.64	05:13
2	TC Clean	5.58	9.42	3.84	49.99	04:01
3	TC Clean	2.53	6.30	3.78	50.09	03:47
4	TC Clean	2.36	6.26	3.90	49.92	03:51
5	Reagent Blank	4.25	8.29	4.04	50.14	05:02
6	Acid Blank	1.36	5.20	3.84	49.53	05:26

Sample Type: Sample From Schedule Version 80

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	D	TOC	RB	0.0441 ppm	0.1394 ppm	316.2300%	2019/12/31 18:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4407	4.4075	11.79	15.74	3.95	50.07	10:28
2	TOC	0.0000	0.0000	7.58	11.48	3.89	50.07	10:27
3	TOC	0.0000	0.0000	6.95	10.79	3.84	50.09	10:25
4	TOC	0.0000	0.0000	7.18	11.14	3.96	50.11	10:27
5	TOC	0.0000	0.0000	6.53	10.27	3.73	50.09	10:27
6	TOC	0.0000	0.0000	6.62	10.19	3.57	50.12	10:27
7	TOC	0.0000	0.0000	6.43	10.02	3.58	50.08	10:26

8	TOC	0.0000	0.0000	6.52	10.04	3.52	50.11	10:28
9	TOC	0.0000	0.0000	6.12	9.81	3.70	50.09	10:29
10	TOC	0.0000	0.0000	6.26	10.07	3.82	50.10	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm — From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	23.9773 ppm (PASS)	0.0000 ppm	0%	2019/12/31 20:35

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	23.9773	239.7730	172.22	176.04	3.82	50.08	10:30

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB — From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2019/12/31 20:49

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.78	10.54	3.76	50.08	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample — From Schedule Version 80

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	1	TOC	MB1	0.0000 ppm	0.0000 ppm	0.0000%	2019/12/31 21:04

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.94	9.79	3.85	50.09	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> LCS From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	25.1165 ppm (PASS)	0.0000 ppm	0%	2019/12/31 21:19

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	25.1165	251.1653	179.95	183.84	3.89	50.07	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	25 ppmC

Sample Type: Sample From Schedule Version 80

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	2	TOC	ICS	0.0636 ppm	0.0000 ppm	0.0000%	2019/12/31 21:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0636	0.6361	9.23	13.06	3.83	50.09	10:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	3	TOC	K1911995-001.01	2.2088 ppm	0.0314 ppm	1.4200%	2019/12/31 21:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.1866	21.8664	23.64	27.48	3.83	50.06	10:27
2	TOC	2.2310	22.3098	23.94	27.71	3.76	50.06	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	4	TOC	K1911995-001.01 ms	28.2887 ppm	0.0000 ppm	0.0000%	2019/12/31 22:16

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	28.2887	282.8866	200.82	204.62	3.80	50.05	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time

◆	5	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2019/12/31 22:31

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.43	11.35	3.92	50.02	10:32

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	6	TOC	K1911998-001.01	2.9073 ppm	0.0683 ppm	2.3500%	2019/12/31 22:45

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.9556	29.5565	28.86	32.62	3.76	50.06	10:29
2	TOC	2.8590	28.5901	28.21	31.99	3.78	50.04	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	7	TOC	K1911998-002.01 100x	0.8965 ppm	0.0303 ppm	3.3800%	2019/12/31 23:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9179	9.1792	15.03	18.91	3.88	50.07	10:27
2	TOC	0.8750	8.7505	14.74	18.37	3.63	50.05	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	8	TOC	K1911998-003.01 1000x	0.0000 ppm	0.0000 ppm	0.0000%	2019/12/31 23:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	8.30	12.03	3.73	50.06	10:27
2	TOC	0.0000	0.0000	7.79	11.74	3.94	50.07	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	9	TOC	K1911998-004.01	9.8591 ppm	0.1210 ppm	1.2300%	2020/01/01 00:10

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	9.9447	99.4466	76.30	80.14	3.84	50.03	10:31
2	TOC	9.7735	97.7347	75.14	79.02	3.87	50.08	10:29

Dilution	Blank Contribution	Method	Calibration

1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm — From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	25.0809 ppm (PASS)	0.0000 ppm	0%	2020/01/01 00:38

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.0809	250.8088	179.71	183.63	3.92	50.04	10:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB — From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/01/01 00:53

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	7.54	11.40	3.87	50.02	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample — From Schedule Version 80

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	10	TOC	K1911998-005.01 50x	2.5177 ppm	0.0309 ppm	1.2300%	2020/01/01 01:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.5396	25.3962	26.04	29.64	3.60	50.04	10:30
2	TOC	2.4959	24.9586	25.74	29.62	3.88	50.03	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	11	TOC	K1911998-006.01	1.7592 ppm	0.0168 ppm	0.9500%	2020/01/01 01:35

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.7473	17.4733	20.66	24.42	3.76	50.04	10:29
2	TOC	1.7710	17.7105	20.82	24.62	3.79	50.03	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	12	TOC	K1912042-001.01	4.4235 ppm	0.0222 ppm	0.5000%	2020/01/01 02:03

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.4392	44.3916	38.93	42.78	3.85	50.07	10:30
2	TOC	4.4078	44.0778	38.72	42.49	3.77	50.03	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	13	TOC	K1912042-002.01	4.0549 ppm	0.0614 ppm	1.5100%	2020/01/01 02:32

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	4.0983	40.9826	36.62	40.28	3.66	50.04	10:28
2	TOC	4.0115	40.1149	36.03	39.76	3.73	50.02	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	14	TOC	K1912042-003.01	13.2410 ppm	0.2666 ppm	2.0100%	2020/01/01 03:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	13.0525	130.5252	97.40	101.21	3.82	50.04	10:26
2	TOC	13.4295	134.2952	99.96	103.63	3.67	50.04	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	15	TOC	K1912042-004.01	14.1339 ppm	0.5156 ppm	3.6500%	2020/01/01 03:28

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	13.7692	137.6924	102.26	106.01	3.75	50.01	10:24
2	TOC	14.4985	144.9847	107.21	111.01	3.80	50.04	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC)	CAS_salt_010711	CAS_salt_010711

(v1333) (v4) (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	16	TOC	K1912042-005.01	3.2440 ppm	0.3311 ppm	10.2100%	2020/01/01 03:56

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.4780	34.7804	32.41	36.29	3.88	50.01	10:27
2	TOC	3.0099	30.0986	29.23	33.20	3.97	50.04	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	17	TOC	K1911934-002.01	0.7151 ppm	0.1165 ppm	16.2900%	2020/01/01 04:24

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7974	7.9741	14.21	17.98	3.77	50.03	10:28
2	TOC	0.6327	6.3270	13.09	16.84	3.74	50.02	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	18	TOC	K1911980-001.01	3.9289 ppm	0.0122 ppm	0.3100%	2020/01/01 04:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.9375	39.3754	35.53	39.23	3.70	50.03	10:28
2	TOC	3.9203	39.2030	35.41	39.09	3.68	50.03	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	19	TOC	K1911981-001.01	3.5048 ppm	0.0034 ppm	0.1000%	2020/01/01 05:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	3.5072	35.0721	32.61	36.21	3.61	50.02	10:30
2	TOC	3.5024	35.0235	32.57	36.34	3.77	50.01	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time

◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	24.0346 ppm (PASS)	0.0000 ppm	0%	2020/01/01 05:48

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	24.0346	240.3461	172.61	176.27	3.66	50.03	10:28

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/01/01 06:03

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.34	9.85	3.50	50.01	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample From Schedule Version 80

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	20	TOC	MB2	0.0000 ppm	0.0000 ppm	0.0000%	2020/01/01 06:18

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.53	9.23	3.70	50.02	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> LCS From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	C	TOC	25.0000	1:1	[TOC] LCS [24.0 ppm]	0 / infinity (NA / NA)	25.0849 ppm (PASS)	0.0000 ppm	0%	2020/01/01 06:32

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	25.0849	250.8486	179.74	183.47	3.74	50.04	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	25 ppmC

Sample Type: Sample

From Schedule Version 80

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	21	TOC	K1912105-001.01	2.3905 ppm	0.0923 ppm	3.8600%	2020/01/01 06:47

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.4558	24.5579	25.47	29.13	3.66	50.00	10:28
2	TOC	2.3253	23.2526	24.58	28.29	3.70	50.01	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	22	TOC	K1912105-001.01 ms	28.1332 ppm	0.0000 ppm	0.0000%	2020/01/01 07:15

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	28.1332	281.3324	199.77	203.34	3.58	50.01	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	23	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/01/01 07:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	7.30	10.96	3.66	50.03	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	24	TOC	K1911912-001.01	1.3018 ppm	0.0289 ppm	2.2200%	2020/01/01 07:44

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.3222	13.2216	17.77	21.47	3.70	50.03	10:28
2	TOC	1.2814	12.8135	17.50	21.26	3.76	50.02	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time

◈	25	TOC	K1911912-002.01	0.4133 ppm	0.0138 ppm	3.3300%	2020/01/01 08:12

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4231	4.2307	11.67	15.28	3.60	50.04	10:26
2	TOC	0.4036	4.0362	11.54	15.27	3.73	50.03	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	26	TOC	K1911912-003.01	0.6258 ppm	0.0079 ppm	1.2700%	2020/01/01 08:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6202	6.2018	13.01	16.67	3.66	50.04	10:28
2	TOC	0.6314	6.3138	13.08	16.79	3.70	50.02	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	27	TOC	K1911912-004.01	0.3476 ppm	0.0006 ppm	0.1800%	2020/01/01 09:08

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.3481	3.4808	11.16	14.86	3.70	50.03	10:26
2	TOC	0.3472	3.4720	11.16	14.61	3.45	50.01	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	28	TOC	K1911968-004.01	1.1812 ppm	0.0446 ppm	3.7700%	2020/01/01 09:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1497	11.4965	16.60	20.31	3.71	50.03	10:30
2	TOC	1.2127	12.1270	17.03	20.61	3.57	50.02	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◈	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	23.9870 ppm (PASS)	0.0000 ppm	0%	2020/01/01 10:04

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	23.9870	239.8703	172.28	176.01	3.73	50.03	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/01/01 10:19

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.23	10.09	3.86	50.04	10:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample From Schedule Version 80

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	29	TOC	K1911968-005.01	0.0000 ppm	0.0000 ppm	0.0000%	2020/01/01 10:34

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.30	10.10	3.80	50.04	10:30
2	TOC	0.0000	0.0000	6.26	9.91	3.66	50.05	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	30	TOC	K1912074-003.01	7.1478 ppm	0.0402 ppm	0.5600%	2020/01/01 11:02

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	7.1194	71.1935	57.12	60.83	3.70	50.03	10:28
2	TOC	7.1762	71.7622	57.51	61.16	3.65	50.03	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	31	TOC	K1912140-001.01	7.3546 ppm	0.0080 ppm	0.1100%	2020/01/01 11:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	7.3602	73.6022	58.76	62.25	3.49	50.02	10:30
2	TOC	7.3489	73.4888	58.68	62.37	3.69	50.03	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	32	TOC	FB 12/20/19 1501	0.0000 ppm	0.0000 ppm	0.0000%	2020/01/01 11:58

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.83	10.55	3.72	50.02	10:31

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	33	TOC	K1911963-001.01 doc	2.3762 ppm	0.0331 ppm	1.3900%	2020/01/01 12:13

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.3997	23.9966	25.09	28.67	3.58	50.02	10:25
2	TOC	2.3528	23.5281	24.77	28.44	3.67	50.03	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	34	TOC	K1911963-002.01 doc	2.3673 ppm	0.0236 ppm	1.0000%	2020/01/01 12:41

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.3840	23.8405	24.98	28.84	3.86	50.04	10:27
2	TOC	2.3506	23.5060	24.76	28.37	3.61	50.03	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◈	35	TOC	K1911963-003.01 doc	0.5096 ppm	0.0047 ppm	0.9200%	2020/01/01 13:09

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5063	5.0630	12.24	16.00	3.76	50.02	10:29
2	TOC	0.5129	5.1293	12.28	15.83	3.55	50.02	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	36	TOC	K1911963-004.01 doc	1.5474 ppm	0.0310 ppm	2.0100%	2020/01/01 13:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.5694	15.6937	19.45	23.25	3.80	50.02	10:26
2	TOC	1.5255	15.2546	19.15	22.81	3.66	50.03	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	37	TOC	K1911963-005.01 doc	1.4530 ppm	0.0733 ppm	5.0500%	2020/01/01 14:05

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.5048	15.0484	19.01	22.69	3.68	50.05	10:30
2	TOC	1.4011	14.0113	18.31	22.18	3.87	50.03	10:24

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	38	TOC	K1911963-006.01 doc	1.9425 ppm	0.0184 ppm	0.9500%	2020/01/01 14:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9555	19.5549	22.07	25.96	3.89	50.07	10:27
2	TOC	1.9294	19.2942	21.90	25.73	3.84	50.03	10:25

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	23.6980 ppm (PASS)	0.0000 ppm	0%	2020/01/01 15:01

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	23.6980	236.9798	170.32	174.08	3.75	50.05	10:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/01/01 15:15

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	6.31	10.01	3.71	50.03	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Sample Type: Sample From Schedule Version 80

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	39	TOC	MB3	0.0000 ppm	0.0000 ppm	0.0000%	2020/01/01 15:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	5.21	9.12	3.91	50.03	10:33

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> LCS From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	C	TOC	25.0000	1:1	[TOC] LCS [25.0 ppm]	0 / infinity (NA / NA)	24.8695 ppm (PASS)	0.0000 ppm	0%	2020/01/01 15:45

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
C	TOC	25.0 ppm	1	24.8695	248.6947	178.28	182.07	3.80	50.03	10:31

Completion State	Success Action	Method	Calibration	STD Conc - Pos C
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	25 ppmC

Sample Type: Sample From Schedule Version 80

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	40	TOC	K1911963-007.01 doc	2.0700 ppm	0.0933 ppm	4.5100%	2020/01/01 16:00

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time

1	TOC	2.1360	21.3596	23.30	27.18	3.88	50.03	10:29
2	TOC	2.0040	20.0396	22.40	26.30	3.90	50.06	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	41	TOC	K1911963-008.01 doc	1.9025 ppm	0.0215 ppm	1.1300%	2020/01/01 16:28

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9176	19.1763	21.82	25.60	3.79	50.04	10:30
2	TOC	1.8873	18.8728	21.61	25.29	3.68	50.05	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	42	TOC	K1911963-009.01 doc	1.8852 ppm	0.0954 ppm	5.0600%	2020/01/01 16:56

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9527	19.5269	22.05	25.78	3.72	50.07	10:27
2	TOC	1.8177	18.1775	21.14	24.92	3.79	50.08	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	43	TOC	K1911963-010.01 doc	1.9715 ppm	0.0951 ppm	4.8200%	2020/01/01 17:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.0387	20.3873	22.64	26.35	3.71	50.05	10:24
2	TOC	1.9042	19.0422	21.72	25.60	3.87	50.04	10:27

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	44	TOC	K1911963-011.01 doc	1.9039 ppm	0.0315 ppm	1.6500%	2020/01/01 17:53

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9262	19.2617	21.87	25.48	3.60	50.05	10:29
2	TOC	1.8817	18.8168	21.57	25.40	3.83	50.04	10:26

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	45	TOC	K1911963-012.01 doc	0.4572 ppm	0.0020 ppm	0.4300%	2020/01/01 18:21

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4558	4.5577	11.89	15.63	3.73	50.04	10:26
2	TOC	0.4586	4.5857	11.91	15.54	3.63	50.04	10:28

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	46	TOC	K1911963-012.01 ms doc	27.1795 ppm	0.0000 ppm	0.0000%	2020/01/01 18:49

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.1795	271.7949	193.29	197.03	3.73	50.05	10:29

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

	Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆	47	TOC	RB	0.0000 ppm	0.0000 ppm	0.0000%	2020/01/01 19:03

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.0000	0.0000	6.24	10.00	3.76	50.05	10:28
2	TOC	0.0000	0.0000	6.14	9.84	3.70	50.05	10:30

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 8.7992 (IC) (v1333)	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)

Sample Type: Check Standard --> CCV 25 ppm From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	B	TOC	25.0000	1:2	[TOC] CCV 25 ppm [25 ppm]	0 / infinity (NA / NA)	23.7970 ppm (PASS)	0.0000 ppm	0%	2020/01/01 19:32

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	23.7970	237.9698	170.99	174.59	3.59	50.06	10:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	50 ppmC

Sample Type: Check Standard --> CCB From Schedule Version 80

	Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◆	D	TOC	0.0000	1:1	[TOC] CCB [0 ppm]	0 / infinity (NA / NA)	0.0000 ppm (PASS)	0.0000 ppm	0%	2020/01/01 19:46

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0 ppm	1	0.0000	0.0000	5.81	9.46	3.65	50.06	10:35

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	CAS_salt_010711 (v4)	CAS_salt_010711 (v30)	0 ppmC

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1332	6.2033	2.5850	0.0000	0.0000	0.0000	2019/12/27 19:09	Fusion1 (Fusion1)
v1333	1.4150	1.3570	0.0000	0.0000	0.0000	2019/12/31 18:14	Fusion1 (Fusion1)

Calibrations

Name: CAS_salt_010711 (TOC)

Version:	v30	Calibration curve formula:	TOC: y = 6.788x + 9.463
Ver Creation:	2019/03/05 17:42	r^2 value:	TOC: r^2 = 0.99963
Comment:			
Operator:	Fusion1 (Fusion1)		
Basic Analysis Type	TOC		

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
DI Water	7.8970	0.0000		2019/03/05 16:15
0.500 ppm	11.5280	0.5000		2019/03/05 16:29
1.0 ppm	14.9760	1.0000		2019/03/05 16:44
5.0 ppm	43.6500	5.0000		2019/03/05 16:58
10 ppm	79.6020	10.0000		2019/03/05 17:12
25 ppm	183.3580	25.0000		2019/03/05 17:26
50 ppm	346.3230	50.0000		2019/03/05 17:40

Methods

Name: CAS_salt_010711 (TOC)

Version: v4 Operator: Fusion1 (Fusion1)
Ver Creation: 2019/02/21 17:57
Comment:

Parameter	Value
SampleVolume	10.0 mL
Dilution	1:10
AcidVolume	0.5 ml
ReagentVolume	2.0 ml
UVReactorPrerinse	Off
UVReactorPrerinseVolume	5.0
NumberOfUVReactorPrerinses	1
ICSpargeTime	1.00 mins
DetectorSweepFlow	500 ml/min
PreSpargeTime	2.00 mins
SystemFlow	500 ml/min

Advanced Parameter	Value
NeedleRinseVolume	5.0 ml
VialPrimeVolume	2.0 ml
ICSamplePrimeVolume	2.0 ml
ICSpargeRinseVolume	12.0 ml
BaselineStabilizeTime	0.70 min
DetectorPressureFlow	150 ml/min
SyringeSpeedWaste	10
SyringeSpeedAcid	7
SyringeSpeedReagent	7
SyringeSpeedDIWater	7
NDIRPressurization	60 psig
SyringeSpeedSampleDispense	5
SyringeSpeedSampleAspirate	4
SyringeSpeedUVDispense	5
SyringeSpeedUVAspirate	5
SyringeSpeedICDispense	5
SyringeSpeedICAspirate	5
NDIRPressureStabilize	1.75 min
SampleMixing	Off
SampleMixingCycles	1
SampleMixingVolume	10.0
LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date

Report History

Report History

Report Version	User Name	System Reason	User Reason	Date

1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2020/01/01 20:01

ALS Environmental

StarLIMS Run: 665302, 665303, 665304

Analysis: DOC/TOC

Method: SM 5310 C, 9060A, 415.1, 9060

CCV: 11-GEN-05-82C 50 ppm LCS: 11-GEN-05-79J 25.0 ppm

ICAL Date: 3/6/19

ICAL ID: 11-GEN-05-76H

ICS ID: 11-GEN-05-78M

ICS TV: 25.0 ppm ICS % R < 1

Spike ID: 11-GEN-05-82C 0.05 ml of 5000 ppm stock ---> 10.0 ml = 25.0 ppm x dilution factor

Sodium Persulfate: 11-GEN-05-83H

21 % H3PO4: 11-GEN-05-83I

Equipment ID: K-TOC-03

PIPETTE ID: 124276B, 129001F, N11314F, Marge

FILTER ID: 16967789

Analyzed By: BCD	Date Analyzed: 12/31/19
Reviewed By: [signature]	Date Reviewed: ~~12~~/01/03/20 TH

January 10, 2020 Service Request No:R1912491

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: LHAAP / Site 58

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory December 20, 2019
For your reference, these analyses have been assigned our service request number **R1912491.**

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Janice Jaeger
Project Manager

CC: Joni Blankfield

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Rochester Laboratory
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Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

1565 Jefferson Rd, Building 300, Rochester, NY 14623 | 585-288-5380 | www.alsglobal.com

Client: ALS Environmental - US
Project: LHAAP / Site 58
Sample Matrix: Water

Service Request: R1912491
Date Received: 12/20/2019

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Five water samples were received for analysis at ALS Environmental on 12/20/2019. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivoa GC:

Method Organic Acids, 12/24/2019: The upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate. Analyte affected: Pyruvic Acid.
Method Organic Acids, 12/24/2019: Due to shifting retention times, Propionic Acid could not be reported on the first run. All samples and QC were run again on another column with more stable retention times for only Propionic Acid. The results of the two runs were merged.

Please note: This report has been revised to add the LOD and MDL.

Approved by _____ Date 12/30/2019

SAMPLE DETECTION SUMMARY

CLIENT ID: 35AWW20_121919			Lab ID: R1912491-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Acetic Acid	3.1	J	0.56	4.0	mg/L	Organic Acids

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: ALS Environmental - US
Project: LHAAP / Site 58/NWO1312.0150 **Service Request:**R1912491

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R1912491-001	35AWW10_121919	12/19/2019	0835
R1912491-002	35AWW10_121919_a	12/19/2019	0835
R1912491-003	35AWW20_121919	12/19/2019	0940
R1912491-004	35AWW06_121919	12/19/2019	1035
R1912491-005	LHSMW07_121919	12/19/2019	1130

bhate ENVIRONMENTAL CONSTRUCTION MANAGEMENT

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Page: _____ of _____

Project/Phase No: NWO1312.0150

COC Number(1): _____

LIMS Number: _____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 58

Client Name:

Collected by: Scott Beesinger

Field Sample ID (30 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code (2)	Sample Number (3)	Sample Matrix (4)	Sample Analysis Requested (5): Number of containers	Volatile Fatty Acids	Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
35AWW10_121919	19Dec2019	0835	-	N		WG	1	X				
35AWW10_121919_AV	19Dec2019	0835	-	FD		WG	1	X				
35AWW20_121919	19Dec2019	0940	-	N		WG	1	X				
35AWW06_121919	19Dec2019	1035		N		WG	1	X				
LHSMW07_121919	19Dec2019	1130		N		WG	1	X				

Quality Assurance Samples (6)

COMMENTS:

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	12/19/19	1430	1. Barry Bohen	12/20/19	1105
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped No.:

_____ Method of Shipment: _____

_____ Fed Ex _____ Airbill Number:

_____ Analytical Lab: ALS 10450 Stanciff Rd. Suite 210 Houston, TX 77099 (281) 530-5656

ATTN: SONIA WEST Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)

2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot

ALS

R1912491
ALS Laboratory Group
LHAAP / Site 58

Cooler Receipt and Preservation Check Form

R1912491 5
ALS Laboratory Group
LHAAP / Site 58

Project/Client LHAAP 58 / bhate Folder Number

Cooler received on 12/20/19 by: GB

COURIER: ALS UPS (FEDEX) VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	(Y)	N
2	**Custody papers** properly completed (ink, signed)?	(Y)	N
3	Did all bottles arrive in good **condition** (unbroken)?	(Y)	N
4	Circle: (**Wet Ice**) **Dry Ice** **Gel packs** present?	(Y)	N

5a	**Perchlorate** samples have required headspace?	Y	N	(NA)
5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	Y	N	(NA)
6	Where did the bottles originate?	(ALS/ROC)	CLIENT	
7	Soil VOA received as: Bulk Encore 5035set			(NA)

8. Temperature Readings Date: 12/20/19 Time: 1109 ID: IR#7 (IR#10) From: Temp Blank (Sample Bottle)

Observed Temp (°C)	1.4						
Within 0-6°C?	(Y) N	Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y (N)	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed (described below) Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R002 by GB on 12/20 at 1112
5035 samples placed in storage location: _____ by _____ on _____ at _____

Cooler Breakdown/Preservation Check**: Date: 12/20/19 Time: 1630 by: [illegible]

9. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? YES NO
10. Did all bottle labels and tags agree with custody papers? YES NO
11. Were correct containers used for the tests indicated? YES NO
12. Were 5035 vials acceptable (no extra lahels, not leaking)? YES NO N/A
13. Air Samples: Cassettes / Tubes Intact with MS? Canisters Pressurized Tedlar® Bags Inflated N/A

pH	Lot of test paper	Reagent	Preserved? Yes	Preserved? No	Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
≥12		NaOH								
≤2		HNO_3								
≤2		H_2SO_4								
<4		$NaHSO_4$								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522			If +, contact PM to add $Na_2S_2O_3$ (625, 608, CN), ascorbic (phenol).					
		$Na_2S_2O_3$								
		ZnAcetate	-	-						
		HCl	**	**						

**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).

Bottle lot numbers: Clear label

Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: [illegible]

PC Secondary Review: _____

*significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
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www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the ñNotesò column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an ñimmediateò hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (Ó100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

[1] Analyses were performed according to our laboratoryôs NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: ALS Environmental - US
Project: LHAAP / Site 58/NWO1312.0150
Service Request: R1912491

Sample Name: 35AWW10_121919
Lab Code: R1912491-001
Sample Matrix: Water
Date Collected: 12/19/19
Date Received: 12/20/19

Analysis Method	Extracted/Digested By	Analyzed By
Organic Acids		AFELSER

Sample Name: 35AWW10_121919_a
Lab Code: R1912491-002
Sample Matrix: Water
Date Collected: 12/19/19
Date Received: 12/20/19

Analysis Method	Extracted/Digested By	Analyzed By
Organic Acids		AFELSER

Sample Name: 35AWW20_121919
Lab Code: R1912491-003
Sample Matrix: Water
Date Collected: 12/19/19
Date Received: 12/20/19

Analysis Method	Extracted/Digested By	Analyzed By
Organic Acids		AFELSER

Sample Name: 35AWW06_121919
Lab Code: R1912491-004
Sample Matrix: Water
Date Collected: 12/19/19
Date Received: 12/20/19

Analysis Method	Extracted/Digested By	Analyzed By
Organic Acids		AFELSER

Sample Name: LHSMW07_121919
Lab Code: R1912491-005
Sample Matrix: Water
Date Collected: 12/19/19
Date Received: 12/20/19

Analysis Method	Extracted/Digested By	Analyzed By
Organic Acids		AFELSER

INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction
For analytical methods not listed, the preparation method is the same as the analytical method reference.	

Sample Results

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Semivolatile Organic Compounds by GC

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	R1912491
Project:	LHAAP / Site 58/NWO1312.0150	**Date Collected:**	12/19/19 08:35
Sample Matrix:	Water	**Date Received:**	12/20/19 11:05
Sample Name:	35AWW10_121919	**Units:**	mg/L
Lab Code:	R1912491-001	**Basis:**	NA

Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Analysis Method: Organic Acids

Analyte Name	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
Pyruvic Acid	ND U	0.20	0.10	0.016	1	12/25/19 06:00	
Acetic Acid	ND U	4.0	2.0	0.56	1	12/25/19 06:00	
Butanoic Acid (Butyric Acid)	ND U	2.0	1.0	0.32	1	12/25/19 06:00	
Lactic Acid	ND U	2.0	1.0	0.14	1	12/25/19 06:00	
Propionic Acid	ND U	2.0	1.0	0.19	1	12/27/19 06:09	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	R1912491
Project:	LHAAP / Site 58/NWO1312.0150	**Date Collected:**	12/19/19 08:35
Sample Matrix:	Water	**Date Received:**	12/20/19 11:05
Sample Name:	35AWW10_121919_a	**Units:**	mg/L
Lab Code:	R1912491-002	**Basis:**	NA

Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Analysis Method: Organic Acids

Analyte Name	Result		LOQ	LOD	MDL	Dil.	Date Analyzed	Q
Pyruvic Acid	ND	U	0.20	0.10	0.016	1	12/25/19 06:43	
Acetic Acid	ND	U	4.0	2.0	0.56	1	12/25/19 06:43	
Butanoic Acid (Butyric Acid)	ND	U	2.0	1.0	0.32	1	12/25/19 06:43	
Lactic Acid	ND	U	2.0	1.0	0.14	1	12/25/19 06:43	
Propionic Acid	ND	U	2.0	1.0	0.19	1	12/27/19 06:52	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	R1912491
Project:	LHAAP / Site 58/NWO1312.0150	**Date Collected:**	12/19/19 09:40
Sample Matrix:	Water	**Date Received:**	12/20/19 11:05
Sample Name:	35AWW20_121919	**Units:**	mg/L
Lab Code:	R1912491-003	**Basis:**	NA

Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Analysis Method: Organic Acids

Analyte Name	Result		LOQ	LOD	MDL	Dil.	Date Analyzed	Q
Pyruvic Acid	ND	U	0.20	0.10	0.016	1	12/25/19 07:26	
Acetic Acid	**3.1**	**J**	4.0	2.0	0.56	1	12/25/19 07:26	
Butanoic Acid (Butyric Acid)	ND	U	2.0	1.0	0.32	1	12/25/19 07:26	
Lactic Acid	ND	U	2.0	1.0	0.14	1	12/25/19 07:26	
Propionic Acid	ND	U	2.0	1.0	0.19	1	12/27/19 07:35	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	R1912491
Project:	LHAAP / Site 58/NWO1312.0150	**Date Collected:**	12/19/19 10:35
Sample Matrix:	Water	**Date Received:**	12/20/19 11:05
Sample Name:	35AWW06_121919	**Units:**	mg/L
Lab Code:	R1912491-004	**Basis:**	NA

Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Analysis Method: Organic Acids

Analyte Name	Result		LOQ	LOD	MDL	Dil.	Date Analyzed	Q
Pyruvic Acid	ND	U	0.20	0.10	0.016	1	12/25/19 08:09	
Acetic Acid	ND	U	4.0	2.0	0.56	1	12/25/19 08:09	
Butanoic Acid (Butyric Acid)	ND	U	2.0	1.0	0.32	1	12/25/19 08:09	
Lactic Acid	ND	U	2.0	1.0	0.14	1	12/25/19 08:09	
Propionic Acid	ND	U	2.0	1.0	0.19	1	12/27/19 08:18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	R1912491
Project:	LHAAP / Site 58/NWO1312.0150	**Date Collected:**	12/19/19 11:30
Sample Matrix:	Water	**Date Received:**	12/20/19 11:05
Sample Name:	LHSMW07_121919	**Units:**	mg/L
Lab Code:	R1912491-005	**Basis:**	NA

Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Analysis Method: Organic Acids

Analyte Name	Result		LOQ	LOD	MDL	Dil.	Date Analyzed	Q
Pyruvic Acid	ND	U	0.20	0.10	0.016	1	12/25/19 08:49	
Acetic Acid	ND	U	4.0	2.0	0.56	1	12/25/19 08:49	
Butanoic Acid (Butyric Acid)	ND	U	2.0	1.0	0.32	1	12/25/19 08:49	
Lactic Acid	ND	U	2.0	1.0	0.14	1	12/25/19 08:49	
Propionic Acid	ND	U	2.0	1.0	0.19	1	12/27/19 08:58	

QC Summary Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Semivolatile Organic Compounds by GC

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
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www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	R1912491
Project:	LHAAP / Site 58/NWO1312.0150	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	mg/L
Lab Code:	RQ1915097-02	**Basis:**	NA

Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Analysis Method: Organic Acids

Analyte Name	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Q
Pyruvic Acid	ND U	0.20	0.10	0.016	1	12/24/19 13:32	
Acetic Acid	ND U	4.0	2.0	0.56	1	12/24/19 13:32	
Butanoic Acid (Butyric Acid)	ND U	2.0	1.0	0.32	1	12/24/19 13:32	
Lactic Acid	ND U	2.0	1.0	0.14	1	12/24/19 13:32	
Propionic Acid	ND U	2.0	1.0	0.19	1	12/26/19 13:41	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: LHAAP / Site 58/NWO1312.0150
Sample Matrix: Water

Service Request: R1912491
Date Analyzed: 12/24/19 - 12/26/19

Duplicate Lab Control Sample Summary
Organic Acids in Aqueous Matrices by High Performance Liquid Chromatography (HPLC) 28 Day Hold Time

Units: mg/L
Basis: NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ1915097-03			RQ1915097-04					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Pyruvic Acid	Organic Acids	2.49	2.02	123 *	2.31	2.02	114	73-122	7	30
Acetic Acid	Organic Acids	21.9	20.1	109	19.7	20.1	98	80-130	10	30
Butanoic Acid (Butyric Acid)	Organic Acids	19.8	19.9	99	18.8	19.9	94	86-128	5	30
Lactic Acid	Organic Acids	23.2	19.9	117 *	21.3	19.9	107	81-114	9	30
Propionic Acid	Organic Acids	21.1	20.3	104	20.3	20.3	100	63-153	4	30

2655 Park Center Dr., Suite A
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LABORATORY REPORT

January 7, 2020

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road Suite 210
Houston, TX 77099-4338

RE: HS19121155

Dear RJ:

Enclosed are the results of the samples submitted to our laboratory on December 21, 2019. For your reference, these analyses have been assigned our service request number P1907802.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Hayden Akers at 5:02 pm, Jan 07, 2020

Hayden Akers
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

Client: ALS Laboratory Group
Project: HS19121155

Service Request No: P1907802

CASE NARRATIVE

The samples were received intact under chain of custody on December 21, 2019 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Carbon Dioxide Analysis

The samples were analyzed for carbon dioxide using a gas chromatograph equipped with a thermal conductivity detector (TCD). A known amount of liquid was displaced by injecting 8.0 milliliters of helium creating a headspace in the sample vial. Each sample vial was agitated using a sonic disrupter for fifteen minutes and then allowed to equilibrate for at least four hours. A volume of the headspace was withdrawn using a gas-tight syringe and analyzed using a manual injection technique. The amount of dissolved gases (carbon dioxide) in the original sample was calculated using Henry's Law. This method was performed with guidance from RSK 175 as described in laboratory SOP VOA-DISGAS. This analyte is included on the laboratory's NELAP and DoD-ELAP scope of accreditation.

Methane, Ethene and Ethane Analysis

The samples were also analyzed for methane, ethene, and ethane using a gas chromatograph equipped with a flame ionization detector (FID). A known amount of liquid was displaced by injecting 8.0 milliliters of helium creating a headspace in the sample vial. Each sample vial was agitated using a sonic disrupter for fifteen minutes and then allowed to equilibrate for at least two hours. A volume of the headspace was withdrawn using a gas-tight syringe and analyzed using a manual injection technique. The amount of dissolved gases (methane, ethene and ethane) in the original sample was calculated using Henry's Law.

This method was performed with guidance from RSK 175. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the laboratory's NELAP or DoD-ELAP accreditation.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1776326
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-006
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413-19-10
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272019-10
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: ALS Laboratory Group
Project ID: HS19121155

Service Request: P1907802

Date Received: 12/21/2019
Time Received: 10:30

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	RSK 175 - CO2	RSK 175 - Gases
35AWW10-121919	P1907802-001	Water	12/19/2019	08:35	X	X
35AWW10-121919_a	P1907802-002	Water	12/19/2019	08:35	X	X
35AWW20-121919	P1907802-003	Water	12/19/2019	09:40	X	X
35AWW06-121919	P1907802-004	Water	12/19/2019	10:35	X	X
LHSMW07-121919	P1907802-005	Water	12/19/2019	11:30	X	X

P1907802

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Houston, TX 77099
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F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Texas**

COC ID: **12926**

SUBCONTRACT TO:

ALS Environmental
2655 Park Center Drive, Suite A
Simi Valley, CA 93065

Phone: +1 805 526 7161

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: RJ Modashia
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: RJ.Modashia@alsglobal.com
Alternate Contact: Jumoke M. Lawal
Email: jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS19121155
TSR: Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE / DUE DATE
	ANALYSIS REQUESTED			
1.	**HS19121155-01**	**35AWW10-121919**	**Groundwater**	**19 Dec 2019 08:35**
	MEE plus CO2 Sub to ALS SimiValley			31 Dec 2019
2.	**HS19121155-02**	**35AWW10-121919_a**	**Groundwater**	**19 Dec 2019 08:35**
	MEE plus CO2 Sub to ALS SimiValley			31 Dec 2019
3.	**HS19121155-03**	**35AWW20-121919**	**Groundwater**	**19 Dec 2019 09:40**
	MEE plus CO2 Sub to ALS SimiValley			31 Dec 2019
4.	**HS19121155-04**	**35AWW06-121919**	**Groundwater**	**19 Dec 2019 10:35**
	MEE plus CO2 Sub to ALS SimiValley			31 Dec 2019
5.	**HS19121155-05**	**LHSMW07-121919**	**Groundwater**	**19 Dec 2019 11:30**
	MEE plus CO2 Sub to ALS SimiValley			31 Dec 2019

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

P1907802

Subcontract Chain of Custody

SAMPLING STATE: **Texas**

COC ID: **12926**

Relinquished By: _____ Date/Time: 12/20/19 1800.

Received By: _____ Date/Time: 12-21-19 1030

Cooler ID(s): _____ Temperature(s): 2°C [illegible]

ALS Environmental
Sample Acceptance Check Form

Client: ALS Laboratory Group Work order: P1907802

Project: HS19121155

Sample(s) received on: 12/21/19 Date opened: 12/21/19 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☒	☐	☐
	Cooler Temperature: 2° C Blank Temperature: ° C Thermometer ID T-111 Wet Ic			
8	Were **custody seals** on outside of cooler/Box/Container?	☒	☐	☐
	Location of seal(s)? Cooler lid. Sealing Lid?	☒	☐	☐
	Were signature and date included?	☒	☐	☐
	Were seals intact?	☒	☐	☐
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☒	☐	☐
	Is there a client indication that the submitted samples are **pH** preserved?	☒	☐	☐
	Were **VOA vials** checked for presence/absence of air bubbles?	☒	☐	☐
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☒	☐
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1907802-001.01	40mL VOA NP		5		A	LD 12/26/2019
P1907802-001.02	40mL VOA NP				A	
P1907802-001.04	40ml VOA HCL		1		A	LD 12/27/2019
P1907802-001.05	40ml VOA HCL				A	
P1907802-001.06	40ml VOA HCL				A	
P1907802-002.01	40mL VOA NP		5		A	LD 12/26/2019
P1907802-002.02	40mL VOA NP				A	
P1907802-002.04	40ml VOA HCL		1		A	LD 12/27/2019
P1907802-002.05	40ml VOA HCL				A	
P1907802-002.06	40ml VOA HCL				A	
P1907802-003.01	40mL VOA NP		6		A	LD 12/26/2019
P1907802-003.02	40mL VOA NP				A	
P1907802-003.04	40ml VOA HCL		1		A	LD 12/27/2019
P1907802-003.05	40ml VOA HCL				A	
P1907802-003.06	40ml VOA HCL				A	

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS Environmental
Sample Acceptance Check Form

Client: ALS Laboratory Group Work order: P1907802

Project: HS19121155

Sample(s) received on: 12/21/19 Date opened: 12/21/19 by: ADAVID

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1907802-004.01	40mL VOA NP		6		A	LD 12/26/2019
P1907802-004.02	40mL VOA NP				A	
P1907802-004.04	40ml VOA HCL		1		A	LD 12/27/2019
P1907802-004.05	40ml VOA HCL				A	
P1907802-004.06	40ml VOA HCL				A	
P1907802-005.01	40mL VOA NP		6		A	LD 12/26/2019
P1907802-005.02	40mL VOA NP				A	
P1907802-005.04	40ml VOA HCL		1		A	LD 12/27/2019
P1907802-005.05	40ml VOA HCL				A	
P1907802-005.06	40ml VOA HCL				A	

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Project ID: **HS19121155** ALS Project ID: P1907802

Carbon Dioxide

Test Code: RSK 175
Instrument ID: HP5890A/GC10/TCD
Analyst: Li Donghao
Matrix: Water
Test Notes:

Date(s) Collected: 12/19/19
Date Received: 12/21/19
Date Analyzed: 12/26/19

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
35AWW10-121919	P1907802-001	0.10	**210,000**	1,000	860	370	
35AWW10-121919_a	P1907802-002	0.10	**180,000**	1,000	860	370	
35AWW20-121919	P1907802-003	0.10	**270,000**	1,000	860	370	
35AWW06-121919	P1907802-004	0.10	**270,000**	1,000	860	370	
LHSMW07-121919	P1907802-005	0.10	**250,000**	1,000	860	370	
Method Control Sample	P191226-MB	0.10	860	1,000	860	370	**U**

The Method Control Sample is laboratory water carried through the entire analytical process.
U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **ALS Laboratory Group**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P1907802
Client Project ID: **HS19121155** ALS Sample ID: P191226-DLCS

Test Code: RSK 175 Date Collected: NA
Instrument ID: HP5890A/GC10/TCD Date Received: NA
Analyst: Li Donghao Date Analyzed: 12/26/19
Matrix: Water Volume(s) Analyzed: NA ml(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS ug/L	Result$_1$ LCS ug/L	Result$_1$ DLCS ug/L	% Recovery LCS	% Recovery DLCS	DOD Acceptance Limits	RPD	RPD Limit	Data Qualifier
124-38-9	Carbon Dioxide	22,900	20,000	19,400	**87**	**85**	80-122	2	12	

$_1$ = The concentration shown includes a subtraction of the Method Control Sample value, even if the result is less than the MRL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **35AWW10-121919**
Client Project ID: **HS19121155**

ALS Project ID: P1907802
ALS Sample ID: P1907802-001

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Li Donghao
Matrix: Water
Test Notes:

Date Collected: 12/19/19
Date Received: 12/21/19
Date Analyzed: 12/27/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	1.0	1.3	1.0	0.51	**U**
74-85-1	Ethene	0.55	1.0	0.55	0.24	**U**
74-84-0	Ethane	0.47	0.60	0.47	0.16	**U**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **35AWW10-121919_a**
Client Project ID: **HS19121155**

ALS Project ID: P1907802
ALS Sample ID: P1907802-002

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Li Donghao
Matrix: Water
Test Notes:

Date Collected: 12/19/19
Date Received: 12/21/19
Date Analyzed: 12/27/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	1.0	1.3	1.0	0.51	**U**
74-85-1	Ethene	0.55	1.0	0.55	0.24	**U**
74-84-0	Ethane	0.47	0.60	0.47	0.16	**U**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **35AWW20-121919**
Client Project ID: **HS19121155**

ALS Project ID: P1907802
ALS Sample ID: P1907802-003

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Li Donghao
Matrix: Water
Test Notes:

Date Collected: 12/19/19
Date Received: 12/21/19
Date Analyzed: 12/27/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	**310**	1.3	1.0	0.51	
74-85-1	Ethene	**6.3**	1.0	0.55	0.24	
74-84-0	Ethane	0.47	0.60	0.47	0.16	**U**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **35AWW06-121919**
Client Project ID: **HS19121155**

ALS Project ID: P1907802
ALS Sample ID: P1907802-004

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Li Donghao
Matrix: Water
Test Notes:

Date Collected: 12/19/19
Date Received: 12/21/19
Date Analyzed: 12/27/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	**1,500**	1.3	1.0	0.51	
74-85-1	Ethene	0.55	1.0	0.55	0.24	**U**
74-84-0	Ethane	0.47	0.60	0.47	0.16	**U**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **LHSMW07-121919**
Client Project ID: **HS19121155**

ALS Project ID: P1907802
ALS Sample ID: P1907802-005

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Li Donghao
Matrix: Water
Test Notes:

Date Collected: 12/19/19
Date Received: 12/21/19
Date Analyzed: 12/27/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	**100**	1.3	1.0	0.51	
74-85-1	Ethene	**2.8**	1.0	0.55	0.24	
74-84-0	Ethane	0.47	0.60	0.47	0.16	**U**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **Method Control Sample**
Client Project ID: **HS19121155**

ALS Project ID: P1907802
ALS Sample ID: P191227-MB

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Li Donghao
Matrix: Water
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 12/27/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	1.0	1.3	1.0	0.51	**U**
74-85-1	Ethene	0.55	1.0	0.55	0.24	**U**
74-84-0	Ethane	0.47	0.60	0.47	0.16	**U**

The Method Control Sample is laboratory water carried through the entire analytical process.
U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **ALS Laboratory Group**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **HS19121155**

ALS Project ID: P1907802
ALS Sample ID: P191227-LCS
P191227-DLCS

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Li Donghao
Matrix: Water
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 12/27/19
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Spike Amount LCS / DLCS µg/L	Result$_1$ LCS µg/L	Result$_1$ DLCS µg/L	% Recovery LCS	% Recovery DLCS	DOD Acceptance Limits	RPD	RPD Limit	Data Qualifier
74-82-8	Methane	2.52	2.40	2.44	**95**	**97**	73-125	2	26	
74-85-1	Ethene	4.40	4.49	4.46	**102**	**101**	72-133	1	11	
74-84-0	Ethane	4.72	4.73	4.75	**100**	**101**	74-131	1	10	

$_1$ = The concentration shown includes a subtraction of the Method Control Sample value, even if the result is less than the MRL.

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261914.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 13:56:40
Operator : LD
Sample : P1907802-001 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:19:36 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

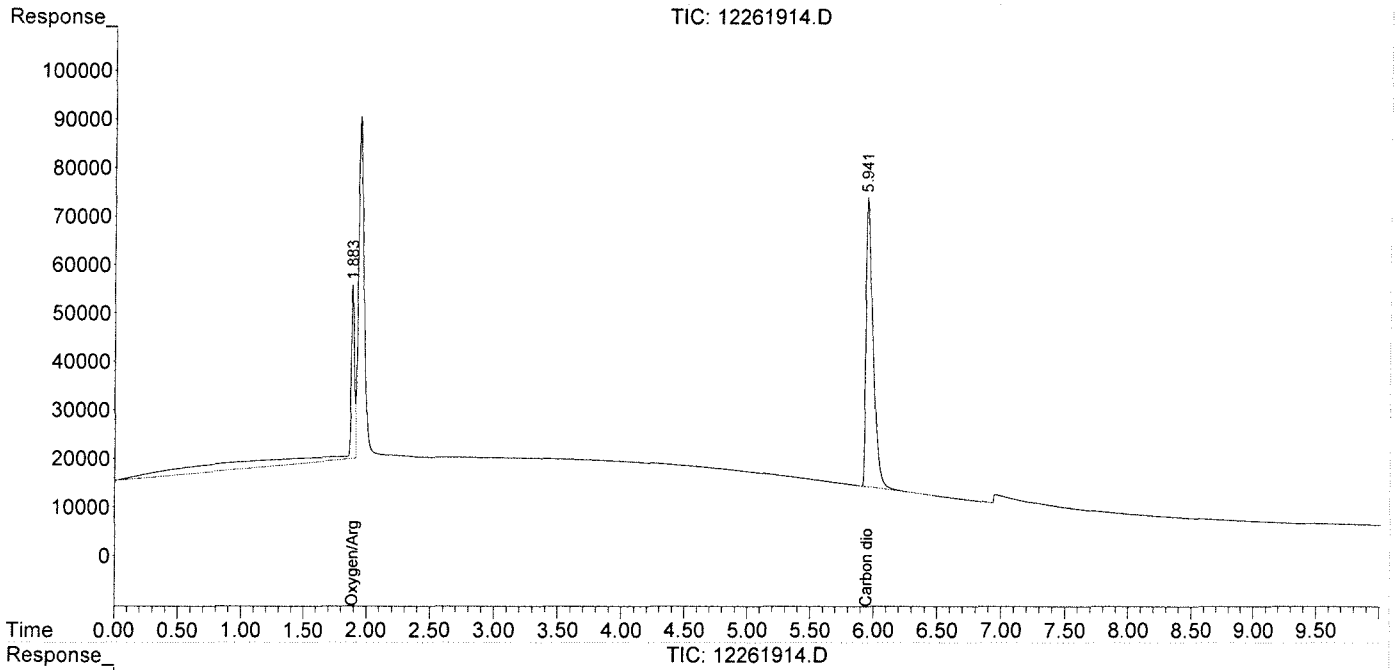
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.884	1801598	0.379	ppm
2)	Carbon monoxide	1.884	1801598	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	5.942	2302250	9808.111	ppm
6)	Methane (FID)	0.000	0	N.D.	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

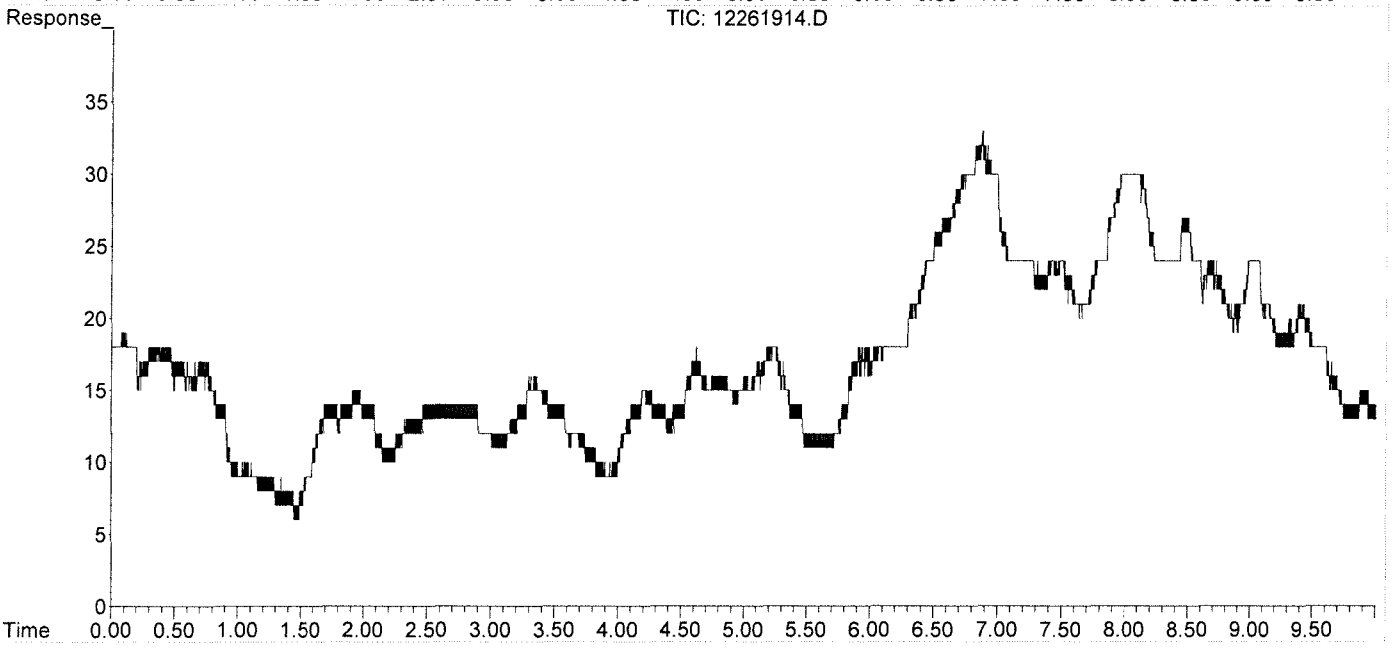
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261914.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 13:56:40
Operator : LD
Sample : P1907802-001 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:19:36 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261915.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 14:09:49
Operator : LD
Sample : P1907802-002 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:19:47 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

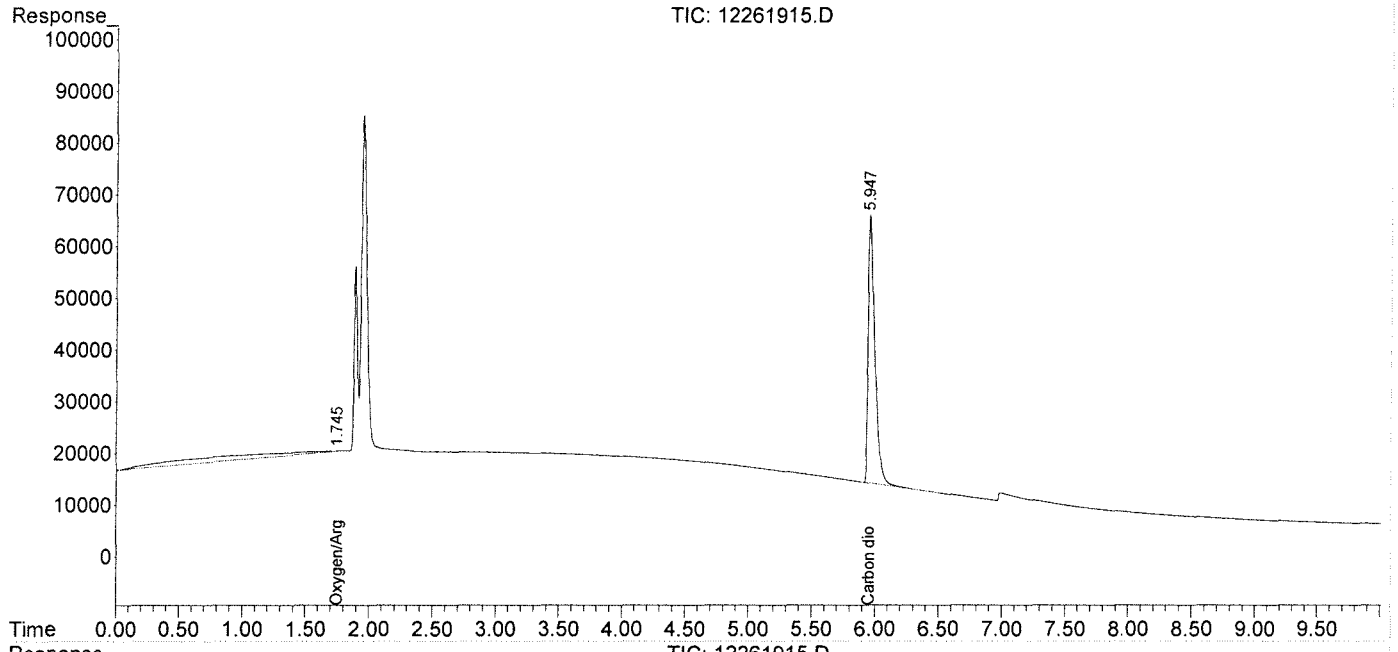
	Compound	R.T.	Response	Conc	Units
Target	Compounds				
1)	Oxygen/Argon	1.745	621087	0.130	ppm
2)	Carbon monoxide	1.745	621087	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	5.948	1914367	8155.640	ppm
6)	Methane (FID)	0.000	0	N.D.	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

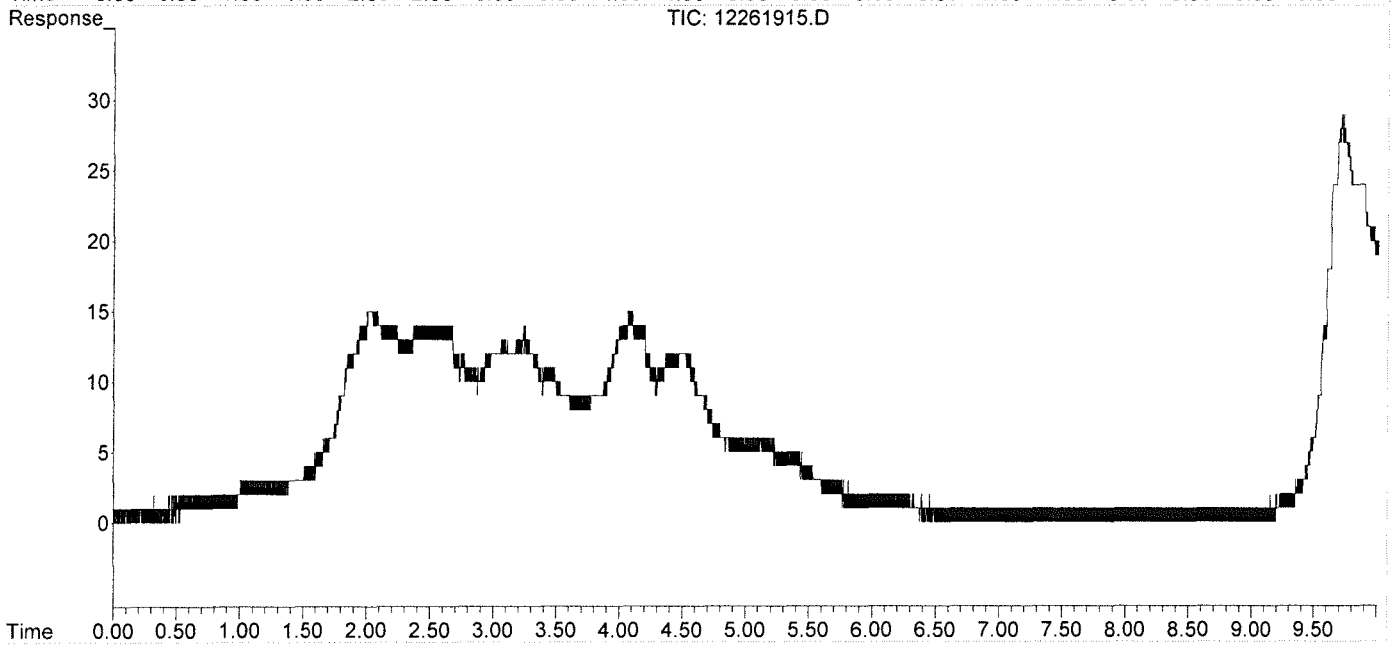
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261915.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 14:09:49
Operator : LD
Sample : P1907802-002 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:19:47 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261916.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 14:25:42
Operator : LD
Sample : P1907802-003 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:19:57 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

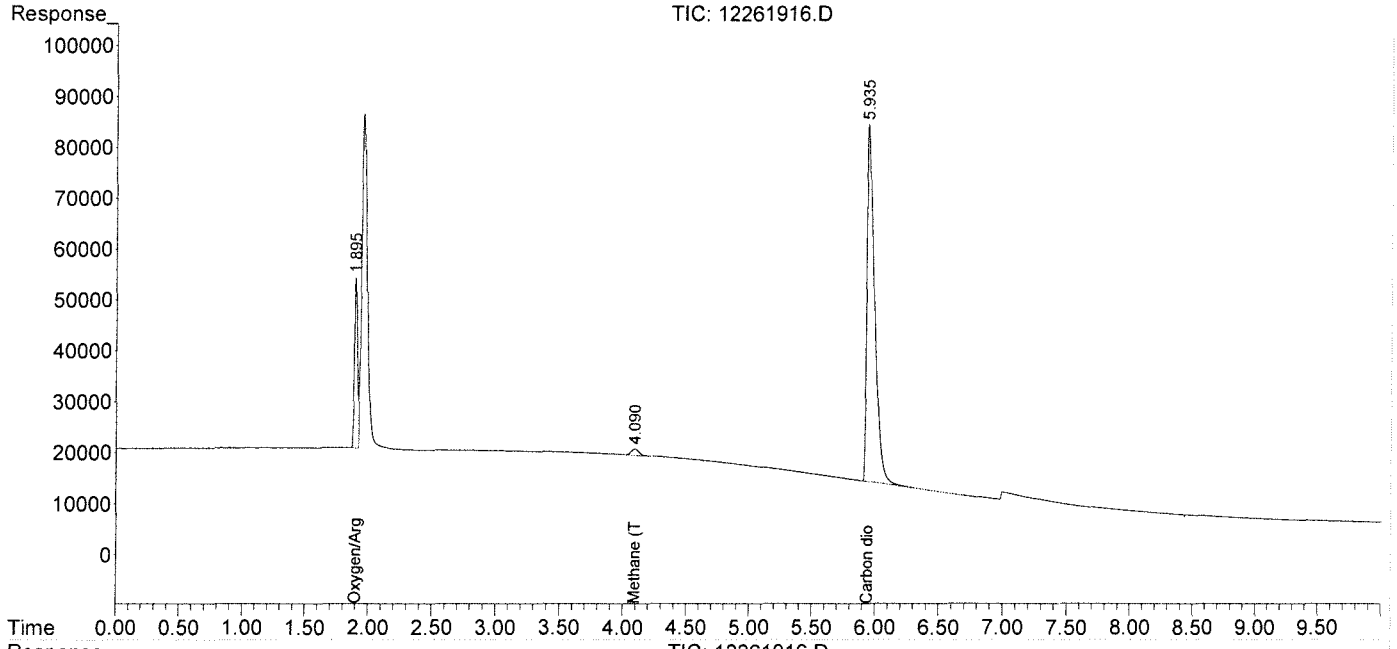
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.896	569398	0.120	ppm
2)	Carbon monoxide	1.896	569398	N.D.	ppm
3)	Methane (TCD)	4.091f	56953	6022.066	ppm
4)	Carbon dioxide	5.935	2929067	12478.493	ppm
6)	Methane (FID)	0.000	0	N.D.	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

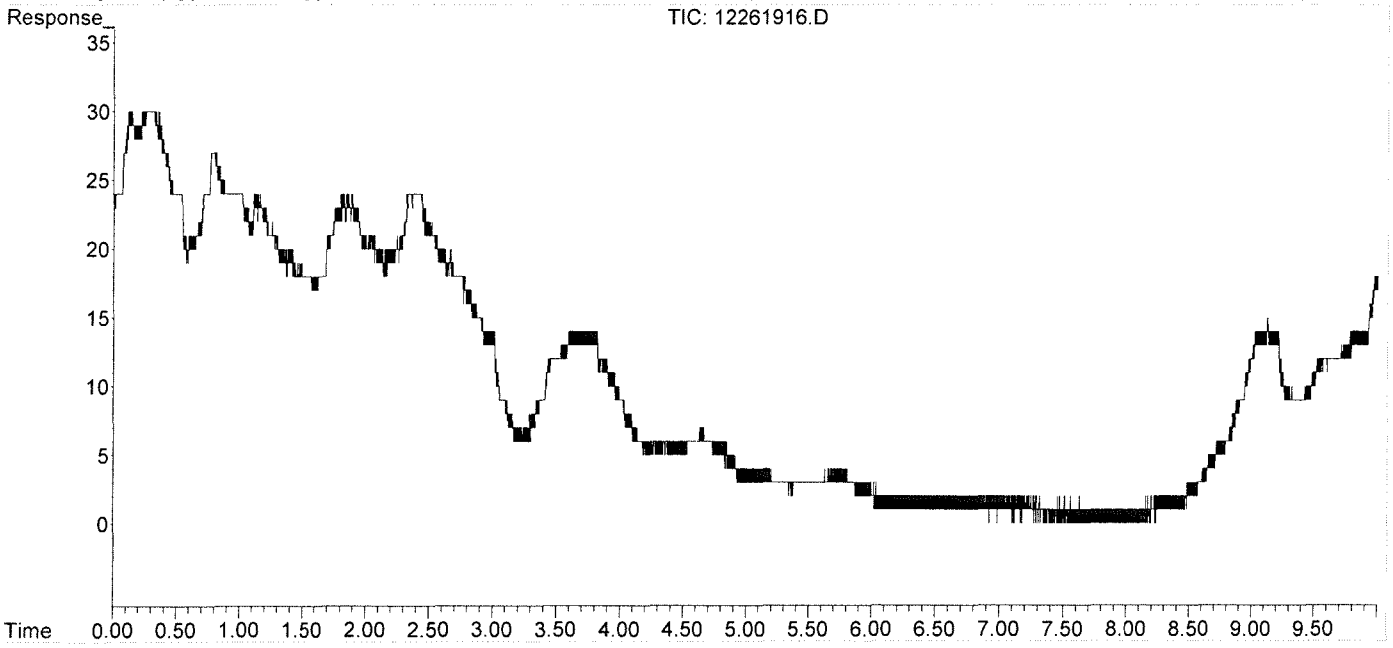
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261916.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 14:25:42
Operator : LD
Sample : P1907802-003 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:19:57 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261917.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 14:38:40
Operator : LD
Sample : P1907802-004 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:20:08 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

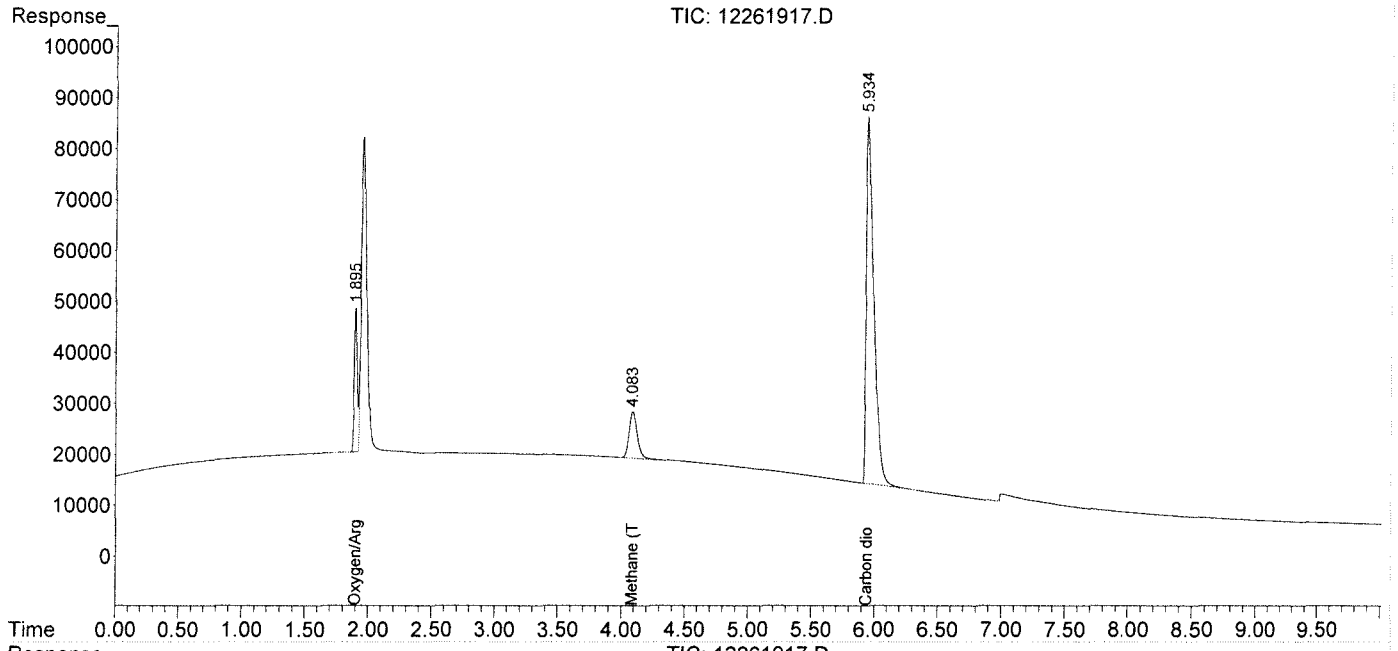
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.896	484151	0.102	ppm
2)	Carbon monoxide	1.896	484151	N.D.	ppm
3)	Methane (TCD)	4.084f	415818	43967.739	ppm
4)	Carbon dioxide	5.936	2948198	12559.996	ppm
6)	Methane (FID)	0.000	0	N.D.	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

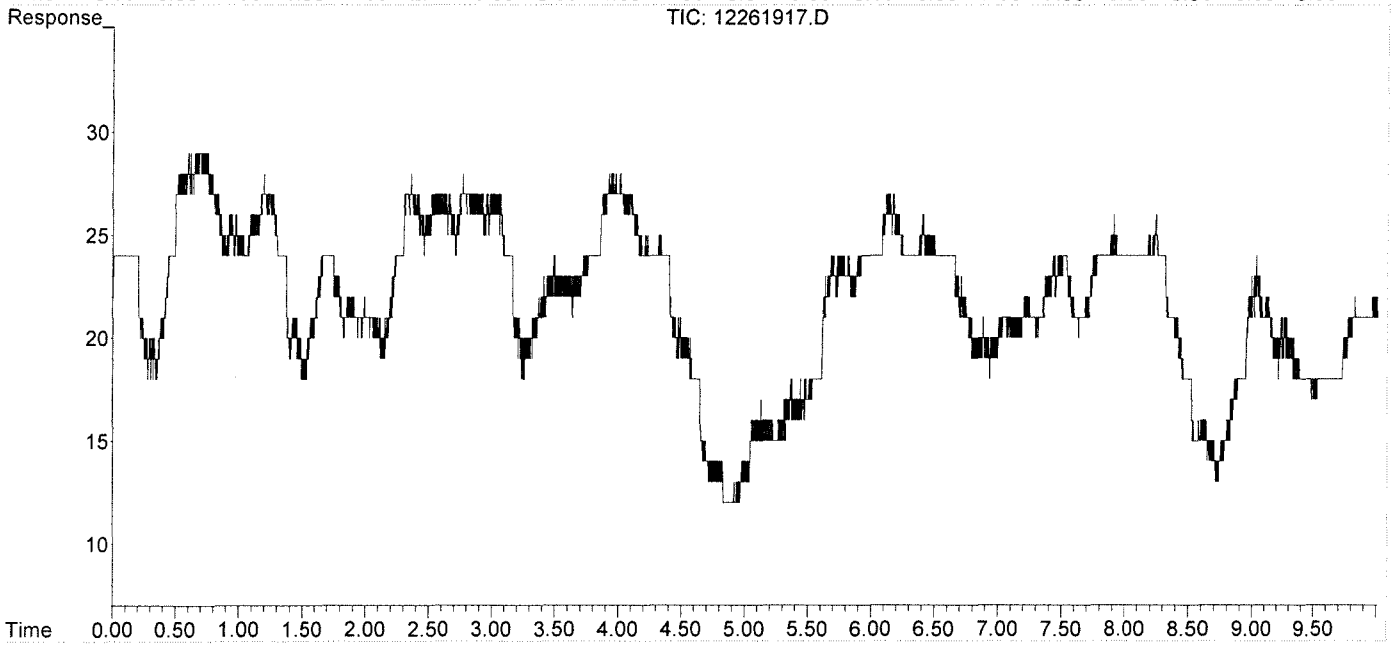
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261917.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 14:38:40
Operator : LD
Sample : P1907802-004 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:20:08 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261919.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 15:09:48
Operator : LD
Sample : P1907802-005 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:23:38 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

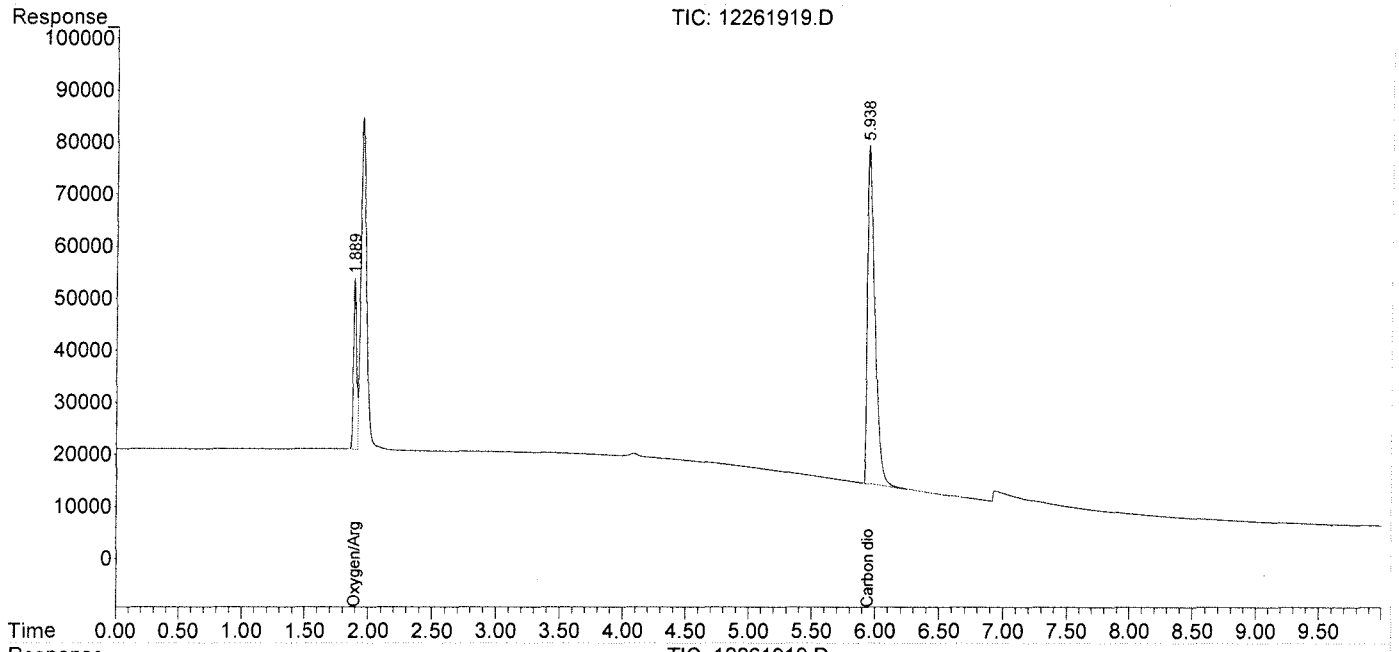
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.889	562753	0.118	ppm
2)	Carbon monoxide	1.889	562753	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	5.939	2640424	11248.808	ppm
6)	Methane (FID)	0.000	0	N.D.	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

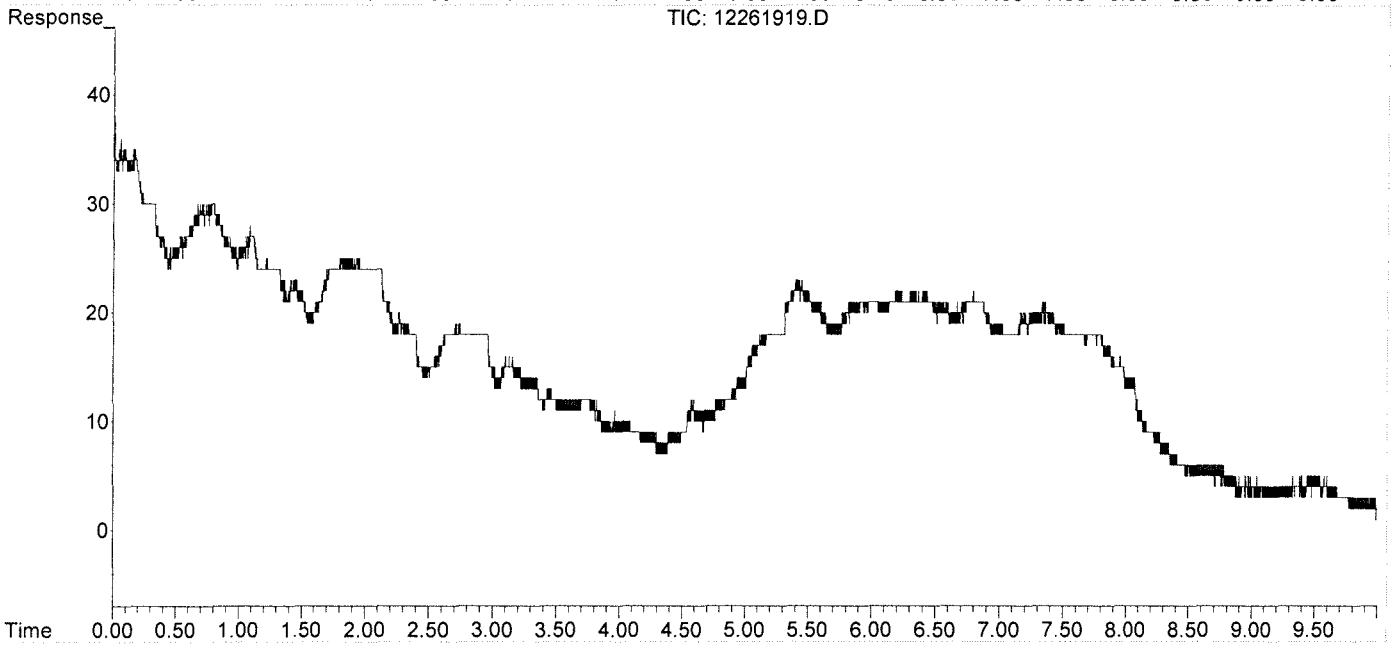
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261919.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 15:09:48
Operator : LD
Sample : P1907802-005 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:23:38 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261903.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 11:27:12
Operator : LD
Sample : MCS 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 11:40:19 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

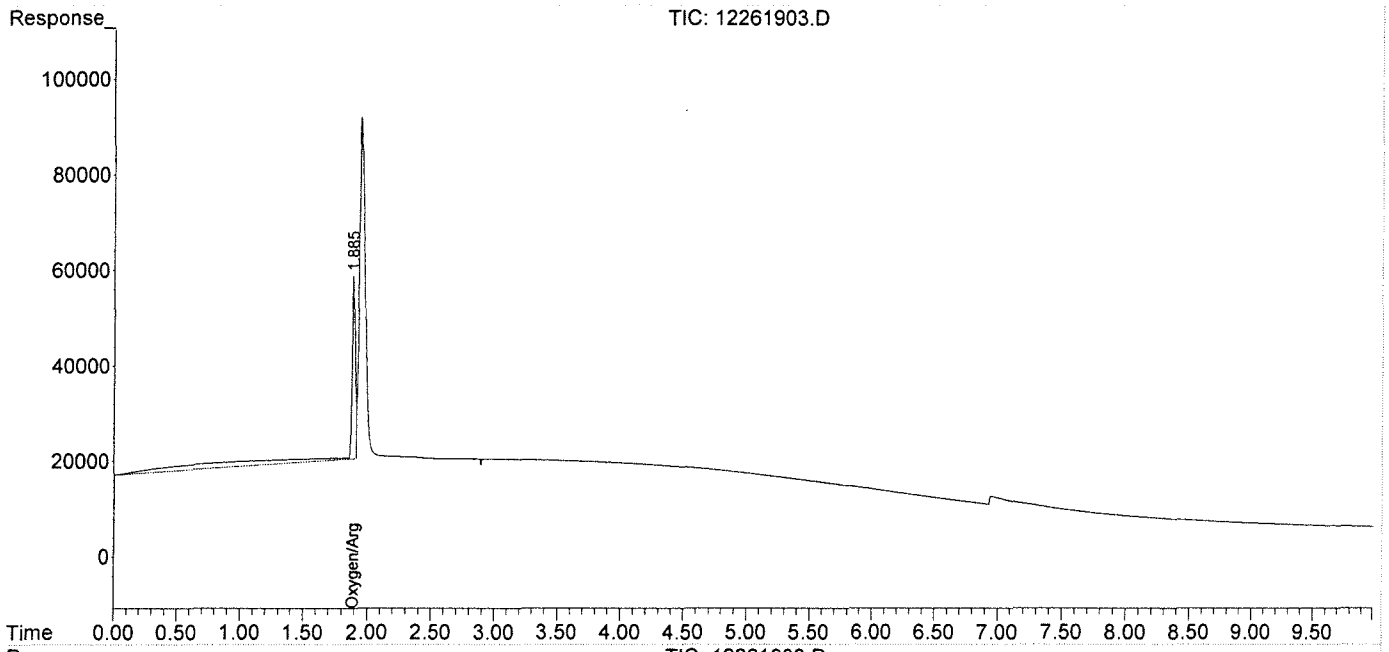
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.885	1447047	0.304	ppm
2)	Carbon monoxide	1.885	1447047	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	0.000	0	N.D.	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

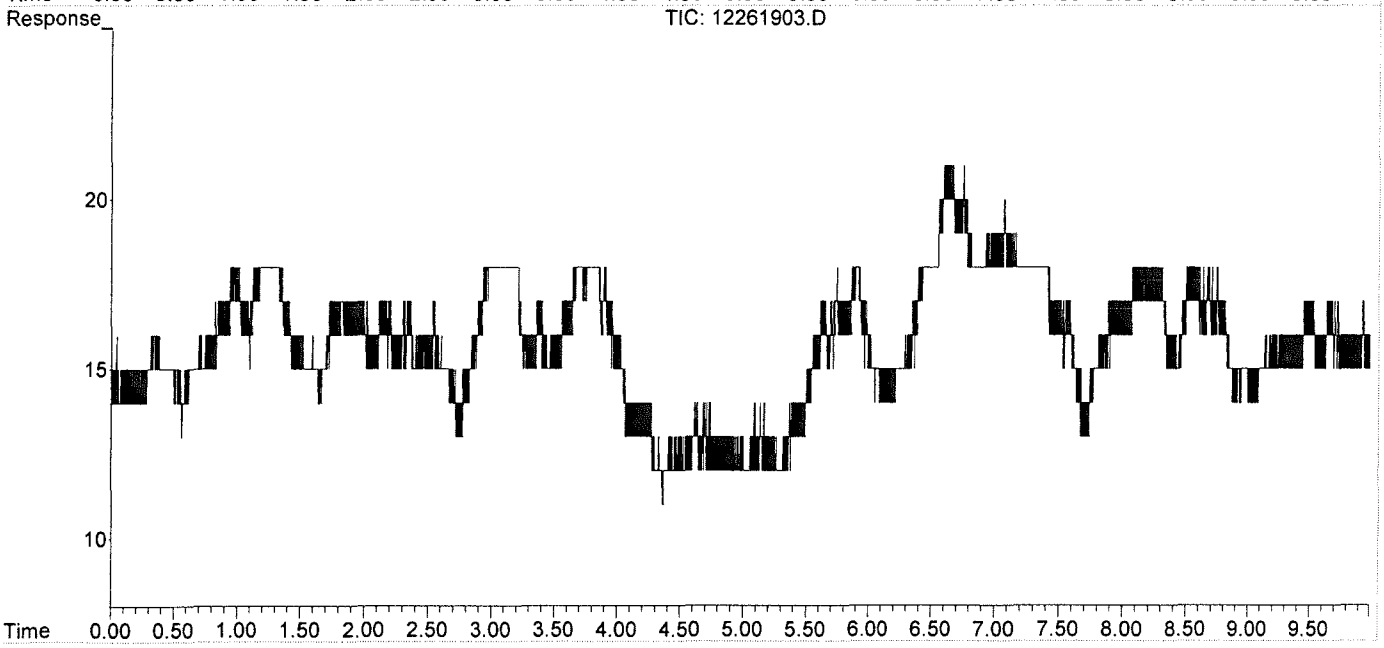
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261903.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 11:27:12
Operator : LD
Sample : MCS 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 11:40:19 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261920.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 15:58:59
Operator : LD
Sample : LCS S32-08141901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 16:09:53 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.872	2342022	0.492	ppm	
2)	Carbon monoxide	1.872	2342022	N.D.	ppm	
3)	Methane (TCD)	4.092f	614956	65024.173	ppm	
4)	Carbon dioxide	5.995	215418	917.730	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

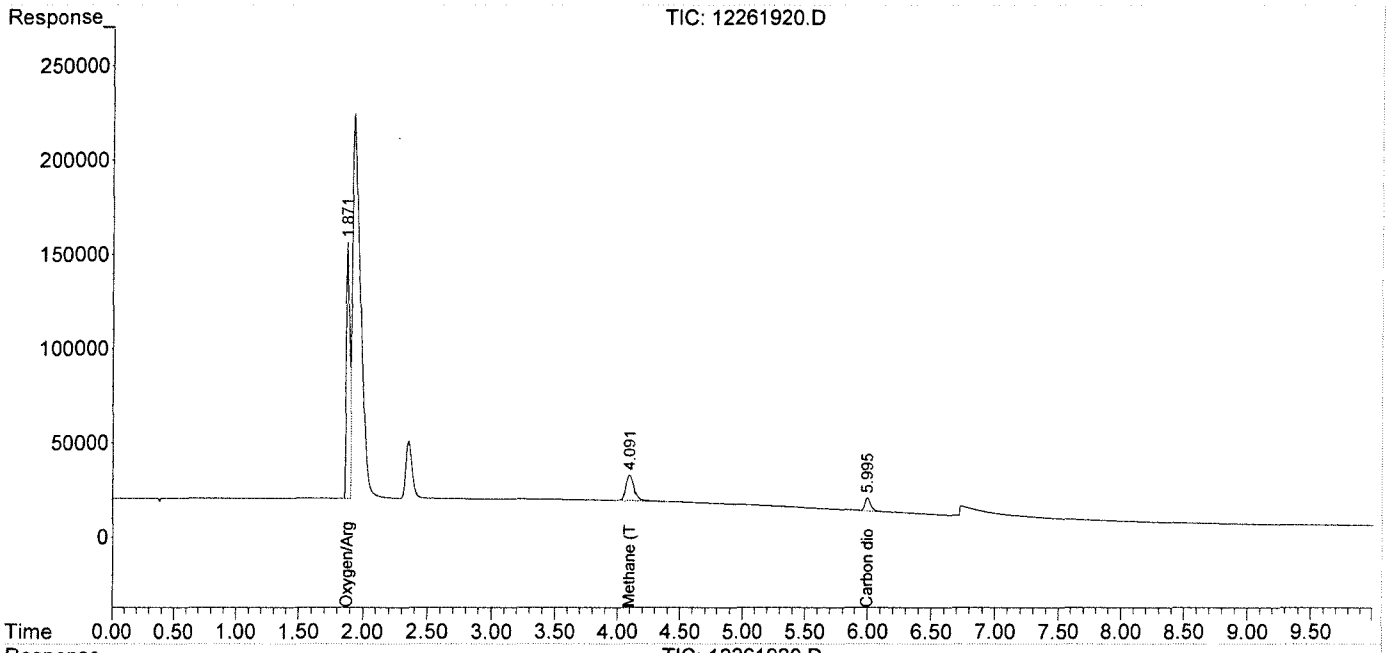
(f)=RT Delta > 1/2 Window (m)=manual int.

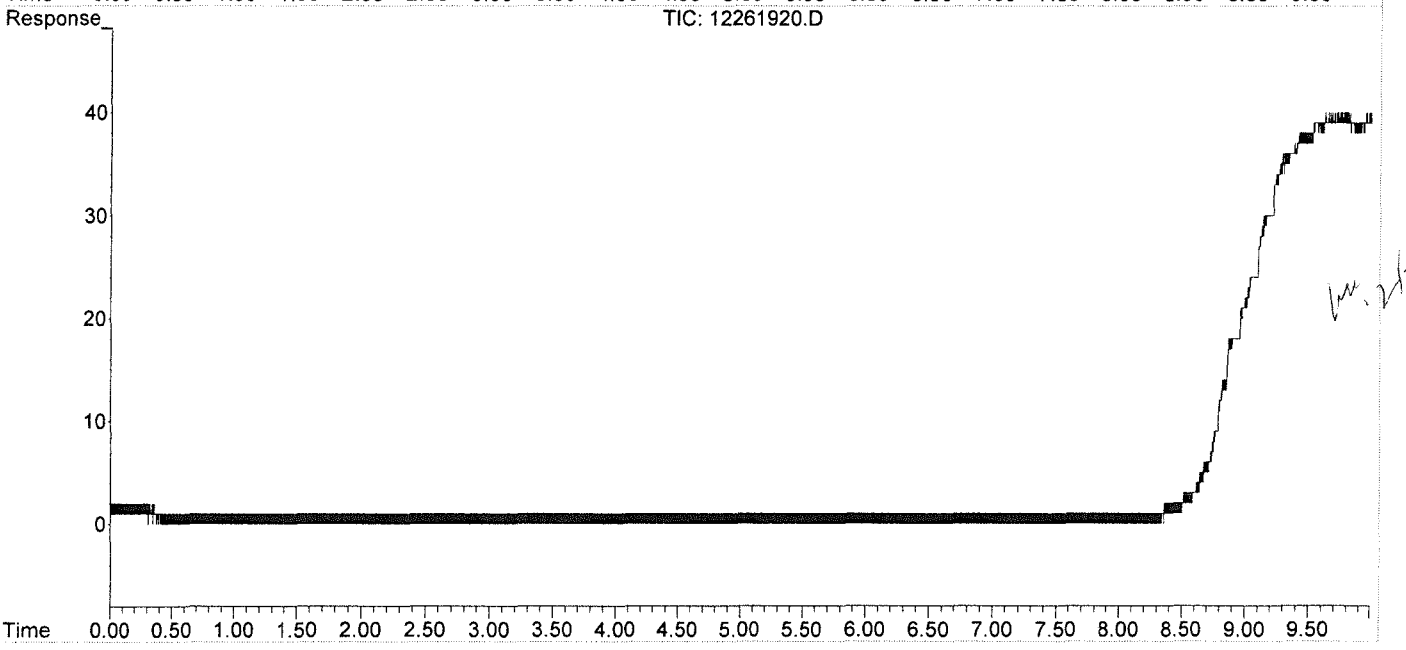
Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261920.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 15:58:59
Operator : LD
Sample : LCS S32-08141901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 16:09:53 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

LP
BLC
no previous
12/27

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





LP 12/27/19

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261921.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 16:11:50
Operator : LD
Sample : LCSD S32-08141901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 16:20:39 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.871	4178770	0.878	ppm	
2)	Carbon monoxide	1.871	4178770	N.D.	ppm	
3)	Methane (TCD)	4.095f	598607	63295.457	ppm	
4)	Carbon dioxide	5.996	208562	888.523	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

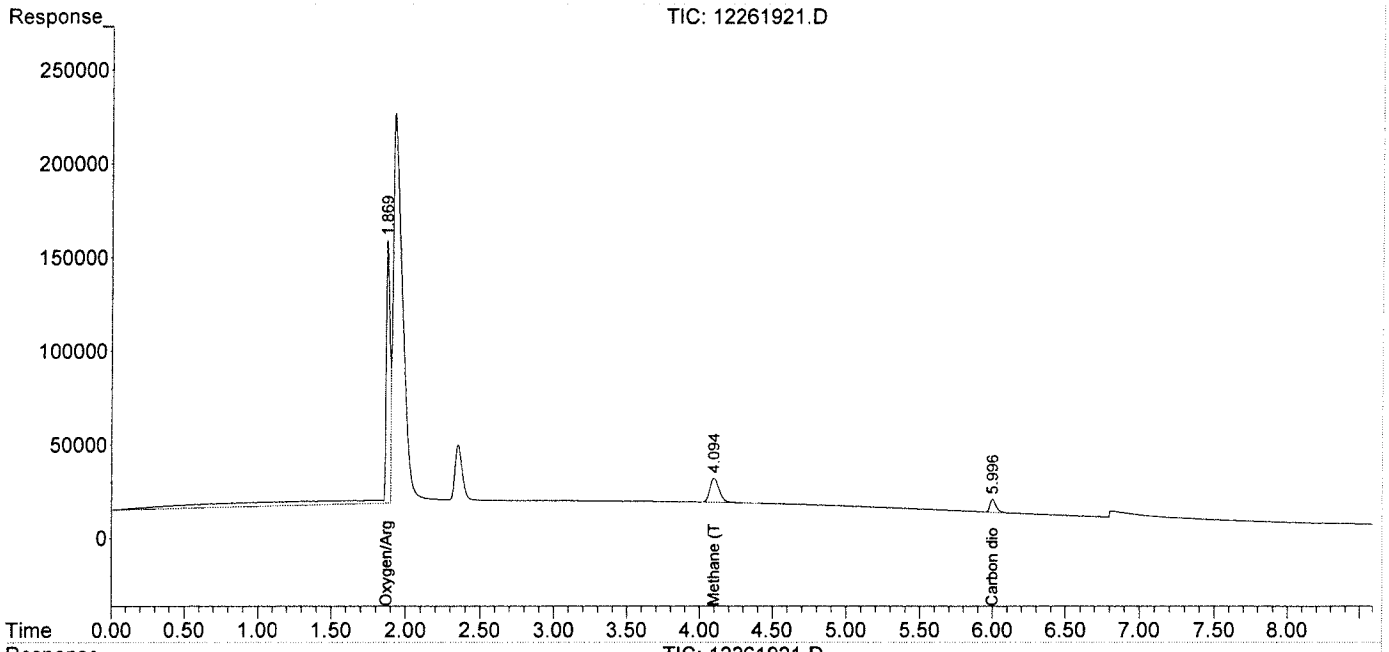
(f)=RT Delta > 1/2 Window (m)=manual int.

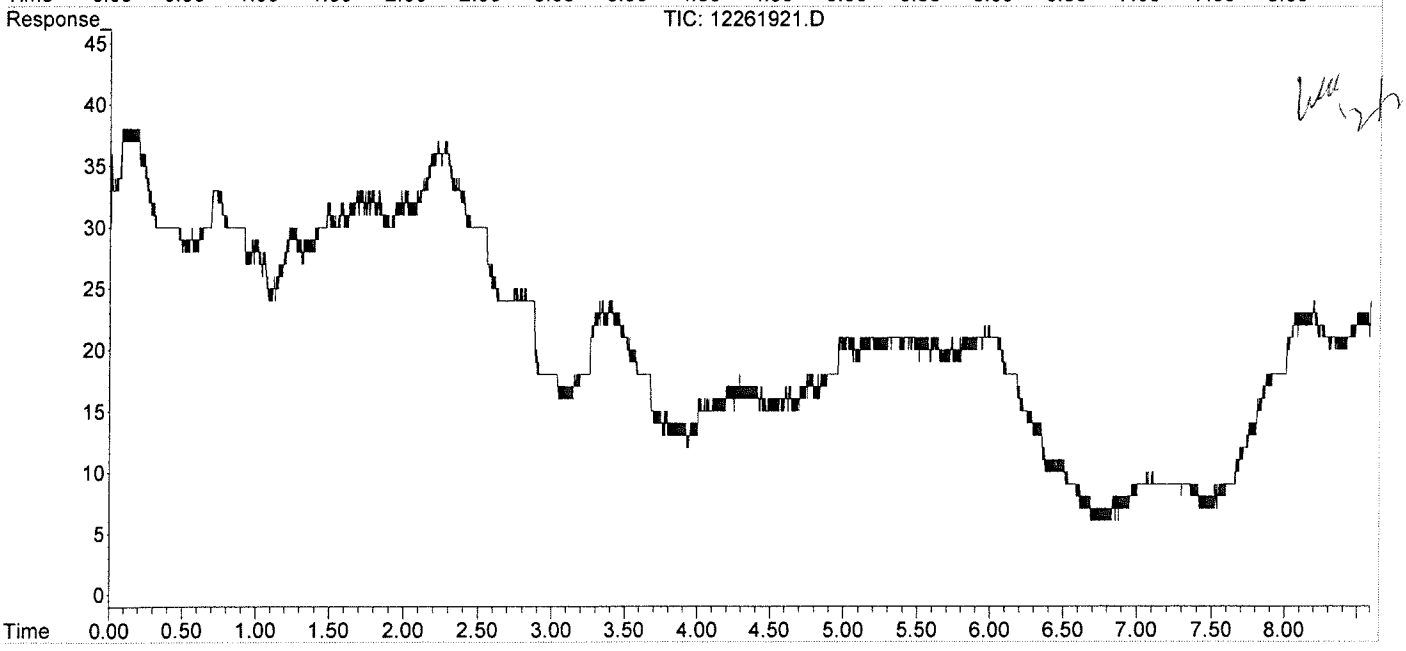
Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261921.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 16:11:50
Operator : LD
Sample : LCSD S32-08141901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 16:20:39 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

LD
BLC
No previous
12/27

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Response Factor Report HP5890

Method Path : I:\GC10\METHODS\
Method File : RS082817_CO2.M
Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
Last Update : Tue Aug 29 16:13:13 2017
Response Via : Initial Calibration

Calibration Files
1 =08291715.D 2 =08291716.D 3 =08291717.D
4 =08291719.D 5 =08291720.D 6 =08291721.D

	Compound	1	2	3	4	5	6	Avg		%RSD
1)	Oxygen/Argon	4.760						4.760	E6	0.00
2)	Carbon monoxide	2.775		1.066	0.043	0.033	0.027	0.657	E6	170.12
3)	Methane (TCD)							9.457		0.00
4)	Carbon dioxide	2.717	2.193	2.338	2.272	2.265	2.298	2.347	E2	7.99

Signal #2 Calibration Files
1 =08291715.D 2 =08291716.D 3 =08291717.D
4 =08291719.D 5 =08291720.D 6 =08291721.D

	Compound	1	2	3	4	5	6	Avg		%RSD
6)	Methane (FID)	1.253	1.160	1.005	0.927	0.848	0.848	0.945	E4	15.85
7)	Ethylene	1.677	1.605	1.900	1.749	1.597	1.579	1.684	E4	7.30
8)	Ethane	1.769	1.631	1.866	1.767	1.639	1.667	1.723	E4	5.40
9)	Propylene	2.402	2.309	2.767	2.551	2.331	2.333	2.449	E4	7.32
10)	Propane	2.906	2.737	2.817	2.639	2.410	2.420	2.655	E4	7.75
11)	Isobutylene							0.000		-1.00
12)	Isobutane							0.000		-1.00
13)	n-Butane							0.000		-1.00

(#) = Out of Range ### Number of calibration levels exceeded format ###

RS082817_CO2.M Wed Aug 30 13:24:19 2017

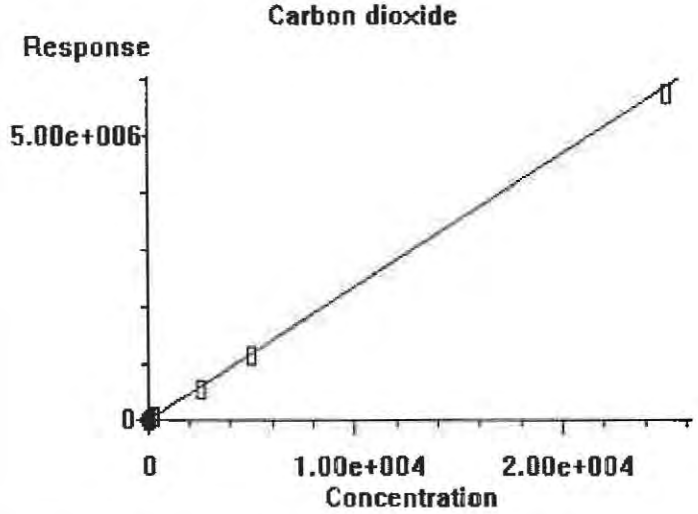
dit Compounds -- Compound #4 -- Carbon dioxide

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compoun
  - Oxygen/Argon
  - Carbon monoxide
  - Methane (TCD)
  - Carbon dioxide
  - Signal #2
  - Methane (FID)
  - Ethylene
  - Ethane
  - Propylene
  - Propane
  - Isobutylene
  - Isobutane
  - n-Butane

Identification | Calibration | User-Defined | Advanced | Reporting

Lvl ID	Concentration	Response	Lvl ID	Concentration	Response
1	25.000000	6793.665186			
2	100.000000	21932.418000			
3	250.000000	58460.642510			
4	2500.000000	568043.388750			
5	5000.000000	1132363.215937			
6	25000.000000	5744294.891563			
7	25000.000000				
8	25000.000000				
9	2000.000000				
10	30000.000000				



0.000e+000	Quadratic term
2.347e+002	Linear term
0.000e+000	Constant term
7.987%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

Calibration Status Report HP5890

Method Path : I:\GC10\METHODS\
Method File : RS082817_CO2.M
Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
Last Update : Tue Aug 29 16:13:13 2017
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	0	0	J:\GC10\DATA\RSK_FID\2017_08\29\08291715.D
2	2	0	0	J:\GC10\DATA\RSK_FID\2017_08\29\08291716.D
3	3	3	0	J:\GC10\DATA\RSK_FID\2017_08\29\08291717.D
4	4	10	0	J:\GC10\DATA\RSK_FID\2017_08\29\08291719.D
5	5	25	0	J:\GC10\DATA\RSK_FID\2017_08\29\08291720.D
6	6	125	0	J:\GC10\DATA\RSK_FID\2017_08\29\08291721.D
7	7	5000	0	J:\GC10\DATA\RSK_FID\2017_08\24\08241708.D
8	8	25000	0	J:\GC10\DATA\RSK_FID\2017_08\24\08241709.D
9	9	2000	0	J:\GC10\DATA\RSK_FID\2017_08\24\08241710.D
10	10	30000	0	J:\GC10\DATA\RSK_FID\2017_08\24\08241711.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	Aug 29 14:21 2017	Aug 29 14:20 2017	29-Aug-2017, 14:07
2	2	Aug 29 14:52 2017	Aug 29 14:51 2017	29-Aug-2017, 14:22
3	3	Aug 29 15:04 2017	Aug 29 15:04 2017	29-Aug-2017, 14:53
4	4	Aug 29 15:36 2017	Aug 29 15:36 2017	29-Aug-2017, 15:23
5	5	Aug 29 15:57 2017	Aug 29 15:57 2017	29-Aug-2017, 15:44
6	6	Aug 29 16:13 2017	Aug 29 16:13 2017	29-Aug-2017, 16:00
7	7	Aug 25 09:05 2017	Aug 24 16:00 2017	24-Aug-2017, 15:44
8	8	Aug 25 09:06 2017	Aug 24 16:13 2017	24-Aug-2017, 16:02
9	9	Aug 25 09:06 2017	Aug 24 16:31 2017	24-Aug-2017, 16:16
10	10	Aug 25 09:07 2017	Aug 24 16:42 2017	24-Aug-2017, 16:33

RS082817_CO2.M Wed Aug 30 13:24:30 2017

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291715.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:07
Operator : MC
Sample : 25ppm s32-08291701 0.25ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 14:20:06 2017
Quant Method : I:\GC10\METHODS\RS082417.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Fri Aug 25 09:19:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

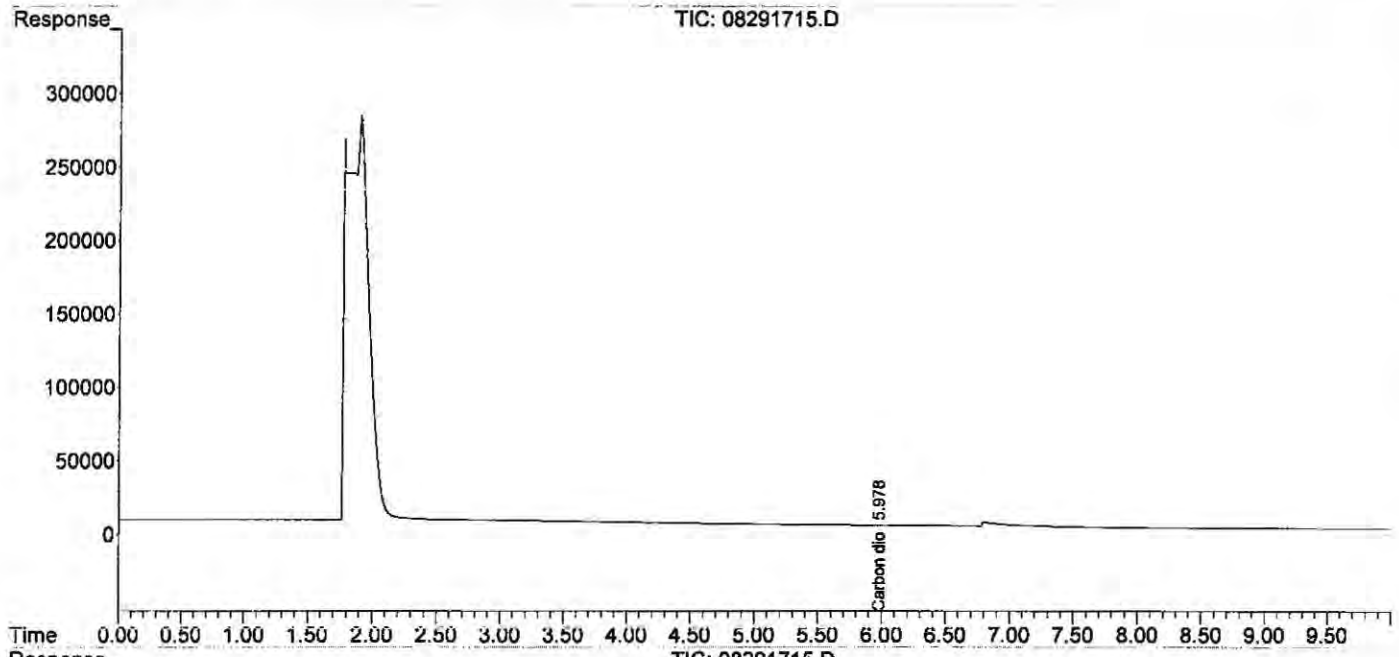
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	0.000	0	N.D.	ppm	d
2)	Carbon monoxide	1.776	277465	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	
4)	Carbon dioxide	5.978	6794	27.870	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	d
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

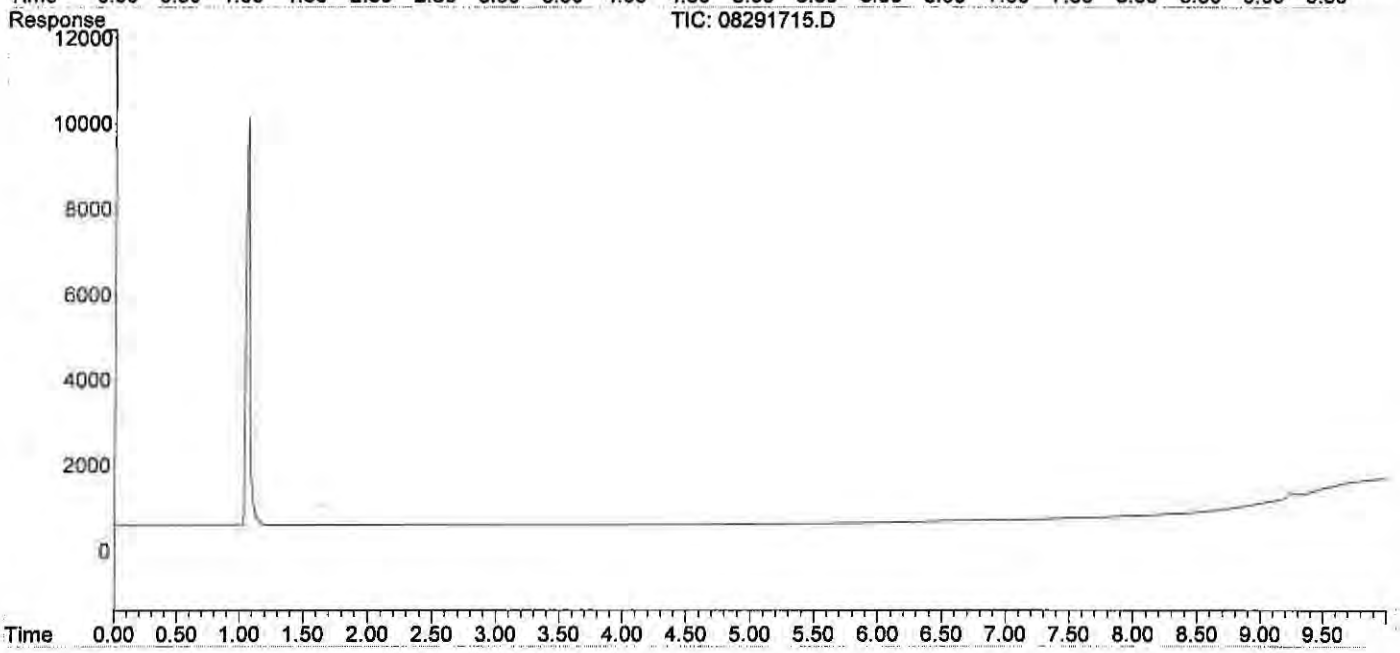
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291715.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:07
Operator : MC
Sample : 25ppm s32-08291701 0.25ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 14:20:06 2017
Quant Method : I:\GC10\METHODS\RS082417.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Fri Aug 25 09:19:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



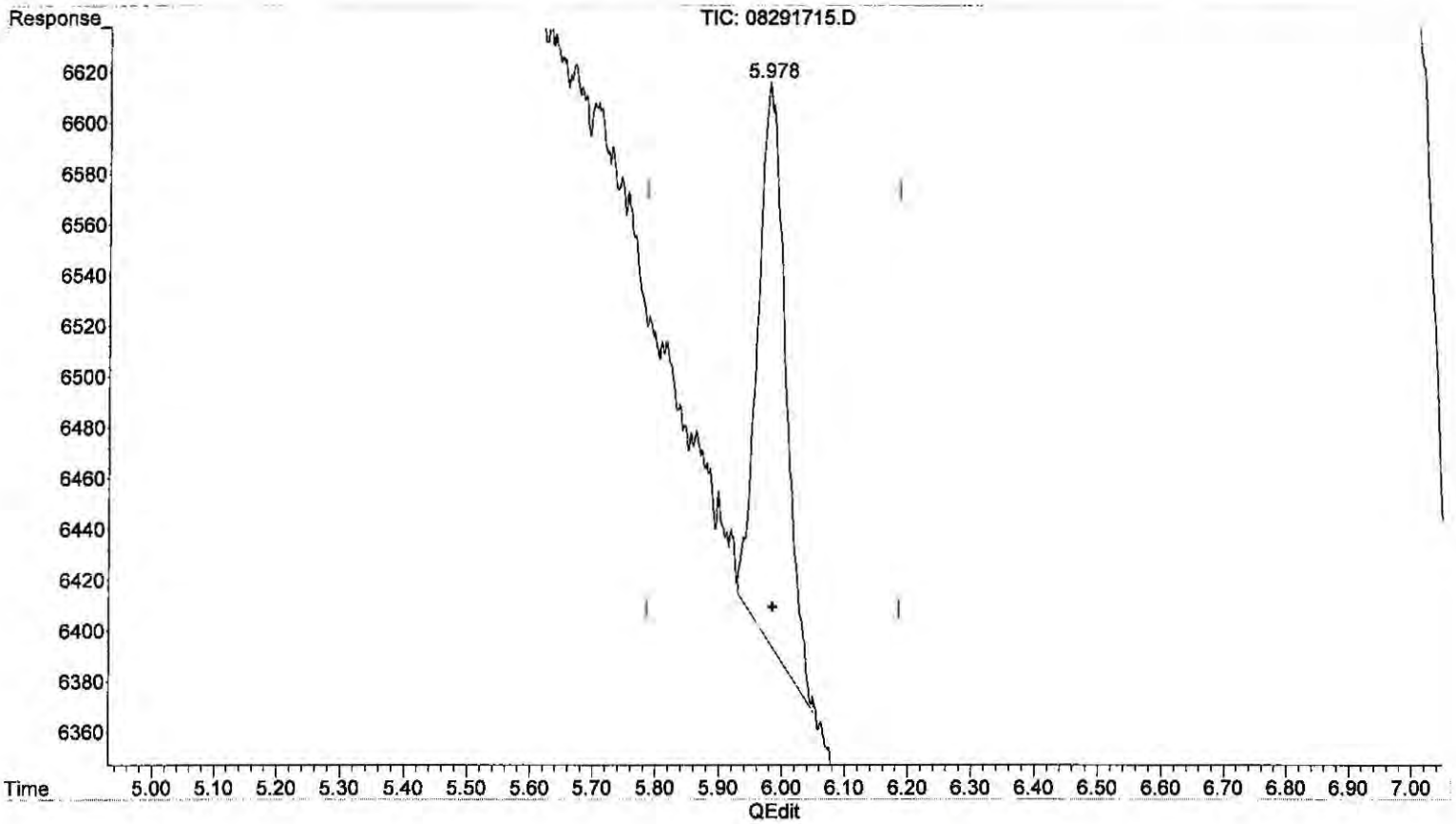


Quantitation Report (Qedit)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291715.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:07
Operator : MC
Sample : 25ppm s32-08291701 0.25ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 14:20:06 2017
Quant Method : I:\GC10\METHODS\RS082417.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Fri Aug 25 09:19:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(4) Carbon dioxide
5.978min 27.870 ppm m
response 6794

(+) = Expected Retention Time

RS082817_CO2.M Wed Aug 30 13:17:47 2017 Page: 1

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291716.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:22
Operator : MC
Sample : 100ppm s32-08291702 0.2ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 14:51:38 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 14:21:08 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

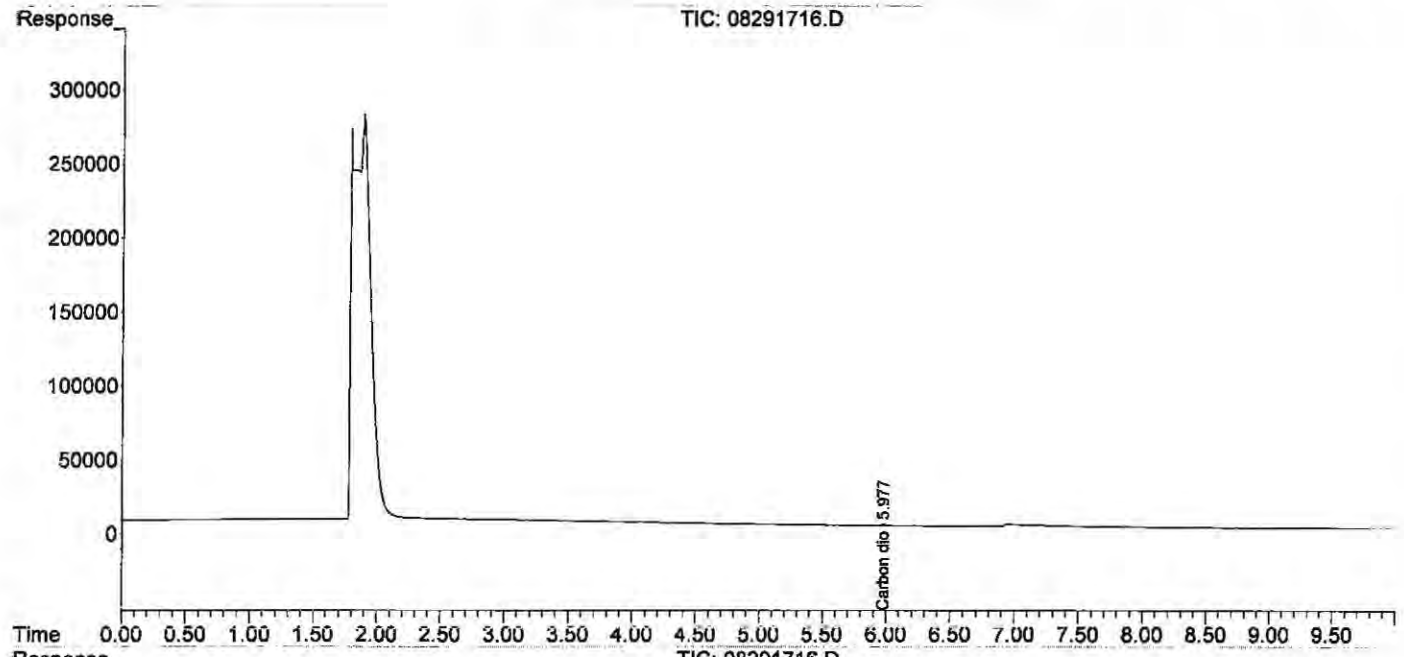
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.790	-598962	N.D.	ppm	
2)	Carbon monoxide	0.000	0	N.D.	ppm	d
3)	Methane (TCD)	0.000	0	N.D.	ppm	
4)	Carbon dioxide	5.978	21932	87.858	ppm	
6)	Methane (FID)	0.000	0	N.D.	ppm	d
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

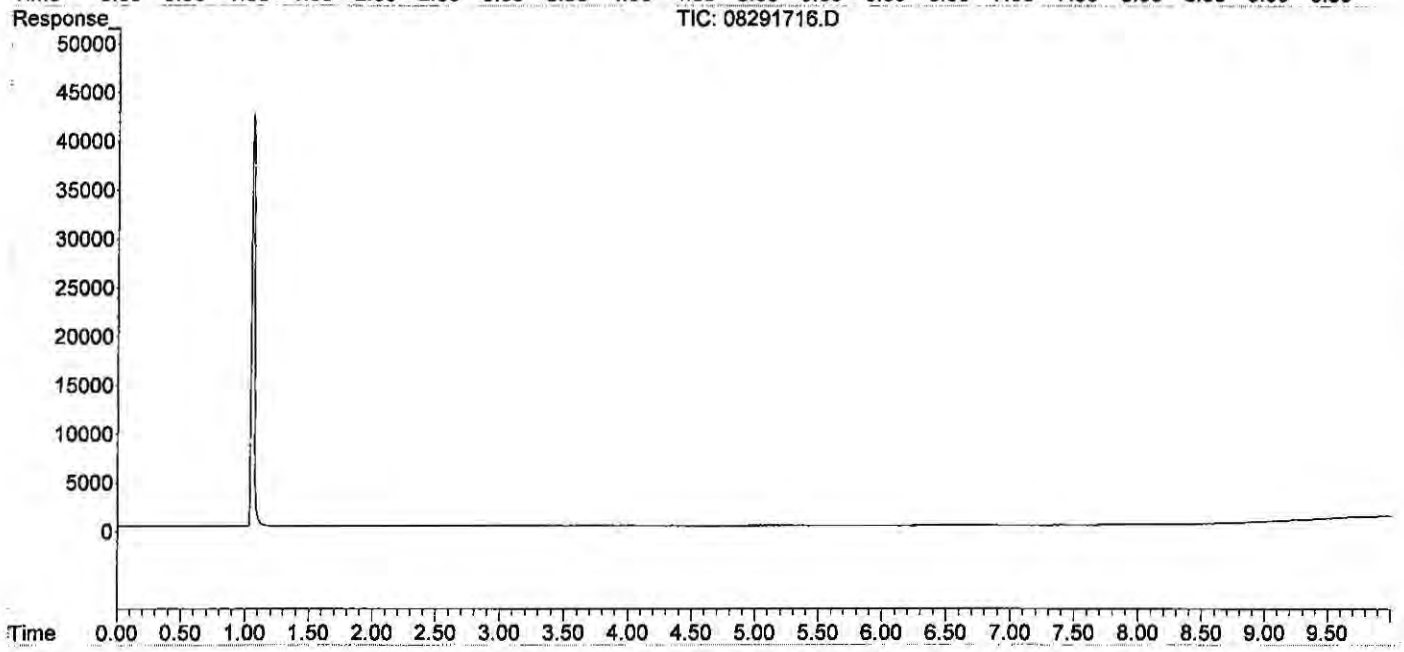
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291716.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:22
Operator : MC
Sample : 100ppm s32-08291702 0.2ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 14:51:38 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 14:21:08 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291717.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:53
Operator : MC
Sample : 250ppm s32-08291702 0.5ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 15:03:42 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 14:52:06 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

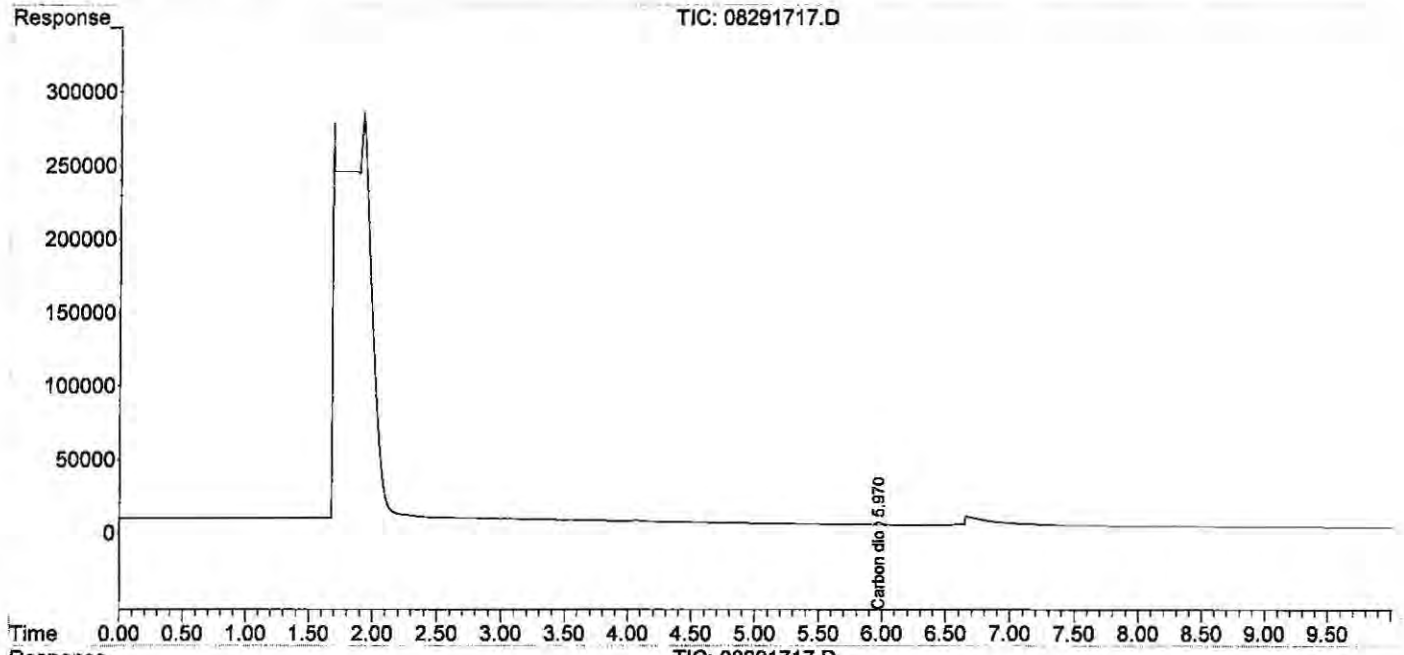
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.920f	-30716454	N.D.	ppm	
2)	Carbon monoxide	0.000	0	N.D.	ppm	d
3)	Methane (TCD)	0.000	0	N.D.	ppm	d
4)	Carbon dioxide	5.970	58461	240.204	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	d
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

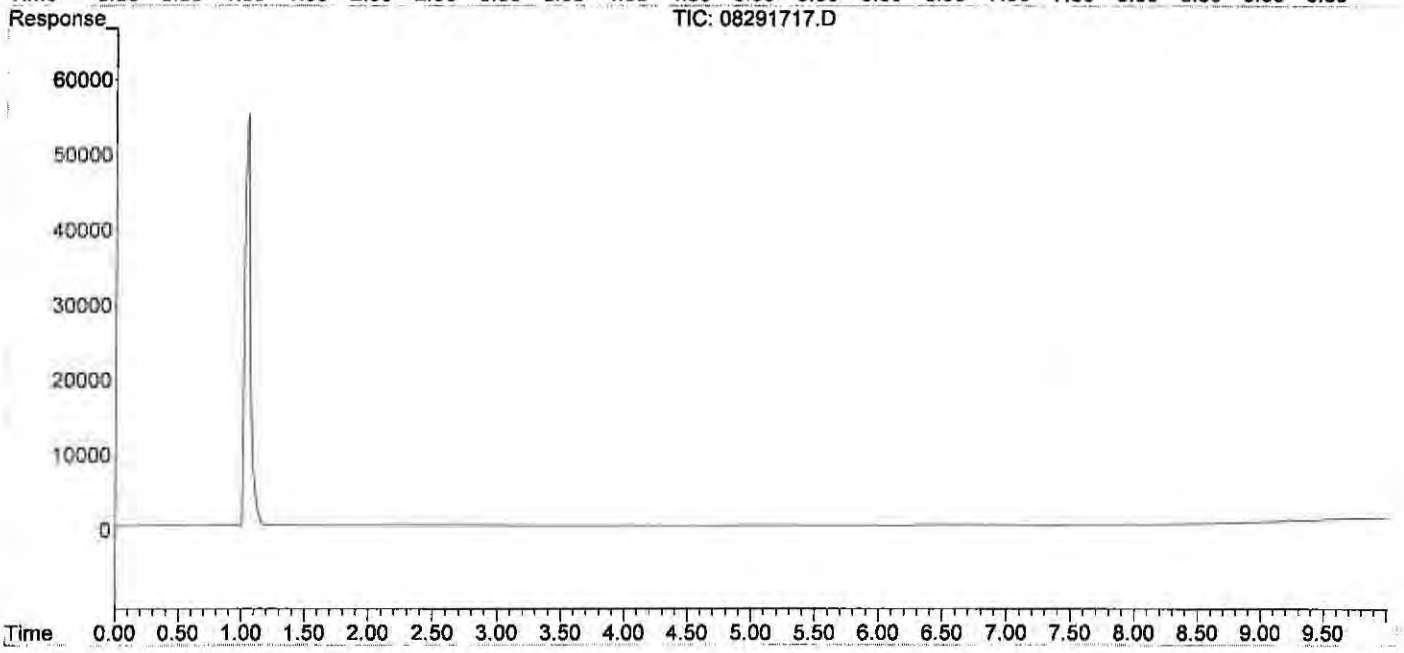
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291717.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:53
Operator : MC
Sample : 250ppm s32-08291702 0.5ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 15:03:42 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 14:52:06 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



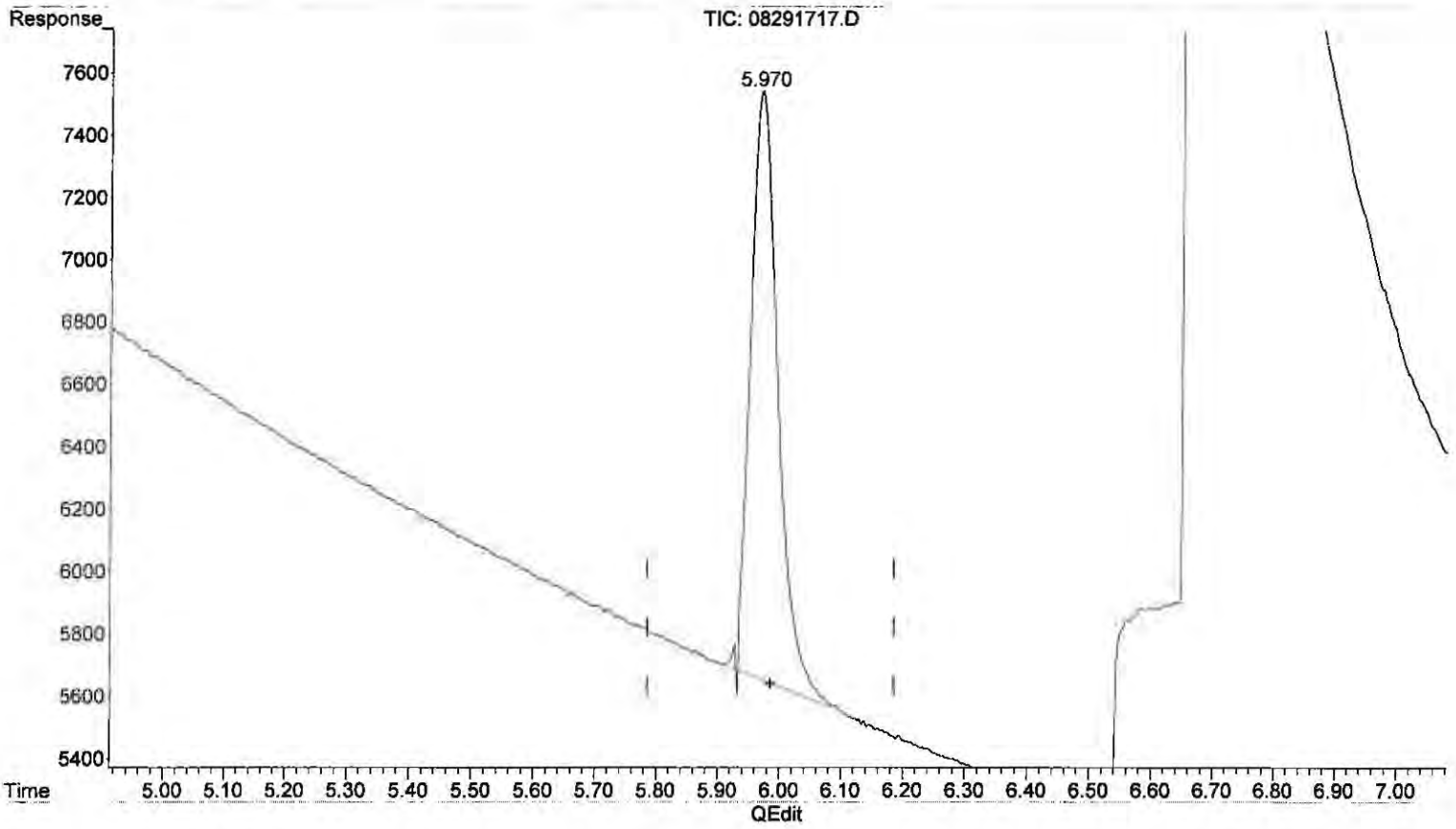


Quantitation Report (Qedit)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291717.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 14:53
Operator : MC
Sample : 250ppm s32-08291702 0.5ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 15:03:42 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 14:52:06 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(4) Carbon dioxide

5.970min 240.204 ppm m

response 58461

(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291719.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 15:23
Operator : MC
Sample : 2500ppm s32-08231701 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 15:35:50 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 15:04:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

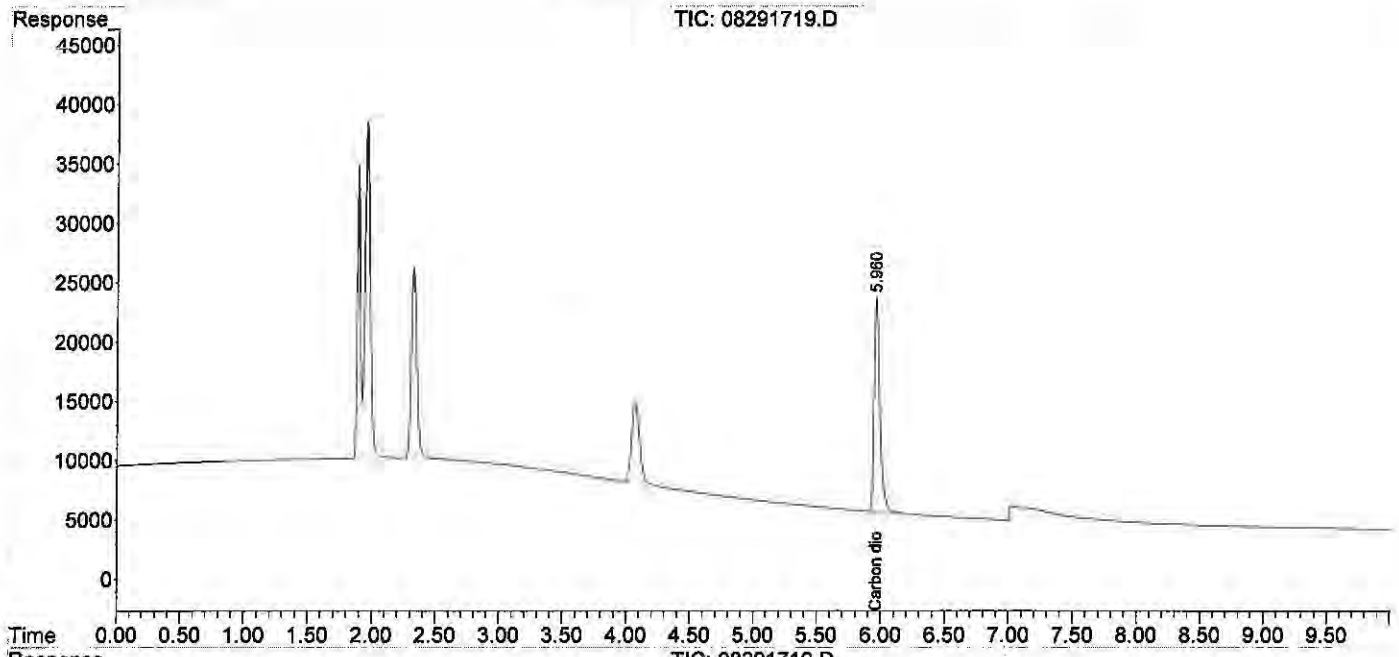
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	0.000	0	N.D.	ppm	d
2)	Carbon monoxide	1.891	425113	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	d
4)	Carbon dioxide	5.962	568043	2369.673	ppm	
6)	Methane (FID)	0.000	0	N.D.	ppm	d
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

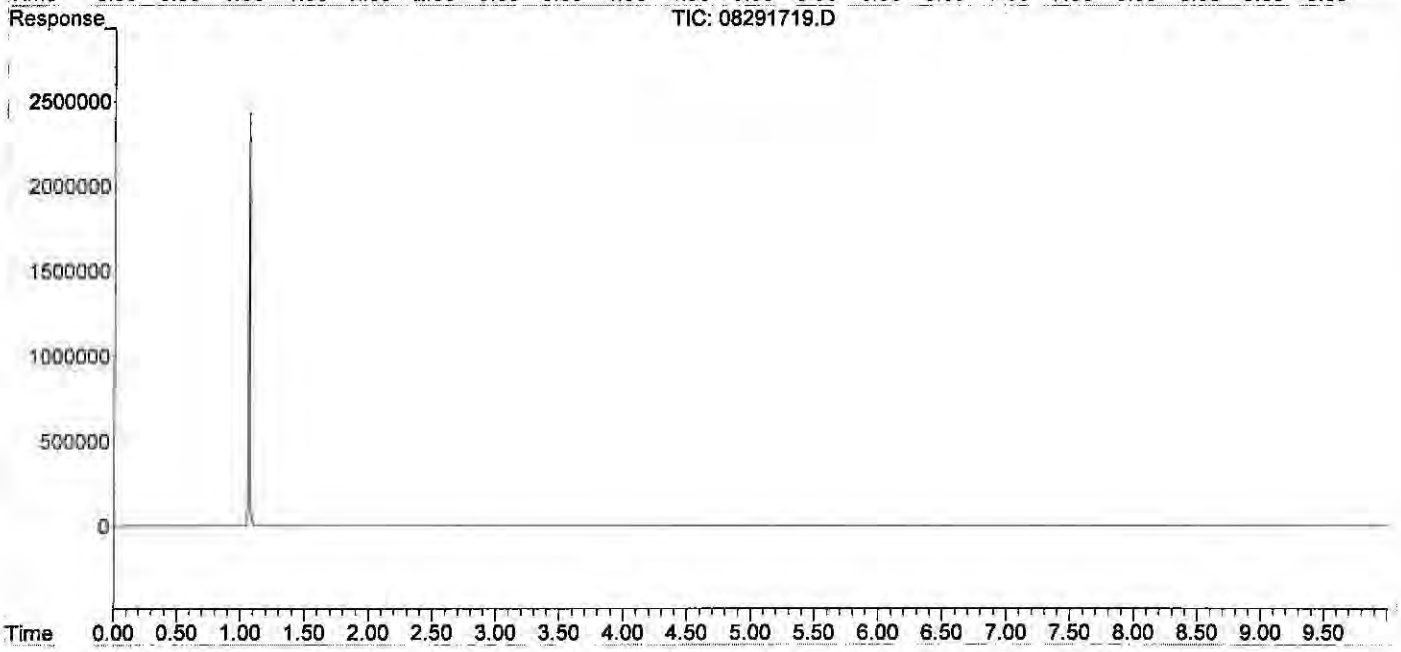
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291719.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 15:23
Operator : MC
Sample : 2500ppm s32-08231701 50ul
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 15:35:50 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 15:04:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291720.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 15:44
Operator : MC
Sample : 5000ppm s32-08231701 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 15:57:17 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 15:36:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

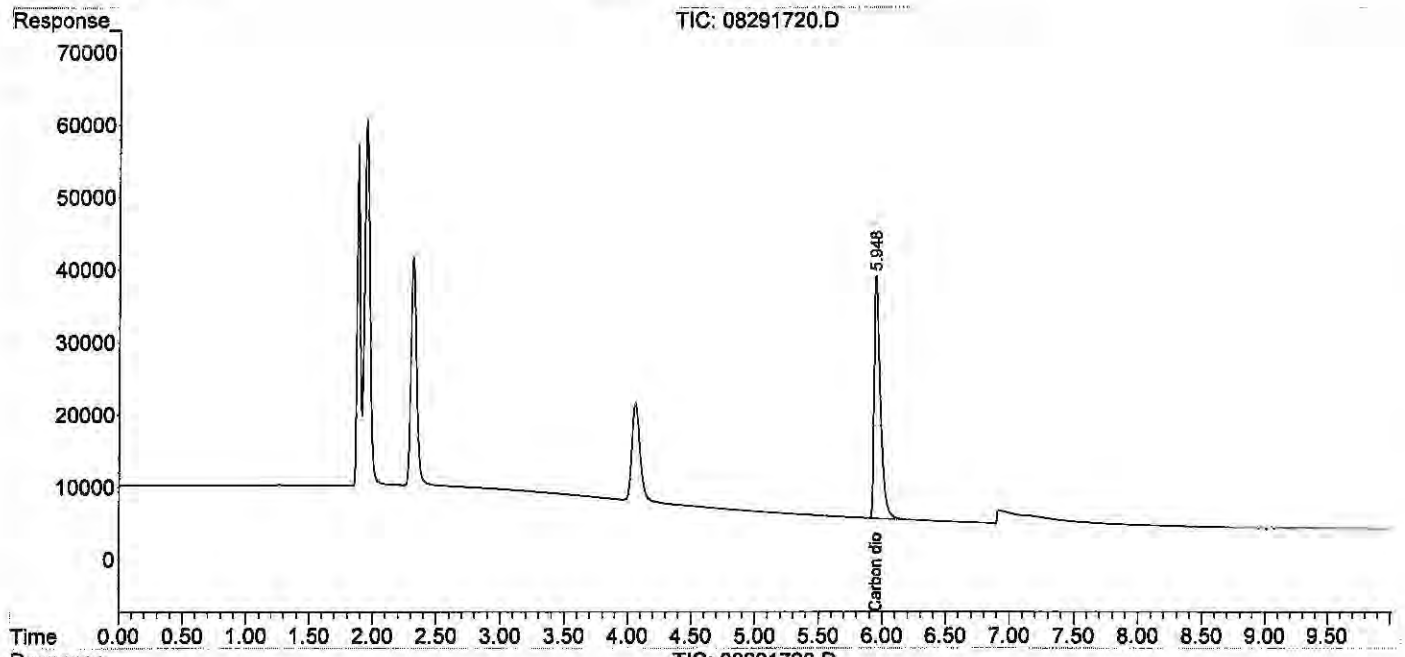
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	0.000	0	N.D.	ppm	d
2)	Carbon monoxide	1.880	819221	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	d
4)	Carbon dioxide	5.948	1132363	4753.126	ppm	
6)	Methane (FID)	0.000	0	N.D.	ppm	d
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

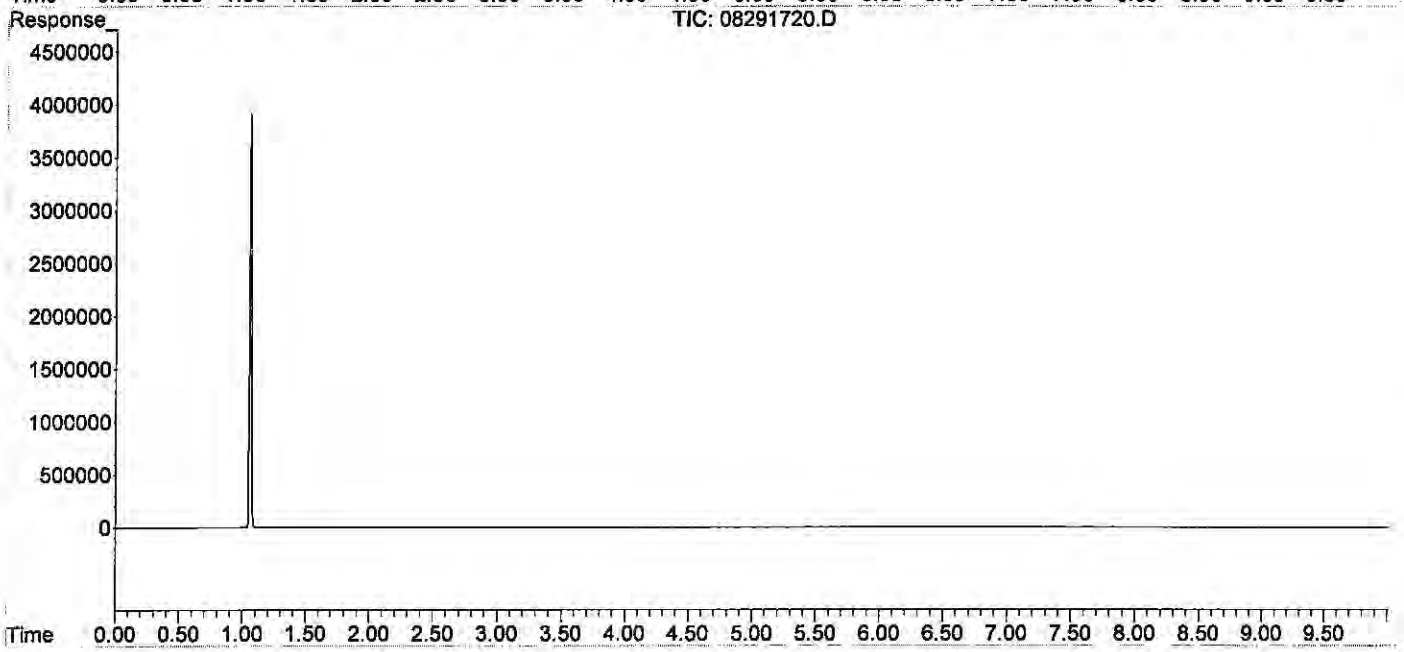
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291720.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 15:44
Operator : MC
Sample : 5000ppm s32-08231701 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 15:57:17 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 15:36:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291721.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 16:00
Operator : MC
Sample : 25000ppm s32-08231701 0.5ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 16:12:53 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 15:57:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	0.000	0	N.D.	ppm	d
2)	Carbon monoxide	1.827	3325463	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	d
4)	Carbon dioxide	5.879f	5744295	24443.288	ppm	
6)	Methane (FID)	0.000	0	N.D.	ppm	d
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

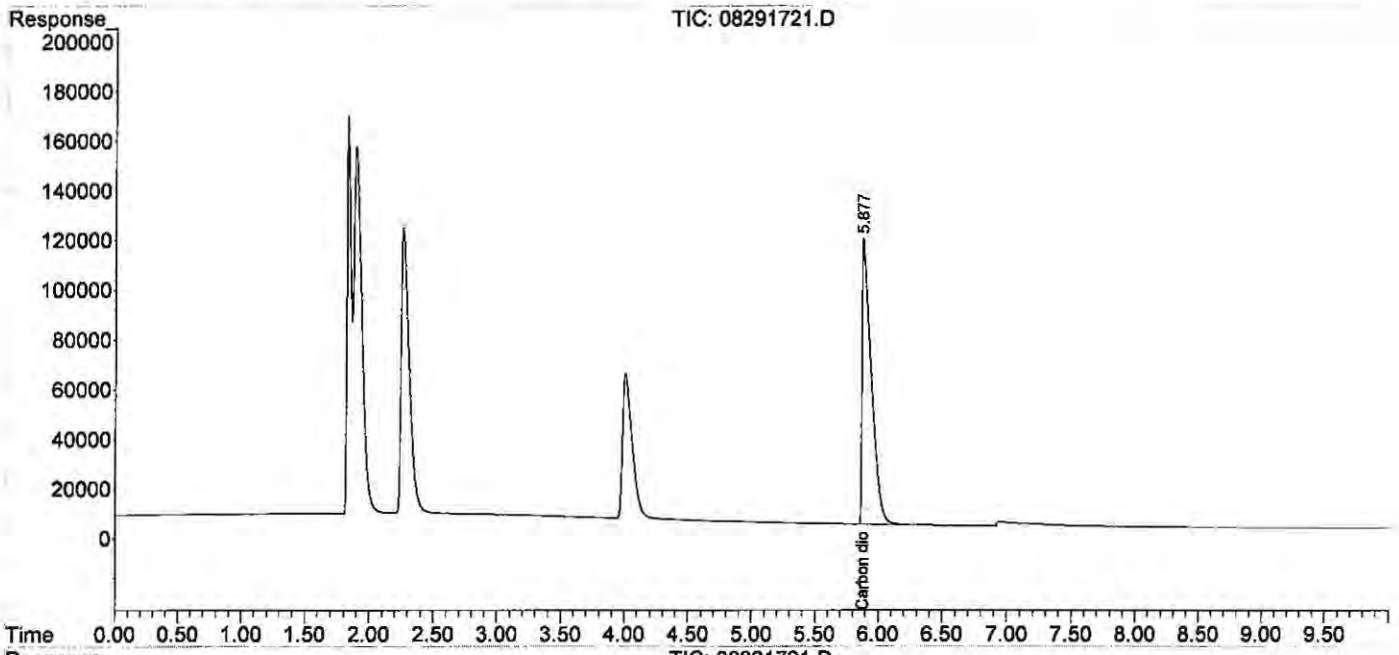
(f)=RT Delta > 1/2 Window (m)=manual int.

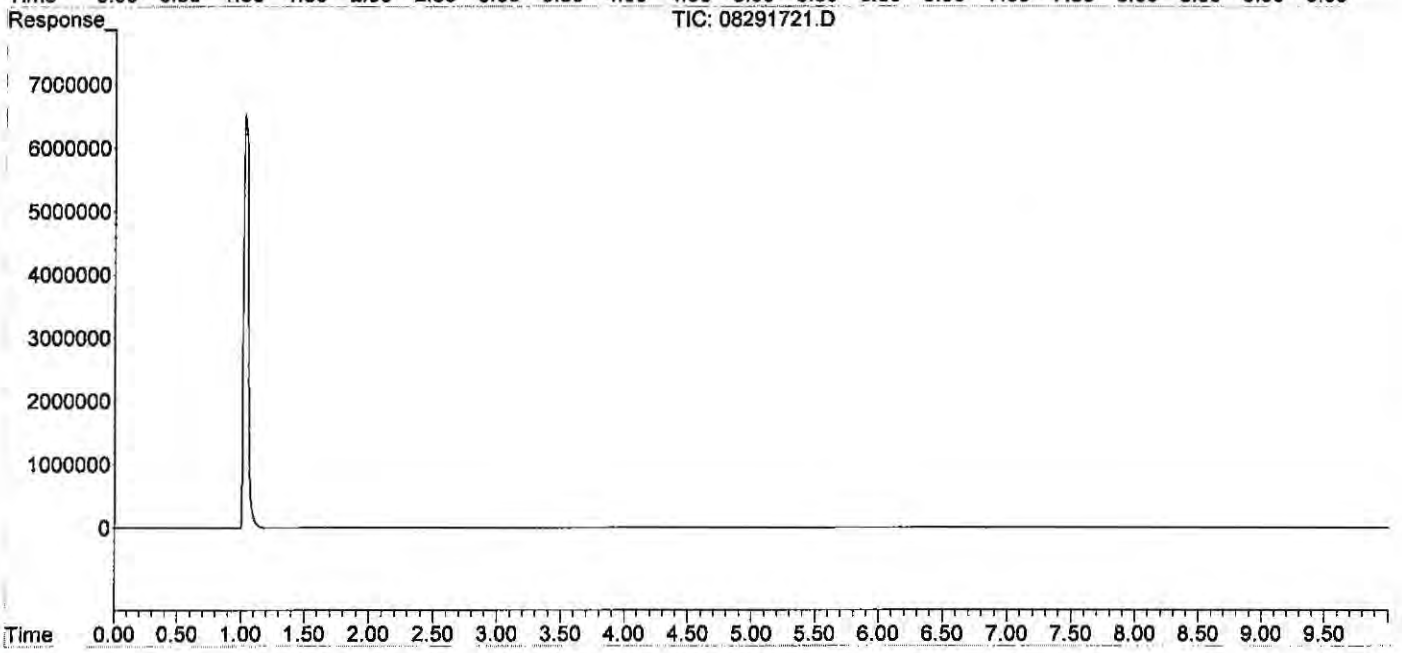
Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291721.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 16:00
Operator : MC
Sample : 25000ppm s32-08231701 0.5ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 16:12:53 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 15:57:37 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291723.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 16:35
Operator : MC
Sample : icv s30-07071701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 16:54:07 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.886	536422	0.113	ppm
2)	Carbon monoxide	1.886	536422	N.D.	ppm
3)	Methane (TCD)	4.059f	626500	66244.710	ppm
4)	Carbon dioxide	5.947	1163775	4957.948	ppm
6)	Methane (FID)	1.062	37290742	3947.023	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

Actual %D
5000 99.16

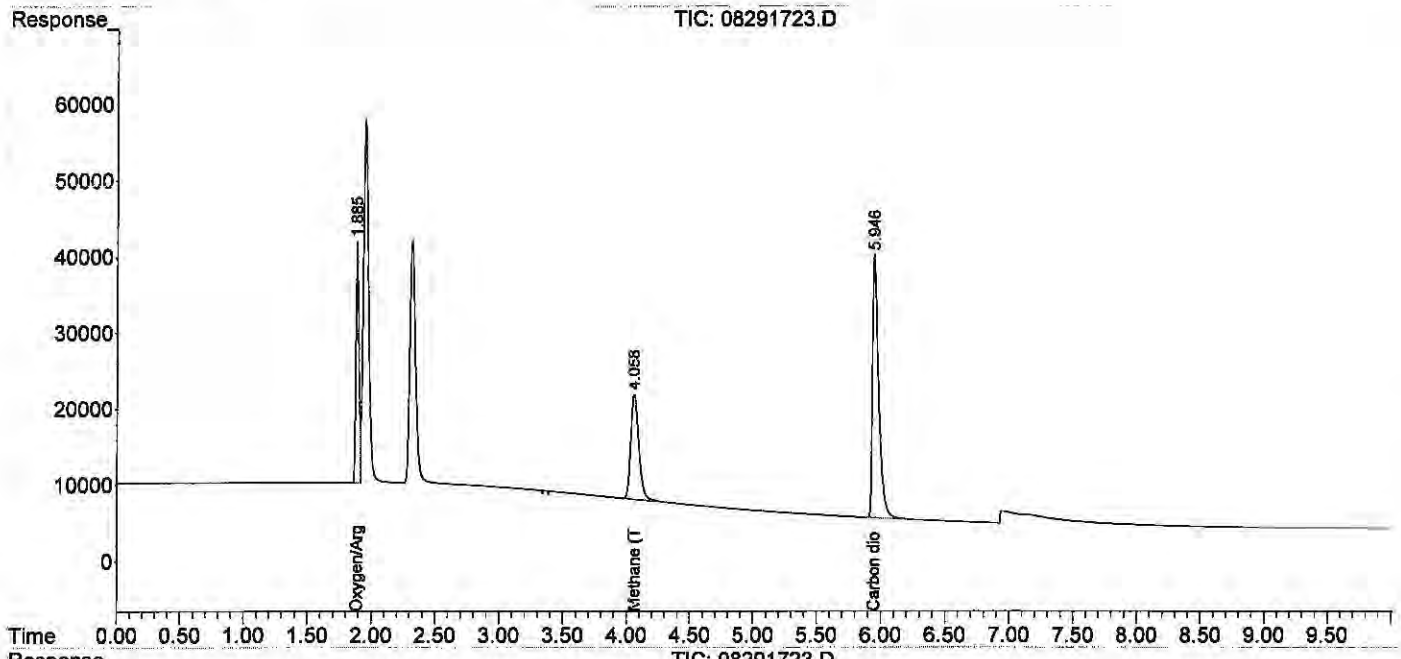
(f)=RT Delta > 1/2 Window (m)=manual int.

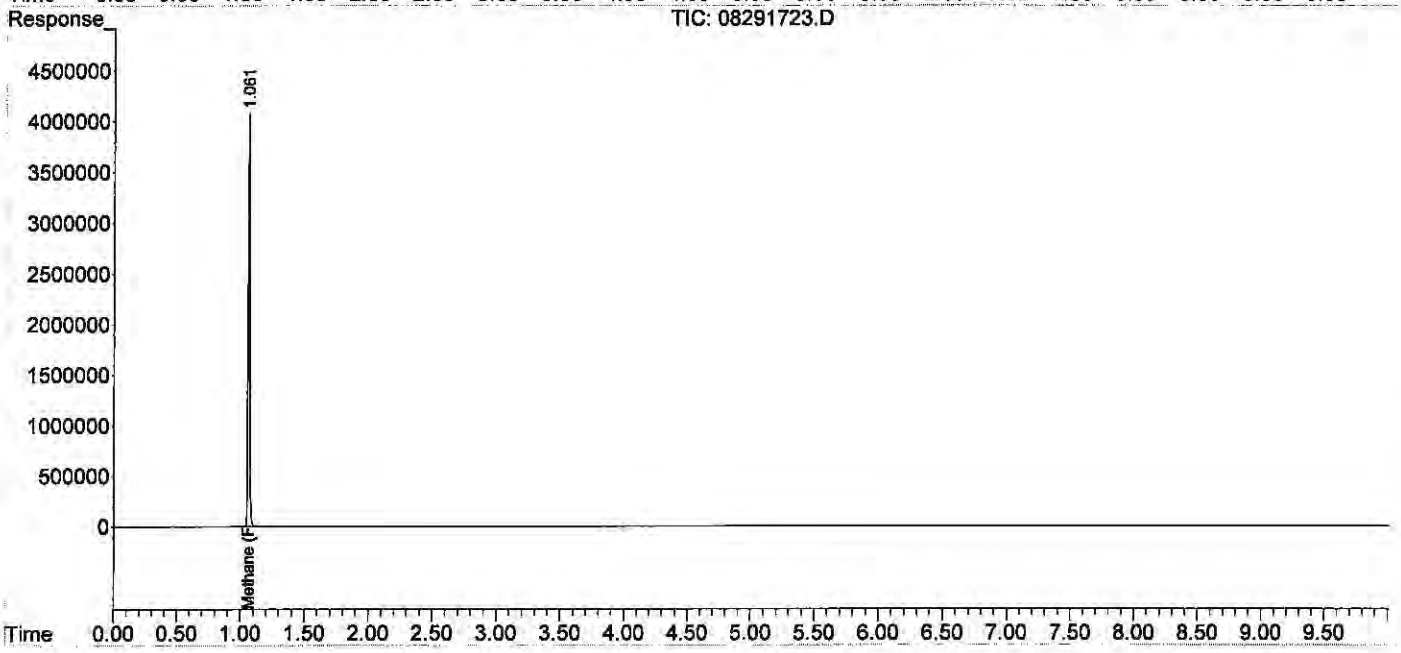
W 9/4/17

Data Path : J:\GC10\DATA\RSK_FID\2017_08\29\
Data File : 08291723.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 29-Aug-2017, 16:35
Operator : MC
Sample : icv s30-07071701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 29 16:54:07 2017
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Dissolved Gases by RSK175

ALS Environmental

Method : RSK175 Headspace Method for Dissolved Hydrocarbon in Water by FID/TCD
Client : ALS Laboratory Group
Service Request: P1907802
Sample Vol. (ml) : 32.00 ml

Analyst : LD
Date Analysis : 12/26/19
Head Space Vol.(ml) : 8.00 ml

Instrument : GC#10
Detector : FID#10, TCD#10
Gas Constant : 24.05684 (20°C)

HEAD SPACE RESULT (ppm)

Sample ID	Inj. Vol.	Carbon Dioxide
STD S32-10291901	0.100	4967.457
ACTUAL		5000.00
%Difference		0.7%
MCS 0.1ml	0.100	0.000
RB 0.1ml	0.100	0.000
LCS S32-08141901	0.100	917.730
LCSD S32-08141901	0.100	888.523
P1907802-001 0.1ml	0.100	9808.111
P1907802-002 0.1ml	0.100	8155.640
P1907802-003 0.1ml	0.100	12478.49
P1907802-004 0.1ml	0.100	12560.00
P1907802-005 0.1ml	0.100	11248.81
STD S32-10291901	0.100	5239.520

FINAL HEAD SPACE RESULT (ppm)

	Carbon Dioxide
WWt.	44.10
HENRY'S CONSTANT	1.42E+03
RL	100.00
MCS 0.1ml	0.000
LCS S32-08141901	9177.300
LCSD S32-08141901	8885.230
P1907802-001 0.1ml	98081.110
P1907802-002 0.1ml	81556.400
P1907802-003 0.1ml	124784.93
P1907802-004 0.1ml	125599.96
P1907802-005 0.1ml	112488.08
STD S32-10291901	52395.200

LP
12/27

STD S32-10291901	5071.627	16:27:10
ACTUAL	5000.00	
%Difference	1.4%	

P50 of 2513

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261901.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 09:10:35
Operator : LD
Sample : STD S32-10291901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 09:22:21 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

LD
12/27

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

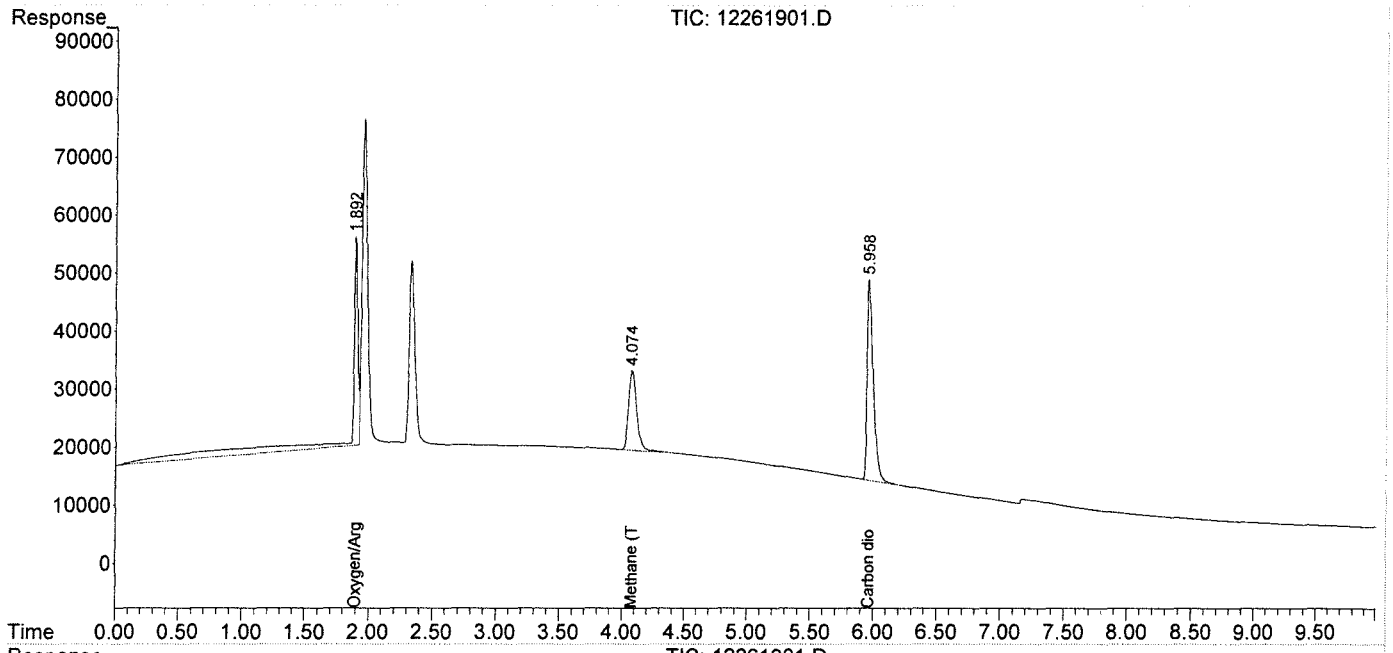
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.893	1510660	0.317	ppm	
2)	Carbon monoxide	1.893	1510660	N.D.	ppm	
3)	Methane (TCD)	4.074f	633311	66964.949	ppm	
4)	Carbon dioxide	5.958	1166007	4967.457	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

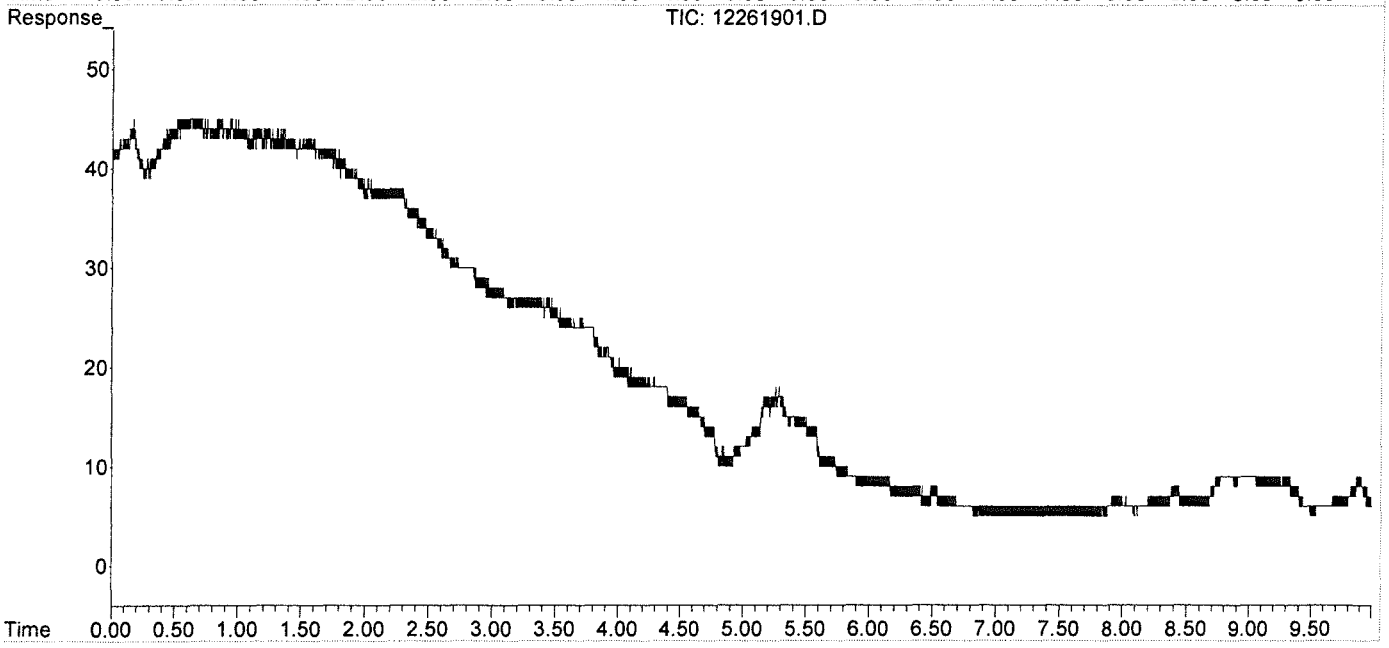
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261901.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 09:10:35
Operator : LD
Sample : STD S32-10291901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 09:22:21 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



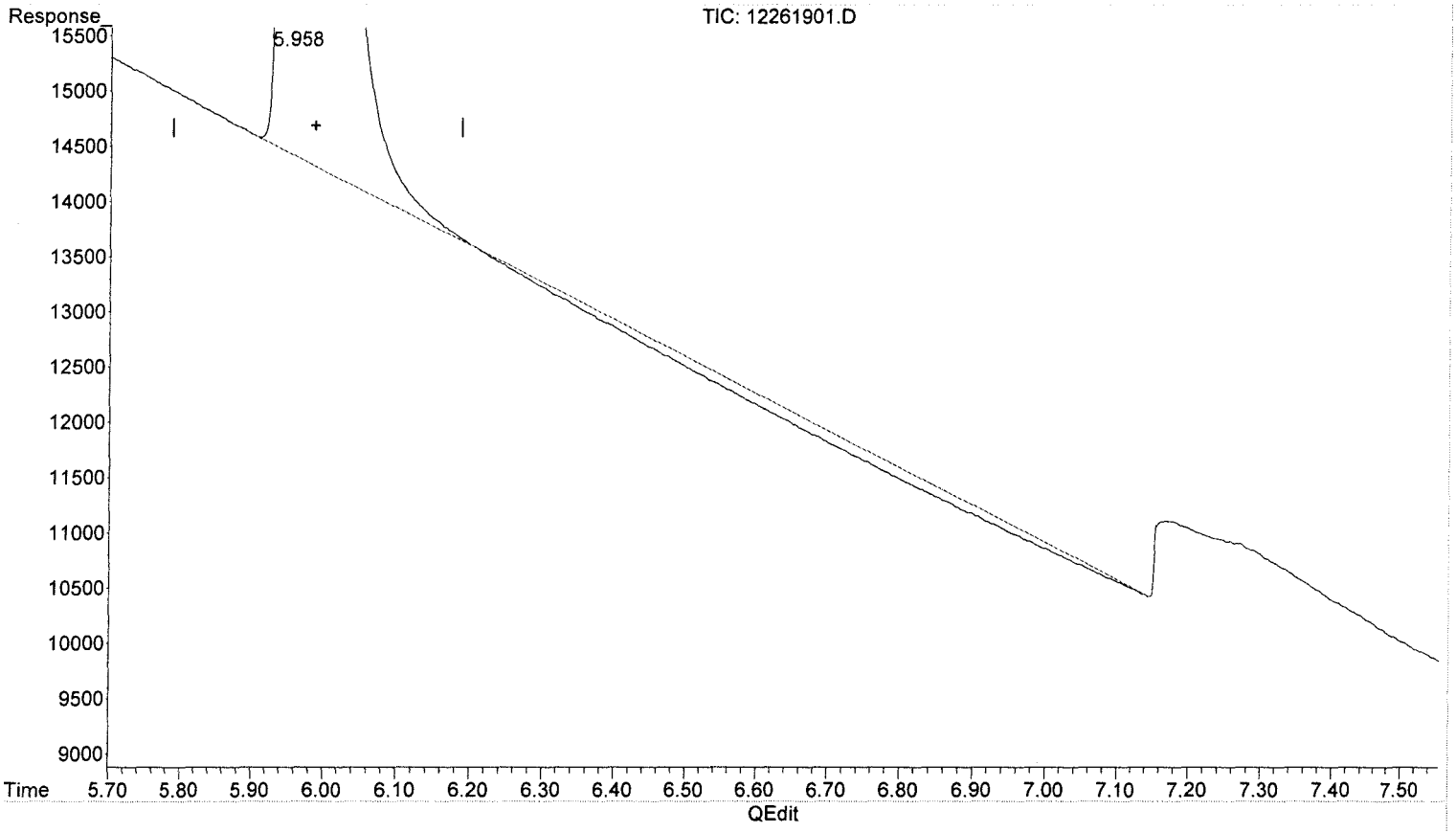


01000744

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261901.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 09:10:35
Operator : LD
Sample : STD S32-10291901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 09:22:21 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(4) Carbon dioxide

5.959min 4796.457 ppm

response 1125868

(+) = Expected Retention Time

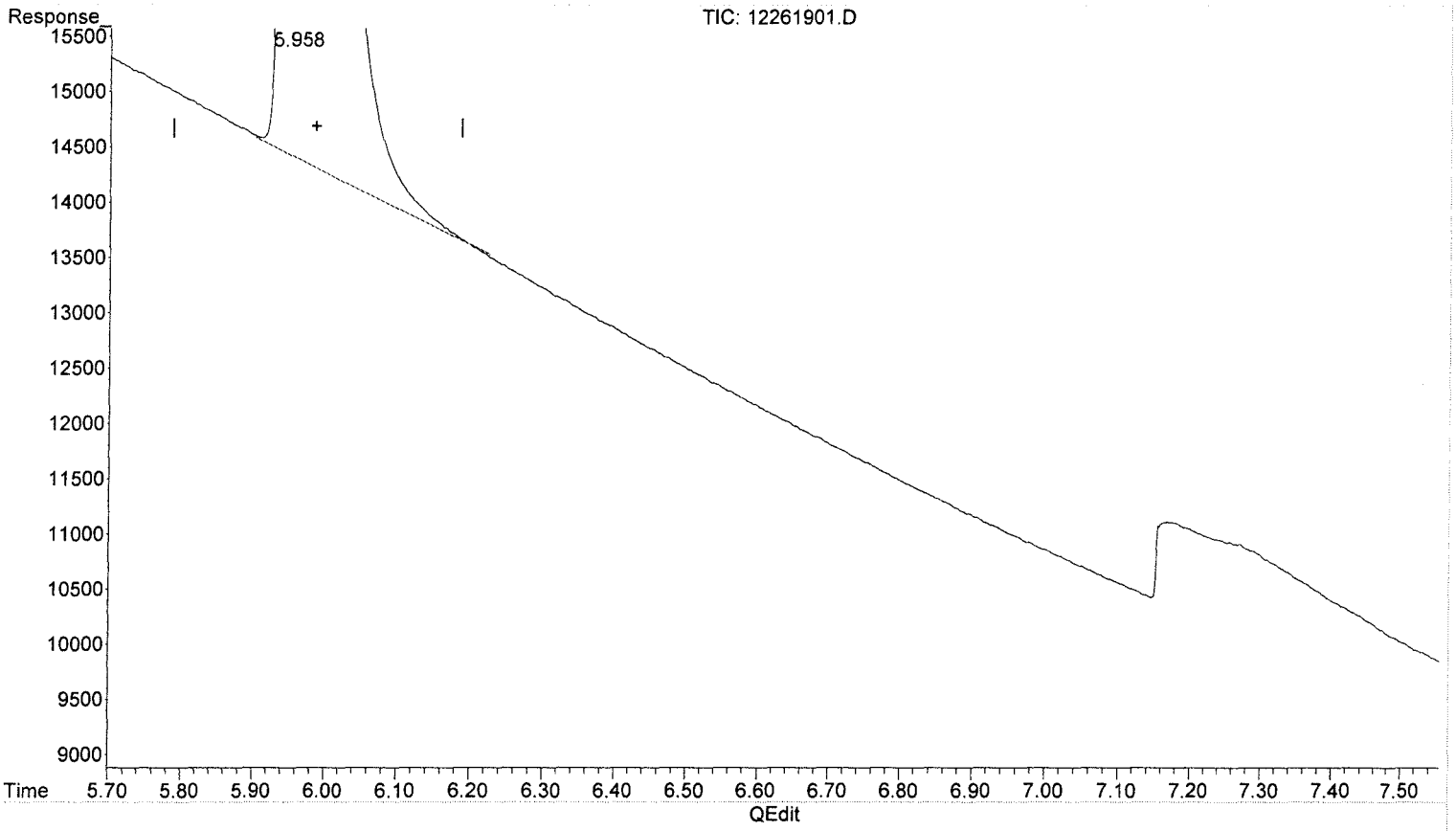
Quantitation Report (Qedit)

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261901.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 09:10:35
Operator : LD
Sample : STD S32-10291901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 09:22:21 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

LD
BLC
12/27

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(4) Carbon dioxide

5.958min 4967.457 ppm m

response 1166007

12/27/2019

(+) = Expected Retention Time
RS082817_CO2.M Fri Dec 27 10:12:25 2019 Page: 1

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261918.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 14:51:43
Operator : LD
Sample : STD S32-10291901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:08:44 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

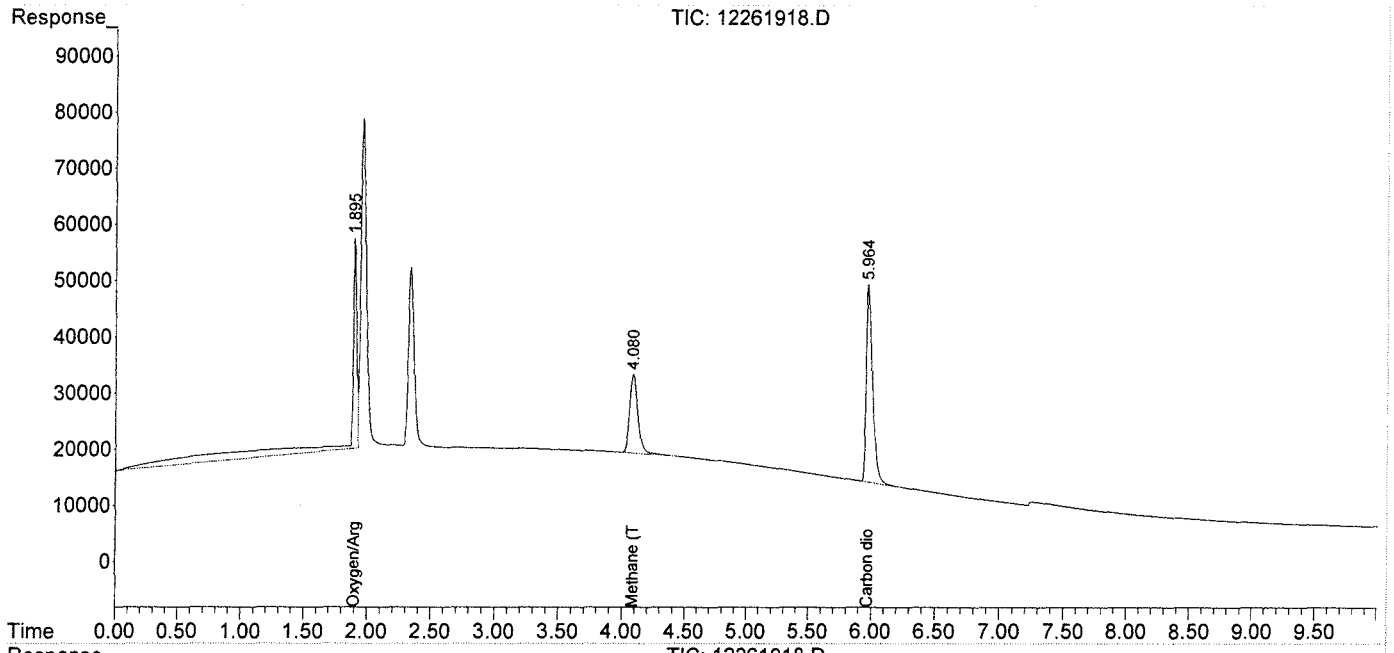
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.896	1726658	0.363	ppm	
2)	Carbon monoxide	1.896	1726658	N.D.	ppm	
3)	Methane (TCD)	4.080f	643404	68032.103	ppm	
4)	Carbon dioxide	5.964	1190459	5071.627	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

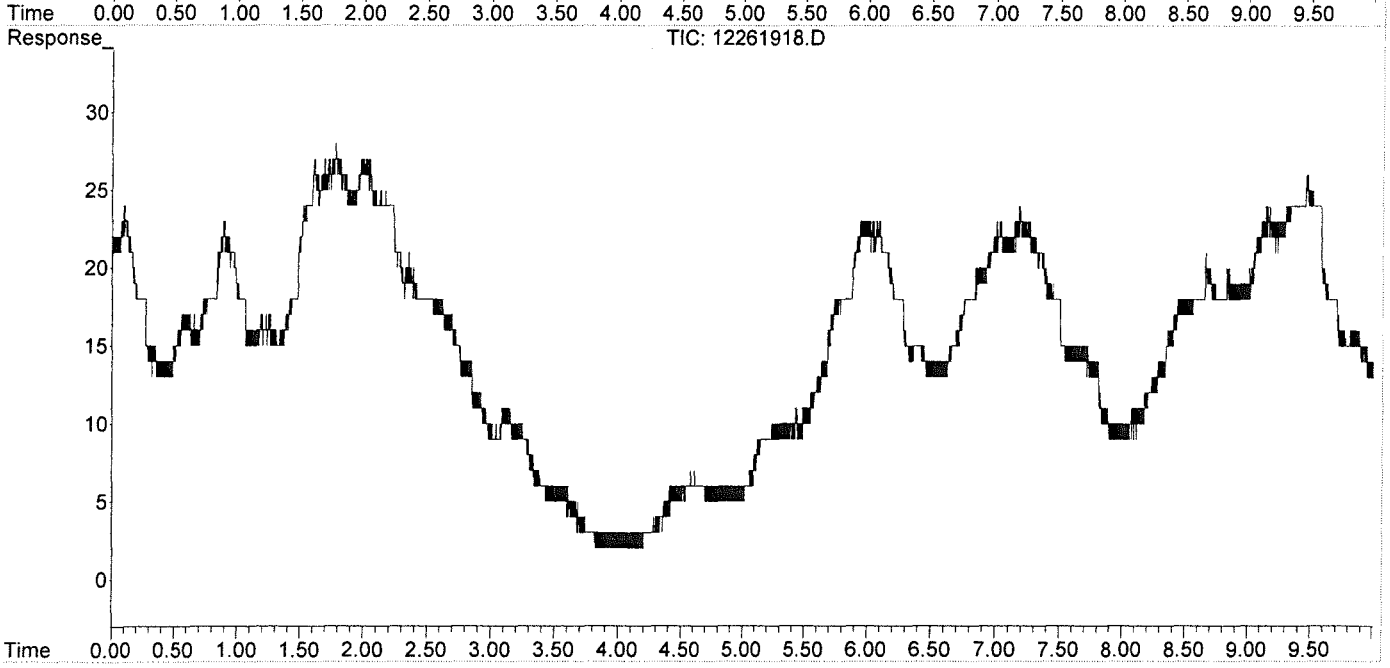
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261918.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 14:51:43
Operator : LD
Sample : STD S32-10291901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:08:44 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

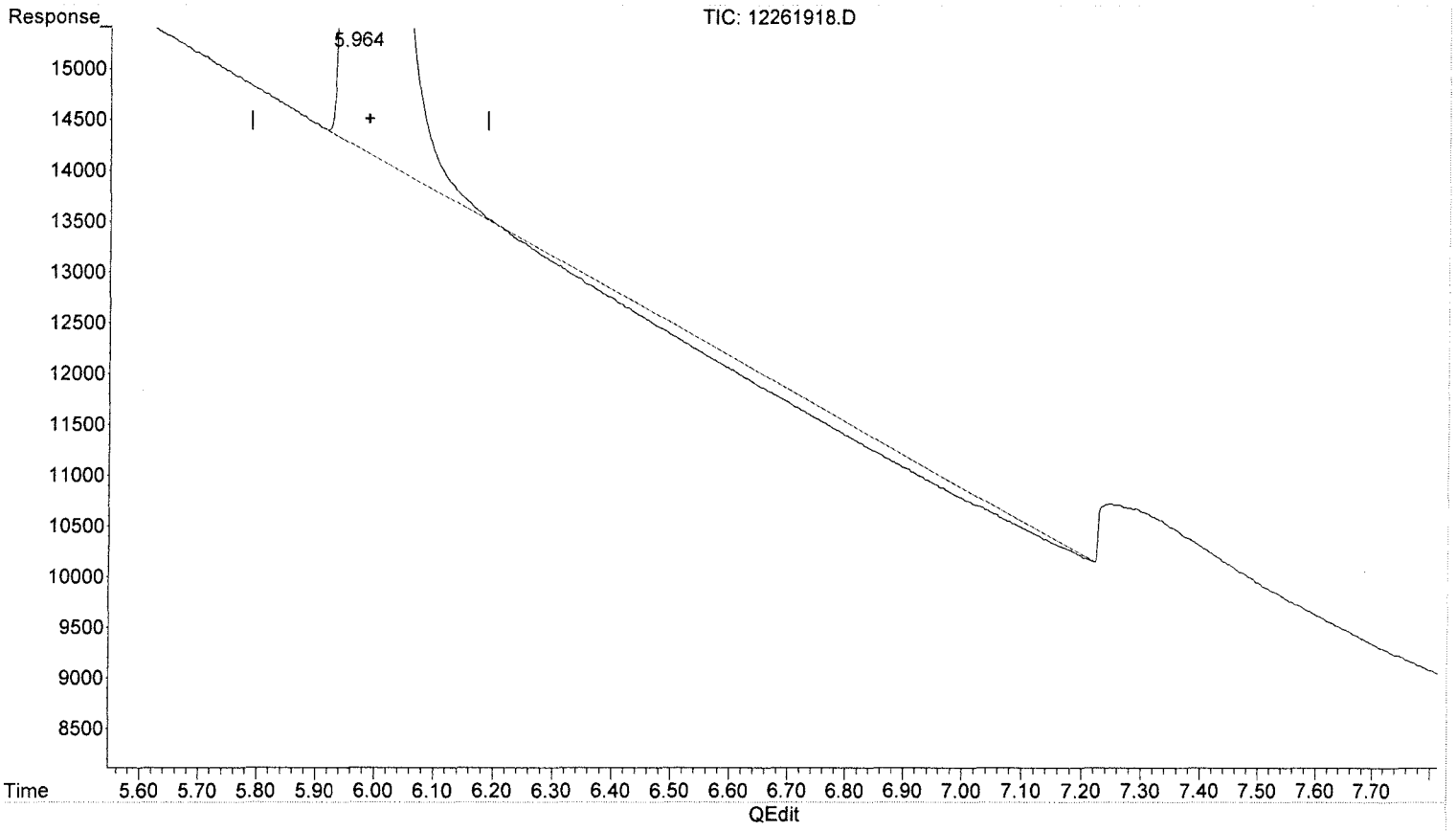




Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261918.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 14:51:43
Operator : LD
Sample : STD S32-10291901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:08:44 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(4) Carbon dioxide

5.965min 4826.613 ppm

response 1132947

(+) = Expected Retention Time

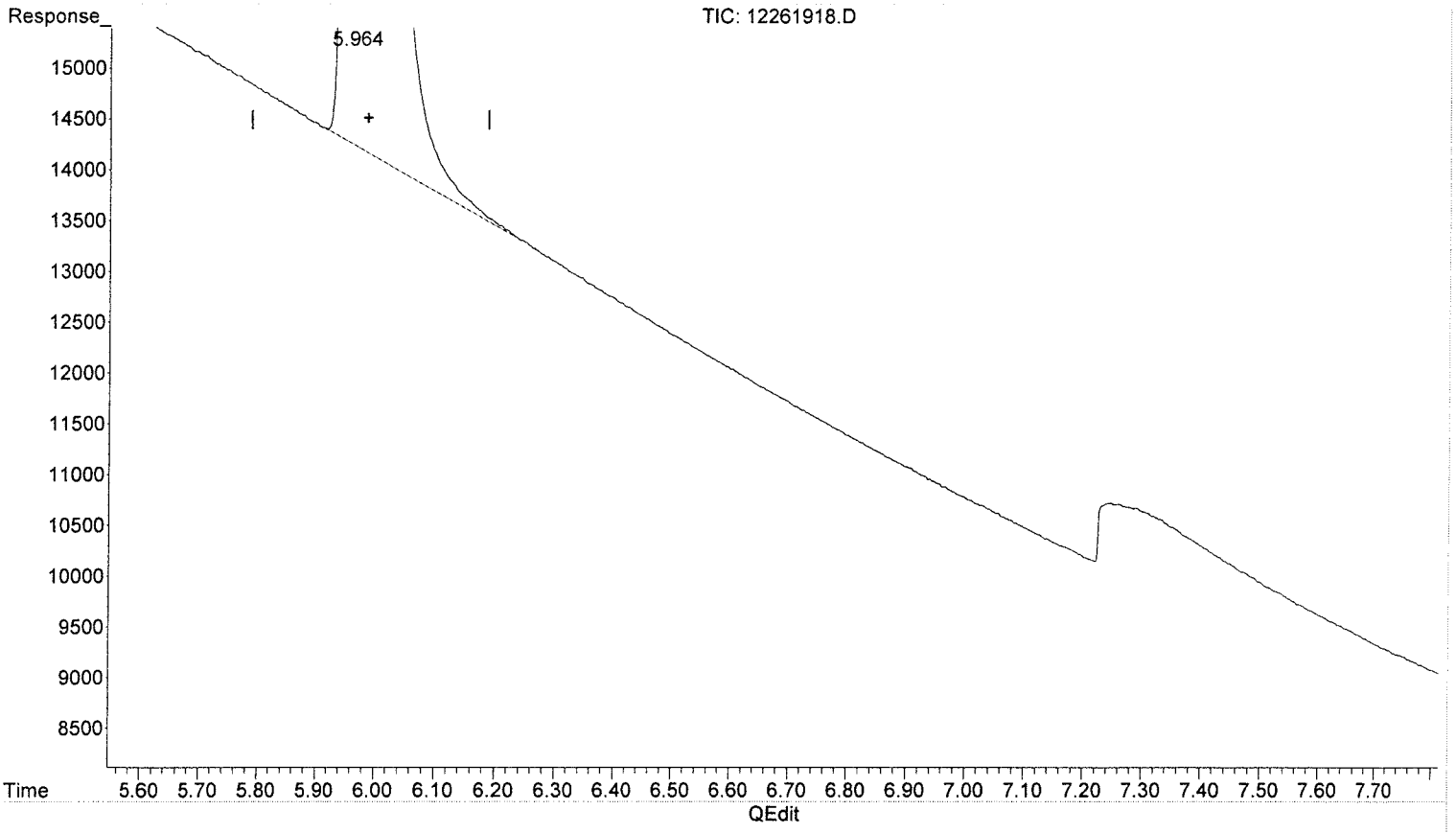
01000749

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261918.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 14:51:43
Operator : LD
Sample : STD S32-10291901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 15:08:44 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

LD
BLC
12/27

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(4) Carbon dioxide

5.964min 5071.627 ppm m

response 1190459

(+) = Expected Retention Time

RS082817_CO2.M Fri Dec 27 10:13:02 2019 Page: 1

Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261922.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 16:27:10
Operator : LD
Sample : STD S32-10291901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 16:42:43 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.919f	563019	0.118	ppm	
2)	Carbon monoxide	1.919f	563019	N.D.	ppm	
3)	Methane (TCD)	4.092f	678747	71769.206	ppm	
4)	Carbon dioxide	5.973	1229868	5239.520	ppm	m
6)	Methane (FID)	0.000	0	N.D.	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

(f)=RT Delta > 1/2 Window (m)=manual int.

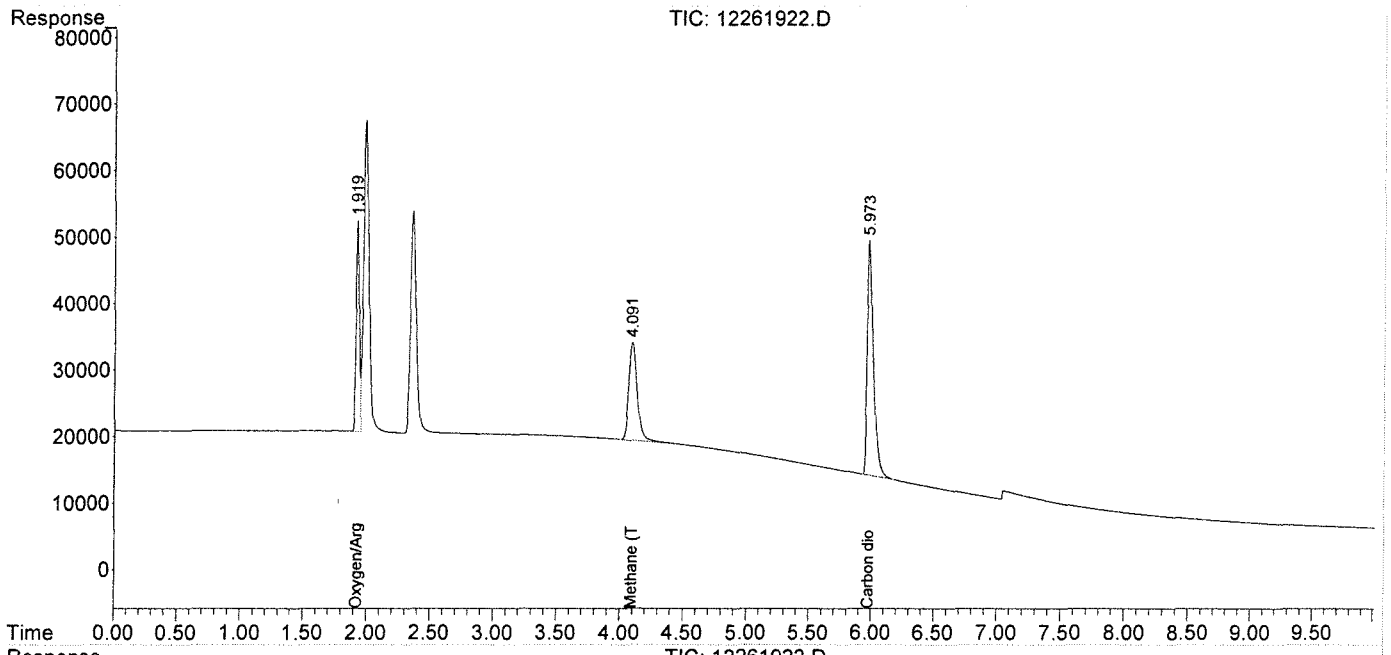
Quantitation Report (QT Reviewed)

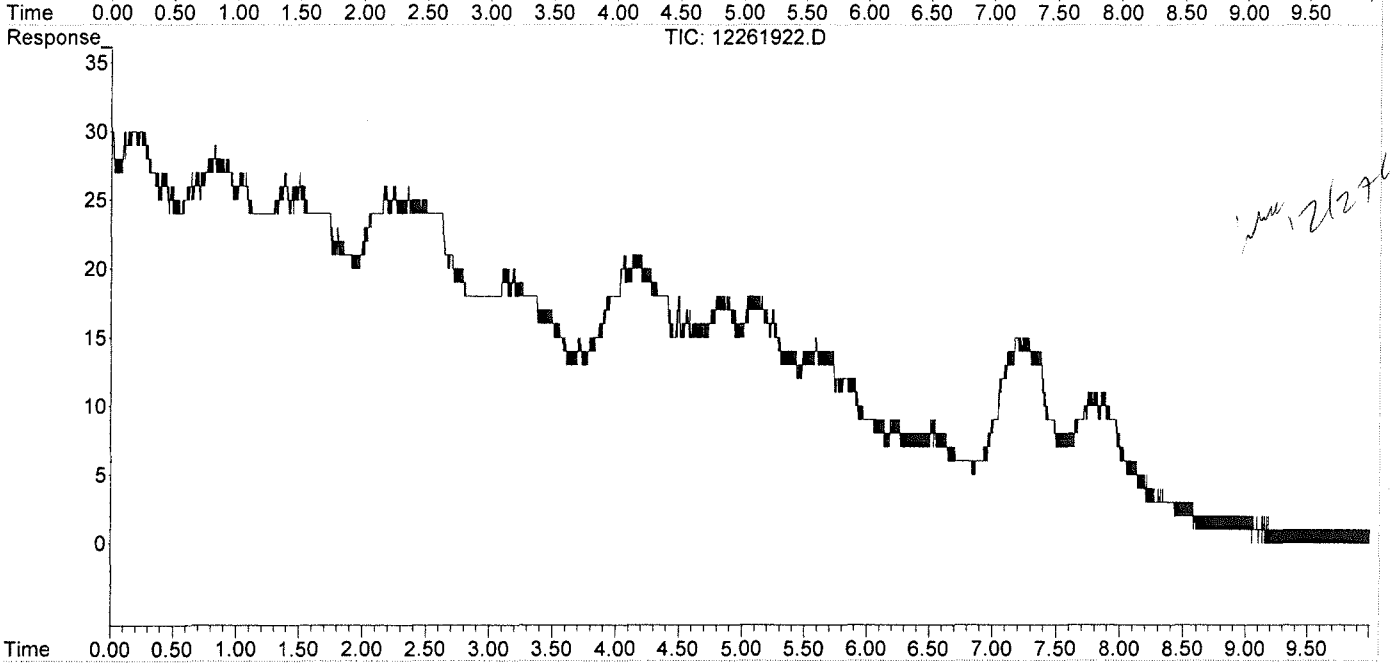
Data Path : J:\GC10\DATA\RSK_TCD\2019_12\26\
Data File : 12261922.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 26-Dec-2019, 16:27:10
Operator : LD
Sample : STD S32-10291901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 26 16:42:43 2019
Quant Method : I:\GC10\METHODS\RS082817_CO2.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Tue Aug 29 16:13:13 2017
Response via : Initial Calibration
Integrator: ChemStation

LD
BLC
NO peaks
12/27

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





12/27 1,9

Injection Log

Directory: I:\GC10\DATA\RSK_FID\2017_08\29\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	29-Aug-17, 07:58:00	08291701.D	std s30-06161601		MC	RSKBOTH.M	Pass
2	29-Aug-17, 08:11:02	08291702.D	mb 0.5ml		MC	RSKBOTH.M	Pass
3	29-Aug-17, 08:24:13	08291703.D	4089-001 0.5ml		MC	RSKBOTH.M	
4	29-Aug-17, 08:39:29	08291704.D	4089-002 0.5ml		MC	RSKBOTH.M	
5	29-Aug-17, 08:53:38	08291705.D	4089-003 0.5ml		MC	RSKBOTH.M	
6	29-Aug-17, 09:33:52	08291706.D	4089-004 0.5ml		MC	RSKBOTH.M	
7	29-Aug-17, 09:50:51	08291707.D	4089-005 0.5ml		MC	RSKBOTH.M	
8	29-Aug-17, 10:07:54	08291708.D	4089-006 0.5ml		MC	RSKBOTH.M	
9	29-Aug-17, 10:42:34	08291709.D	4089-007 0.5ml		MC	RSKBOTH.M	
10	29-Aug-17, 11:06:01	08291710.D	4089-008 0.5ml		MC	RSKBOTH.M	
11	29-Aug-17, 11:23:53	08291711.D	4089-009 0.5ml		MC	RSKBOTH.M	
12	29-Aug-17, 11:37:17	08291712.D	lcs s30-05241604		MC	RSKBOTH.M	Pass
13	29-Aug-17, 11:50:31	08291713.D	lcs s30-05241604		MC	RSKBOTH.M	Pass
14	29-Aug-17, 12:29:45	08291714.D	std s30-06161601		MC	RSKBOTH.M	Pass
15	29-Aug-17, 14:07:01	08291715.D	25ppm s32-08291701 0.25ml		MC	RSKBOTH.M	Curve
16	29-Aug-17, 14:22:12	08291716.D	100ppm s32-08291702 0.2ml		MC	RSKBOTH.M	Curve
17	29-Aug-17, 14:53:00	08291717.D	250ppm s32-08291702 0.5ml		MC	RSKBOTH.M	Curve
18	29-Aug-17, 15:07:43	08291718.D	mls inject		MC	RSKBOTH.M	
19	29-Aug-17, 15:23:21	08291719.D	2500ppm s32-08231701 50ul		MC	RSKBOTH.M	Curve
20	29-Aug-17, 15:44:54	08291720.D	5000ppm s32-08231701 0.1ml		MC	RSKBOTH.M	Curve
21	29-Aug-17, 16:00:09	08291721.D	25000ppm s32-08231701 0.5ml		MC	RSKBOTH.M	Curve
22	29-Aug-17, 16:15:43	08291722.D	mb 0.1ml		MC	RSKBOTH.M	Pass
23	29-Aug-17, 16:35:37	08291723.D	lcv s30-07071701		MC	RSKBOTH.M	Pass

Injection Log

WH 12/31/19

Directory: I:\GC10\DATA\RSK_TCD\2019_12\26\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	26-Dec-19, 09:10:35	12261901.D	STD S32-10291901		LD	RSKBOTH.M	PASS
2	26-Dec-19, 09:24:53	12261902.D	RB 0.1ml		LD	RSKBOTH.M	PASS
3	26-Dec-19, 11:27:12	12261903.D	MCS 0.1ml		LD	RSKBOTH.M	PASS
4	26-Dec-19, 11:41:15	12261904.D	xxxxLCS S32-08141901		LD	RSKBOTH.M	FAIL
5	26-Dec-19, 11:55:02	12261905.D	xxxxLCS S32-08141901		LD	RSKBOTH.M	FAIL
6	26-Dec-19, 12:08:56	12261906.D	xxxxxLCS S32-08141901		LD	RSKBOTH.M	FAIL
7	26-Dec-19, 12:23:26	12261907.D	xxxxxLCS S32-08141901		LD	RSKBOTH.M	FAIL
8	26-Dec-19, 12:36:53	12261908.D	P1907801-001 0.1ml		LD	RSKBOTH.M	
9	26-Dec-19, 12:50:07	12261909.D	P1907801-002 0.1ml		LD	RSKBOTH.M	
10	26-Dec-19, 13:03:25	12261910.D	P1907801-003 0.1ml		LD	RSKBOTH.M	
11	26-Dec-19, 13:17:04	12261911.D	P1907801-004 0.1ml		LD	RSKBOTH.M	
12	26-Dec-19, 13:30:29	12261912.D	P1907801-005 0.1ml		LD	RSKBOTH.M	
13	26-Dec-19, 13:43:47	12261913.D	P1907801-006 0.1ml		LD	RSKBOTH.M	
14	26-Dec-19, 13:56:40	12261914.D	P1907802-001 0.1ml		LD	RSKBOTH.M	
15	26-Dec-19, 14:09:49	12261915.D	P1907802-002 0.1ml		LD	RSKBOTH.M	
16	26-Dec-19, 14:25:42	12261916.D	P1907802-003 0.1ml		LD	RSKBOTH.M	
17	26-Dec-19, 14:38:40	12261917.D	P1907802-004 0.1ml		LD	RSKBOTH.M	
18	26-Dec-19, 14:51:43	12261918.D	STD S32-10291901		LD	RSKBOTH.M	PASS
19	26-Dec-19, 15:09:48	12261919.D	P1907802-005 0.1ml		LD	RSKBOTH.M	
20	26-Dec-19, 15:58:59	12261920.D	LCS S32-08141901		LD	RSKBOTH.M	PASS
21	26-Dec-19, 16:11:50	12261921.D	LCSD S32-08141901		LD	RSKBOTH.M	PASS
22	26-Dec-19, 16:27:10	12261922.D	STD S32-10291901		LD	RSKBOTH.M	PASS

01000754

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271912.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 13:26:26
Operator : LD
Sample : P1907802-001 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:37:06 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	0.000	0	N.D.	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

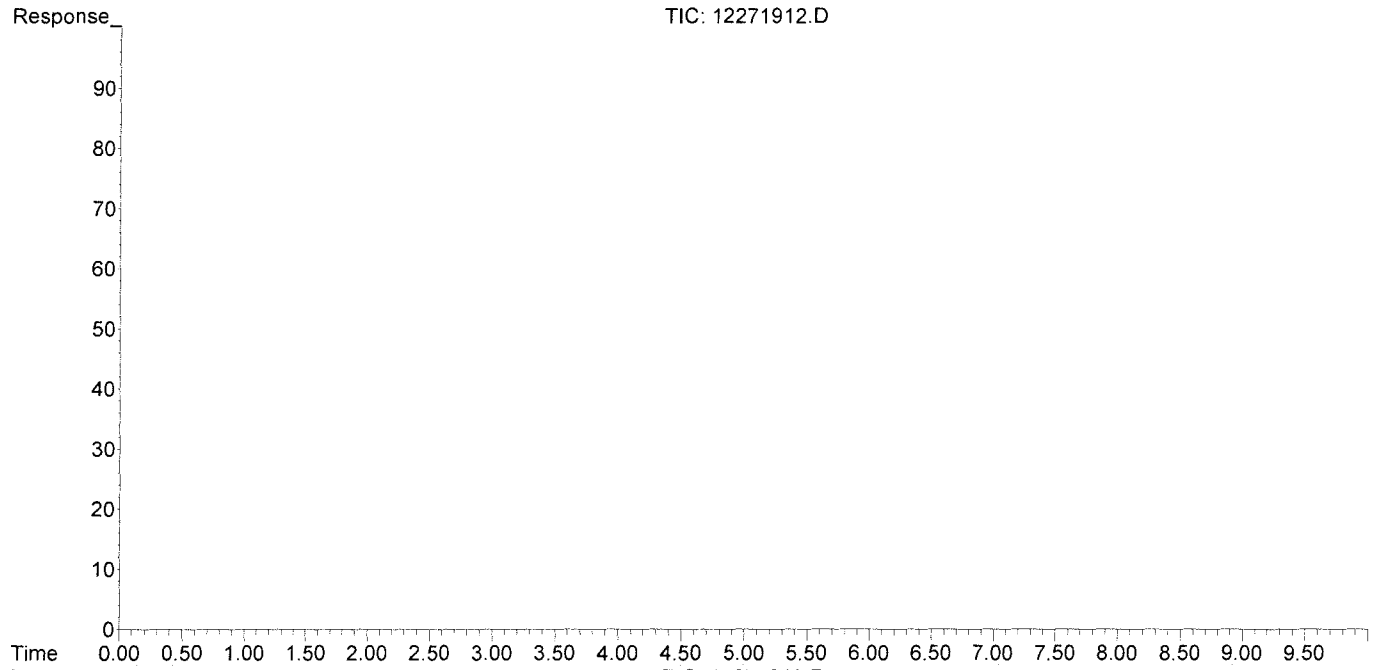
(f)=RT Delta > 1/2 Window (m)=manual int.

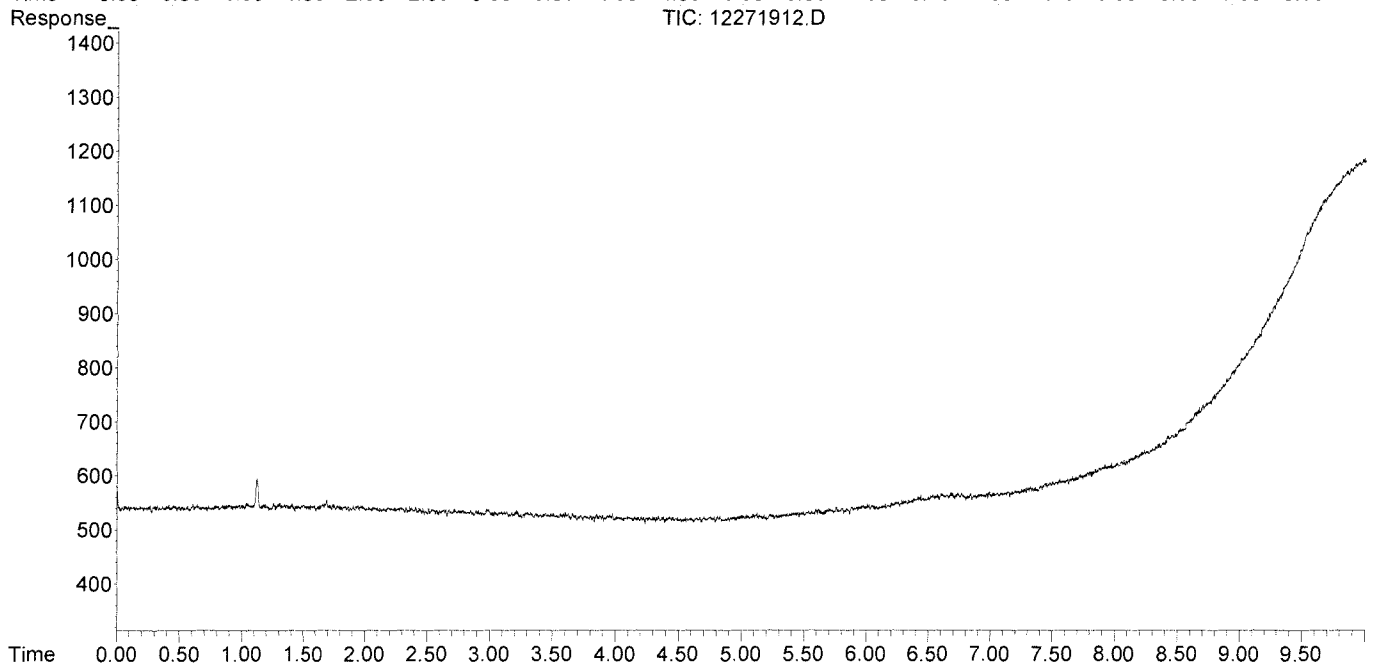
01000755

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271912.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 13:26:26
Operator : LD
Sample : P1907802-001 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:37:06 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271913.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 13:40:35
Operator : LD
Sample : P1907802-002 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:37:21 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

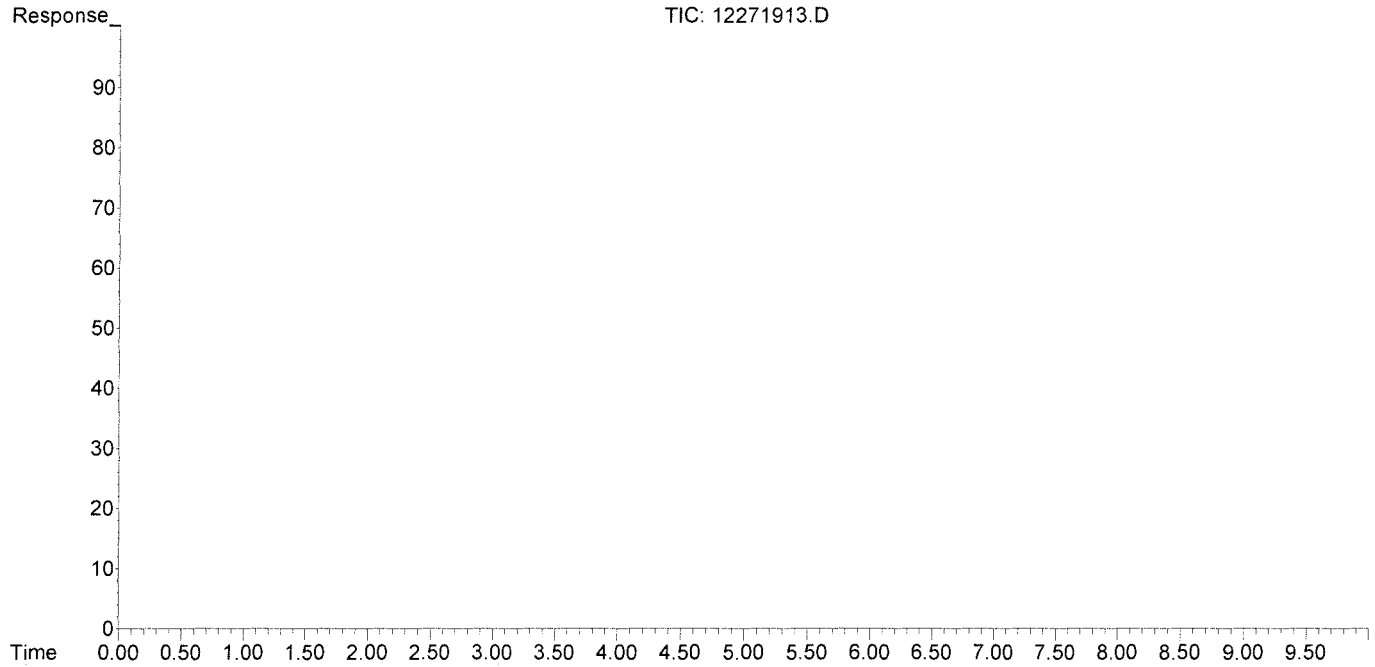
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	0.000	0	N.D.	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

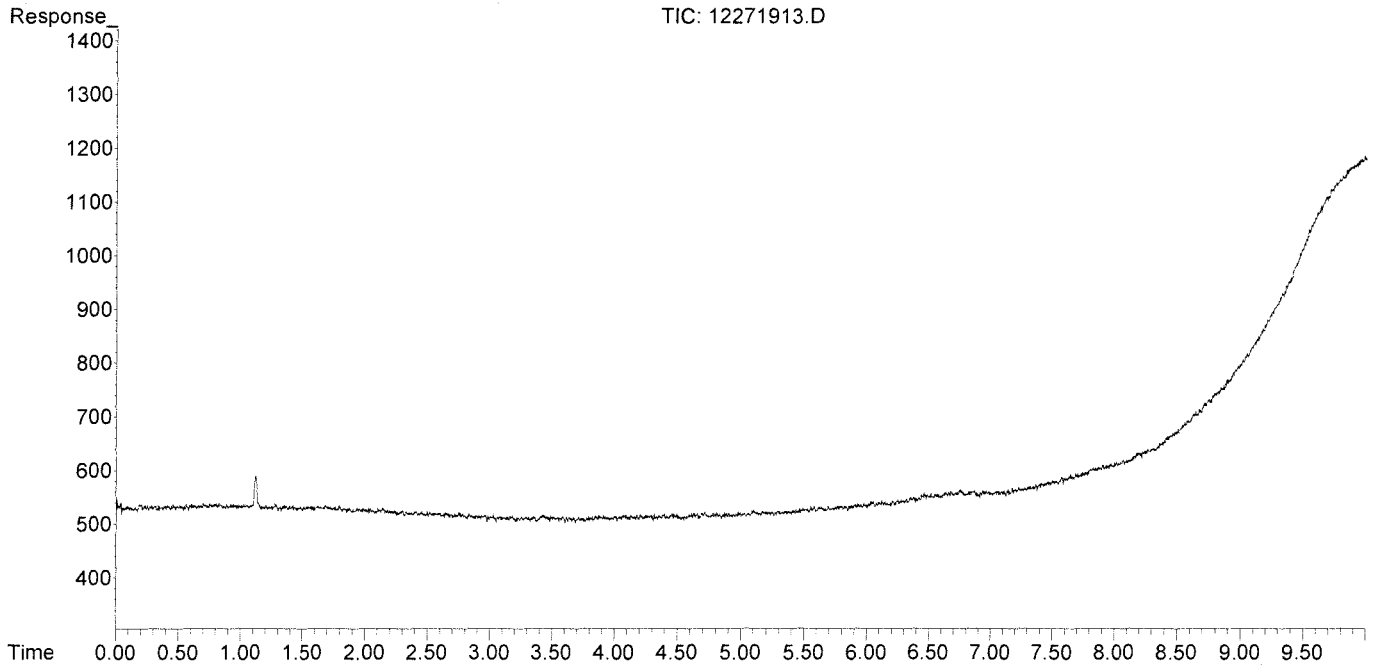
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271913.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 13:40:35
Operator : LD
Sample : P1907802-002 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:37:21 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271914.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 13:54:12
Operator : LD
Sample : P1907802-003 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:37:29 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

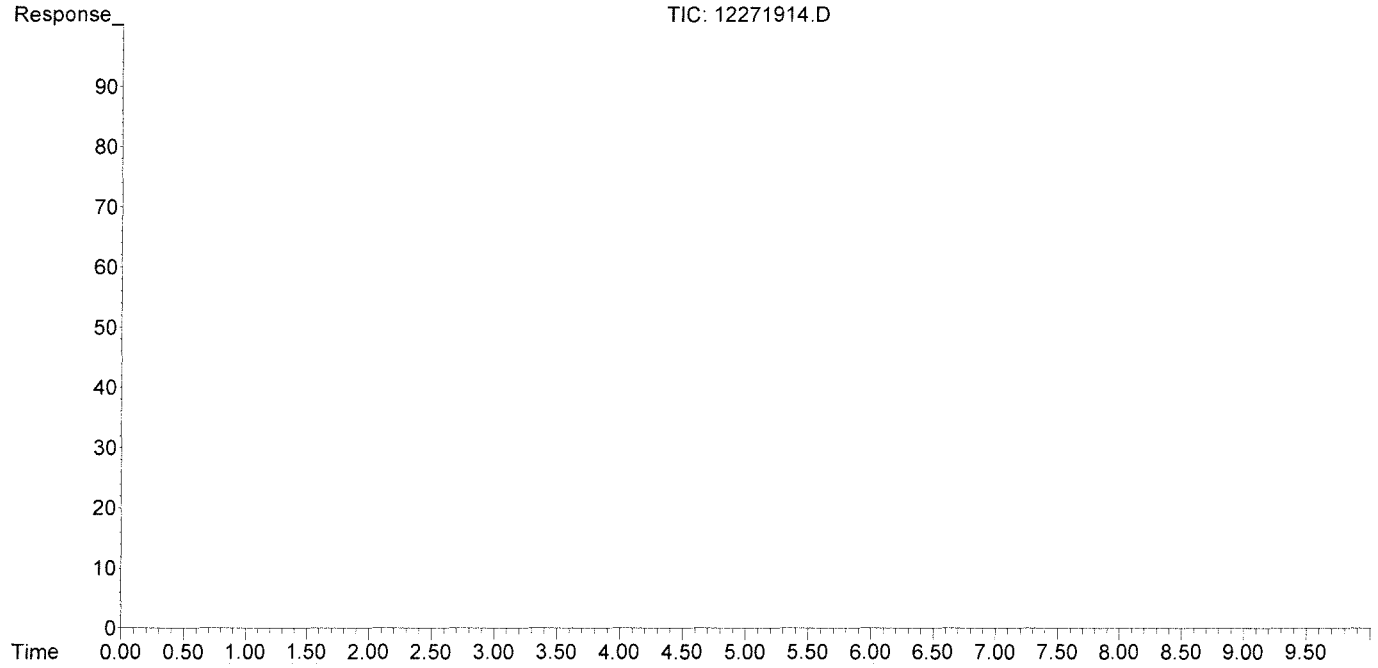
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.113	1461354	161.108	ppm
7)	Ethylene	1.684	23865	1.426	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	6.659	14555	0.547	ppm
13)	n-Butane	6.659	14555	0.547	ppm

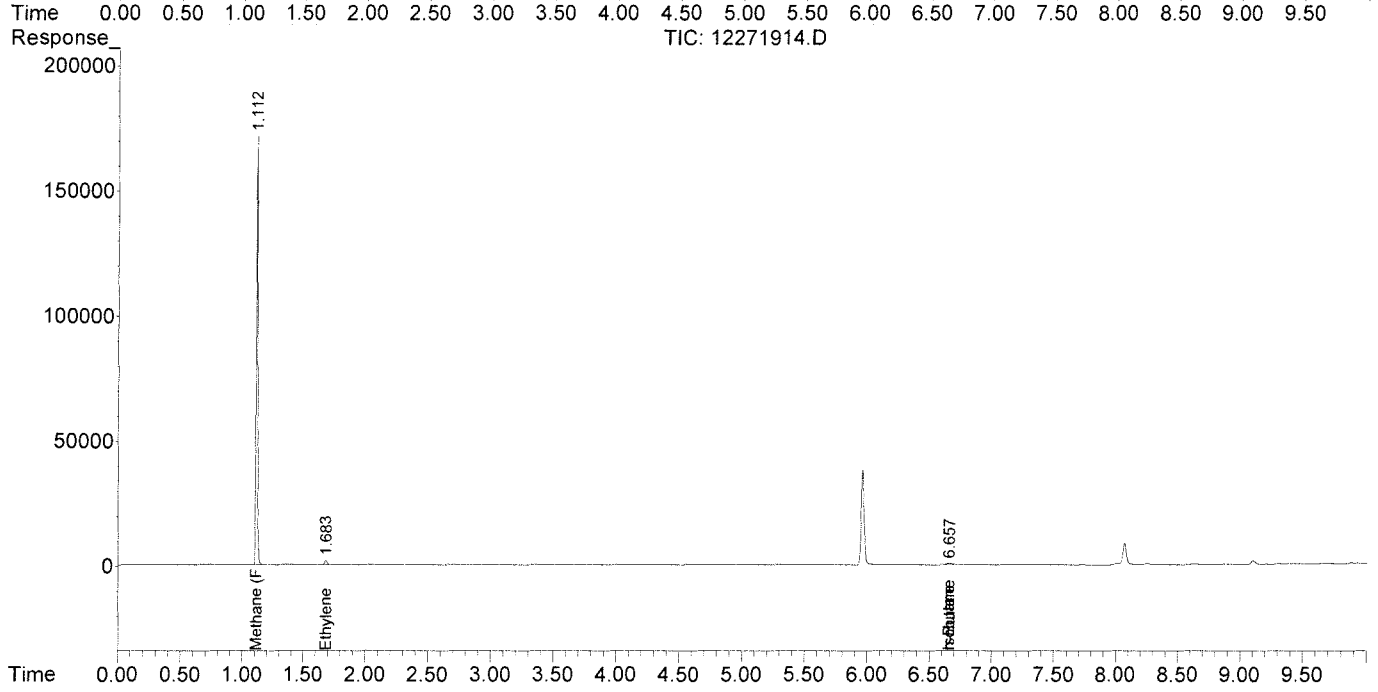
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271914.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 13:54:12
Operator : LD
Sample : P1907802-003 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:37:29 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271915.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 14:07:18
Operator : LD
Sample : P1907802-004 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:37:46 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

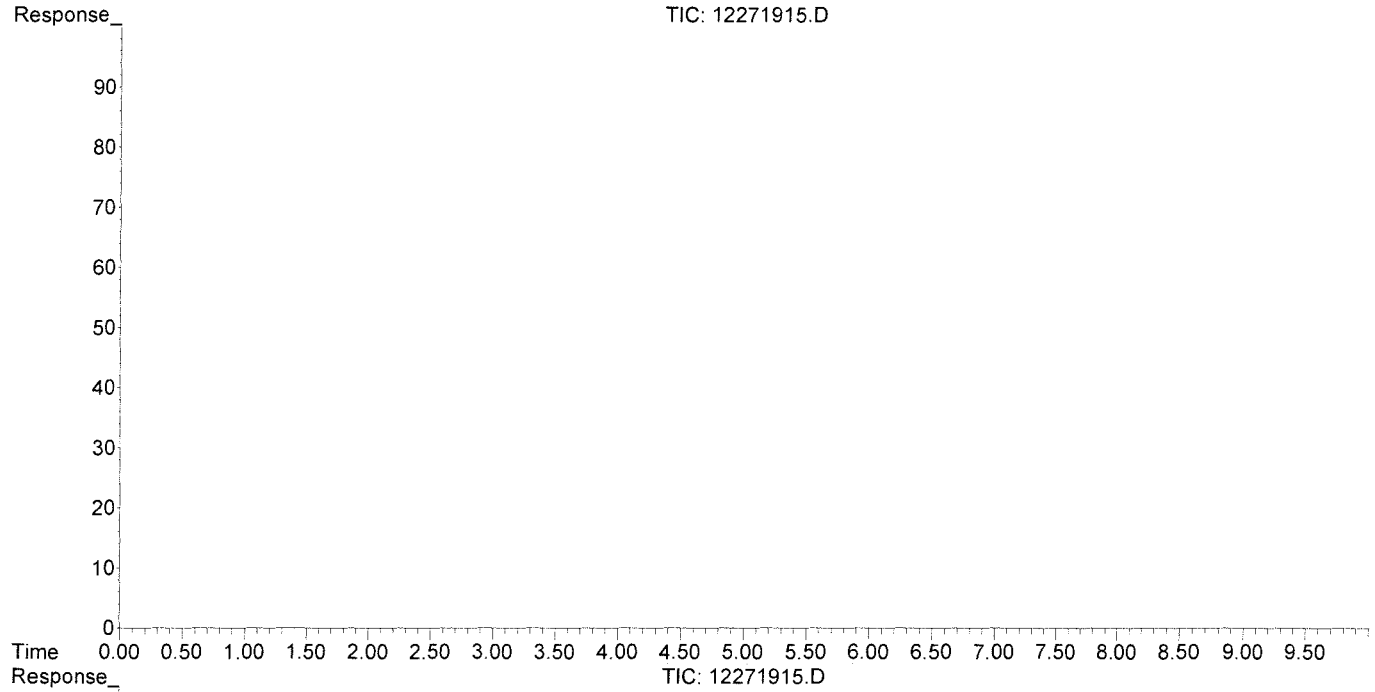
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.113	7028066	774.815	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

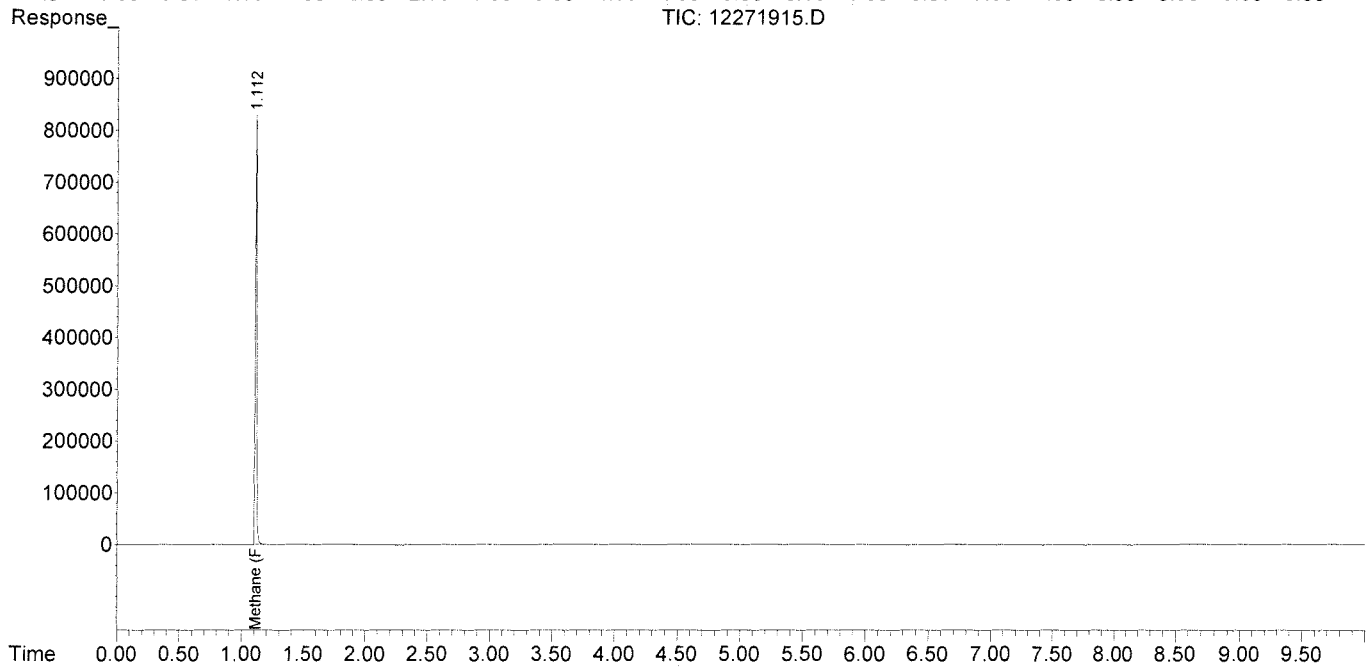
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271915.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 14:07:18
Operator : LD
Sample : P1907802-004 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:37:46 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





01000762

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271917.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 14:33:31
Operator : LD
Sample : P1907802-005 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 15:00:32 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.110	482609	53.206	ppm
7)	Ethylene	1.680	10486	0.627	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	6.661	14272	0.536	ppm
13)	n-Butane	6.661	14272	0.536	ppm

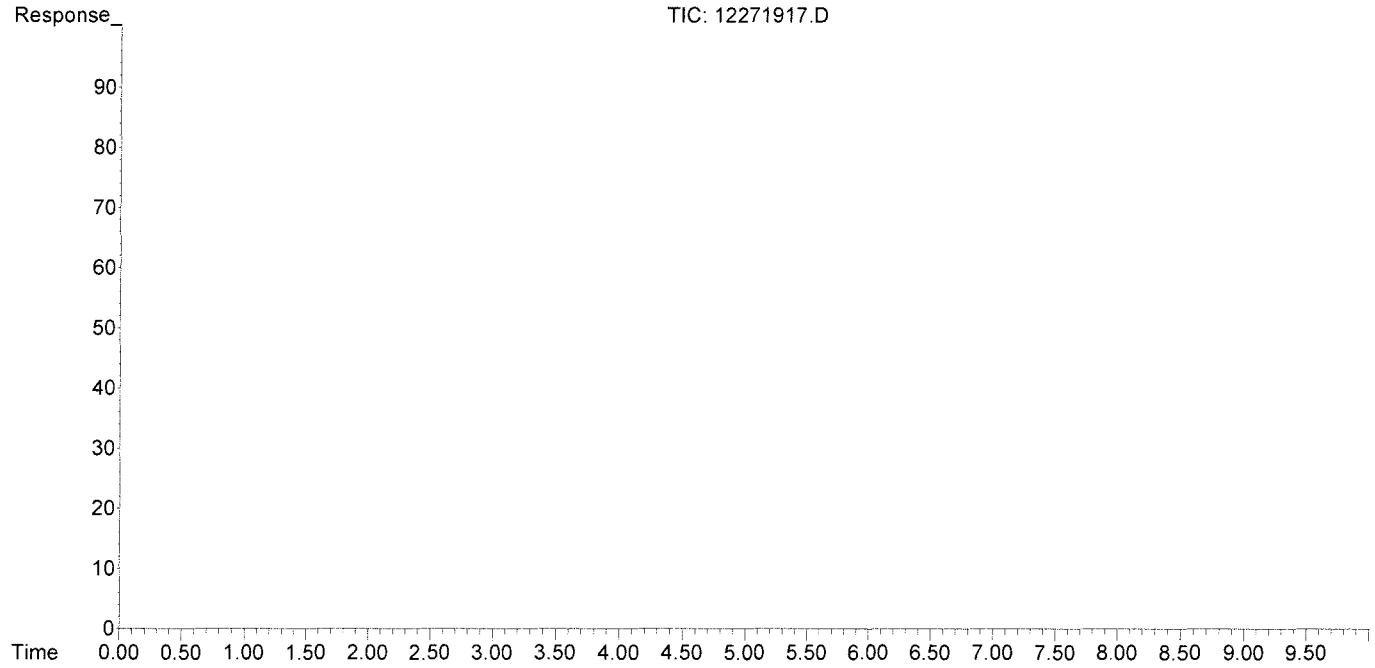
(f)=RT Delta > 1/2 Window (m)=manual int.

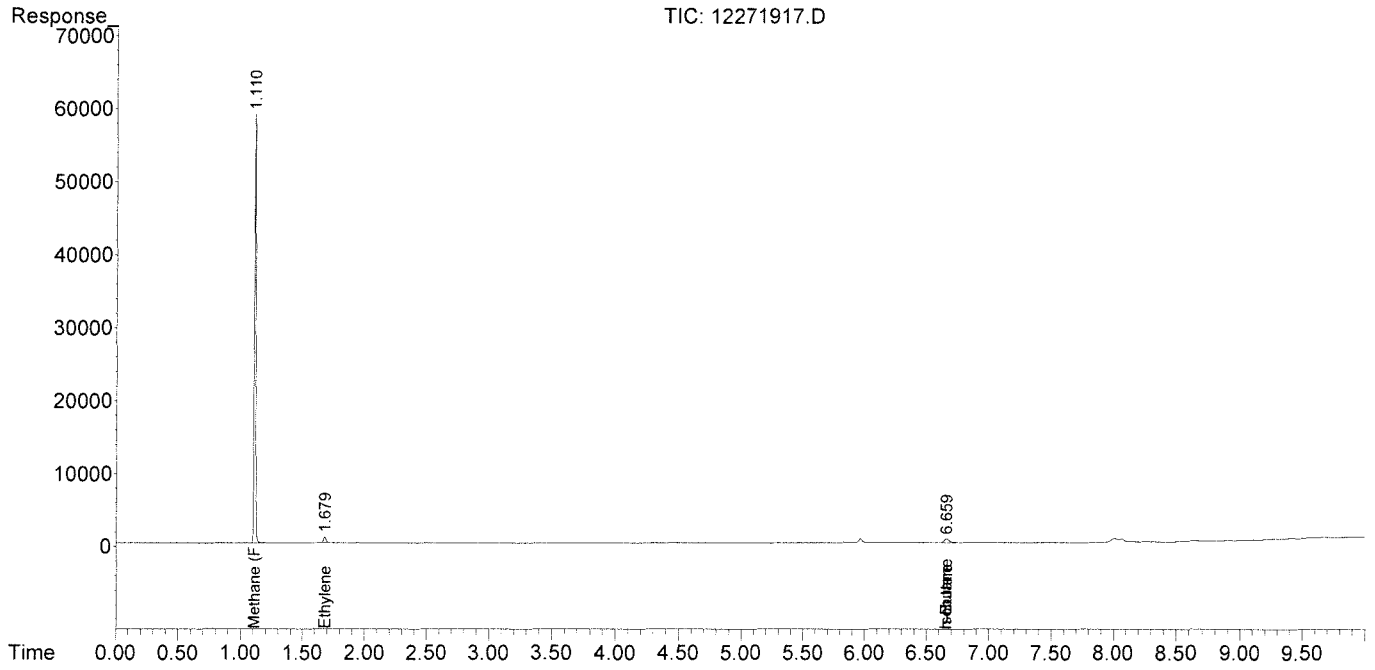
01000763

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271917.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 14:33:31
Operator : LD
Sample : P1907802-005 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 15:00:32 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271903.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 11:17:39
Operator : LD
Sample : MCS 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 11:35:58 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

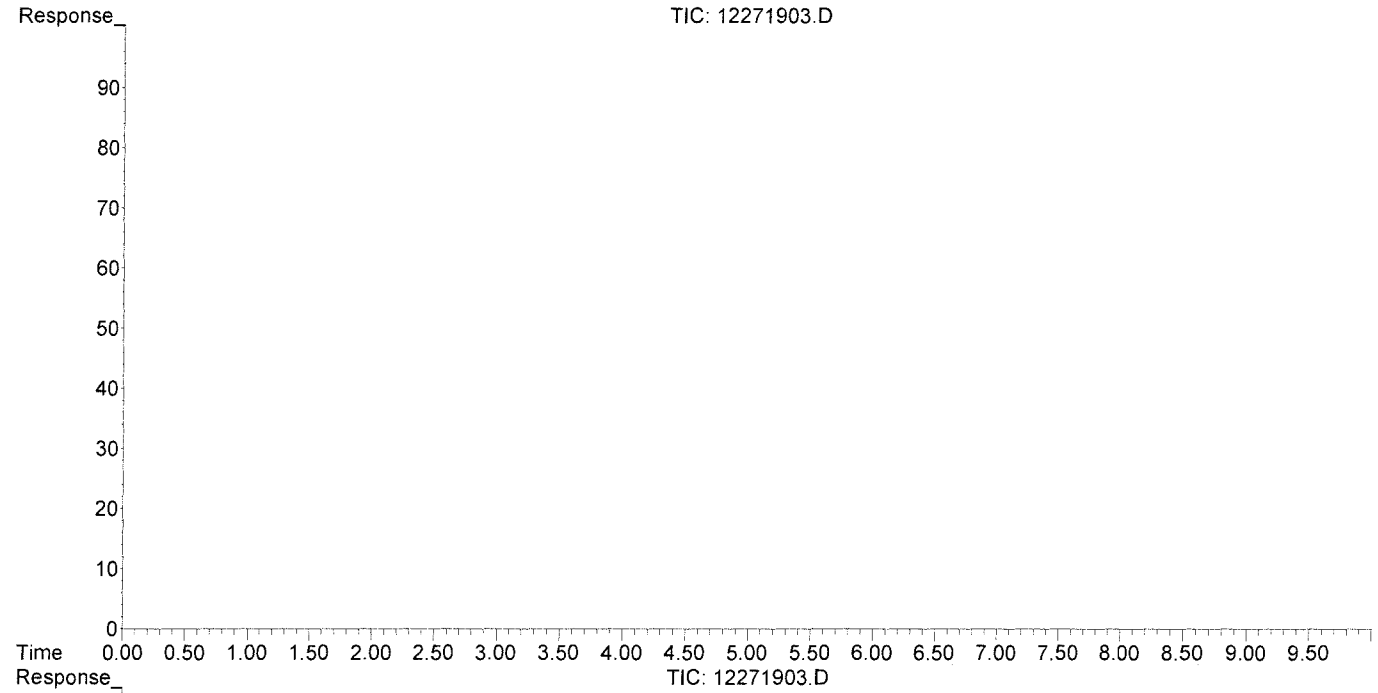
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.120	1191	0.131	ppm
7)	Ethylene	0.000	0	N.D.	ppm
8)	Ethane	0.000	0	N.D.	ppm
9)	Propylene	0.000	0	N.D.	ppm
10)	Propane	0.000	0	N.D.	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	6.713	7250	0.272	ppm
13)	n-Butane	6.713	7250	0.272	ppm

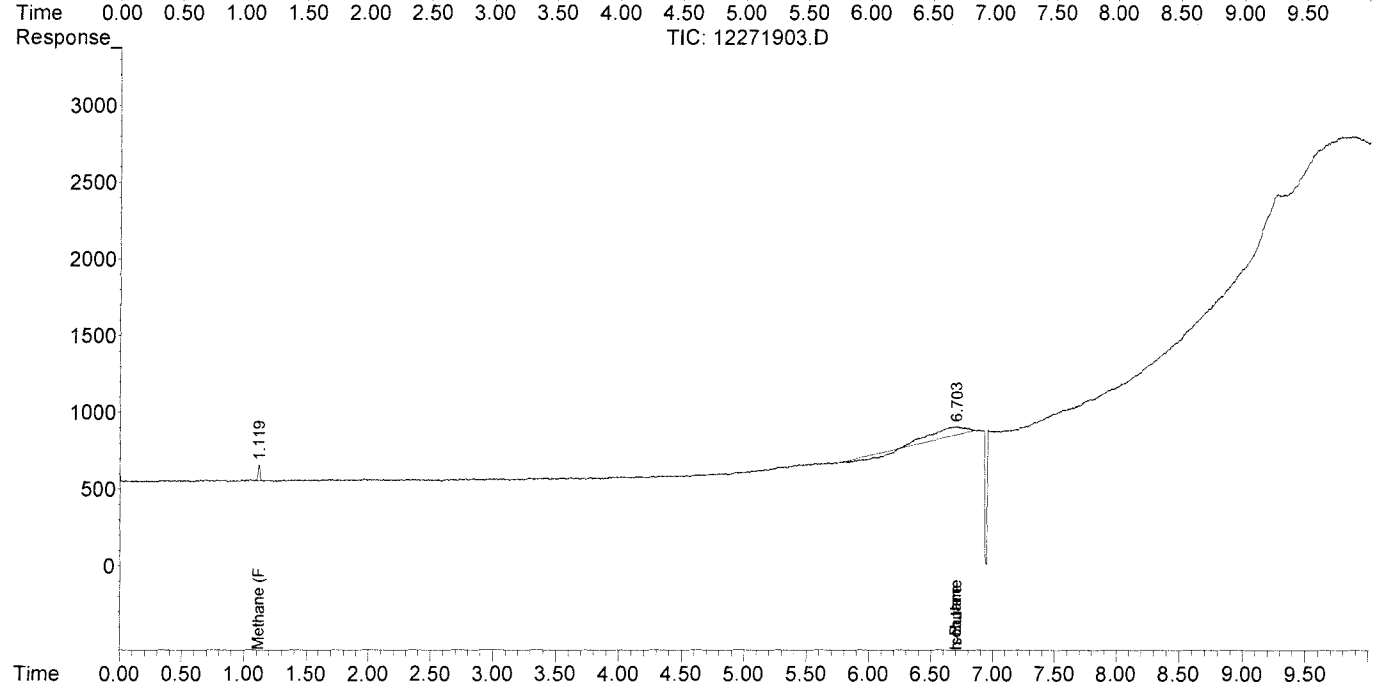
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271903.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 11:17:39
Operator : LD
Sample : MCS 0.1ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 11:35:58 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271904.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 11:32:18
Operator : LD
Sample : LCS S32-07231801
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 12:26:59 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

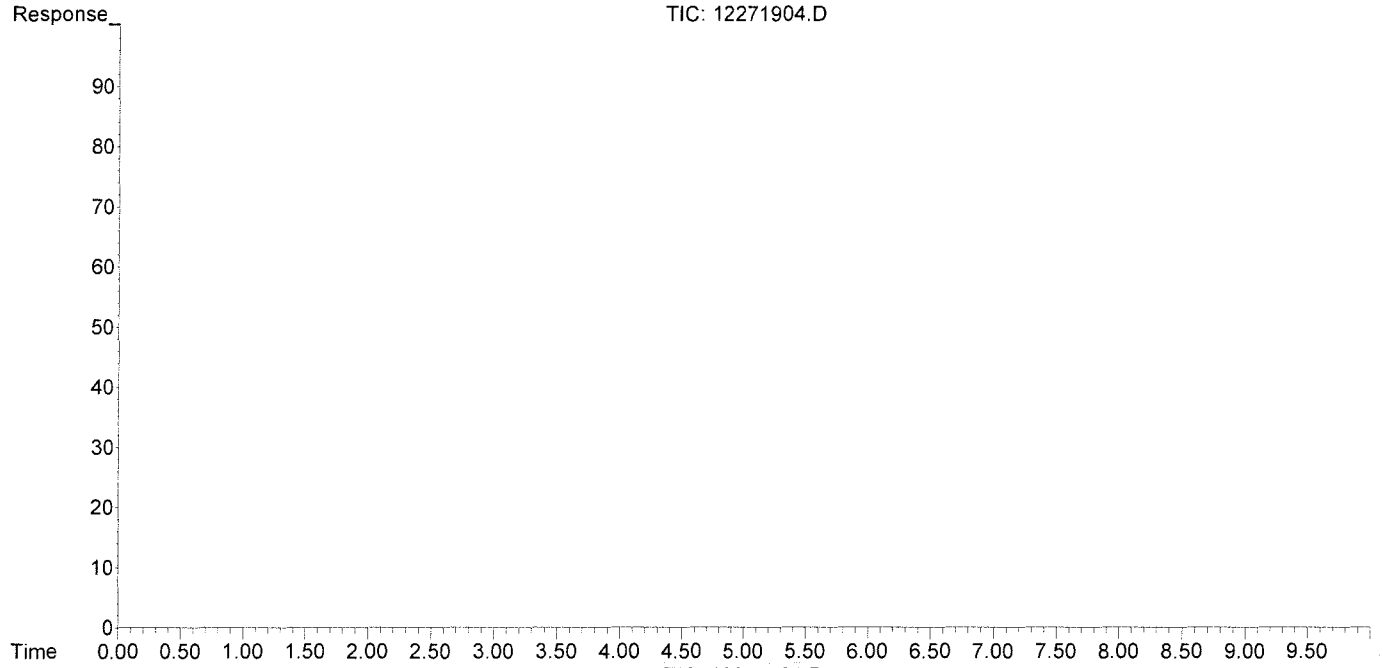
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.118	12636	1.393	ppm
7)	Ethylene	1.695	16931	1.012	ppm
8)	Ethane	1.964	21308	1.257	ppm
9)	Propylene	4.347	22646	0.966	ppm
10)	Propane	4.469	32754	1.316	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	6.668	263402	9.896	ppm
13)	n-Butane	6.668	263402	9.896	ppm

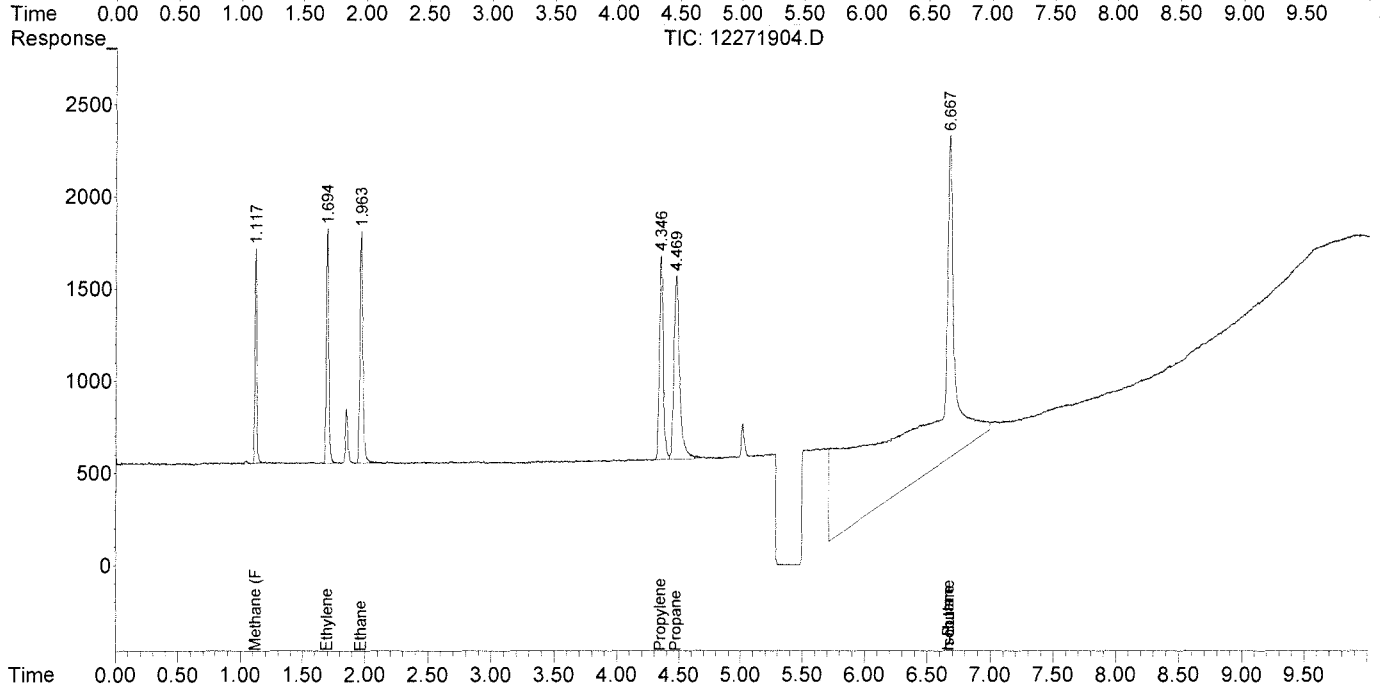
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271904.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 11:32:18
Operator : LD
Sample : LCS S32-07231801
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 12:26:59 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271905.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 11:45:51
Operator : LD
Sample : LCSD S32-07231801
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 12:27:32 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

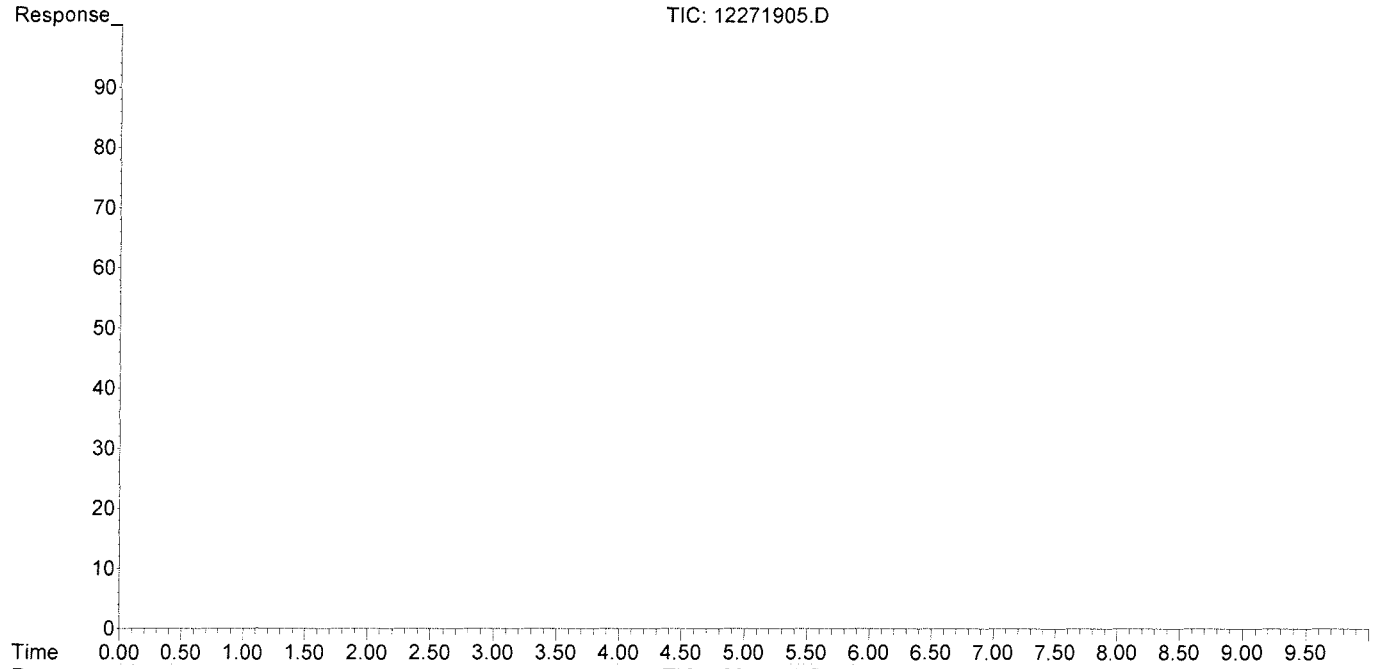
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.115	12814	1.413	ppm
7)	Ethylene	1.690	16812	1.005	ppm
8)	Ethane	1.958	21419	1.264	ppm
9)	Propylene	4.344	22887	0.977	ppm
10)	Propane	4.467	32984	1.326	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	6.668	44613	1.676	ppm
13)	n-Butane	6.668	44613	1.676	ppm

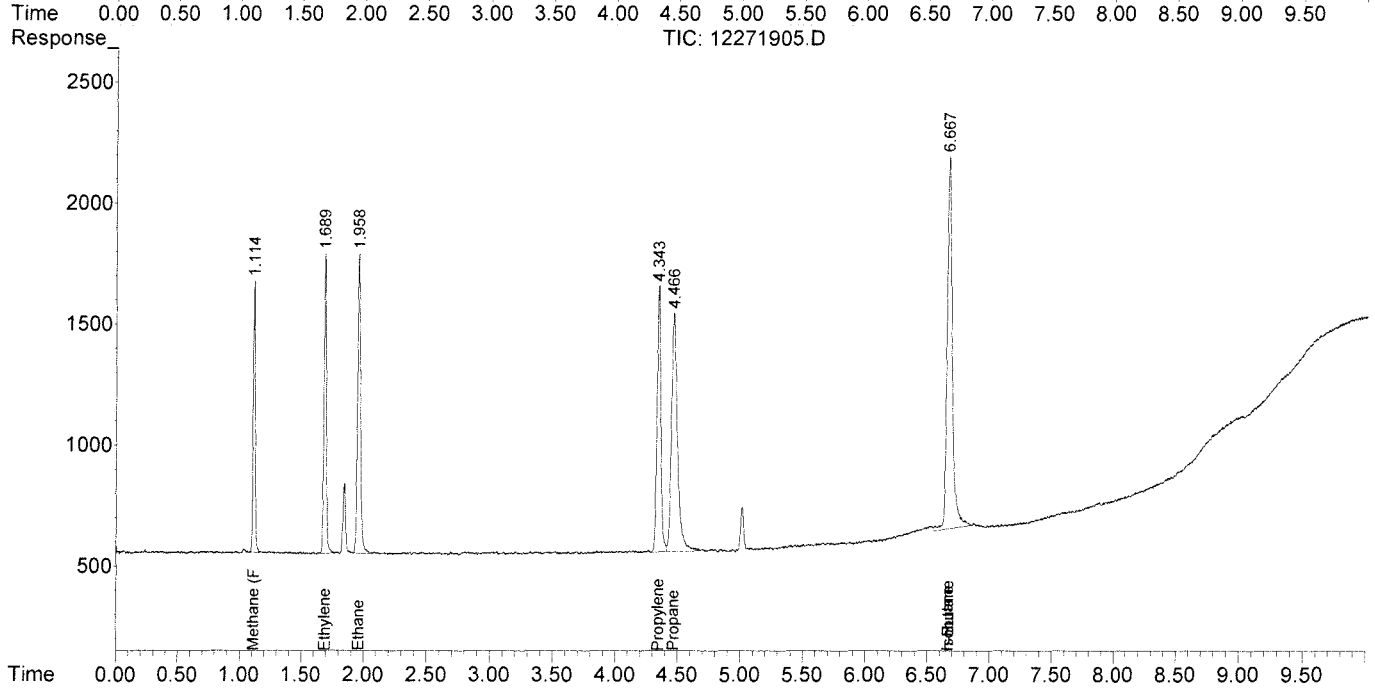
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271905.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 11:45:51
Operator : LD
Sample : LCSD S32-07231801
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 12:27:32 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Response Factor Report HP5890

Method Path : J:\GC10\METHODS\
Method File : RS091217_R.M
Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
Last Update : Wed Sep 13 11:14:47 2017
Response Via : Initial Calibration

Calibration Files
1 =09121702.D 2 =09121703.D 3 =09121704.D
4 =09121705.D 5 =09121706.D 6 =09121707.D

	Compound	1	2	3	4	5	6	Avg	%RSD
1)	Oxygen/Argon	3.739		1.014			0.001	0.793 E6	189.17
2)	Carbon monoxide	3.739		1.014			0.001	0.594 E6	221.92
3)	Methane (TCD)						2.161	0.951 E2	106.37
4)	Carbon dioxide	2.365	2.569	2.558	2.361	2.459	2.314	2.438 E2	4.44

Signal #2 Calibration Files
1 =09121702.D 2 =09121703.D 3 =09121704.D
4 =09121705.D 5 =09121706.D 6 =09121707.D

	Compound	1	2	3	4	5	6	Avg	%RSD
6)	Methane (FID)		1.180	0.975	0.908	0.870	0.868	0.907 E4	11.66
7)	Ethylene	1.736	1.638	1.780	1.720	1.628	1.670	1.673 E4	3.90
8)	Ethane	1.781	1.676	1.784	1.730	1.692	1.675	1.695 E4	3.83
9)	Propylene	2.505	2.296	2.592	2.480	2.346	2.252	2.343 E4	6.56
10)	Propane	2.439	2.283	2.645	2.555	2.433	2.522	2.488 E4	4.20
11)	Isobutylene							0.652 E1	138.46
12)	Isobutane	6.058	4.793	2.214	1.553	1.353		2.662 E4	86.17
13)	n-Butane	6.058	4.793	2.214	1.553	1.353		2.662 E4	86.17

(#) = Out of Range ### Number of calibration levels exceeded format ###

RS091217_R.M Wed Sep 13 15:11:48 2017

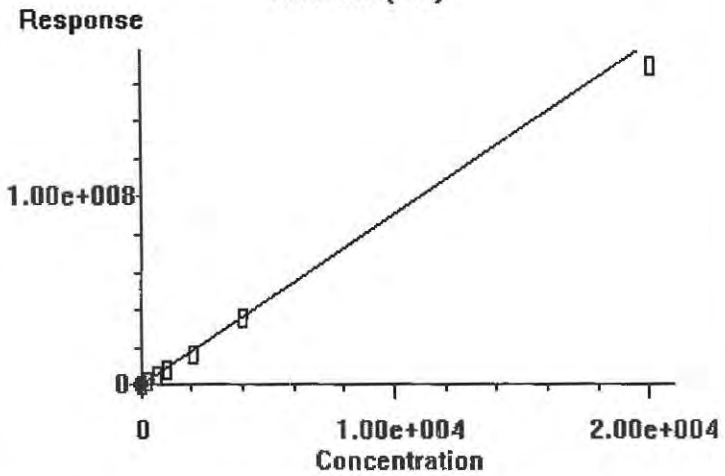
Edit Compounds -- Compound #6 -- Methane (FID)

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compoun
  - Oxygen/Argon
  - Carbon monoxide
  - Methane (TCD)
  - Carbon dioxide
  - Signal #2
  - Methane (FID)
  - Ethylene
  - Ethane
  - Propylene
  - Propane
  - Isobutylene
  - Isobutane
  - n-Butane

Identification | Calibration | User-Defined | Advanced | Reporting

Lvl ID	Concentration	Response
1	0.151000	
2	0.302000	3564.400000
3	1.510000	14725.268625
4	4.530000	41128.575000
5	10.570000	91966.784531
6	200.000000	1735997.497500
7	600.000000	5189848.900000
8	1000.000000	8598533.570000
9	2000.000000	16098209.390000
10	4000.000000	35776839.311362
11	20000.000000	169009160.49199



0.000e+000	Quadratic term
9.071e+003	Linear term
0.000e+000	Constant term
11.657%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

Edit Compounds -- Compound #7 -- Ethylene

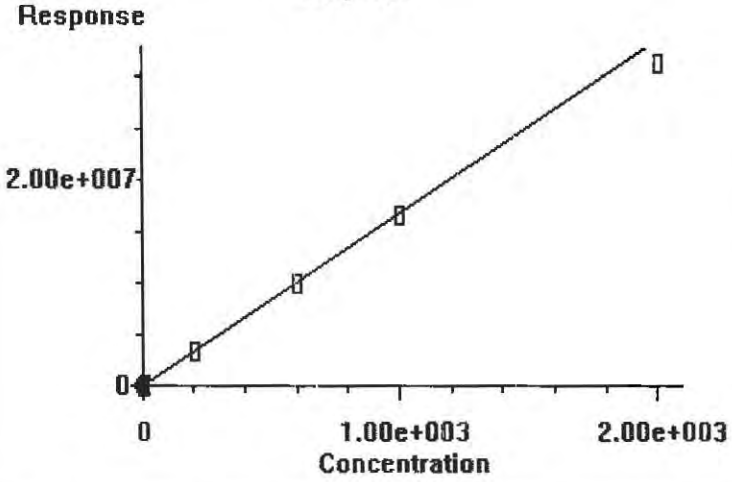
Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compoun
  - Oxygen/Argon
  - Carbon monoxide
  - Methane (TCD)
  - Carbon dioxide
  - Signal #2
  - Methane (FID)
  - Ethylene
  - Ethane
  - Propylene
  - Propane
  - Isobutylene
  - Isobutane
  - n-Butane

Identification | Calibration | User-Defined | Advanced | Reporting

Lvl ID	Concentration	Response
1	0.151000	2621.970000
2	0.302000	4946.731301
3	1.510000	26884.746847
4	4.530000	77902.721497
5	10.570000	172085.529560
6	200.000000	3339702.313219
7	600.000000	10007758.776971
8	1000.000000	16608503.805988
9	2000.000000	31192443.898600
10	4000.000000	

Lvl ID	Concentration	Response
11	20000.000000	



0.000e+000	Quadratic term
1.673e+004	Linear term
0.000e+000	Constant term
3.897%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

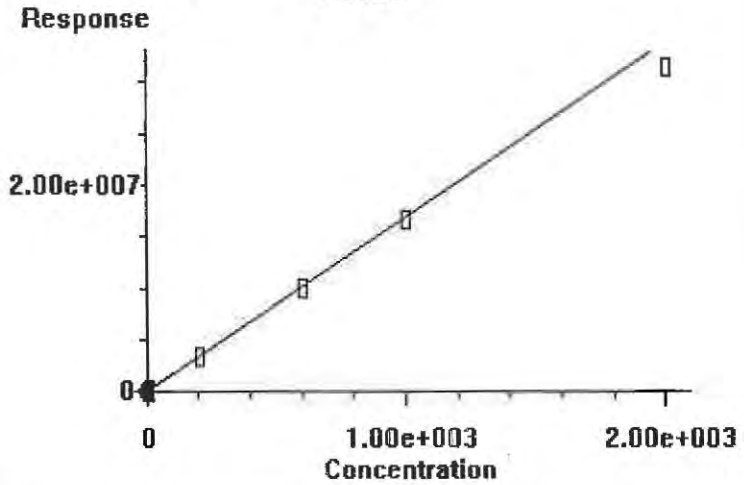
Edit Compounds -- Compound #8 -- Ethane

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compoun
  - Oxygen/Argon
  - Carbon monoxide
  - Methane (TCD)
  - Carbon dioxide
  - Signal #2
  - Methane (FID)
  - Ethylene
  - Ethane
  - Propylene
  - Propane
  - Isobutylene
  - Isobutane
  - n-Butane

Identification | Calibration | User-Defined | Advanced | Reporting

Lvl ID	Concentration	Response	Lvl ID	Concentration	Response
1	0.151000	2689.928008	11	20000.000000	
2	0.302000	5060.331943			
3	1.510000	26943.667500			
4	4.530000	78353.525045			
5	10.570000	178840.731148			
6	200.000000	3350442.319129			
7	600.000000	10048964.218029			
8	1000.000000	16703164.879012			
9	2000.000000	31424217.938900			
10	4000.000000				



0.000e+000	Quadratic term
1.695e+004	Linear term
0.000e+000	Constant term
3.831%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

Edit Compounds -- Compound #9 -- Propylene

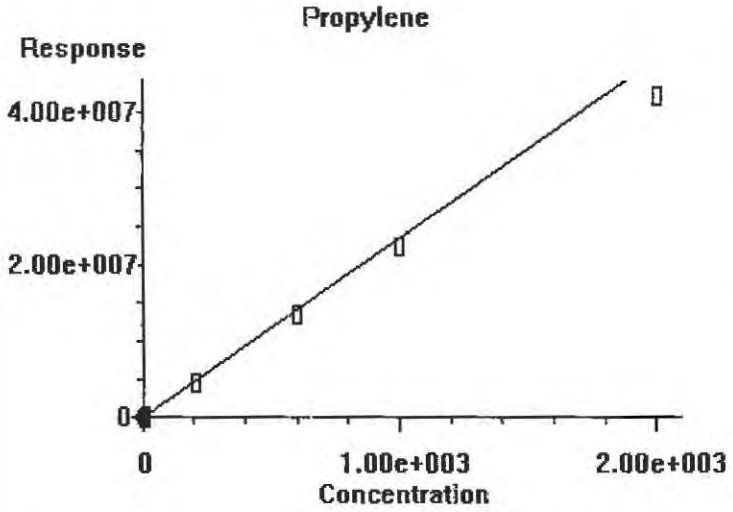
Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compoun
  - Oxygen/Argon
  - Carbon monoxide
  - Methane (TCD)
  - Carbon dioxide
  - Signal #2
  - Methane (FID)
  - Ethylene
  - Ethane
  - Propylene
  - Propane
  - Isobutylene
  - Isobutane
  - n-Butane

Identification | Calibration | User-Defined | Advanced | Reporting

Lvl ID	Concentration	Response
1	0.151000	3782.537646
2	0.302000	6933.285530
3	1.510000	39139.518208
4	4.530000	112341.896872
5	10.570000	248003.903623
6	200.000000	4504060.086084
7	600.000000	13569342.761419
8	1000.000000	22494887.720990
9	2000.000000	42124689.656800
10	4000.000000	

Lvl ID	Concentration	Response
11	20000.000000	



0.000e+000	Quadratic term
2.343e+004	Linear term
0.000e+000	Constant term
6.559%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

Page 2 of 2

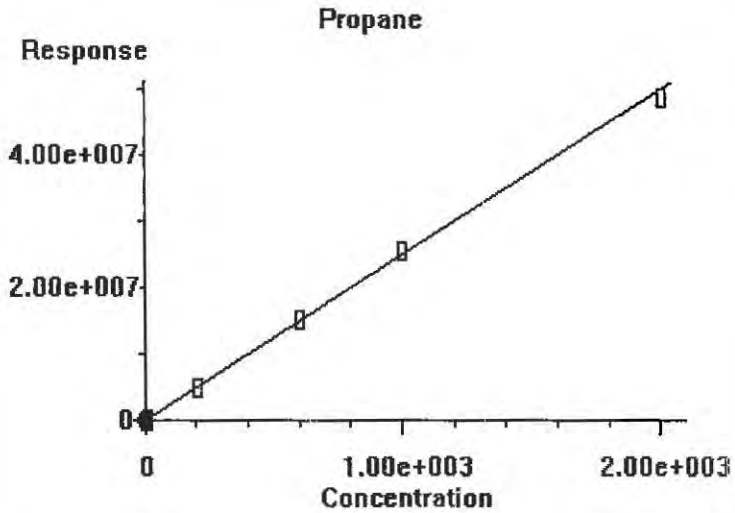
Edit Compounds -- Compound #10 -- Propane

Search by: Ret Time | Name | Index | Find Compound

- Compound Database
- External Standard Compoun
  - Oxygen/Argon
  - Carbon monoxide
  - Methane (TCD)
  - Carbon dioxide
  - Signal #2
  - Methane (FID)
  - Ethylene
  - Ethane
  - Propylene
  - Propane
  - Isobutylene
  - Isobutane
  - n-Butane

Identification | Calibration | User-Defined | Advanced | Reporting

Lvl ID	Concentration	Response	Lvl ID	Concentration	Response
1	0.151000	3682.897354	11	20000.000000	
2	0.302000	6894.237803			
3	1.510000	39934.166792			
4	4.530000	115723.428128			
5	10.570000	257124.432806			
6	200.000000	5043035.663916			
7	600.000000	15251325.797404			
8	1000.000000	25459410.657938			
9	2000.000000	48583085.287451			
10	4000.000000				



0.000e+000	Quadratic term
2.488e+004	Linear term
0.000e+000	Constant term
4.200%	RF Rel Std Dev

OK | Cancel | Help | Print Calibration Curve | Copy Calibration Curve

Calibration Status Report HP5890

Method Path : J:\GC10\METHODS\
Method File : RS091217_R.M
Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
Last Update : Wed Sep 13 11:14:47 2017
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	0	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121702.D
2	2	0	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121703.D
3	3	3	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121704.D
4	4	10	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121705.D
5	5	25	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121706.D
6	6	125	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121707.D
7	7	5000	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121708.D
8	8	25000	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121709.D
9	9	2000	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121710.D
10	10	30000	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121711.D
11	11	20000	0	J:\GC10\DATA\RSK_FID\2017_09\12\09121712.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	Sep 13 11:04 2017	Sep 12 15:03 2017	12-Sep-2017, 10:52
2	2	Sep 13 11:05 2017	Sep 13 11:05 2017	12-Sep-2017, 11:05
3	3	Sep 13 11:06 2017	Sep 13 11:05 2017	12-Sep-2017, 11:45
4	4	Sep 13 11:09 2017	Sep 13 11:06 2017	12-Sep-2017, 12:09
5	5	Sep 13 11:09 2017	Sep 13 11:09 2017	12-Sep-2017, 12:30
6	6	Sep 13 11:10 2017	Sep 13 11:10 2017	12-Sep-2017, 12:47
7	7	Sep 13 11:11 2017	Sep 13 11:10 2017	12-Sep-2017, 13:00
8	8	Sep 13 11:12 2017	Sep 13 11:11 2017	12-Sep-2017, 13:47
9	9	Sep 13 11:12 2017	Sep 13 11:12 2017	12-Sep-2017, 14:07
10	10	Sep 13 11:14 2017	Sep 13 11:13 2017	12-Sep-2017, 14:48
11	11	Sep 13 11:14 2017	Sep 13 11:14 2017	12-Sep-2017, 15:21

RS091217_R.M Wed Sep 13 15:11:22 2017

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121702.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 10:52
Operator : MC
Sample : 0.151ppm 0.250ml s32-09121702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 12 11:03:15 2017
Quant Method : I:\GC10\METHODS\RS082417.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Fri Aug 25 09:19:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.767	373920	0.128	ppm	
2)	Carbon monoxide	1.767	373920	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	
4)	Carbon dioxide	0.000	0	N.D.	ppm	
6)	Methane (FID)	0.000	0	N.D.	ppm	d
7)	Ethylene	1.595	2622	0.156	ppm	
8)	Ethane	1.848	2690	0.156	ppm	
9)	Propylene	4.222	3783	0.154	ppm	
10)	Propane	4.348	3683	0.139	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	6.582f	6058	NoCal	ppm	
13)	n-Butane	6.582f	6058	NoCal	ppm	

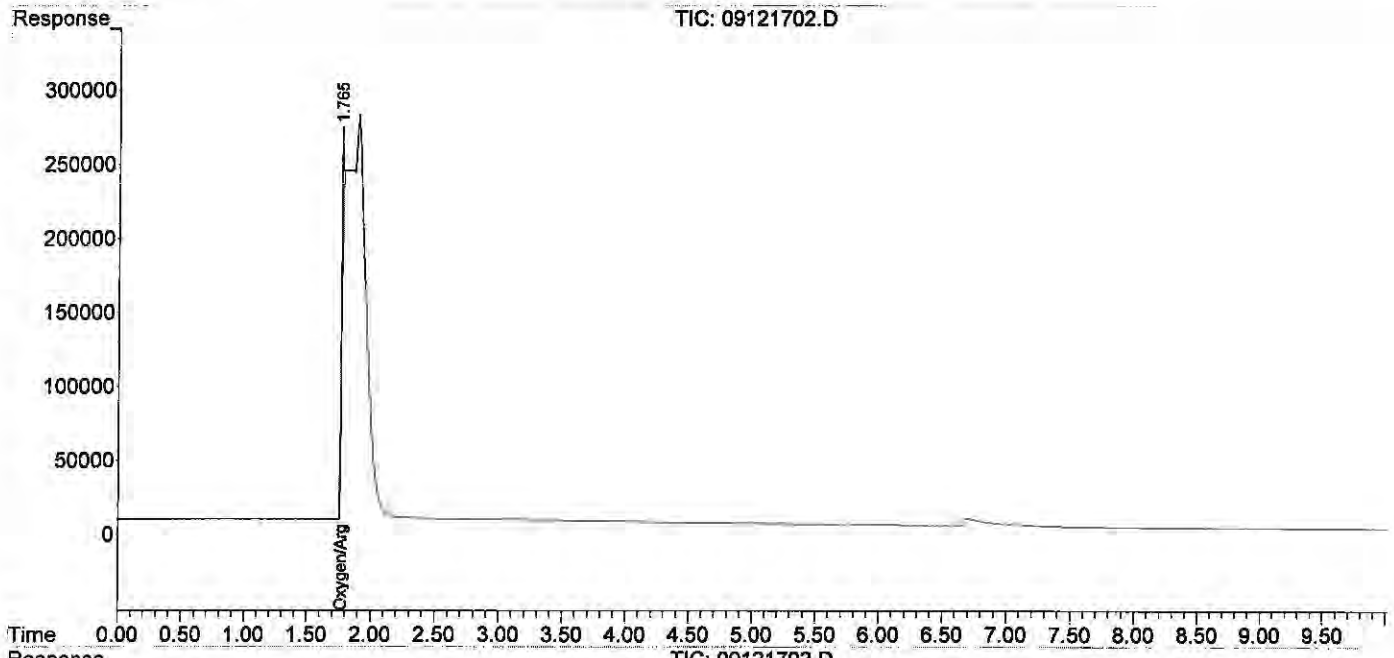
(f)=RT Delta > 1/2 Window (m)=manual int.

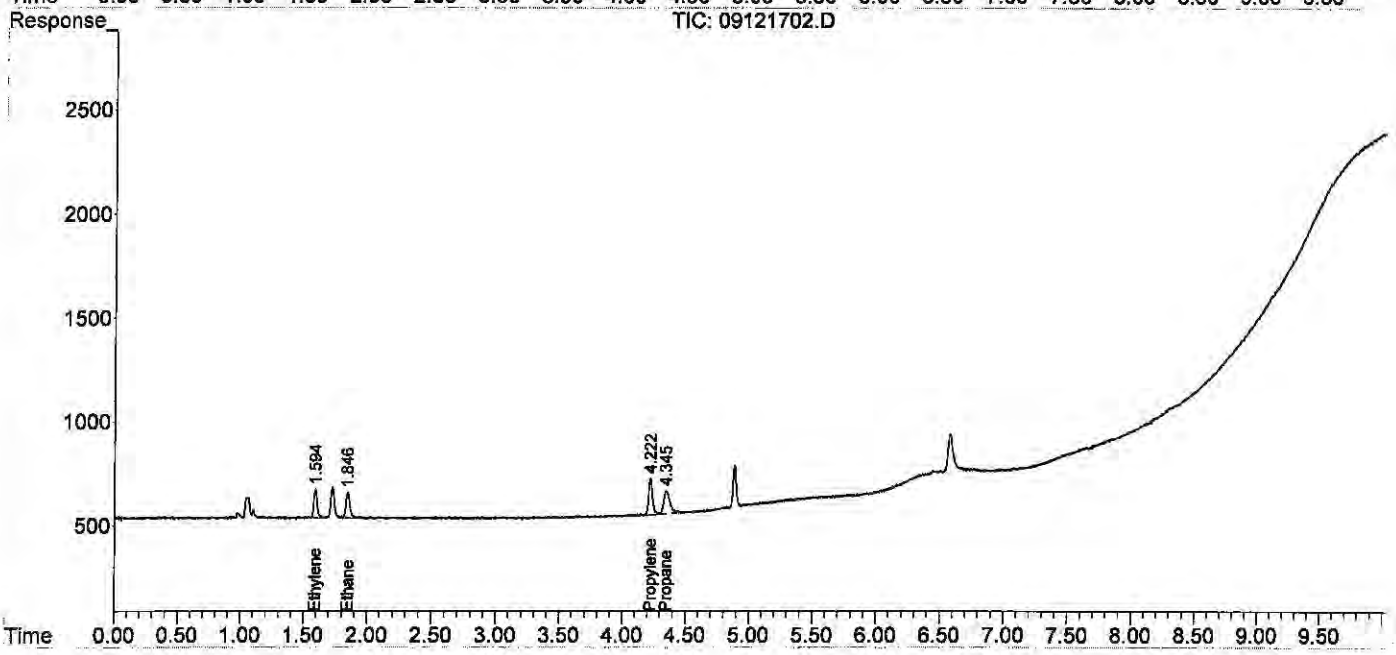
9/13/17

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121702.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 10:52
Operator : MC
Sample : 0.151ppm 0.250ml s32-09121702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 12 11:03:15 2017
Quant Method : I:\GC10\METHODS\RS082417.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Fri Aug 25 09:19:14 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121703.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 11:05
Operator : MC
Sample : 0.302ppm 0.5ml s32-09121702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:05:03 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
Target	Compounds					
1)	Oxygen/Argon	1.913f	-25181981	N.D.	ppm	
2)	Carbon monoxide	1.913f	-25181981	1.089	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	
4)	Carbon dioxide	0.000	0	N.D.	ppm	
6)	Methane (FID)	1.049	3564	0.391	ppm	m
7)	Ethylene	1.577	4947	0.292	ppm	
8)	Ethane	1.828	5060	0.293	ppm	
9)	Propylene	4.207	6933	0.281	ppm	
10)	Propane	4.337	6894	0.268	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	6.579f	9587	0.158	ppm	
13)	n-Butane	6.579f	9587	0.158	ppm	

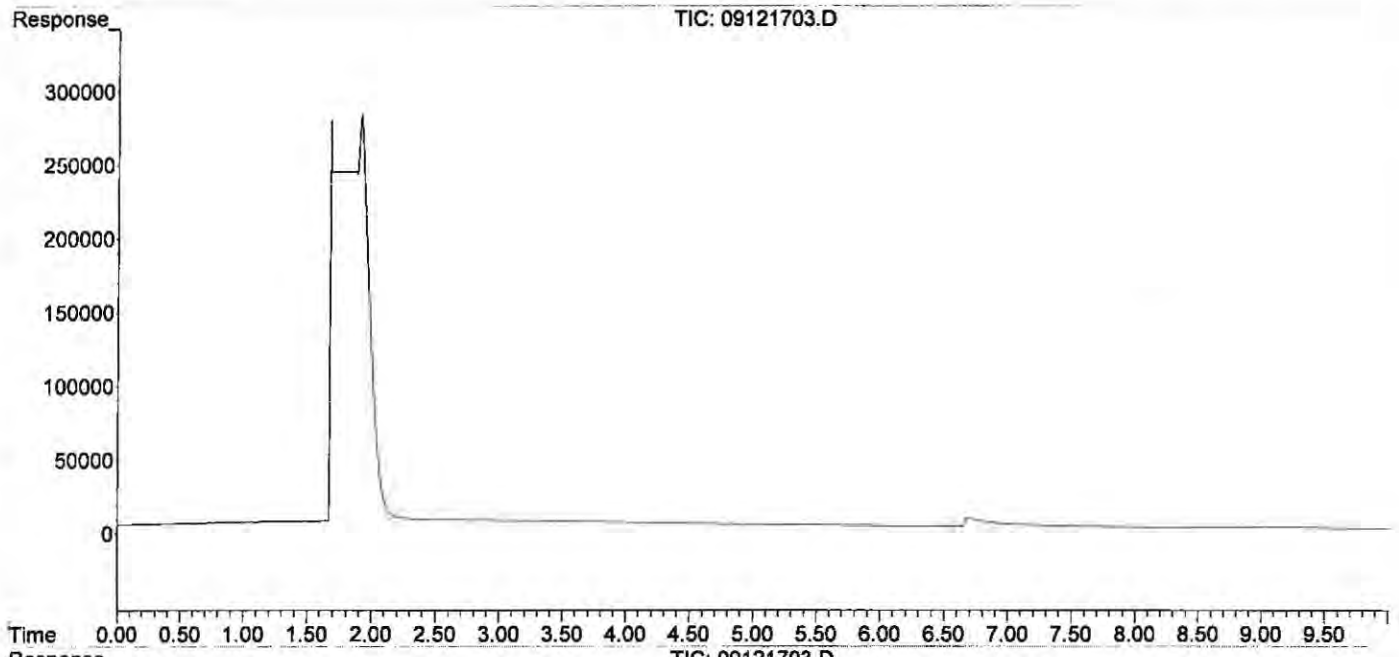
(f)=RT Delta > 1/2 Window (m)=manual int.

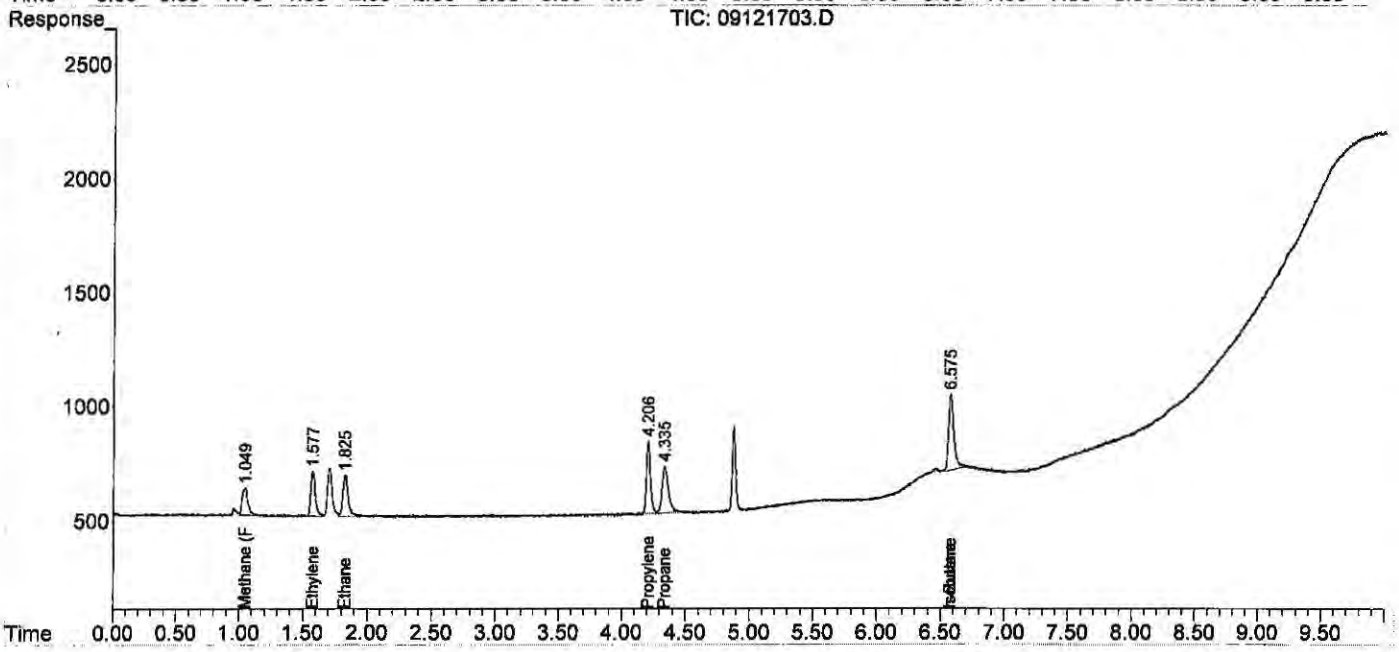
Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121703.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 11:05
Operator : MC
Sample : 0.302ppm 0.5ml s32-09121702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:05:03 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



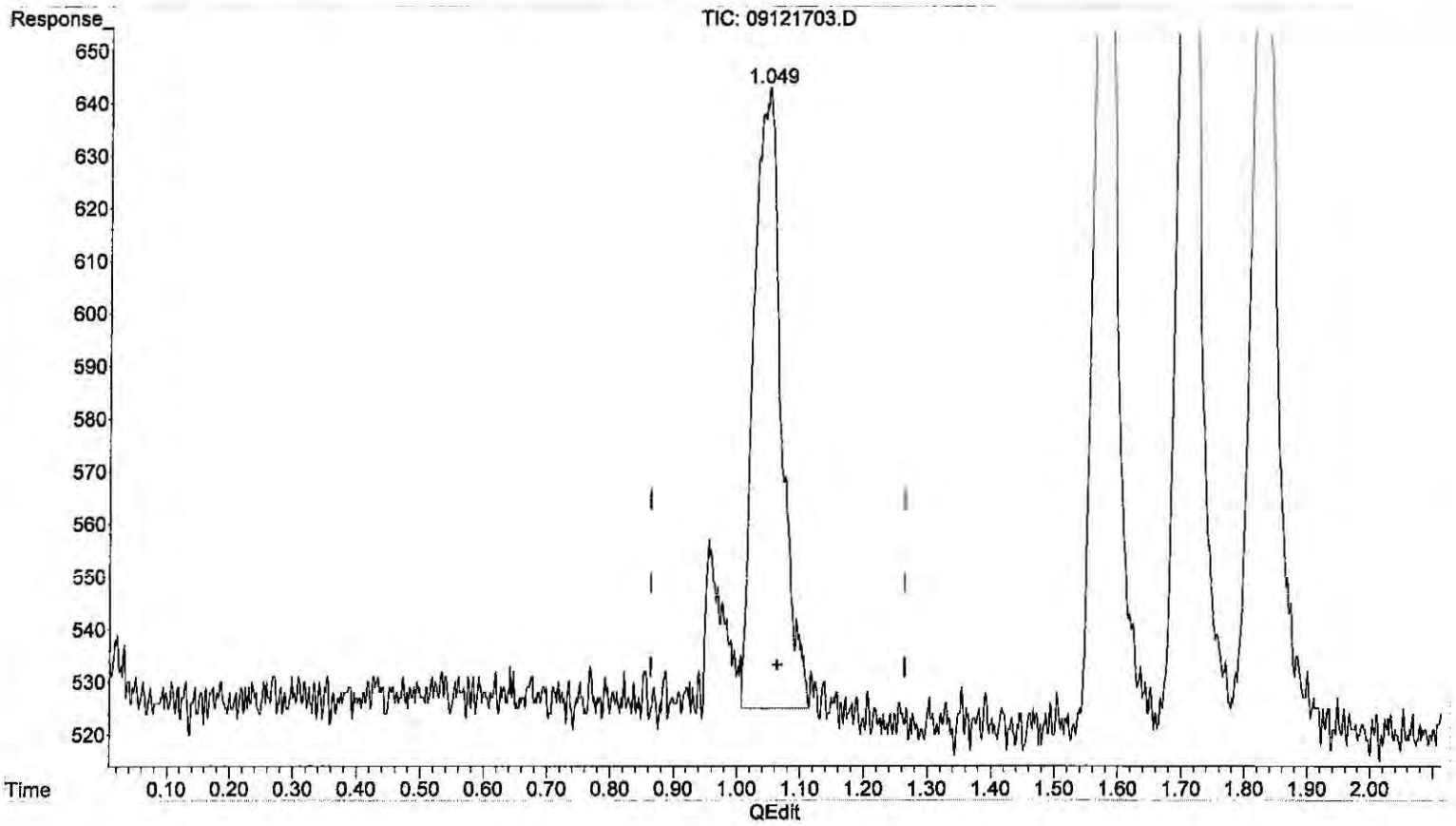


Quantitation Report (Qedit)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121703.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 11:05
Operator : MC
Sample : 0.302ppm 0.5ml s32-09121702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:05:03 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



(6) Methane (FID)

1.049min 0.391 ppm m

response 3564

(+) = Expected Retention Time

RS091217_R.M Wed Sep 13 15:00:03 2017

Page: 1

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121704.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 11:45
Operator : MC
Sample : 1.51ppm 0.1ml s32-09051701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:05:55 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

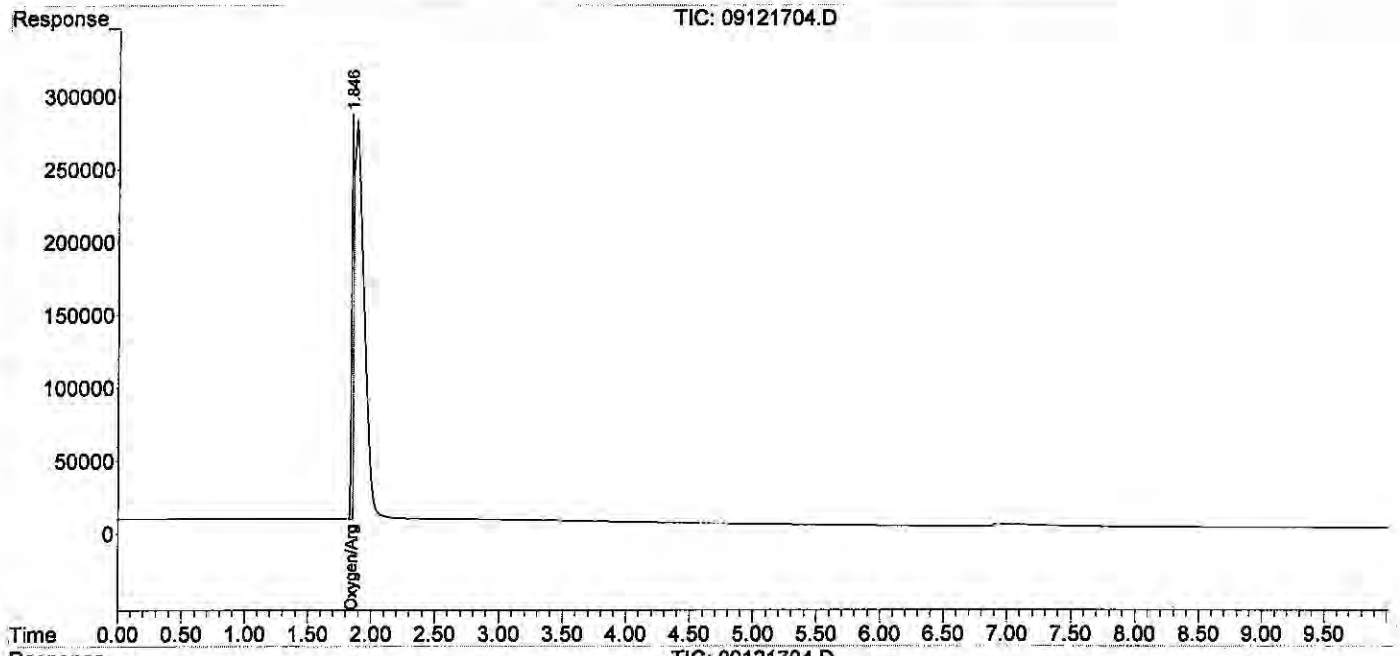
	Compound	R.T.	Response	Conc	Units
Target	Compounds				
1)	Oxygen/Argon	1.847	2536230	1.056	ppm
2)	Carbon monoxide	1.847	2536230	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.064	14725	1.613	ppm
7)	Ethylene	1.598	26885	1.582	ppm
8)	Ethane	1.851	26944	1.555	ppm
9)	Propylene	4.220	39140	1.589	ppm
10)	Propane	4.349	39934	1.596	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	6.578f	55348	1.020	ppm
13)	n-Butane	6.578f	55348	1.020	ppm

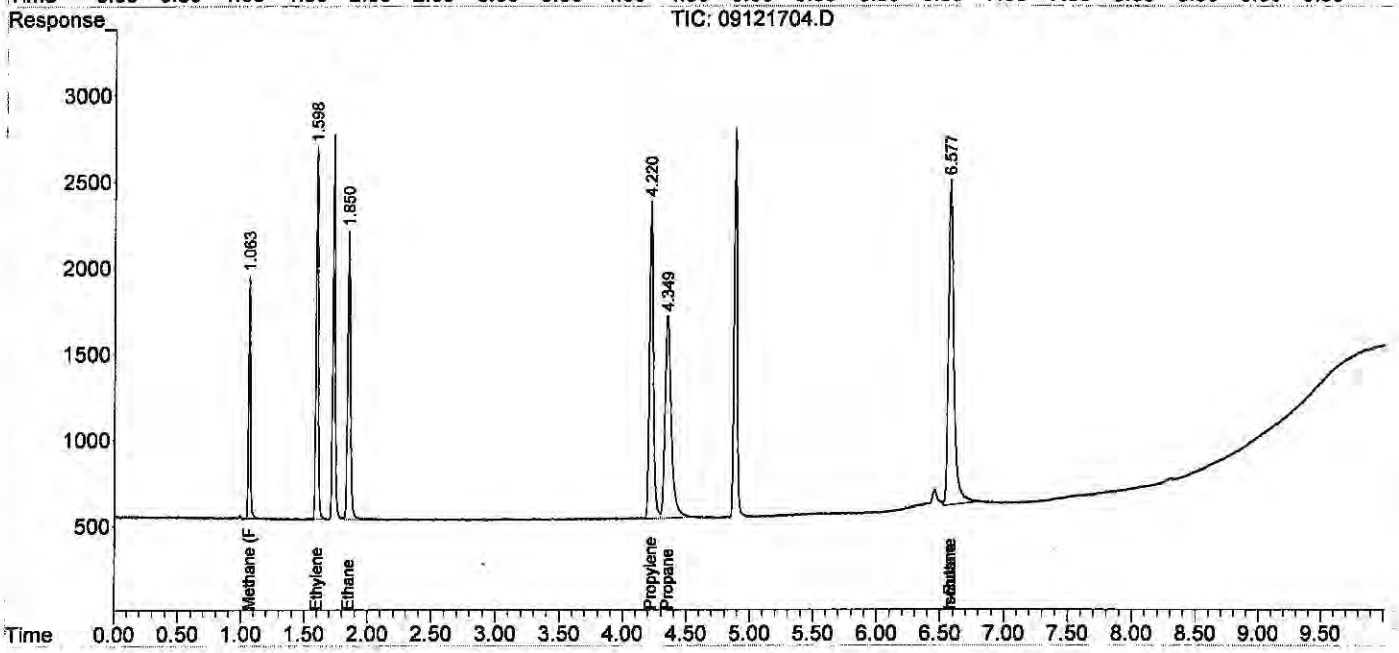
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121704.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 11:45
Operator : MC
Sample : 1.51ppm 0.1ml s32-09051701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:05:55 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121705.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 12:09
Operator : MC
Sample : 4.53ppm 0.3ml s32-09051701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:06:32 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.738	-331216	N.D.	ppm
2)	Carbon monoxide	1.738	-331216	0.019	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.052	41129	4.522	ppm
7)	Ethylene	1.586	77903	4.637	ppm
8)	Ethane	1.838	78354	4.558	ppm
9)	Propylene	4.218	112342	4.614	ppm
10)	Propane	4.347	115723	4.680	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	6.580f	155256	3.565	ppm
13)	n-Butane	6.580f	155256	3.565	ppm

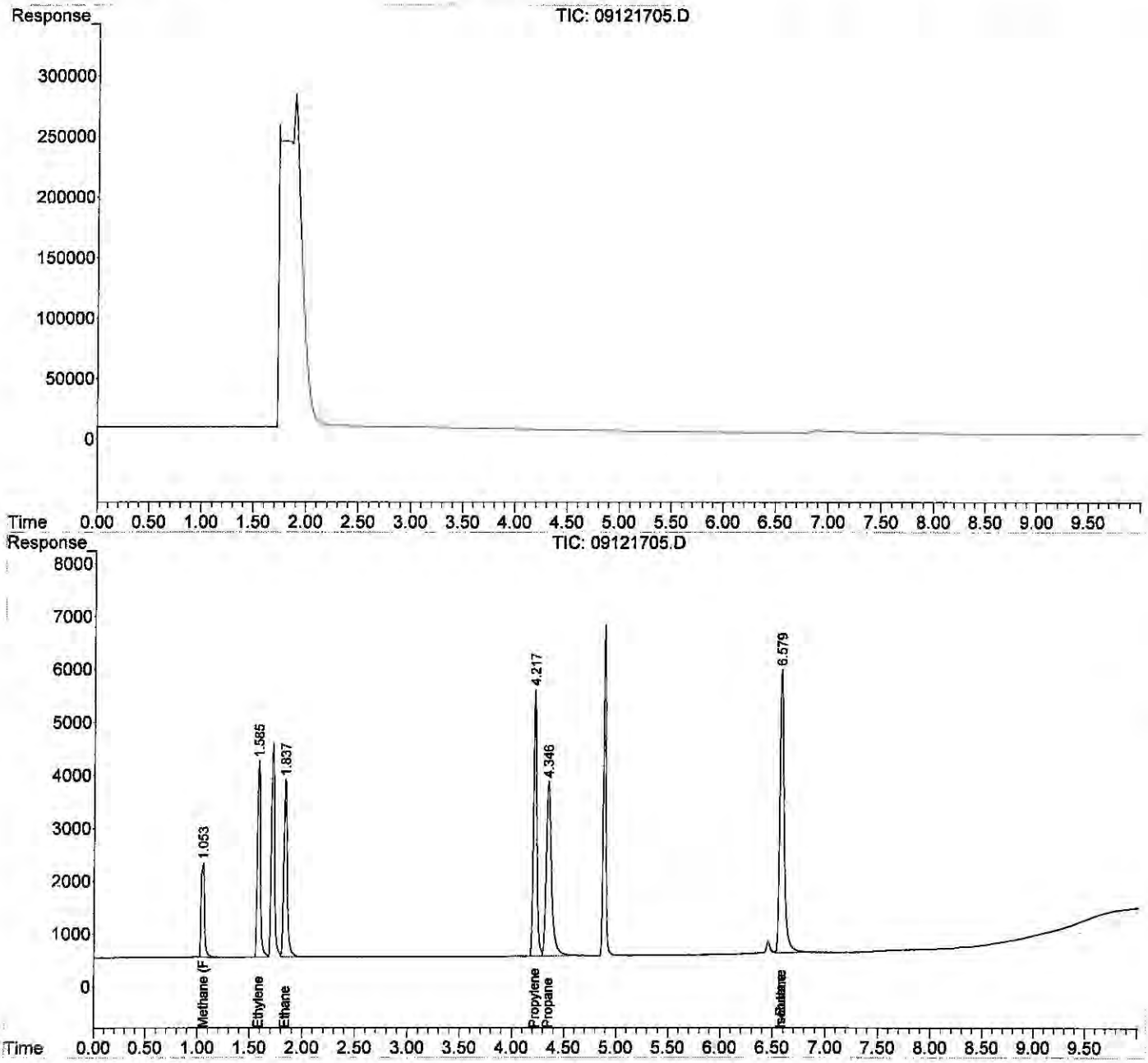
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121705.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 12:09
Operator : MC
Sample : 4.53ppm 0.3ml s32-09051701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:06:32 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121706.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 12:30
Operator : MC
Sample : 10.57ppm 0.7ml s32-09051701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:09:24 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

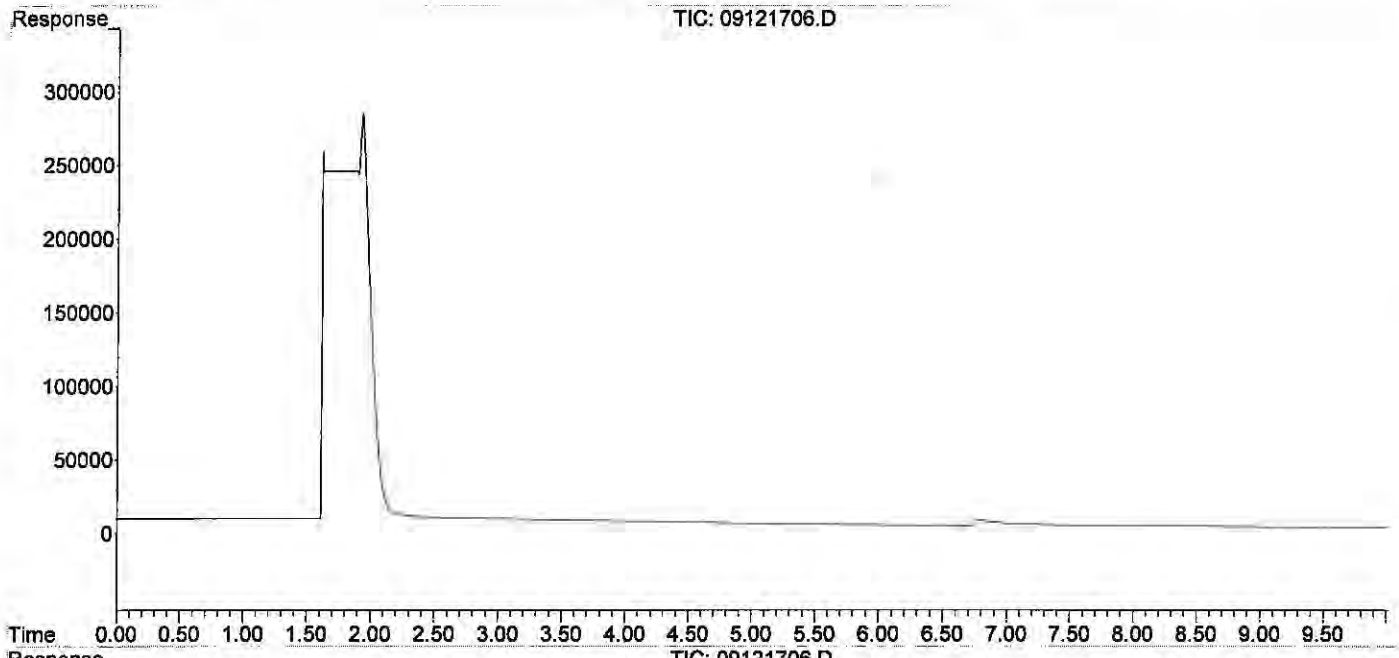
	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.929f	-31871242	N.D.	ppm
2)	Carbon monoxide	1.929f	-31871242	1.818	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.025	91967	10.135	ppm
7)	Ethylene	1.568	172086	10.273	ppm
8)	Ethane	1.822	178841	10.441	ppm
9)	Propylene	4.214	248004	10.236	ppm
10)	Propane	4.344	257124	10.458	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	6.578f	338181	9.254	ppm
13)	n-Butane	6.578f	338181	9.254	ppm

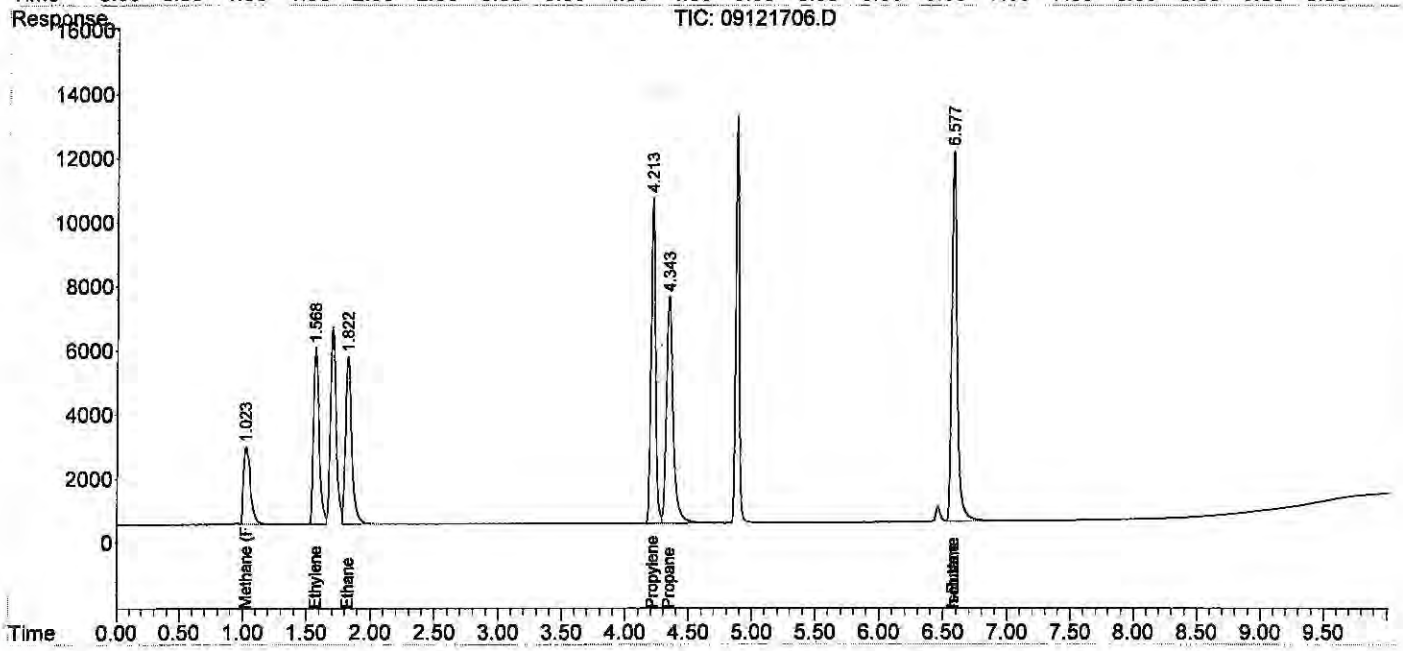
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121706.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 12:30
Operator : MC
Sample : 10.57ppm 0.7ml s32-09051701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:09:24 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121707.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 12:47
Operator : MC
Sample : 200ppm 0.1ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:09:59 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.897	155286	0.065	ppm
2)	Carbon monoxide	1.897	155286	N.D.	ppm
3)	Methane (TCD)	4.079f	27015	2856.472	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.063	1735997	190.792	ppm
7)	Ethylene	1.597	3339702	198.758	ppm
8)	Ethane	1.849	3350442	194.597	ppm
9)	Propylene	4.201	4504060	185.706	ppm
10)	Propane	4.333	5043036	204.809	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

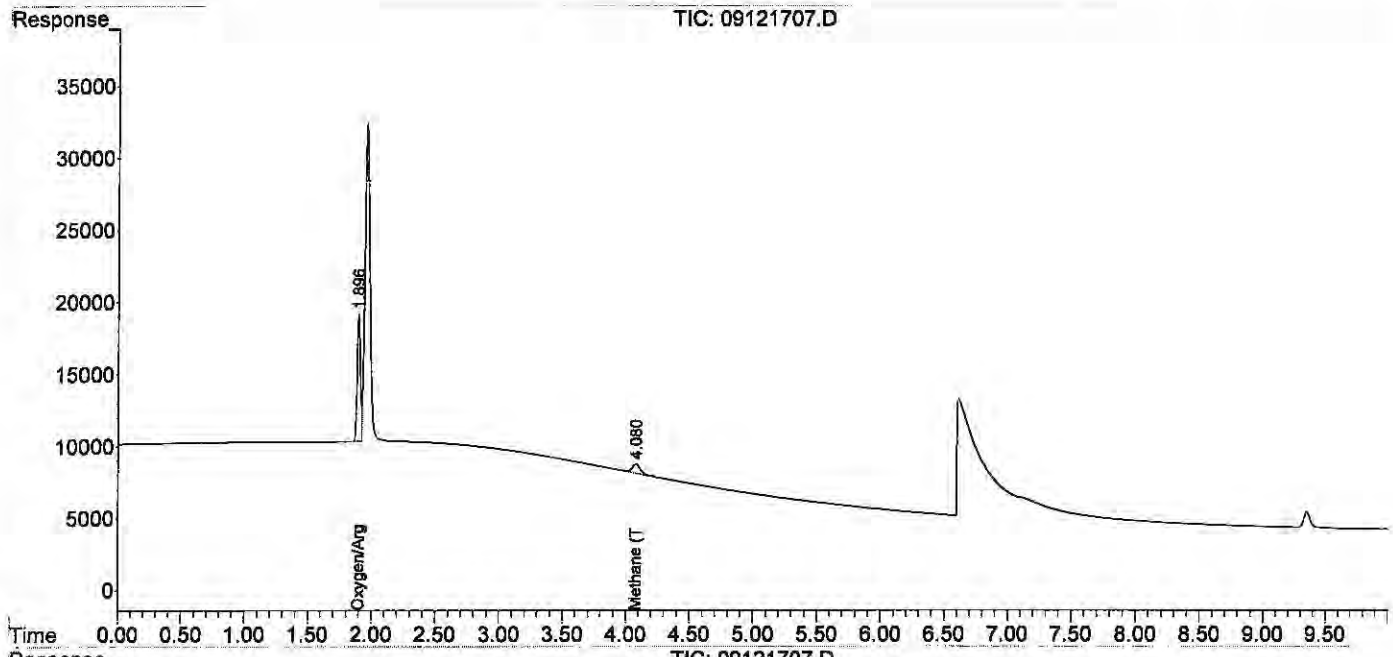
(f)=RT Delta > 1/2 Window (m)=manual int.

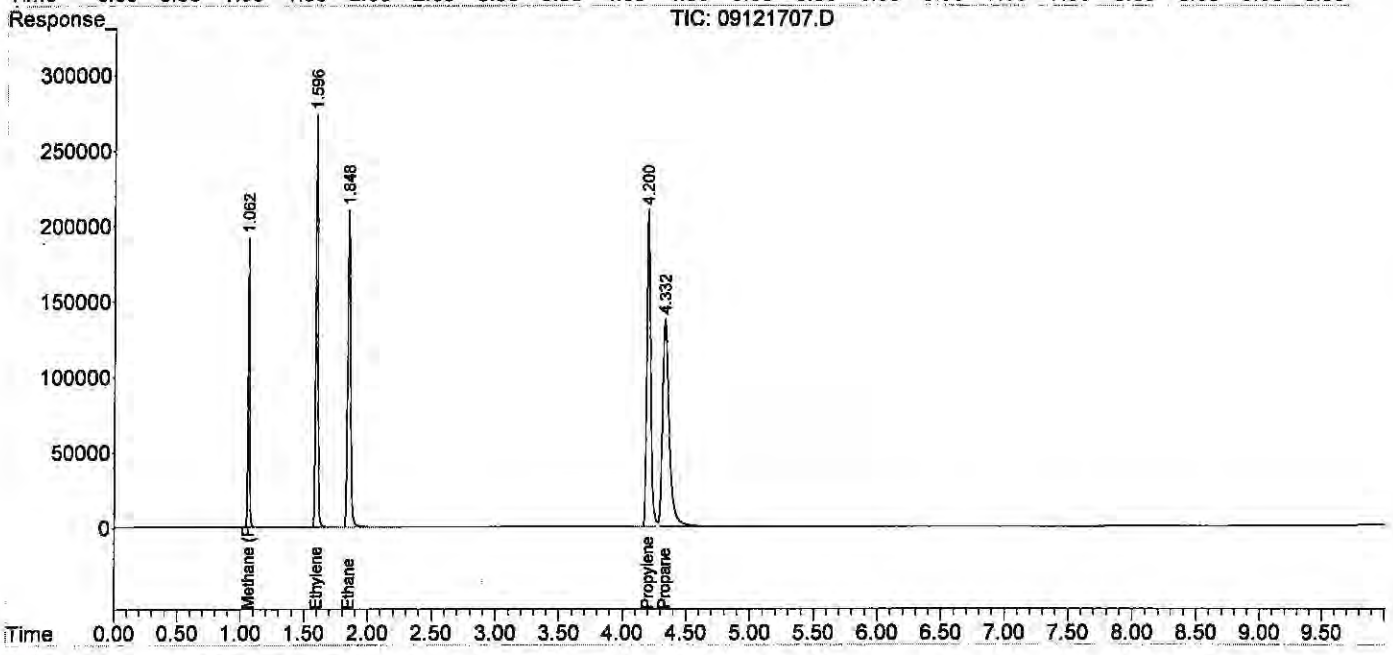
Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121707.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 12:47
Operator : MC
Sample : 200ppm 0.1ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:09:59 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:04:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121708.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 13:00
Operator : MC
Sample : 600ppm 0.3ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:10:57 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:10:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
Target	Compounds				
1)	Oxygen/Argon	1.884	196022	0.124	ppm
2)	Carbon monoxide	1.884	196022	N.D.	ppm
3)	Methane (TCD)	4.070f	88282	782.730	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.044	5189849	539.759	ppm
7)	Ethylene	1.573	10007759	590.286	ppm
8)	Ethane	1.822	10048964	583.213	ppm
9)	Propylene	4.160	13569343	562.612	ppm
10)	Propane	4.300	15251326	615.171	ppm
11)	Isobutylene	6.143	9815	NoCal	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

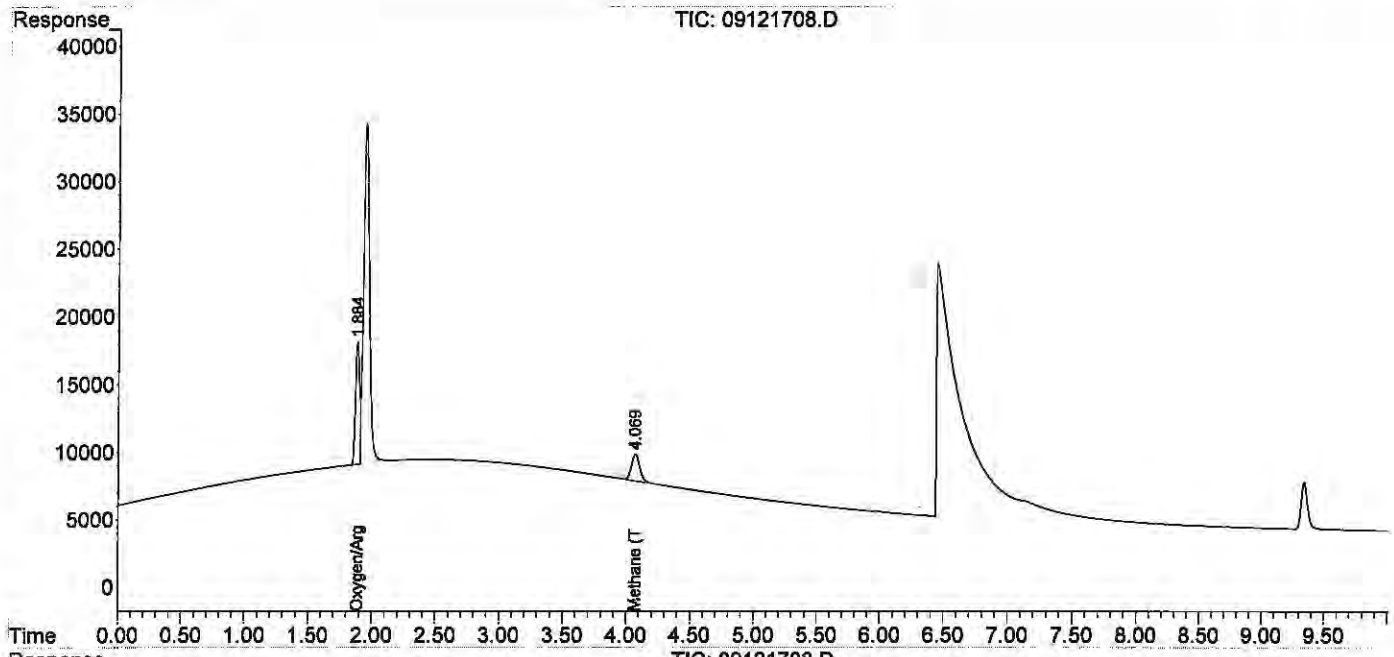
(f)=RT Delta > 1/2 Window (m)=manual int.

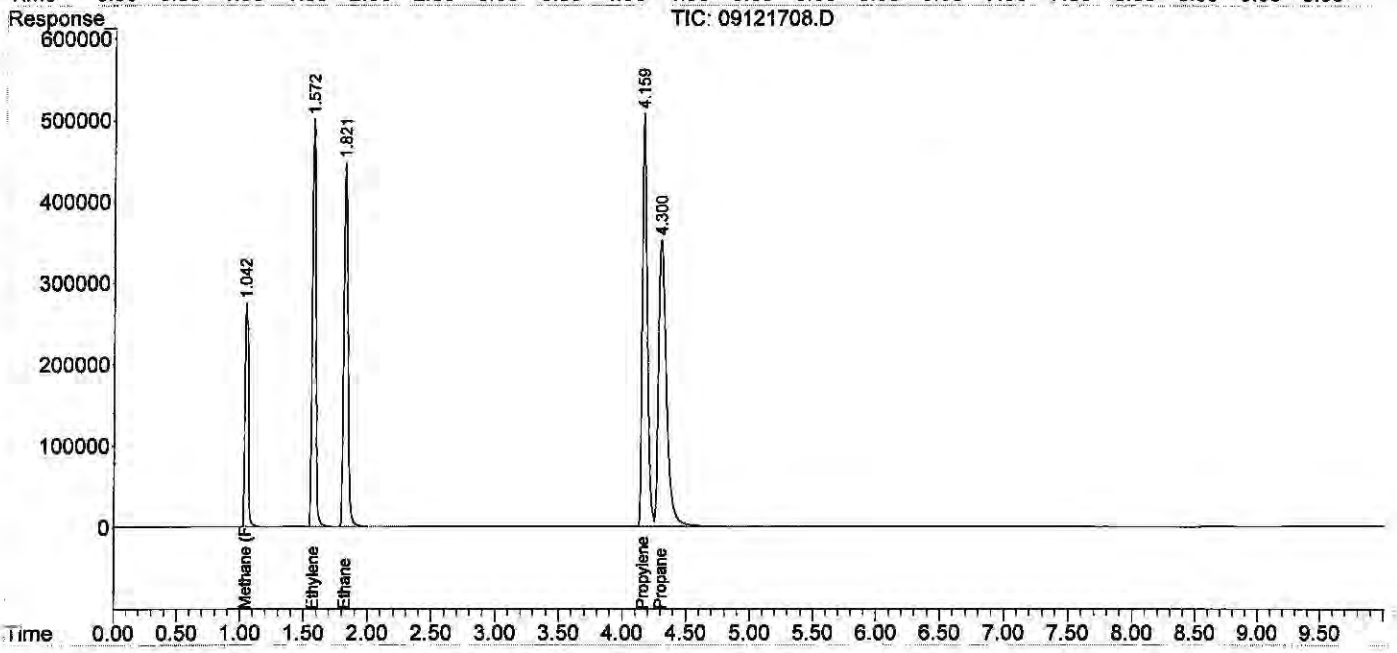
Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121708.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 13:00
Operator : MC
Sample : 600ppm 0.3ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:10:57 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:10:50 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121709.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 13:47
Operator : MC
Sample : 1000ppm 0.5ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:11:46 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:11:38 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	1.879	192611	0.162	ppm
2)	Carbon monoxide	1.879	192611	N.D.	ppm
3)	Methane (TCD)	4.070f	145492	1244.729	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.039	8598534	945.644	ppm
7)	Ethylene	1.576	16608504	981.887	ppm
8)	Ethane	1.827	16709165	973.644	ppm
9)	Propylene	4.161	22494888	941.060	ppm
10)	Propane	4.298	25459411	1023.223	ppm
11)	Isobutylene	6.138	16970	8645.243	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

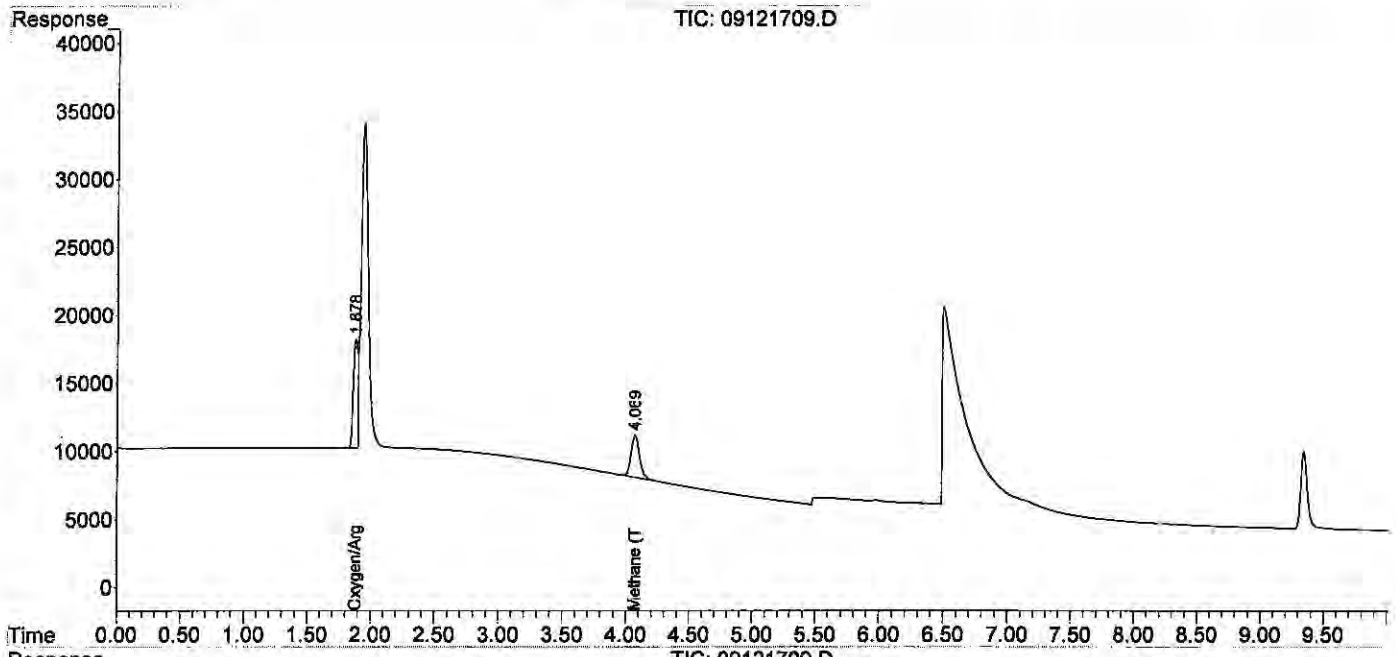
(f)=RT Delta > 1/2 Window (m)=manual int.

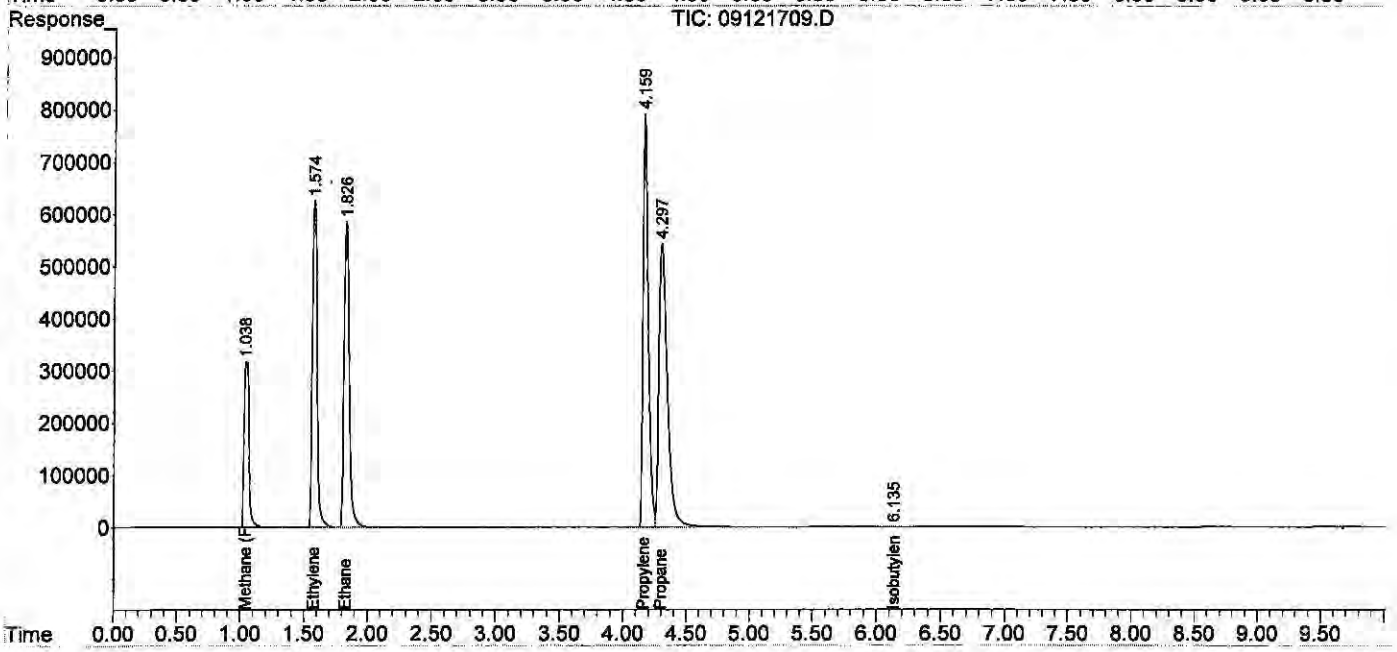
Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121709.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 13:47
Operator : MC
Sample : 1000ppm 0.5ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:11:46 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:11:38 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121710.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 14:07
Operator : MC
Sample : 2000ppm 1ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:12:33 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:12:25 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

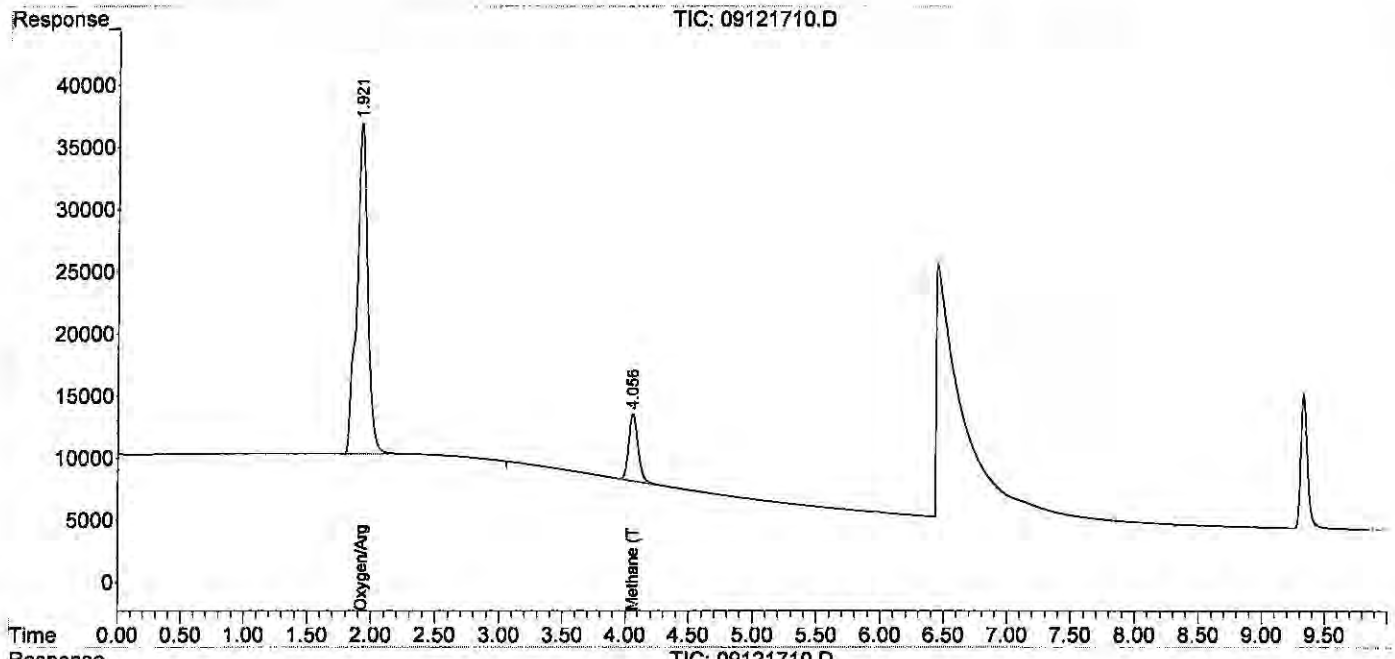
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.922f	1578147	1.659	ppm	
2)	Carbon monoxide	1.922f	1578147	N.D.	ppm	
3)	Methane (TCD)	4.057f	281651	3526.607	ppm	
4)	Carbon dioxide	0.000	0	N.D.	ppm	
6)	Methane (FID)	1.016	16098209	1763.622	ppm	
7)	Ethylene	1.552	31192444	1848.268	ppm	
8)	Ethane	1.801	31424218	1837.143	ppm	
9)	Propylene	4.129	42124690	1775.341	ppm	m
10)	Propane	4.269	48583085	1946.921	ppm	
11)	Isobutylene	6.136	33832	25613.603	ppm	
12)	Isobutane	6.576f	3845	0.120	ppm	
13)	n-Butane	6.576f	3845	0.120	ppm	

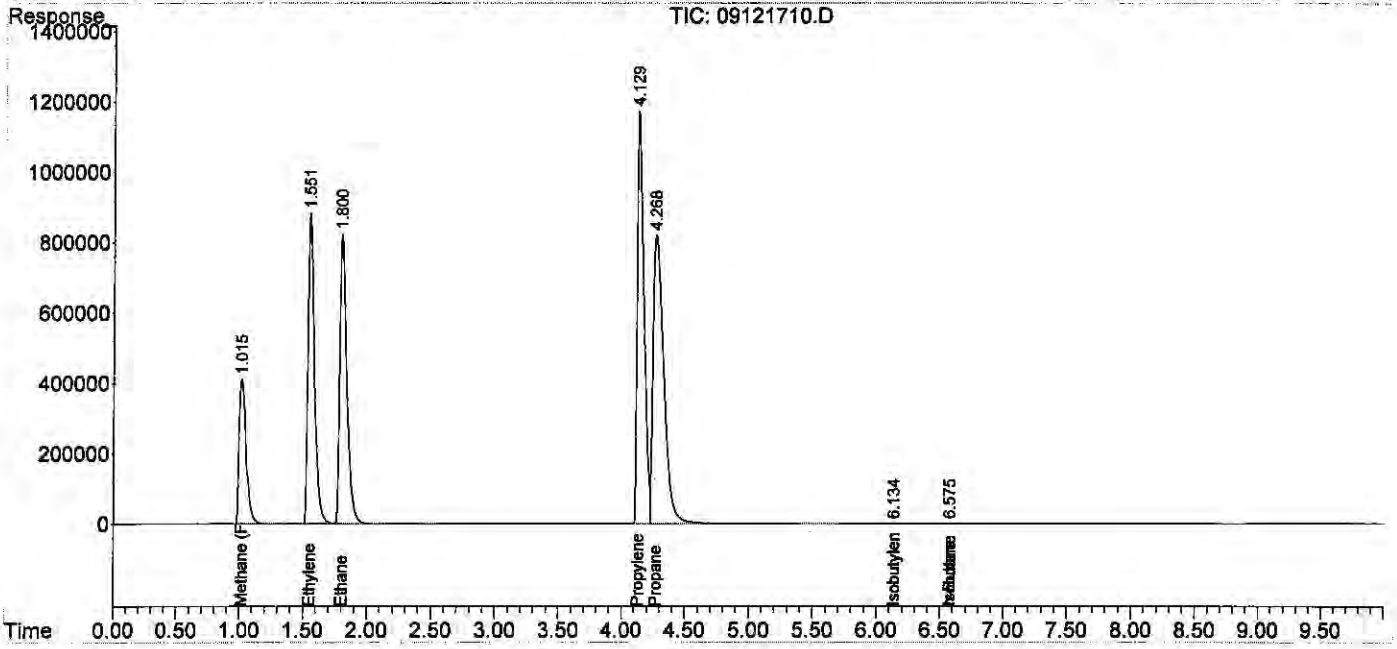
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121710.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 14:07
Operator : MC
Sample : 2000ppm 1ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:12:33 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:12:25 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



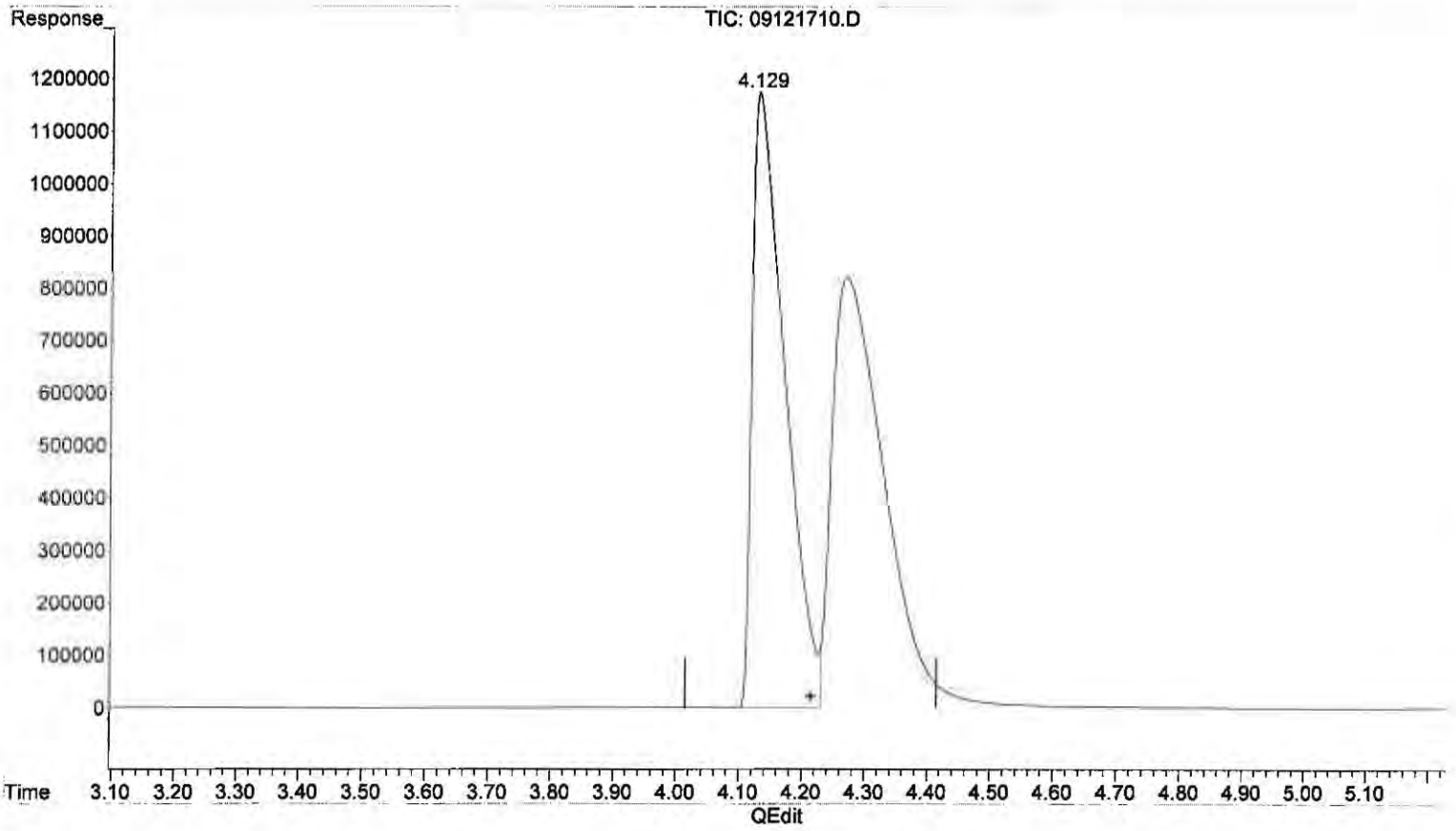


Quantitation Report (Qedit)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121710.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 14:07
Operator : MC
Sample : 2000ppm 1ml s32-09121701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:12:33 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:12:25 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase :
Signal #1 Info :
Signal #2 Phase:
Signal #2 Info :



(9) Propylene
4.129min 1775.341 ppm m
response 42124690

(+) = Expected Retention Time

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121711.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 14:48
Operator : MC
Sample : 4000ppm 0.1ml s32-08231701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:13:37 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:13:29 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

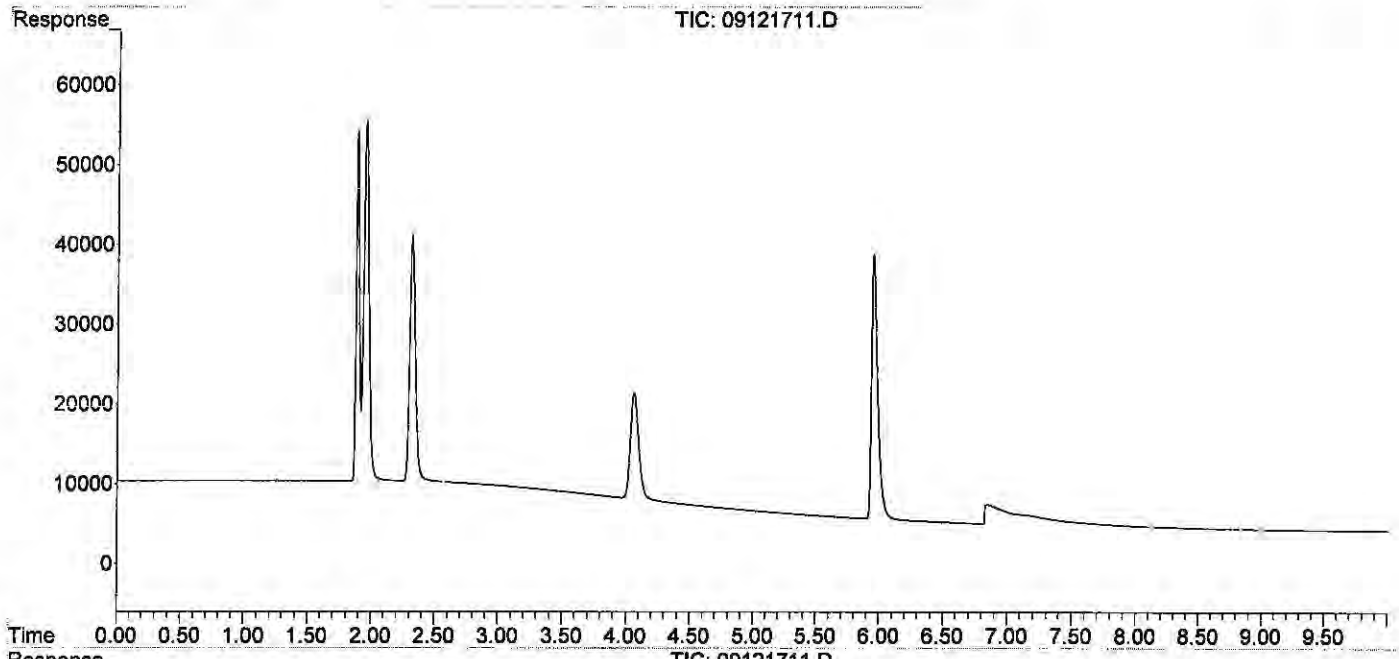
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	0.000	0	N.D.	ppm	d
2)	Carbon monoxide	0.000	0	N.D.	ppm	d
3)	Methane (TCD)	0.000	0	N.D.	ppm	d
4)	Carbon dioxide	0.000	0	N.D.	ppm	d
6)	Methane (FID)	1.059	35776839	3925.122	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

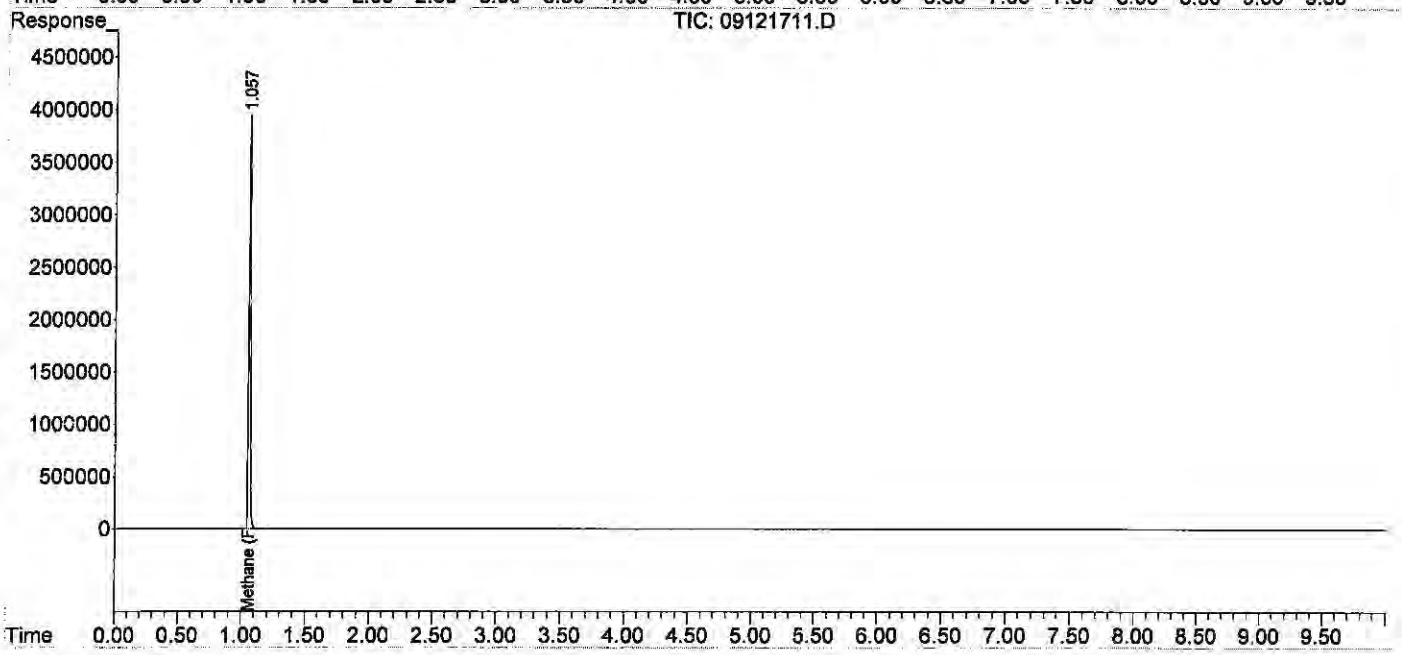
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121711.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 14:48
Operator : MC
Sample : 4000ppm 0.1ml s32-08231701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:13:37 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:13:29 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase :
Signal #1 Info :
Signal #2 Phase:
Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121712.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 15:21
Operator : MC
Sample : 20000ppm 0.5ml s32-08231701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:14:17 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:13:29 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

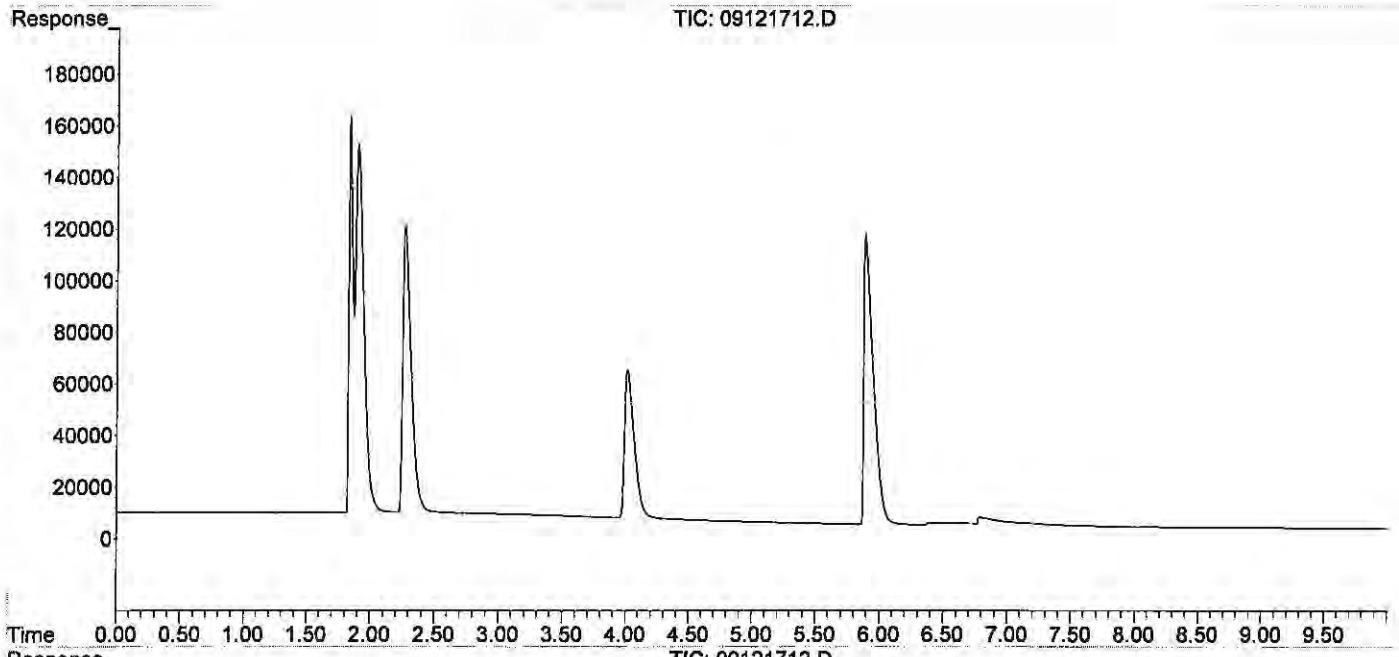
	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	0.000	0	N.D.	ppm	d
2)	Carbon monoxide	1.836	3190788	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	d
4)	Carbon dioxide	0.000	0	N.D.	ppm	d
6)	Methane (FID)	1.034	169009160	18492.064	ppm	
7)	Ethylene	0.000	0	N.D.	ppm	
8)	Ethane	0.000	0	N.D.	ppm	
9)	Propylene	0.000	0	N.D.	ppm	
10)	Propane	0.000	0	N.D.	ppm	
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	0.000	0	N.D.	ppm	
13)	n-Butane	0.000	0	N.D.	ppm	

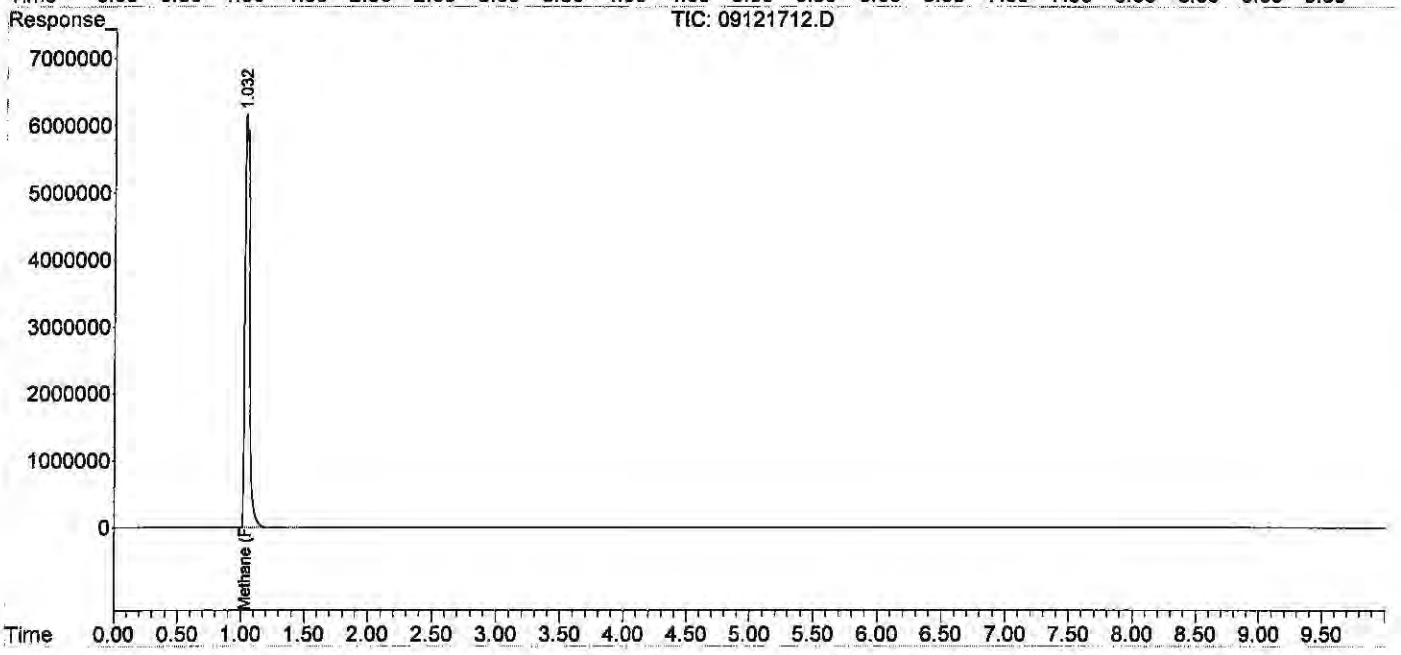
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121712.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 15:21
Operator : MC
Sample : 20000ppm 0.5ml s32-08231701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:14:17 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:13:29 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121715.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 16:15
Operator : MC
Sample : icv s30-05241604
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:15:11 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:13:29 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units	
Target Compounds						
1)	Oxygen/Argon	1.843	2922459	3.687	ppm	
2)	Carbon monoxide	1.843	2922459	N.D.	ppm	
3)	Methane (TCD)	0.000	0	N.D.	ppm	actual %D
4)	Carbon dioxide	0.000	0	N.D.	ppm	
6)	Methane (FID)	1.063	13748	1.516	ppm	1.50 101.1
7)	Ethylene	1.598	24153	1.443	ppm	1.50 96.2
8)	Ethane	1.850	24488	1.445	ppm	1.50 96.3
9)	Propylene	4.221	36004	1.537	ppm	1.50 102.5
10)	Propane	4.350	37738	1.517	ppm	1.51 100.5
11)	Isobutylene	0.000	0	N.D.	ppm	
12)	Isobutane	6.579f	48019	1.804	ppm	9/14/2
13)	n-Butane	6.579f	48019	1.804	ppm	

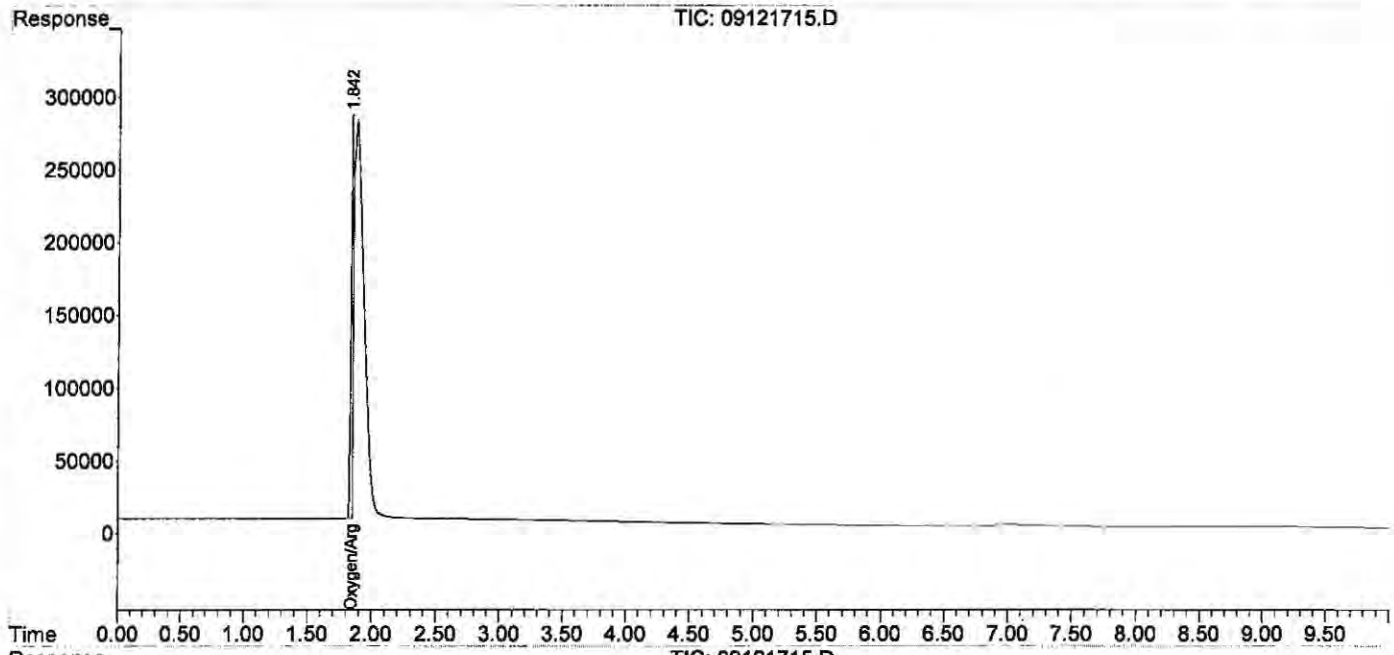
(f)=RT Delta > 1/2 Window (m)=manual int.

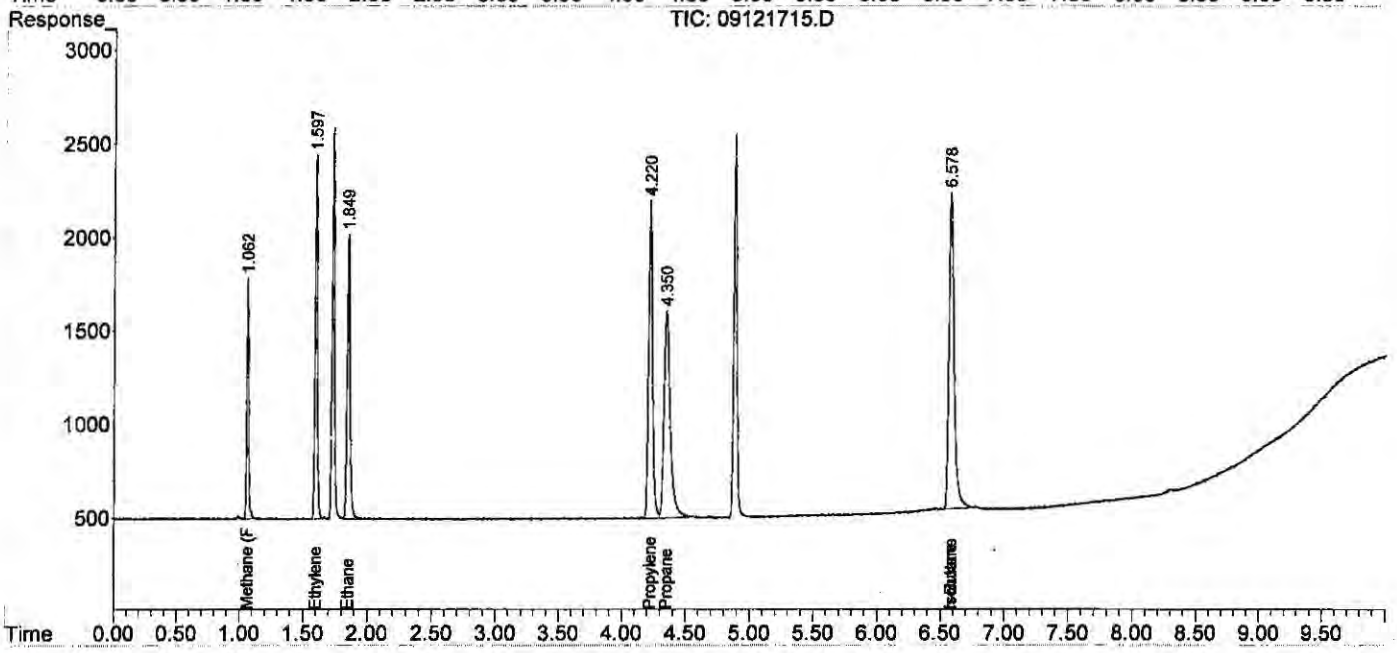
9/14/2017

Data Path : J:\GC10\DATA\RSK_FID\2017_09\12\
Data File : 09121715.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 12-Sep-2017, 16:15
Operator : MC
Sample : icv s30-05241604
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Sep 13 11:15:11 2017
Quant Method : J:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:13:29 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Dissolved Gases by RSK175

ALS Environmental

Method : RSK175 Headspace Method for Dissolved Hydrocarbon in Water by FID/TCD
Client : ALS Laboratory Group
Service Request: P1907802
Sample Vol. (ml) : 32.00 ml

Analyst : LD
Date Analysis : 12/27/19
Head Space Vol.(ml) : 8.00 ml

Instrument : GC#10
Detector : FID#10, TCD#10
Gas Constant : 24.05684 (20°C)

HEAD SPACE RESULT (ppm)

Sample ID	Inj. Vol.	Methane	Ethylene	Ethane
STD S32-05221901	0.100	93.081	98.801	97.915
ACTUAL		101.50	100.90	101.40
%Difference		8.3%	2.1%	3.4%
MCS 0.1ml	0.100	0.131	0.000	0.000
RB 0.1ml	0.100	0.000	0.000	0.000
LCS S32-07231801	0.100	1.393	1.012	1.257
LCSD S32-07231801	0.100	1.413	1.005	1.264
P1907802-001 0.1ml	0.100	0.000	0.000	0.000
P1907802-002 0.1ml	0.100	0.000	0.000	0.000
P1907802-003 0.1ml	0.100	161.108	1.426	0.000
P1907802-004 0.1ml	0.100	774.815	0.000	0.000
P1907802-005 0.1ml	0.100	53.206	0.627	0.000
STD S32-05221901	0.100	90.836	96.419	95.642
STD S32-05221901		89.407	95.301	95.003
ACTUAL		101.50	100.90	101.40
%Difference		11.9%	5.5%	6.3%

FINAL HEAD SPACE RESULT (ppm)

	Methane	Ethylene	Ethane
WWt.	16.04	28.05	30.07
HENRY'S CONSTANT	3.76E+04	1.02E+04	2.63E+04
RL	1.30	1.00	0.60
MCS 0.1ml	1.310	0.000	0.000
LCS S32-07231801	13.930	10.120	12.570
LCSD S32-07231801	14.130	10.050	12.640
P1907802-001 0.1ml	0.000	0.000	0.000
P1907802-002 0.1ml	0.000	0.000	0.000
P1907802-003 0.1ml	1611.080	14.260	0.000
P1907802-004 0.1ml	7748.150	0.000	0.000
P1907802-005 0.1ml	532.060	6.270	0.000
STD S32-05221901	908.360	964.190	956.420
15:04:44	90.84	96.42	95.64

LD
12/27

J:\Excel\Report\RSK175\2019\P1907802_ALS Laboratory Group_HS19121155_RSK175_1912271545_DL

Page 1 of 4
Printed: 12/27/2019 3:46 PM

Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271901.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 09:48:42
Operator : LD
Sample : STD S32-05221901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 10:00:50 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

LD
12/27

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.115	844300	93.081	ppm
7)	Ethylene	1.688	1653369	98.801	ppm
8)	Ethane	1.954	1659675	97.915	ppm
9)	Propylene	4.328	2406501	102.704	ppm
10)	Propane	4.451	2462578	98.977	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271901.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 09:48:42
Operator : LD
Sample : STD S32-05221901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 10:00:50 2019
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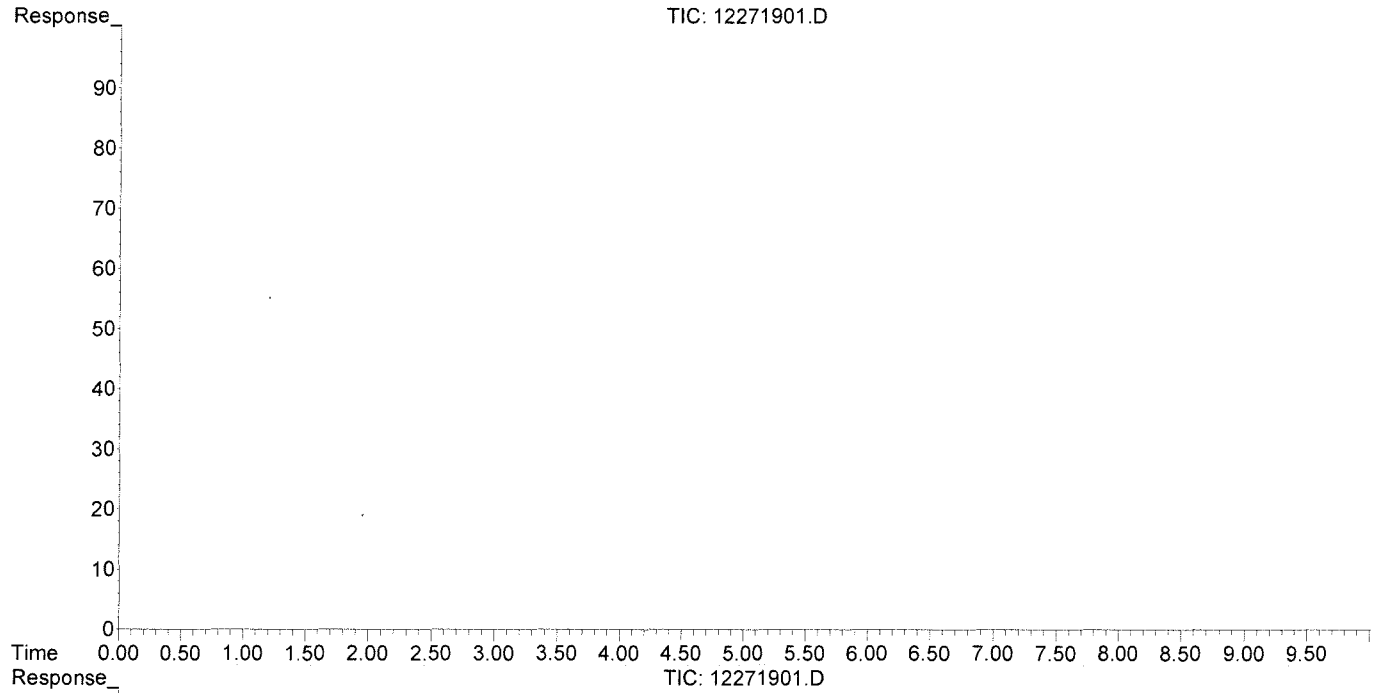
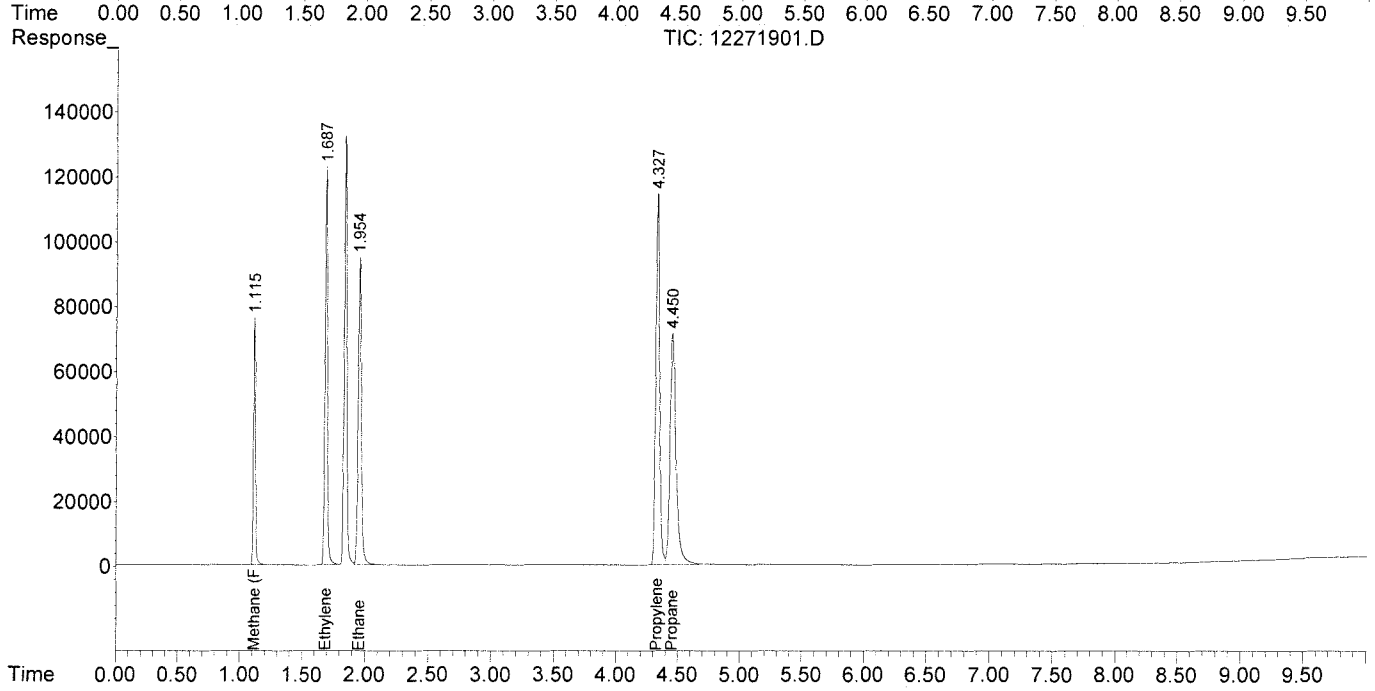
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271916.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 14:20:24
Operator : LD
Sample : STD S32-05221901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:42:13 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.108	810977	89.407	ppm
7)	Ethylene	1.677	1594791	95.301	ppm
8)	Ethane	1.944	1610319	95.003	ppm
9)	Propylene	4.330	2329836	99.432	ppm
10)	Propane	4.454	2396821	96.334	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271916.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 14:20:24
Operator : LD
Sample : STD S32-05221901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 14:42:13 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
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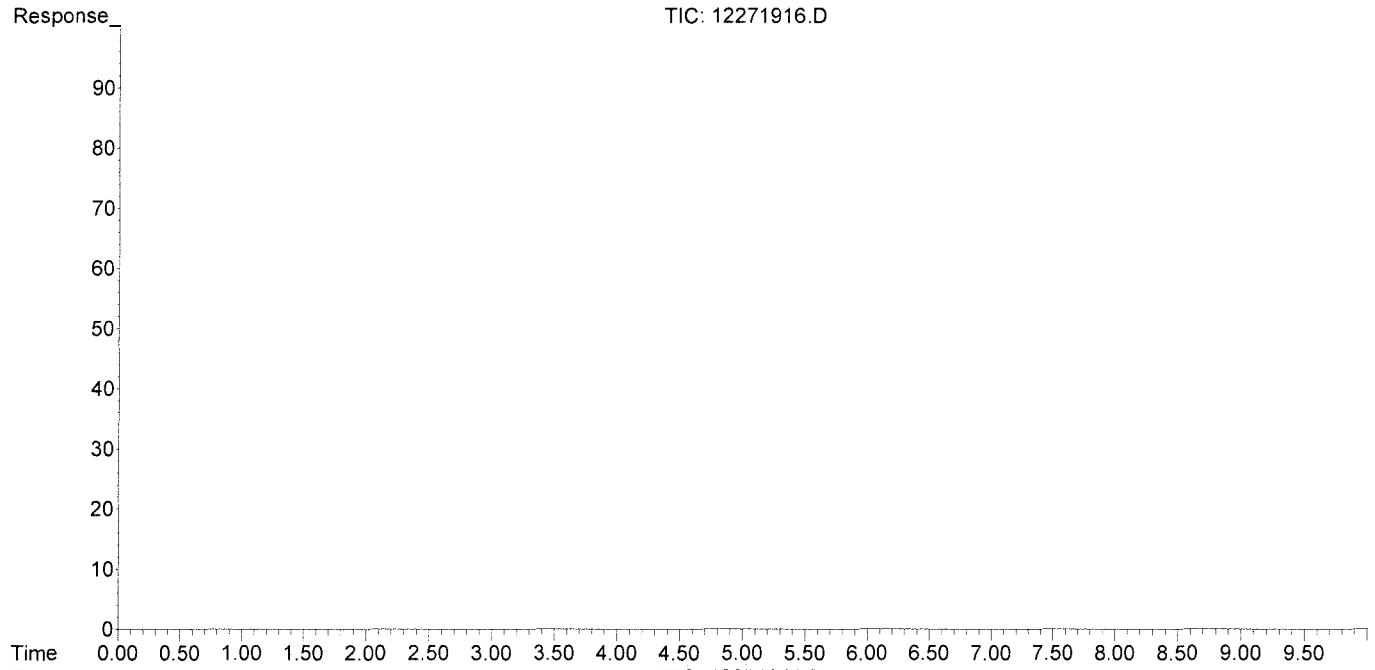
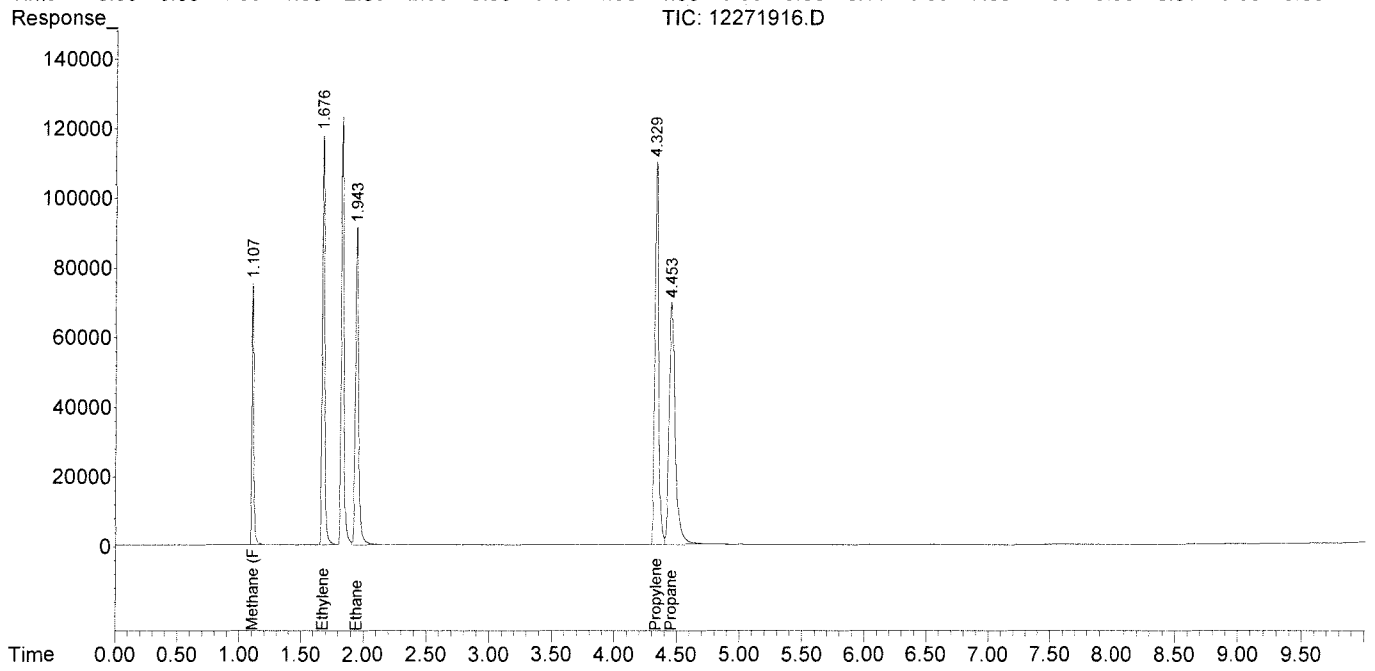
Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271919.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 15:04:44
Operator : LD
Sample : STD S32-05221901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 15:16:17 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Oxygen/Argon	0.000	0	N.D.	ppm
2)	Carbon monoxide	0.000	0	N.D.	ppm
3)	Methane (TCD)	0.000	0	N.D.	ppm
4)	Carbon dioxide	0.000	0	N.D.	ppm
6)	Methane (FID)	1.110	823939	90.836	ppm
7)	Ethylene	1.681	1613500	96.419	ppm
8)	Ethane	1.948	1621146	95.642	ppm
9)	Propylene	4.332	2351222	100.344	ppm
10)	Propane	4.455	2414111	97.029	ppm
11)	Isobutylene	0.000	0	N.D.	ppm
12)	Isobutane	0.000	0	N.D.	ppm
13)	n-Butane	0.000	0	N.D.	ppm

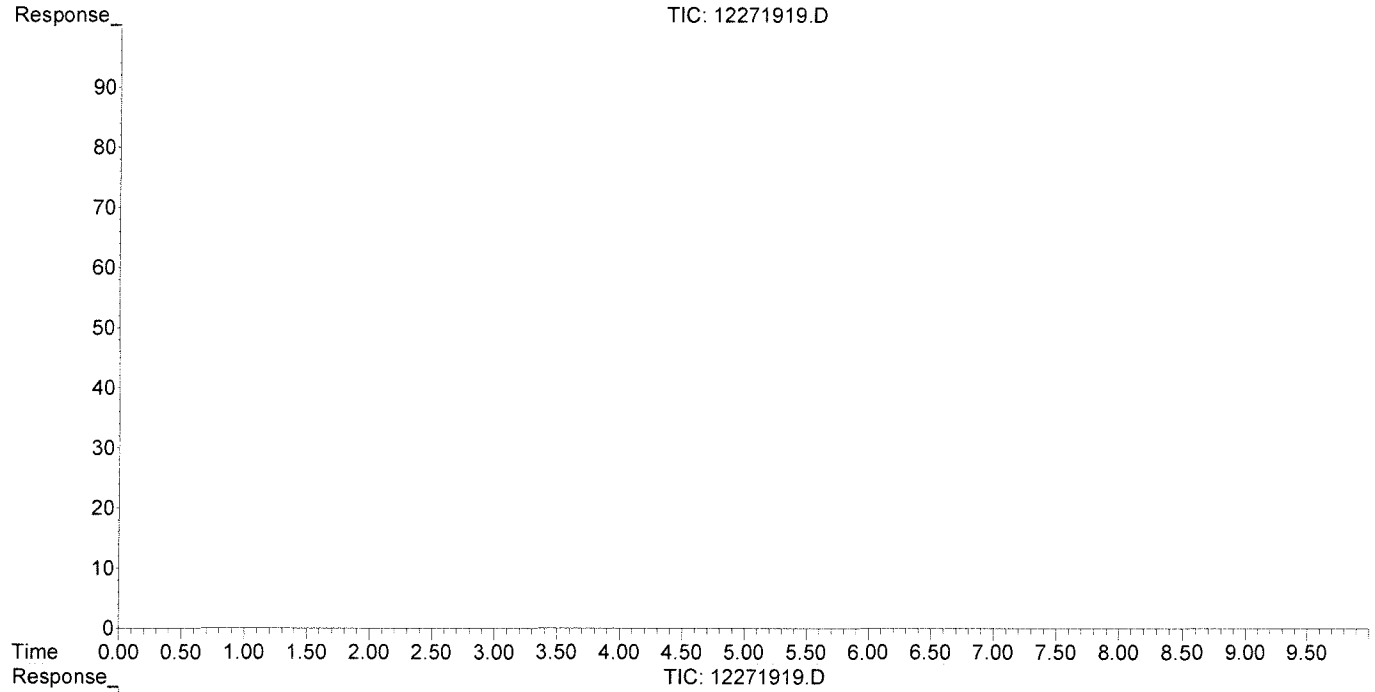
(f)=RT Delta > 1/2 Window (m)=manual int.

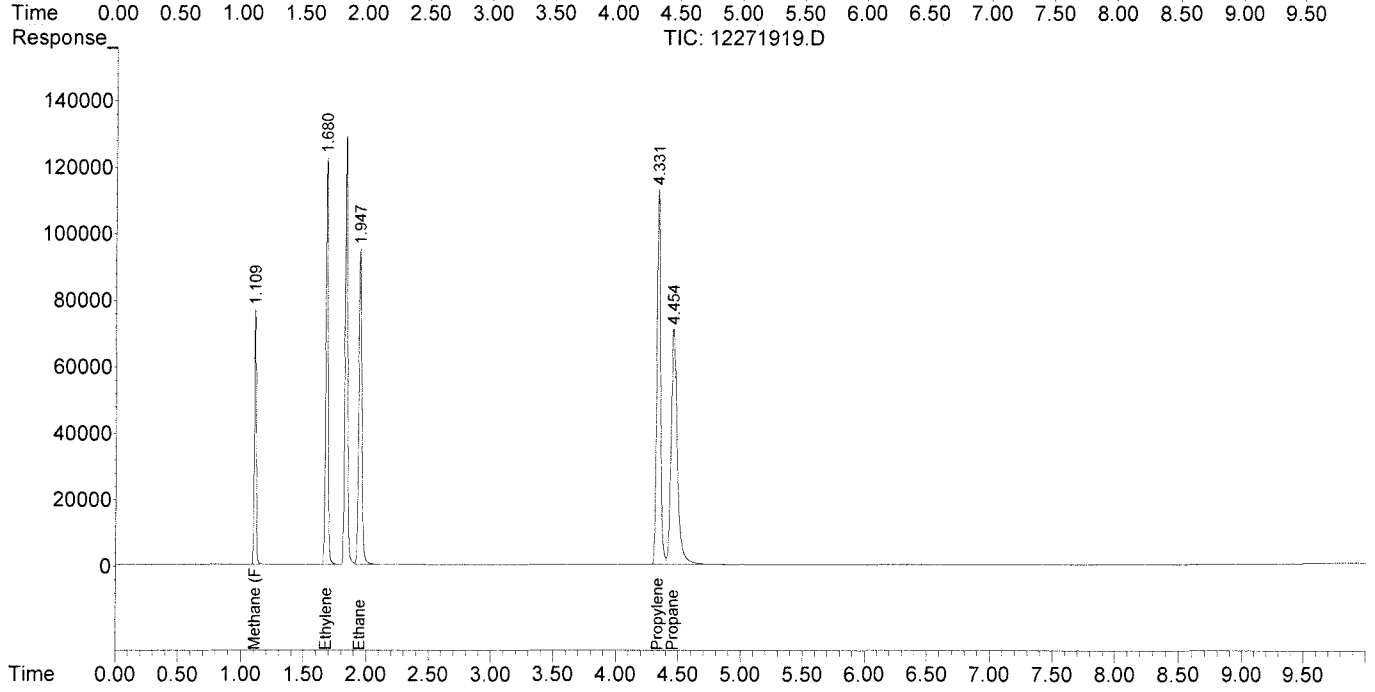
01000809

Data Path : J:\GC10\DATA\RSK_FID\2019_12\27\
Data File : 12271919.D
Signal(s) : Signal #1: TCD1A.CH Signal #2: FID2B.CH
Acq On : 27-Dec-2019, 15:04:44
Operator : LD
Sample : STD S32-05221901
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Dec 27 15:16:17 2019
Quant Method : I:\GC10\METHODS\RS091217_R.M
Quant Title : RSK175, VOA-DISGAS, VOA-TO3C1C6
QLast Update : Wed Sep 13 11:14:47 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Injection Log

Directory: I:\GC10\DATA\RSK_FID\2017_09\12\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	12-Sep-17, 08:38:08	09121701.D	test		MC	RSKBOTH.M	
2	12-Sep-17, 10:52:40	09121702.D	0.151ppm 0.250ml s32-09121702		MC	RSKBOTH.M	Curve
3	12-Sep-17, 11:05:49	09121703.D	0.302ppm 0.5ml s32-09121702		MC	RSKBOTH.M	Curve
4	12-Sep-17, 11:45:34	09121704.D	1.51ppm 0.1ml s32-09051701		MC	RSKBOTH.M	Curve
5	12-Sep-17, 12:09:33	09121705.D	4.53ppm 0.3ml s32-09051701		MC	RSKBOTH.M	Curve
6	12-Sep-17, 12:30:23	09121706.D	10.57ppm 0.7ml s32-09051701		MC	RSKBOTH.M	Curve
7	12-Sep-17, 12:47:18	09121707.D	200ppm 0.1ml s32-09121701		MC	RSKBOTH.M	Curve
8	12-Sep-17, 13:00:22	09121708.D	600ppm 0.3ml s32-09121701		MC	RSKBOTH.M	Curve
9	12-Sep-17, 13:47:48	09121709.D	1000ppm 0.5ml s32-09121701		MC	RSKBOTH.M	Curve
10	12-Sep-17, 14:07:58	09121710.D	2000ppm 1ml s32-09121701		MC	RSKBOTH.M	Curve
11	12-Sep-17, 14:48:48	09121711.D	4000ppm 0.1ml s32-08231701		MC	RSKBOTH.M	Curve
12	12-Sep-17, 15:21:51	09121712.D	20000ppm 0.5ml s32-08231701		MC	RSKBOTH.M	Curve
13	12-Sep-17, 15:38:59	09121713.D	mb 0.5ml		MC	RSKBOTH.M	Pass
14	12-Sep-17, 15:55:35	09121714.D	mb 0.1ml		MC	RSKBOTH.M	Pass
15	12-Sep-17, 16:15:26	09121715.D	icv s30-05241604		MC	RSKBOTH.M	Pass

Injection Log

12/31/19

Directory: I:\GC10\DATA\RSK_FID\2019_12\27\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	27-Dec-19, 09:48:42	12271901.D	STD S32-05221901		LD	RSKBOTH.M	pass
2	27-Dec-19, 10:03:03	12271902.D	RB 0.1ml		LD	RSKBOTH.M	pass
3	27-Dec-19, 11:17:39	12271903.D	MCS 0.1ml		LD	RSKBOTH.M	pass
4	27-Dec-19, 11:32:18	12271904.D	LCS S32-07231801		LD	RSKBOTH.M	pass
5	27-Dec-19, 11:45:51	12271905.D	LCSD S32-07231801		LD	RSKBOTH.M	pass
6	27-Dec-19, 12:00:50	12271906.D	P1907801-001 0.1ml		LD	RSKBOTH.M	
7	27-Dec-19, 12:15:29	12271907.D	P1907801-002 0.1ml		LD	RSKBOTH.M	
8	27-Dec-19, 12:29:32	12271908.D	P1907801-003 0.1ml		LD	RSKBOTH.M	
9	27-Dec-19, 12:42:33	12271909.D	P1907801-004 0.1ml		LD	RSKBOTH.M	
10	27-Dec-19, 12:56:28	12271910.D	P1907801-005 0.1ml		LD	RSKBOTH.M	
11	27-Dec-19, 13:09:49	12271911.D	P1907801-006 0.1ml		LD	RSKBOTH.M	
12	27-Dec-19, 13:26:26	12271912.D	P1907802-001 0.1ml		LD	RSKBOTH.M	
13	27-Dec-19, 13:40:35	12271913.D	P1907802-002 0.1ml		LD	RSKBOTH.M	
14	27-Dec-19, 13:54:12	12271914.D	P1907802-003 0.1ml		LD	RSKBOTH.M	
15	27-Dec-19, 14:07:18	12271915.D	P1907802-004 0.1ml		LD	RSKBOTH.M	
16	27-Dec-19, 14:20:24	12271916.D	STD S32-05221901		LD	RSKBOTH.M	pass
17	27-Dec-19, 14:33:31	12271917.D	P1907802-005 0.1ml		LD	RSKBOTH.M	
18	27-Dec-19, 14:46:47	12271918.D	xxxxSTD S32-05221901		LD	RSKBOTH.M	fail
19	27-Dec-19, 15:04:44	12271919.D	STD S32-05221901		LD	RSKBOTH.M	pass

REPORT TO:

Name: MARCIA OLIVA
Company: BHATE ENVIRONMENTAL
Address: 445 UNION BLVD. STE. 129
LAKEWOOD, CO. 80228
email: molive@bhate.com
Phone: 205-918-4000
Fax:

INVOICE TO: (For invoices paid by a third party it is imperative that all information be provided)

Name:
Company:
Address:
email:
Phone:
Fax:

microbialinsights
10515 Research Dr
Knoxville, TN 37932
865-573-8188
www.microbe.com

Project Manager: Kim NEMMERS
Project Name: LITAAP-58
Project No.: NW01312.0150

Purchase Order No.
Subcontract No.
MI Quote No.

Please Check One:
☐ More samples to follow
☒ No Additional Samples

Report Type: ☒ Standard (default) ☐ Microbial Insights Level III raw data (15% surcharge) ☐ Microbial Insights Level IV (25% surcharge) ☐ Comprehensive Interpretive (15%) ☐ Historical Interpretive (30%)

EDD type: ☐ Microbial Insights Standard (default) ☐ All other available EDDs (5% surcharge) Specify EDD Type:

Please contact us with any questions about the analyses or filling out the COC at (865) 573-8188 (9:00 am to 5:00 pm EST, M-F). After hours email: customerservice@microbe.com

Sample Information					Analyses					CENSUS: Please select the target organism/gene																						
MI ID (Laboratory Use Only)	Sample Name	Date Sampled	Time Sampled	Matrix	PLFA	DGGE+3ID	DGGE+5ID	QuantArray Chlor	QuantArray Petro	DHC (Dehalococcoides)	DHC Functional genes (bvc, tca, vcr)	DHBt (Dehalobacter)	DSM (Desulfuromonas)	DSB (Desulfitobacterium)	EBAC (Total)	SRB (Sulfate Reducing Bacteria-APS)	MGN (Methanogens)	MOB (Methanotrophs)	SMMO	DNF (Denitrifiers-nirS and nirK)	AOB (ammonia oxidizing bacteria)	PM1 (MTBE aerobic)	RMO (Toluene Monooxygenase)	RDEG (Toluene Monooxygenase)	PHE (Phenol Hydroxylase)	NAH (Naphalene-aerobic)	BSSA (Toluene/Xylene-Anaerobic)	add. qPCR:	add. qPCR:	RNA (Expression Option)*	Other:	Other:	Other:
095QL1	35AWW20-121919	12/19/19	0920	wb							X	X																				
2	35AWW06-121919	12/19/19	1035	wb							X	X																				
3	LHSMW07-121919	12/19/19	1130	wb							X	X																				

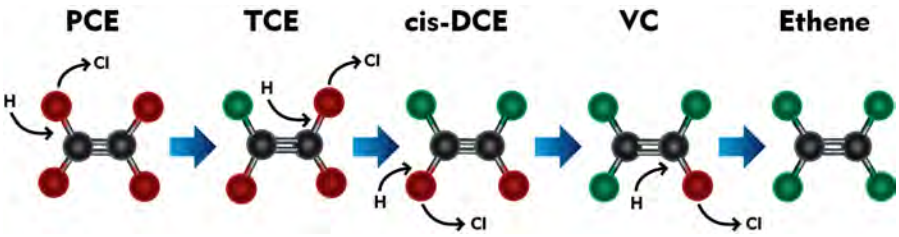
Relinquished by: [signature] 12/19/19 1430 Received by: [signature] Date 12/20/19

It is vital that chain of custody is filled out correctly & that all relative information is provided.
Failure to provide sufficient and/or correct information regarding reporting, invoicing & analyses requested information may result in delays for which MI will not be liable.

DHC Interpretation

Dehalococcoides 16S rRNA gene (qDHC)

Under anaerobic conditions, tetrachloroethene (PCE) and trichloroethene (TCE) can undergo sequential reductive dechlorination through the daughter products *cis*-dichloroethene (*cis*-DCE) and vinyl chloride to nontoxic ethene (1,2).



While a number of bacterial cultures capable of utilizing PCE and TCE as growth supporting electron acceptors have been isolated (3-7), *Dehalococcoides* spp. may be the most important because they are the only bacterial group that has been isolated to date which is capable of complete reductive dechlorination of PCE to ethene (8). In fact, the presence of *Dehalococcoides* spp. has been associated with complete dechlorination to ethene at sites across North America and Europe (9).

Status	*Dehalococcoides spp.*	Observation
	**≥ 10^4** (cells/mL)	Lu et al. proposed that a concentration of 1 x 10^4 DHC cells/mL could be used as a screening criterion to identify sites where reductive dechlorination will yield a generally useful biodegradation rate (10). Similarly, in an internal study conducted with nearly 1000 groundwater samples obtained from sites across the US, ethene production was observed in approximately 80% of samples in which CENSUS® qDHC results were greater than or equal to 10^4 DHC cells/mL.
	**10^1 to < 10^4** (cells/mL)	When vinyl chloride reductase genes (See DHC functional genes discussion below) are also detected, complete reductive dechlorination of PCE and TCE to ethene may still occur even with moderate DHC concentrations. When the DHC population is below the 10^4 cells/mL criterion proposed by Lu et al. (10), project managers should carefully consider other site-specific data to determine whether subsurface conditions may be limiting reductive dechlorination. For example, the addition of an electron donor may be able to stimulate DHC growth and enhance anaerobic bioremediation.
	**< 10^1** (cells/mL)	DHC concentrations are low suggesting that complete reductive dechlorination of PCE and TCE to ethene is unlikely to occur under existing conditions. Enhanced anaerobic bioremediation options (biostimulation or bioaugmentation) may need to be considered.

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www.microbe.com

microbialinsights

DHC Interpretation

DHC Functional Genes (*tce*A, *bvc*A, *vcr*A)

A "stall" where daughter products *cis*-DCE and vinyl chloride accumulate can occur at PCE- and TCE-impacted sites especially under MNA conditions. The accumulation of vinyl chloride, generally considered more carcinogenic than the parent compounds, is particularly problematic. Although elevated *Dehalococcoides* concentrations correspond to ethene production in numerous studies, the range of chlorinated ethenes metabolized and cometabolized varies among species and strains within the *Dehalococcoides* genus. For example, *Dehalococcoides ethenogenes* str. 195 metabolizes PCE, TCE, and *cis*-DCE and cometabolizes vinyl chloride (8) to produce ethene. Conversely, *Dehalococcoides* sp. CBDB1 utilizes PCE and TCE but does not cometabolize additional chloroethenes (11). Other *Dehalococcoides* strains, such as BAV1, GT and VS, are known to fully dechlorinate cis-DCE and VC to ethene (14,16,19). Quantification of reductive dehalogenase genes is used to more definitively confirm the potential for reductive dechlorination of TCE, cis-DCE, and vinyl chloride (12-15).

Functional Gene	Observation
TCE Reductase	
***tce*A gene**	The *tce*A gene encodes the enzyme responsible for reductive dechlorination of TCE to *cis*-DCE in some strains of *Dehalococcoides*. Absence of *tce*A does not preclude the potential for reductive dechlorination of TCE in the field since the *tce*A gene is not universally distributed among all DHC and is not present in other microorganisms capable of reductive dechlorination of TCE (e.g. *Dehalobacter*). Detection of the *tce*A gene provides an additional line of evidence indicating the potential for dechlorination of TCE.
Vinyl Chloride Reductase	
***bvc*A gene**	The *bvc*A gene encodes the vinyl chloride reductase enzyme responsible for reductive dechlorination of vinyl chloride to ethene by *Dehalococcoides* sp. str. BAV1 (16). Presence of *bvc*A gene indicates the potential for reductive dechlorination of VC to ethene. Absence of both *bvc*A and *vcr*A genes suggests VC may accumulate. An internal study with ~1,000 samples showed ethene production was observed in 80% of the samples that the DHC population was greater than or equal to 10^4 cells/mL. The *bvc*A gene was detected in over 50% of these samples. Van Der Zaan et al (17) noted that the bvcA gene was the only VC reductase gene detected at three of their sites. Alfred Spormann's laboratory at Stanford University (18) reported that the *bvc*A gene was the most abundant and active at the outflow of a PCE fed column study. This section of the column was in the DCE to VC stages of reductive dechlorination thus confirming the importance of the *bvc*A gene for complete reductive dechlorination.
***vcr*A gene**	The *vcr*A gene encodes the vinyl chloride reductase enzyme responsible for reductive dechlorination of *cis*-DCE and vinyl chloride by *Dehalococcoides* sp. strain VS (14). Presence of *vcr*A gene indicates the potential for reductive dechlorination of DCE and/or VC to ethene. Absence of both *bvc*A and *vcr*A genes suggest VC may accumulate. As with the *bvc*A gene, detection of the *vcr*A gene is associated with ethene production in internal studies (67%) and vinyl chloride reduction in independent studies (14, 17).

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DHC Interpretation

Reporting

Microbial Insights can provide a variety of data packages and reporting levels to suit the needs of any project. Data packages range from simple analytical reports with results only to more complex data packages that include a report narrative, analytical results, QC data, and supporting materials including all raw data and chain-of-custody documentation. The figure below shows our standard report and explains the way values are reported.

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CENSUS

Client: Company Name
Project: Your Project Name

MI Project Number: Unique Laboratory Identifier
Date Received: Date Samples Arrived

Sample Information

Client Sample ID:		Sample A	Sample B	Sample C
Sample Date:		00/00/0000	00/00/0000	00/00/0000
Units:		cells/mL	cells/mL	cells/mL
Analyst:		Intials	Intials	Intials
Dechlorinating Bacteria				
Dehalococcoides spp.	DHC	**1.84E+05**	**2.76E+02**	**2.28E+01 (J)**
Functional Genes				
tceA Reductase	TCE	**6.00E+01**	**3.23E+01**	<4.00E-01
bvcA Reductase	BVC	**1.17E+04**	**1.81E+01**	<4.00E-01
vcrA Reducatase	VCR	**8.42E+04**	**1.74E+02**	<4.00E-01

"J" value
Result is an estimated value. This data qualifier (flag) is used when the target gene is detected but at a concentration or abundance below the practical quantification limit (PQL).

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

< value
The target gene was not detected at the limit of quantitation (LOQ) reported for that sample.

"I" value
QA Procedure indicated that the sample may have exhibited PCR inhibition. Although relatively rare, PCR inhibition can occur due to the presence of metals or humic acids at high concentrations in the sample.

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DHC Interpretation

Quality Assurance

Microbial Insights' comprehensive Quality Assurance (QA) Program is the foundation of all laboratory analyses, ensuring that our clients receive high-quality analytical services that are timely, reliable, and meet their intended purpose in a cost effective manner. MI is committed to providing quality data that surpasses regulatory and industry standards, thus enabling the client to make well-informed decisions. MI maintains strict standard operating procedures and QA/QC measures throughout all of the analyses offered. The following Table details specific QA/QC procedures that are used for CENSUS.

QA/QC	Description
Date of Extraction	DNA and RNA extractions are performed the day the samples are received by MI to minimize the possibility of any changes to the microbial community prior to analysis.
Laboratory Method Blanks	An extraction blank (no sample added) is processed alongside each set of field samples from DNA extraction through CENSUS® analysis to ensure that cross contamination has not occurred. Although MI has never experienced this issue, the detection of the CENSUS® target (e.g. *Dehalococcoides*) in an extraction blank is direct evidence of cross contamination with a sample or contamination of a reagent and would invalidate the results. If this were to occur, MI would re-extract the sample. If not possible to re-extract, MI would contact the client immediately and notate it on the laboratory report.
Laboratory Control Samples (LCS)	A laboratory control sample (LCS) or positive control (target DNA) is included with each CENSUS® plate to confirm amplification and as a continuing calibration check.
Negative Controls	A negative control (no DNA) is included with each CENSUS plate to ensure that cross contamination has not occurred during amplification. As with the extraction blank, detection of CENSUS target (e.g. DHC) in a negative control is direct evidence of contamination and would invalidate the results. If this were to occur, MI would rerun the analysis.

References

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How to Retrieve and Use Estimated Percentile Ranks from the Microbial Insights Database

The MI Database

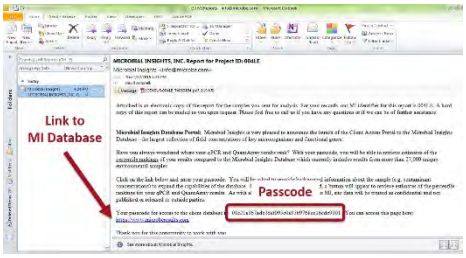
The Microbial Insights Database is the largest collection of field concentrations of key microorganisms and functional genes currently containing qPCR and QuantArray results for more than 40,000 unique groundwater, soil, and sediment samples from all 50 states and 33 countries worldwide.

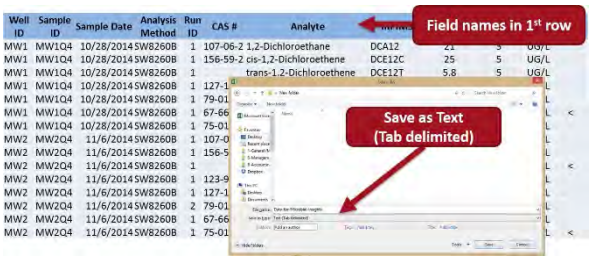
Is that low, medium or high?

In practice, biodegradation depends not just on the presence but the actual concentrations of the contaminant degrading microorganisms. The estimated percentile ranks retrieved from the MI Database answer the question "Is that low, medium or high?" by comparing your results to those of the literally thousands of other environmental samples submitted to MI for analysis over the last 20+ years.

Retrieving Estimated Percentile Ranks

With your report, you were emailed a passcode and link enabling you to login to the Client Portal. Just enter basic information about the sample (e.g. contaminant concentrations) to aid in understanding the links between environmental conditions and microbial populations and you can retrieve estimates of the percentile ranks of your results based on those compiled in the MI database at no additional charge.





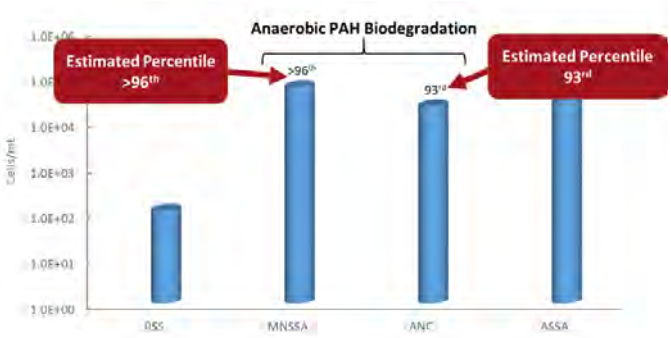
All site specific data will be treated as confidential and uploading is easy.

You can even upload chemical and geochemical data from EDDs. Just save as a Tab Delimited text file.

Example - Using Estimated Percentile for MNA Assessment at an MGP Site

CENSUS® qPCR was performed to quantify anaerobic naphthalene carboxylase (ANC) and naphthyl-2-methylsuccinate synthase (MNSSA) to assess anaerobic biodegradation of naphthalene and methyl-naphthalene under existing site conditions.

- Not only were ANC and MNSSA genes detected, but these functional genes responsible for anaerobic biodegradation of PAHs were present at concentrations "far better than average" based on the estimated percentile ranks.
- Demonstrating high concentrations of ANC and MNSSA gave an additional line of evidence indicating growth substantial populations of anaerobic PAH degraders and suggested a greater probability that monitored natural attenuation (MNA) will be successful.



How to Use Estimated Percentile Ranks from the Microbial Insights Database

The MI Database and Client Portal

The Microbial Insights Database is the largest collection of field concentrations of key microorganisms and functional genes currently containing qPCR and QuantArray results for more than 32,000 unique groundwater, soil, and sediment samples from all 50 states and 33 countries worldwide. Driven by field samples, the database reflects the impacts of common contaminants, geochemical conditions, and site management practices on critical microbial populations.

With your report, you received a passcode enabling you to retrieve estimates of the percentile ranks of your results based on those compiled in the MI database at no additional charge. When accessing the database, you will be asked to provide background information about the sample (e.g. contaminant concentrations) to aid in understanding the links between environmental conditions and microbial populations. As with all client information provided to MI, site specific data will be treated as confidential.

Is that low, medium or high?

In practice, biodegradation depends not just on the presence but the actual concentrations of the contaminant degrading microorganisms. Simply put, qPCR and QuantArray results demonstrating high concentrations of target microorganisms or functional genes suggest in situ selection, enrichment and growth of those specific contaminant degraders and therefore a greater probability that monitored natural attenuation (MNA) or bioremediation will be successful.

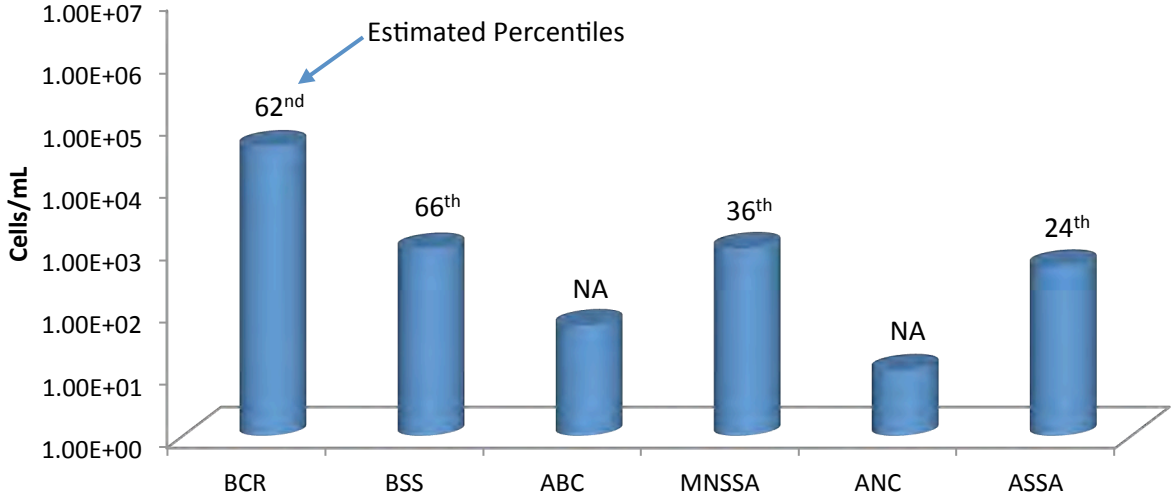
Is that a low, medium, or high concentration? The estimated percentile ranks retrieved from the MI Database answer that question by comparing your qPCR and QuantArray results to those of the literally thousands of other environmental samples submitted to MI for analysis over the last 20+ years.

Using the Estimated Percentile - Interpretation Examples

MNA Assessment – Petroleum Hydrocarbon Site:

Whenever possible, interpretation of qPCR and QuantArray results should include comparisons between samples obtained from background and impacted wells. The estimated percentile ranks however provide an additional avenue for comparison and evaluation of treatment options as shown below.

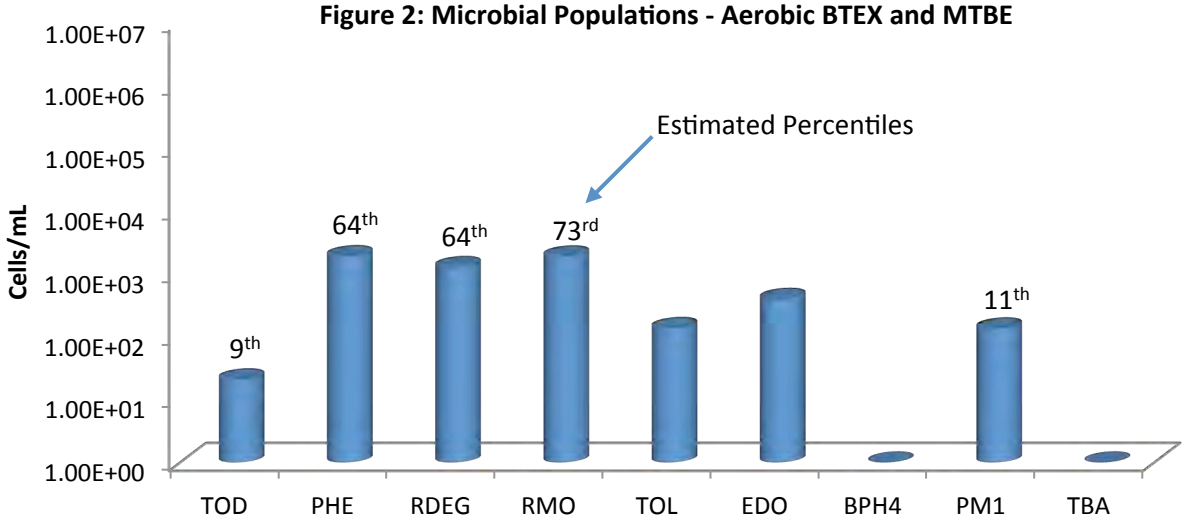
Figure 1: Microbial Populations - Anaerobic BTEX and PAHs



Anaerobic BTEX and PAH Biodegradation (Figure 1):

- With moderate concentrations of functional genes involved in anaerobic BTEX metabolism detected, the QuantArray-Petro® results were encouraging in terms of evaluating biodegradation potential under existing site conditions.
- More specifically, benzylsuccinate synthase (BSS) was detected on the order of nearly 10^3 cells/mL indicating the presence of a substantial population (66th percentile) capable of anaerobic biodegradation of toluene and other alkyl substituted benzenes.
- Naphthyl-2-methylsuccinate synthase (MNSSA) and alkylsuccinate synthase (ASSA) genes were also detected indicating the potential for anaerobic biodegradation of 2-methylnaphthalene and normal alkanes.
- The concentration of MNSSA genes would be considered modest with an estimated percentile of 36th.
- While the percentile rank for MNSSA would be "below average", a number of additional factors should be considered.
    - First, anaerobic hydrocarbon degraders are less prevalent than aerobic BTEX degraders and overall detection frequencies for many genes involved in anaerobic hydrocarbon biodegradation are less than 50%.
    - Therefore, the detection of genes like BSS, MNSSA, ASSA, anaerobic benzene carboxylase (ABC), and anaerobic naphthalene carboxylase (ANC) even at low concentrations is certainly noteworthy and inherently "better than average".
    - The estimated percentiles for all assays are based only on samples where the concentration of the target gene was greater than the practical quantitation limit (PQL).
    - For less commonly detected targets like many of the genes involved in anaerobic hydrocarbon biodegradation this is an especially important consideration.
    - Excluding samples where a gene target is below the PQL ensured that the median concentrations of less commonly detected targets would not be unduly biased low by the fact that the gene is not detected in most samples.
- Anaerobic benzene carboxylase (ABC) and naphthalene carboxylase (ANC) genes were also detected indicating the presence of bacterial populations capable of anaerobic biodegradation of benzene and naphthalene.
- For newly identified genes like ABC and ANC, estimated percentile ranks are not yet available due to the limited number of field samples that have been analyzed to date.
- However, like MNSSA and other genes involved in anaerobic hydrocarbon biodegradation, ABC and ANC detection frequencies are relatively low so the detection of these genes even at low concentrations should be considered when evaluating biodegradation potential under existing site conditions.

Figure 2: Microbial Populations - Aerobic BTEX and MTBE



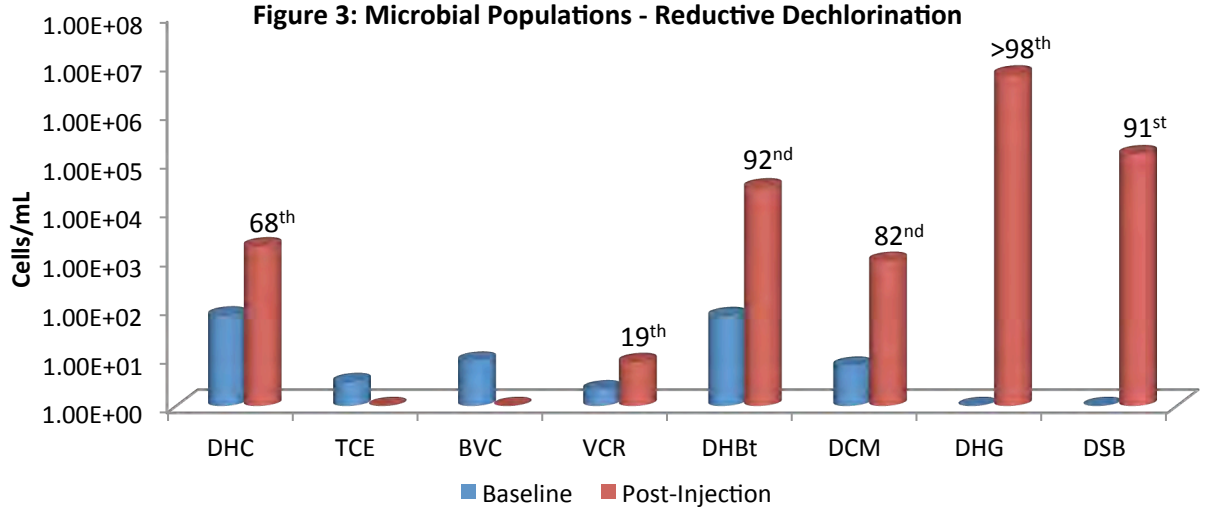
Aerobic BTEX and MTBE Biodegradation (Figure 2):

- With growing evidence that aromatic oxygenases function at low dissolved oxygen concentrations, aerobic BTEX biodegradation pathways should also be evaluated when considering MNA.
- Again, the QuantArray-Petro results were encouraging – genes encoding the first step in multiple pathways for aerobic BTEX biodegradation were detected indicating the presence of a diverse population of aerobic BTEX degraders.
- However, aerobic BTEX degraders are often considered ubiquitous. Therefore answering the question "Is that low, medium or high?" becomes especially important when evaluating aerobic BTEX biodegradation at petroleum hydrocarbon sites.
- In this case, the estimated percentile ranks of the concentrations of toluene/benzene monooxygenase (RMO and RDEG) and phenol hydroxylase (PHE) genes ranged from the 64th to 73rd percentile.
- In other words, the concentrations of RMO, RDEG, and PHE detected in this groundwater sample were greater than the concentrations detected in 64% to 73% of all other groundwater samples where these genes were analyzed and detected above the PQL.
- Aerobic BTEX degraders are common in the environment, but in this sample concentrations of toluene/benzene monooxygenase genes could be viewed as "better than average" when compared to the MI Database.

Biostimulation – Chlorinated Solvent Site:

Whenever possible, interpretation of qPCR and QuantArray results should include comparisons between baseline and post-injection monitoring events as shown below (Figure 3). The estimated percentile ranks however provide an additional avenue for comparison and evaluation of remedy performance.

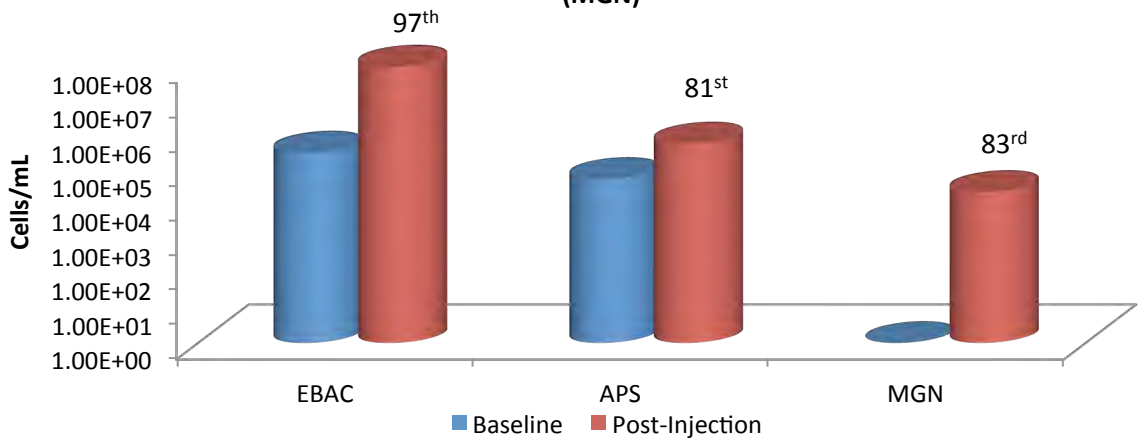
Figure 3: Microbial Populations - Reductive Dechlorination



- During the baseline groundwater sampling event, *Dehalococcoides* and vinyl chloride reductase genes were detected indicating the potential for complete reductive dechlorination of PCE and TCE to ethene.
- However, the *Dehalococcoides* concentration was well below the 10^4 cells/mL recommended by Lu et al. (2006) for generally effective rates of reductive dechlorination.
- Based on qPCR results as well as traditional groundwater monitoring, biostimulation with electron donor addition was selected as the site management plan.
- By the first monitoring event after injection, populations of halorespiring bacteria had increased substantially in response to electron donor addition.
    - *Dehalobacter* populations increased by more than two orders of magnitude to post-injection concentrations greater than 10^4 cells/mL (92nd percentile).
    - *Dehalogenimonas* (10^6 cells/mL) and *Desulfitobacterium* (10^5 cells/mL) which had not been detected prior electron donor addition were present at concentrations greater than observed in over 90% of other groundwater samples where these halorespiring bacteria were detected.
- After injection, *Dehalococcoides* populations increased by more than an order of magnitude to a concentration of over 10^3 cells/mL (68th percentile) demonstrating growth of this key group of halorespiring bacteria.
- Despite a substantial increase and a "better than average" concentration, the *Dehalococcoides* population was still below the 10^4 cells/mL threshold and vinyl chloride reductase gene copies were low (19th percentile).
    - In terms of electron donors and acceptors, the metabolic capabilities of *Dehalococcoides* are rather specialized (hydrogen utilizing obligate halorespiring bacteria) so the median concentration is low. With a low median concentration across the database, a "better than average" *Dehalococcoides* concentration in a given sample may not exceed the 10^4 cells/mL threshold established for effective reductive dechlorination (Lu et al. 2006) and ethene production (Microbial Insights, unpublished data).

- In this case, the initial growth of *Dehalococcoides* was substantial but may have been somewhat hindered by competition with sulfate reducing bacteria (Figure 4 below).
    - The baseline population of sulfate reducing bacteria was moderate (10^4 cells/mL; 63rd percentile). Consistent with an observed decreased in dissolved sulfate concentrations, populations of sulfate reducing bacteria increased and were detected at a relatively high concentration (81st percentile) after electron donor addition.
    - After injection, methanogen populations also increased to a relatively high concentration (83rd percentile) suggesting generation of methanogenic conditions.
- With sulfate depletion and generation of highly anaerobic conditions more conducive to reductive dechlorination, *Dehalococcoides* populations may continue to increase and exceed the 10^4 *Dehalococcoides* cells/mL threshold in subsequent monitoring events.
- Overall, QuantArray analysis conclusively demonstrated that electron donor addition stimulated growth of halorespiring bacteria with the estimated percentiles retrieved from the MI Database providing the "low, medium or high" perspective to the observed changes in microbial populations.

Figure 4: Total Bacteria (EBAC), Sulfate Reducering Bacteria (APS) and Methanogens (MGN)



References

Lu, X., J.T. Wilson, and D.H. Kampbell. 2006. Relationship between *Dehalococcoides* DNA in ground water and rates of reductive dechlorination at field scale. *Water Research* 40 no. 16: 3131-3140.

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Identifier: 095QL **Date Rec:** 12/20/2019 **Report Date:** 12/27/2019

Client Project #: NW01312.0150 **Client Project Name:** LHAAP-58

Purchase Order #:

Analysis Requested: CENSUS

Reviewed By:



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CENSUS

Client: **ALS Laboratory Group**
Project: LHAAP-58

MI Project Number: **095QL**
Date Received: 12/20/2019

Sample Information

Client Sample ID:		**35AWW20_121919**	**35AWW06_121919**	**LHSMW07_121919**
Sample Date:		12/19/2019	12/19/2019	12/19/2019
Units:		cells/mL	cells/mL	cells/mL
Analyst/Reviewer:		HT	HT	HT

Dechlorinating Bacteria

Dehalococcoides	*DHC*	**2.78E+04**	**8.03E+01**	**9.49E+02**
tceA Reductase	TCE	<5.00E-01	<1.00E+00	**2.00E-01 (J)**
BAV1 Vinyl Chloride Reductase	BVC	**4.91E+04**	**2.96E+01**	**3.30E+00**
Vinyl Chloride Reductase	VCR	**4.60E+00**	<1.00E+00	**2.71E+02**
Dehalobacter spp.	*DHBt*	**6.07E+03**	<1.02E+01	**5.23E+03**

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

Quality Assurance/Quality Control Data

Samples Received **12/20/2019**

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
DHBt	12/20/2019	12/27/2019	4 °C	111%	non-detect	non-detect
DHC	12/20/2019	12/27/2019	4 °C	111%	non-detect	non-detect
BVC	12/20/2019	12/27/2019	4 °C	111%	non-detect	non-detect
TCE	12/20/2019	12/27/2019	4 °C	110%	non-detect	non-detect
VCR	12/20/2019	12/27/2019	4 °C	108%	non-detect	non-detect

HS19121155 8260 Raw Data

ALS WO# HS19121155

MSVOA06 -Logbook

Batch: 38366 **Analyst:** Presenta Cabascango

Date: 11-18-2019 **Reviewer:**

Method: 8260 **Laboratory:** Houston

Comments:

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	11-18-2019 01:23 pm	1.00	50 mL	50 mL	X111801.D	Liquid	Y	NA
	Auto find/ purged									
2	VSTD000.25	ICAL1	11-18-2019 01:47 pm	1.00	50 mL	50 mL	X111802.D	Liquid	Y	NA
	0.10 uL cal std/100 mL DI									
3	VSTD000.5	ICAL2	11-18-2019 02:35 pm	1.00	50 mL	50 mL	X111803.D	Liquid	Y	NA
	0.10 uL cal std/50 mL DI									
4	VSTD001	ICAL3	11-18-2019 02:59 pm	1.00	50 mL	50 mL	X111804.D	Liquid	Y	NA
	0.20 uL cal std/50 mL DI									
5	VSTD002	ICAL4	11-18-2019 03:23 pm	1.00	50 mL	50 mL	X111805.D	Liquid	Y	NA
	0.40 uL cal std/50 mL DI									
6	VSTD005	ICAL5	11-18-2019 03:47 pm	1.00	50 mL	50 mL	X111806.D	Liquid	Y	NA
	1.0 uL cal std/50 mL DI									
7	VSTD020	ICAL6	11-18-2019 04:11 pm	1.00	50 mL	50 mL	X111807.D	Liquid	Y	NA
	4.0 uL cal std/50 mL DI									
8	VSTD050	ICAL7	11-18-2019 04:35 pm	1.00	50 mL	50 mL	X111808.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
9	VSTD100	ICAL8	11-18-2019 04:59 pm	1.00	50 mL	50 mL	X111809.D	Liquid	Y	NA
	20 uL cal std/50 mL DI									
10	VSTD150	ICAL9	11-18-2019 05:22 pm	1.00	50 mL	50 mL	X111810.D	Liquid	Y	NA
	30 uL cal std/50 mL DI									
11	VSTD200	ICAL	11-18-2019 05:46 pm	1.00	50 mL	50 mL	X111811.D	Liquid	Y	NA
	40 uL cal std/50 mL DI									
12	BLANK	SAMP	11-18-2019 06:10 pm	1.00	50 mL	50 mL	X111812.D	Liquid	Y	NA
13	BLANK	SAMP	11-18-2019 06:34 pm	1.00	50 mL	50 mL	X111813.D	Liquid	Y	NA
14	CCV	ICCV	11-18-2019 06:58 pm	1.00	50 mL	50 mL	X111814.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
15	BLANK	SAMP	11-18-2019 07:22 pm	1.00	50 mL	50 mL	X111815.D	Liquid	Y	NA
16	BFB	TUNE	11-18-2019 07:47 pm	1.00	50 mL	50 mL	Y111801.D	Liquid	Y	NA
	Auto find/ purged									
17	CCV	CCV	11-18-2019 08:10 pm	1.00	50 mL	50 mL	Y111802a.D	Liquid	Y	NA
	10 uL cal std/50 mL DI/ not used									
18	CCV	CCV	11-18-2019 08:34 pm	1.00	50 mL	50 mL	Y111803.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
19	CCB	SAMP	11-18-2019 08:58 pm	1.00	50 mL	50 mL	Y111804.D	Liquid	Y	NA
20	VLCSW-191118	LCS	11-18-2019 09:22 pm	1.00	50 mL	50 mL	Y111805.D	Liquid	Y	NA
	4.0 uL cal std/50 mL DI									
21	BLK	SAMP	11-18-2019 09:46 pm	1.00	50 mL	50 mL	Y111806.D	Liquid	Y	NA
22	VBLKW-191118	MBLK	11-18-2019 10:10 pm	1.00	50 mL	50 mL	Y111807.D	Liquid	Y	NA
23	HS19110861-01	SAMP	11-18-2019 10:34 pm	1.00	50 mL	50 mL	Y111808.D	Liquid	Y	NA
24	HS19110861-02	SAMP	11-18-2019 10:59 pm	1.00	50 mL	50 mL	Y111809.D	Liquid	Y	NA
25	HS19110861-03	SAMP	11-18-2019 11:23 pm	1.00	50 mL	50 mL	Y111810.D	Liquid	Y	NA
26	HS19110861-04	SAMP	11-18-2019 11:47 pm	1.00	50 mL	50 mL	Y111811.D	Liquid	Y	NA
27	HS19110861-05	SAMP	11-19-2019 12:11 am	1.00	50 mL	50 mL	Y111812.D	Liquid	Y	NA
28	HS19110861-06	SAMP	11-19-2019 12:35 am	1.00	50 mL	50 mL	Y111813.D	Liquid	Y	NA
29	HS19110829-13	SAMP	11-19-2019 12:59 am	1.00	50 mL	50 mL	Y111814.D	Liquid	Y	NA
30	HS19110829-11	SAMP	11-19-2019 01:23 am	1.00	50 mL	50 mL	Y111815.D	Liquid	Y	NA
31	HS19110829-01	SAMP	11-19-2019 01:47 am	1.00	50 mL	50 mL	Y111816.D	Liquid	Y	NA
32	HS19110829-01MS	MS	11-19-2019 02:11 am	1.00	50 mL	50 mL	Y111817.D	Liquid	Y	NA
	3.50 uL cal std/40 mL samp									

MSVOA06 -Logbook

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
33	HS19110829-01MSD	MSD	11-19-2019 02:35 am	1.00	50 mL	50 mL	Y111818.D	Liquid	Y	NA
	3.5 uL cal std/40 mL samp									
34	HS19110829-02	SAMP	11-19-2019 02:59 am	1.00	50 mL	50 mL	Y111819.D	Liquid	Y	NA
35	HS19110829-03	SAMP	11-19-2019 03:23 am	1.00	50 mL	50 mL	Y111820.D	Liquid	Y	NA
36	HS19110829-04	SAMP	11-19-2019 03:47 am	1.00	50 mL	50 mL	Y111821.D	Liquid	Y	NA
37	HS19110829-05	SAMP	11-19-2019 04:11 am	1.00	50 mL	50 mL	Y111822.D	Liquid	Y	NA
38	HS19110829-06	SAMP	11-19-2019 04:35 am	1.00	50 mL	50 mL	Y111823.D	Liquid	Y	NA
39	HS19110829-07	SAMP	11-19-2019 04:59 am	1.00	50 mL	50 mL	Y111824.D	Liquid	Y	NA
40	HS19110829-08	SAMP	11-19-2019 05:23 am	1.00	50 mL	50 mL	Y111825.D	Liquid	Y	NA
41	HS19110829-09	SAMP	11-19-2019 05:47 am	1.00	50 mL	50 mL	Y111826.D	Liquid	Y	NA
42	HS19110829-10	SAMP	11-19-2019 06:11 am	1.00	50 mL	50 mL	Y111827.D	Liquid	Y	NA
43	HS19110829-12	SAMP	11-19-2019 06:36 am	1.00	50 mL	50 mL	Y111828.D	Liquid	Y	NA
44	HS19110716-06	SAMP	11-19-2019 07:00 am	1.00	50 mL	50 mL	Y111829.D	Liquid	Y	NA

Chemical	Value
SURR SPK ID	31106-04-03
IS ID	31106-04-04
ICV STD ID	30603-92-01
LCS/MS ID	30603-92-01
CAL STD ID	31106-04-01/02
BFB ID	31106-04-03
pH Paper	634-64-11

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121155

Matrix Spike - Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
cis-1,3-Dichloropropene	50.00	52.07	104	80-120
trans-1,3-Dichloroprope	50.00	51.83	104	80-120
1,3-Dichlorobenzene	50.00	50.58	101	80-120
2,2-Dichloropropane	50.00	52.35	105	80-120
1,1-Dichloropropene	50.00	49.88	100	80-120
Dibromomethane	50.00	50.50	101	80-120
1,2-Dibromoethane	50.00	50.00	100	80-120
trans-1,2-Dichloroethen	50.00	52.31	105	80-120
1,1,1,2-Tetrachloroetha	50.00	51.37	103	80-120
1,1,1-Trichloroethane	50.00	52.74	105	80-120
1,1,2,2-Tetrachloroetha	50.00	49.68	99	80-120
1,1,2-Trichloroethane	50.00	49.22	98	80-120
1,1-Dichloroethane	50.00	51.46	103	80-120
1,1-Dichloroethene	50.00	53.02	106	80-120
Trichloroethene	50.00	51.78	104	80-120
1,2,3-Trichlorobenzene	50.00	58.28	116	80-120
Trichlorofluoromethane	50.00	55.57	111	80-120
1,2,4-Trichlorobenzene	50.00	55.34	111	80-120
1,2,4-Trimethylbenzene	50.00	50.40	101	80-120
Tetrachloroethene	50.00	49.33	99	80-120
1,2-Dichlorobenzene	50.00	49.42	99	80-120
1,2-Dichloroethane	50.00	51.38	103	80-120
1,2-Dichloropropane	50.00	49.50	99	80-120
1,3,5-Trimethylbenzene	50.00	52.04	104	80-120
1,3-Dichloropropane	50.00	49.18	98	80-120
1,4-Dichlorobenzene	50.00	49.63	99	80-120
Toluene	50.00	49.55	99	80-120
2-Butanone	100.00	105.25	105	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

_____

FORM III VOA

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121155

Matrix Spike - Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
2-Chlorotoluene	50.00	50.41	101	80-120
2-Hexanone	100.00	96.09	96	80-120
4-Chlorotoluene	50.00	50.58	101	80-120
tert-Butylbenzene	50.00	51.37	103	80-120
4-Methyl-2-Pentanone	100.00	97.68	98	80-120
Acetone	100.00	111.37	111	80-120
Benzene	50.00	50.85	102	80-120
Bromobenzene	50.00	51.16	102	80-120
Bromochloromethane	50.00	51.34	103	80-120
Bromodichloromethane	50.00	51.00	102	80-120
Bromoform	50.00	49.08	98	80-120
Bromomethane	50.00	57.73	115	80-120
Carbon Disulfide	100.00	109.76	110	80-120
Carbon Tetrachloride	50.00	51.07	102	80-120
Chlorobenzene	50.00	49.20	98	80-120
Chloroethane	50.00	51.64	103	80-120
Chloroform	50.00	49.36	99	80-120
Chloromethane	50.00	50.43	101	80-120
cis-1,2-Dichloroethene	50.00	53.16	106	80-120
Dibromochloromethane	50.00	49.93	100	80-120
Dichlorodifluoromethane	50.00	52.99	106	80-120
Ethylbenzene	50.00	50.22	100	80-120
Hexachlorobutadiene	50.00	53.65	107	80-120
Isopropylbenzene	50.00	50.14	100	80-120
m,p-Xylenes	100.00	101.69	102	80-120
Methylene Chloride	50.00	49.65	99	80-120
n-Butylbenzene	50.00	52.07	104	80-120
n-Propylbenzene	50.00	51.90	104	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM III VOA

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121155

Matrix Spike - Sample No.: ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
Naphthalene	50.00	51.04	102	80-120
o-Xylene	50.00	49.72	99	80-120
sec-Butylbenzene	50.00	51.77	104	80-120
Styrene	50.00	50.35	101	80-120
Vinyl Chloride	50.00	51.98	104	80-120
1,2,3-Trichloropropane	50.00	49.40	99	80-120
p-Isopropyltoluene	50.00	51.77	104	80-120
1,2-Dibromo-3-Chloropro	50.00	51.39	103	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

_____

FORM III VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121155

Lab File ID: X111801 BFB Injection Date: 11/18/19

Instrument ID: VOA6 BFB Injection Time: 1323

GC Column: DB624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.9
75	30.0 - 60.0% of mass 95	54.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.6
173	Less than 2.0% of mass 174	0.4 (0.7)1
174	Greater than 50.0% of mass 95	65.0
175	5.0 - 9.0% of mass 174	5.8 (8.9)1
176	95.0 - 101.0% of mass 174	62.0 (95.4)1
177	5.0 - 9.0% of mass 176	5.1 (8.2)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD000.25	VSTD000.25	X111802	11/18/19	1347
02	VSTD000.5	VSTD000.5	X111803	11/18/19	1435
03	VSTD001	VSTD001	X111804	11/18/19	1459
04	VSTD002	VSTD002	X111805	11/18/19	1523
05	VSTD005	VSTD005	X111806	11/18/19	1547
06	VSTD020	VSTD020	X111807	11/18/19	1611
07	VSTD050	VSTD050	X111808	11/18/19	1635
08	VSTD100	VSTD100	X111809	11/18/19	1659
09	VSTD150	VSTD150	X111810	11/18/19	1722
10	VSTD200	VSTD200	X111811	11/18/19	1746
11	ICV	ICV	X111814	11/18/19	1858
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19121155

Instrument ID: VOA6 Calibration Date(s): 11/18/19 11/18/19

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1347 1746

LAB FILE ID: RF0.25: X111802 RF0.5: X111803 RF1: X111804
RF2: X111805 RF5: X111806 RF20: X111807

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF5	RF20
cis-1,3-Dichloropropene		0.326	0.553	0.497	0.554	0.476
trans-1,3-Dichloropropene		0.304	0.464	0.458	0.504	0.445
1,3-Dichlorobenzene		1.036	1.601	1.542	1.622	1.411
2,2-Dichloropropane		0.547	0.815	0.674	0.705	0.610
1,1-Dichloropropene		0.332	0.476	0.441	0.432	0.372
Dibromomethane		0.139	0.244	0.233	0.245	0.207
1,2-Dibromoethane		0.245	0.385	0.380	0.402	0.348
trans-1,2-Dichloroethene		0.285	0.489	0.436	0.440	0.386
1,1,1,2-Tetrachloroethane		0.248	0.403	0.375	0.406	0.356
1,1,1-Trichloroethane		0.492	0.775	0.723	0.717	0.640
1,1,2,2-Tetrachloroethane		0.602	0.844	0.735	0.800	0.680
1,1,2-Trichloroethane		0.180	0.311	0.285	0.294	0.253
1,1-Dichloroethane		0.569	0.830	0.781	0.786	0.690
1,1-Dichloroethene		0.349	0.423	0.469	0.464	0.390
Trichloroethene		0.226	0.390	0.387	0.396	0.344
1,2,3-Trichlorobenzene		421	1182	2753	6553	21856
Trichlorofluoromethane		0.511	0.831	0.818	0.813	0.707
1,2,4-Trichlorobenzene		0.325	0.435	0.465	0.518	0.418
1,2,4-Trimethylbenzene		1.739	2.619	2.442	2.563	2.286
Tetrachloroethene		0.266	0.412	0.394	0.398	0.333
1,2-Dichlorobenzene		0.916	1.484	1.429	1.497	1.292
1,2-Dichloroethane		0.277	0.470	0.408	0.432	0.391
1,2-Dichloropropane		0.294	0.294	0.312	0.339	0.284
1,3,5-Trimethylbenzene		1.606	2.354	2.372	2.481	2.215
1,3-Dichloropropane		0.431	0.613	0.570	0.583	0.512
1,4-Dichlorobenzene		1.108	1.632	1.581	1.609	1.417
Toluene		1.077	1.582	1.498	1.570	1.359
2-Butanone		0.167	0.156	0.152	0.164	0.146
2-Chlorotoluene		1.263	1.990	1.903	2.032	1.735
2-Hexanone		0.180	0.237	0.204	0.235	0.191
4-Chlorotoluene		1.550	2.500	2.222	2.378	2.079
tert-Butylbenzene		1.338	2.168	2.060	2.126	1.865
4-Methyl-2-Pentanone		0.220	0.321	0.313	0.331	0.281
Acetone		4579	5956	7954	15992	43200
Benzene		0.788	1.327	1.220	1.289	1.109
Bromobenzene		0.584	1.003	0.940	0.994	0.873
Bromochloromethane		0.229	0.323	0.309	0.284	0.255
Bromodichloromethane		0.298	0.490	0.424	0.473	0.395
Bromoform		887	3197	5989	16084	56416
Bromomethane		2741	6334	12041	28671	93456
Carbon Disulfide		0.747	1.257	1.216	1.254	1.101
Carbon Tetrachloride		0.340	0.503	0.483	0.478	0.403
Chlorobenzene		0.738	1.108	1.028	1.090	0.934
Chloroethane		0.279	0.361	0.345	0.323	0.283

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1912115

Instrument ID: VOA6 Calibration Date(s): 11/18/19 11/18/19

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1347 1746

LAB FILE ID: RF0.25: X111802 RF0.5: X111803 RF1: X111804
RF2: X111805 RF5: X111806 RF20: X111807

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF5	RF20
Chloroform		0.775	0.990	0.890	0.850	0.736
Chloromethane		2201	6118	10461	24949	85402
cis-1,2-Dichloroethene		0.327	0.540	0.493	0.541	0.454
Dibromochloromethane		0.253	0.433	0.392	0.429	0.370
Dichlorodifluoromethane		1269	3829	7335	18346	63810
Ethylbenzene		0.353	0.562	0.515	0.576	0.493
Hexachlorobutadiene		0.502	0.441	0.406	0.415	0.339
Isopropylbenzene		1.054	1.627	1.570	1.602	1.425
m,p-Xylenes		0.393	0.653	0.644	0.678	0.591
Methylene Chloride		0.422	0.556	0.483	0.491	0.406
n-Butylbenzene		1.620	2.055	2.004	2.069	1.888
n-Propylbenzene		2.290	3.358	3.192	3.345	2.976
Naphthalene		0.510	0.569	0.604	0.614	0.512
o-Xylene		0.390	0.677	0.656	0.658	0.582
sec-Butylbenzene		1.995	2.859	2.859	2.813	2.501
Styrene		0.702	1.134	1.076	1.148	1.004
Vinyl Chloride		0.490	0.545	0.546	0.504	0.454
1,2,3-Trichloropropane		0.455	0.730	0.701	0.662	0.580
p-Isopropyltoluene		1.839	2.630	2.538	2.573	2.307
1,2-Dibromo-3-Chloropropane		125	464	859	2641	8805
1,2-Dichloroethane-d4		2522	4458	8034	20921	75813
Dibromofluoromethane		2303	3882	8127	20237	75094
Toluene-d8		1.628	1.327	1.357	1.369	1.263
4-Bromofluorobenzene		3844	5731	10468	25804	94194

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1912115

Instrument ID: VOA6 Calibration Date(s): 11/18/19 11/18/19

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1347 1746

LAB FILE ID: RF50: X111808 RF100: X111809 RF150: X111810
RF200: X111811

COMPOUND	RF50	RF100	RF150	RF200
cis-1,3-Dichloropropene	0.499	0.494	0.497	0.493
trans-1,3-Dichloropropene	0.452	0.455	0.456	0.461
1,3-Dichlorobenzene	1.457	1.422	1.398	1.417
2,2-Dichloropropane	0.644	0.644	0.646	0.658
1,1-Dichloropropene	0.402	0.392	0.391	0.392
Dibromomethane	0.211	0.206	0.208	0.208
1,2-Dibromoethane	0.348	0.347	0.350	0.351
trans-1,2-Dichloroethene	0.410	0.413	0.416	0.427
1,1,1,2-Tetrachloroethane	0.368	0.369	0.369	0.370
1,1,1-Trichloroethane	0.673	0.676	0.678	0.697
1,1,2,2-Tetrachloroethane	0.672	0.670	0.662	0.661
1,1,2-Trichloroethane	0.256	0.258	0.256	0.259
1,1-Dichloroethane	0.710	0.716	0.728	0.737
1,1-Dichloroethene	0.430	0.429	0.426	0.434
Trichloroethene	0.359	0.350	0.348	0.348
1,2,3-Trichlorobenzene	52554	102660	156391	210414
Trichlorofluoromethane	0.823	0.824	0.813	0.840
1,2,4-Trichlorobenzene	0.421	0.402	0.400	0.406
1,2,4-Trimethylbenzene	2.419	2.440	2.397	2.446
Tetrachloroethene	0.352	0.340	0.332	0.334
1,2-Dichlorobenzene	1.330	1.327	1.324	1.344
1,2-Dichloroethane	0.401	0.397	0.397	0.398
1,2-Dichloropropane	0.295	0.290	0.290	0.290
1,3,5-Trimethylbenzene	2.368	2.377	2.339	2.377
1,3-Dichloropropane	0.516	0.521	0.514	0.516
1,4-Dichlorobenzene	1.465	1.445	1.412	1.445
Toluene	1.411	1.408	1.420	1.435
2-Butanone	0.146	0.147	0.153	0.148
2-Chlorotoluene	1.853	1.827	1.787	1.800
2-Hexanone	0.192	0.201	0.204	0.204
4-Chlorotoluene	2.208	2.230	2.205	2.250
tert-Butylbenzene	2.012	2.011	1.967	1.996
4-Methyl-2-Pentanone	0.283	0.291	0.298	0.298
Acetone	103091	202207	284604	372223
Benzene	1.164	1.135	1.133	1.128
Bromobenzene	0.878	0.857	0.837	0.854
Bromochloromethane	0.263	0.261	0.260	0.255
Bromodichloromethane	0.412	0.408	0.412	0.412
Bromoform	143798	293256	447981	602595
Bromomethane	215480	396733	529714	
Carbon Disulfide	1.192	1.188	1.192	1.228
Carbon Tetrachloride	0.452	0.442	0.435	0.440
Chlorobenzene	0.965	0.966	0.974	0.982
Chloroethane	0.311	0.311	0.310	0.311

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1912115

Instrument ID: VOA6 Calibration Date(s): 11/18/19 11/18/19

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1347 1746

LAB FILE ID: RF50: X111808 RF100: X111809 RF150: X111810
RF200: X111811

COMPOUND	RF50	RF100	RF150	RF200
Chloroform	0.751	0.754	0.761	0.780
Chloromethane	215753	420936	613254	811388
cis-1,2-Dichloroethene	0.470	0.475	0.478	0.488
Dibromochloromethane	0.381	0.386	0.386	0.387
Dichlorodifluoromethane	186161	359790	504807	695305
Ethylbenzene	0.512	0.509	0.506	0.512
Hexachlorobutadiene	0.365	0.345		
Isopropylbenzene	1.523	1.544	1.538	1.560
m,p-Xylenes	0.623	0.628	0.627	0.639
Methylene Chloride	0.421	0.425	0.428	0.436
n-Butylbenzene	2.162	2.176	2.153	2.197
n-Propylbenzene	3.234	3.176	3.089	3.155
Naphthalene	0.521	0.505	0.514	0.512
o-Xylene	0.600	0.608	0.611	0.623
sec-Butylbenzene	2.823	2.798	2.726	2.790
Styrene	1.056	1.073	1.093	1.113
Vinyl Chloride	0.505	0.510	0.510	0.523
1,2,3-Trichloropropane	0.577	0.564	0.549	0.543
p-Isopropyltoluene	2.571	2.546	2.480	2.534
1,2-Dibromo-3-Chloropropane	21800	42468	65470	86827
1,2-Dichloroethane-d4	178006	364646	532181	713282
Dibromofluoromethane	173990	354918	514854	681300
Toluene-d8	1.212	1.246	1.223	1.231
4-Bromofluorobenzene	222328	465570	688600	933083

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1912115

Instrument ID: VOA6 Calibration Date(s): 11/18/19 11/18/19

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1347 1746

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2	MAX %RSD OR R^2
cis-1,3-Dichloropropene	AVRG		0.48761342		13.630	15.000
trans-1,3-Dichloropropene	AVRG		0.44441818		12.432	15.000
1,3-Dichlorobenzene	AVRG		1.43390401		11.978	15.000
2,2-Dichloropropane	AVRG		0.66029305		11.040	15.000
1,1-Dichloropropene	AVRG		0.40332539		10.380	15.000
Dibromomethane	AVRG		0.21136309		14.886	15.000
1,2-Dibromoethane	AVRG		0.35067597		12.763	15.000
trans-1,2-Dichloroethene	AVRG		0.41138839		13.381	15.000
1,1,1,2-Tetrachloroethane	AVRG		0.36274186		12.717	15.000
1,1,1-Trichloroethane	AVRG		0.67453438		11.648	15.000
1,1,2,2-Tetrachloroethane	AVRG		0.70308768		10.825	15.000
1,1,2-Trichloroethane	AVRG		0.26137158		14.102	15.000
1,1-Dichloroethane	AVRG		0.72750643		10.197	15.000
1,1-Dichloroethene	AVRG		0.42373367		8.607	15.000
Trichloroethene	AVRG		0.34966887		14.517	15.000
1,2,3-Trichlorobenzene	2ORDR	-1.73e-002	5.50264123	-0.1707432	0.9998373	0.9900000
Trichlorofluoromethane	AVRG		0.77561874		13.736	15.000
1,2,4-Trichlorobenzene	AVRG		0.42118311		12.391	15.000
1,2,4-Trimethylbenzene	AVRG		2.37245105		10.778	15.000
Tetrachloroethene	AVRG		0.35131312		12.801	15.000
1,2-Dichlorobenzene	AVRG		1.32701574		12.905	15.000
1,2-Dichloroethane	AVRG		0.39691390		12.978	15.000
1,2-Dichloropropane	AVRG		0.29867989		5.660	15.000
1,3,5-Trimethylbenzene	AVRG		2.27648393		11.444	15.000
1,3-Dichloropropane	AVRG		0.53064503		9.928	15.000
1,4-Dichlorobenzene	AVRG		1.45709302		10.715	15.000
Toluene	AVRG		1.41788930		10.479	15.000
2-Butanone	AVRG		0.15342086		5.109	15.000
2-Chlorotoluene	AVRG		1.79889065		12.374	15.000
2-Hexanone	AVRG		0.20539492		9.225	15.000
4-Chlorotoluene	AVRG		2.18043218		12.121	15.000
tert-Butylbenzene	AVRG		1.94917789		12.586	15.000
4-Methyl-2-Pentanone	AVRG		0.29296235		10.958	15.000
Acetone	LINR	-7.72e-002	8.02348321		0.9999004	0.9900000
Benzene	AVRG		1.14377224		13.444	15.000
Bromobenzene	AVRG		0.86897432		14.186	15.000
Bromochloromethane	AVRG		0.27086566		10.835	15.000
Bromodichloromethane	AVRG		0.41377448		13.021	15.000
Bromoform	LINR	1.997e-002	3.29171060		0.9995506	0.9900000
Bromomethane	LINR	-4.72e-002	2.10632186		0.9967362	0.9900000
Carbon Disulfide	AVRG		1.15275096		13.789	15.000
Carbon Tetrachloride	AVRG		0.44181701		10.990	15.000
Chlorobenzene	AVRG		0.97614522		10.975	15.000
Chloroethane	AVRG		0.31480657		8.302	15.000

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1912115

Instrument ID: VOA6 Calibration Date(s): 11/18/19 11/18/19

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1347 1746

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2	MAX %RSD OR R^2
Chloroform	AVRG		0.80974969		10.425	15.000
Chloromethane	LINR	3.748e-003	1.83460007		0.9998260	0.9900000
cis-1,2-Dichloroethene	AVRG		0.47416954		13.204	15.000
Dibromochloromethane	AVRG		0.37970849		13.683	15.000
Dichlorodifluoromethane	LINR	1.763e-002	2.15619239		0.9988587	0.9900000
Ethylbenzene	AVRG		0.50436028		12.486	15.000
Hexachlorobutadiene	AVRG		0.40182319		14.476	15.000
Isopropylbenzene	AVRG		1.49389834		11.672	15.000
m,p-Xylenes	AVRG		0.60861655		13.850	15.000
Methylene Chloride	AVRG		0.45210476		10.732	15.000
n-Butylbenzene	AVRG		2.03598696		9.063	15.000
n-Propylbenzene	AVRG		3.09059969		10.434	15.000
Naphthalene	AVRG		0.54020307		8.055	15.000
o-Xylene	AVRG		0.60066696		14.145	15.000
sec-Butylbenzene	AVRG		2.68486077		10.468	15.000
Styrene	AVRG		1.04451403		12.966	15.000
Vinyl Chloride	AVRG		0.50958661		5.494	15.000
1,2,3-Trichloropropane	AVRG		0.59573805		14.502	15.000
p-Isopropyltoluene	AVRG		2.44651692		10.015	15.000
1,2-Dibromo-3-Chloropropane	LINR	-6.81e-003	12.9714748		0.9998714	0.9900000
1,2-Dichloroethane-d4	LINR	1.473e-002	2.09453233		0.9994184	0.9900000
Dibromofluoromethane	LINR	7.36e-003	2.18334297		0.9997712	0.9900000
Toluene-d8	AVRG		1.31739803		9.895	15.000
4-Bromofluorobenzene	LINR	8.357e-003	2.13170980		0.9997055	0.9900000

FORM VI VOA

Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\X111801.D

Date : 18-NOV-2019 13:23

Client ID: BFB

Instrument: voa6.i

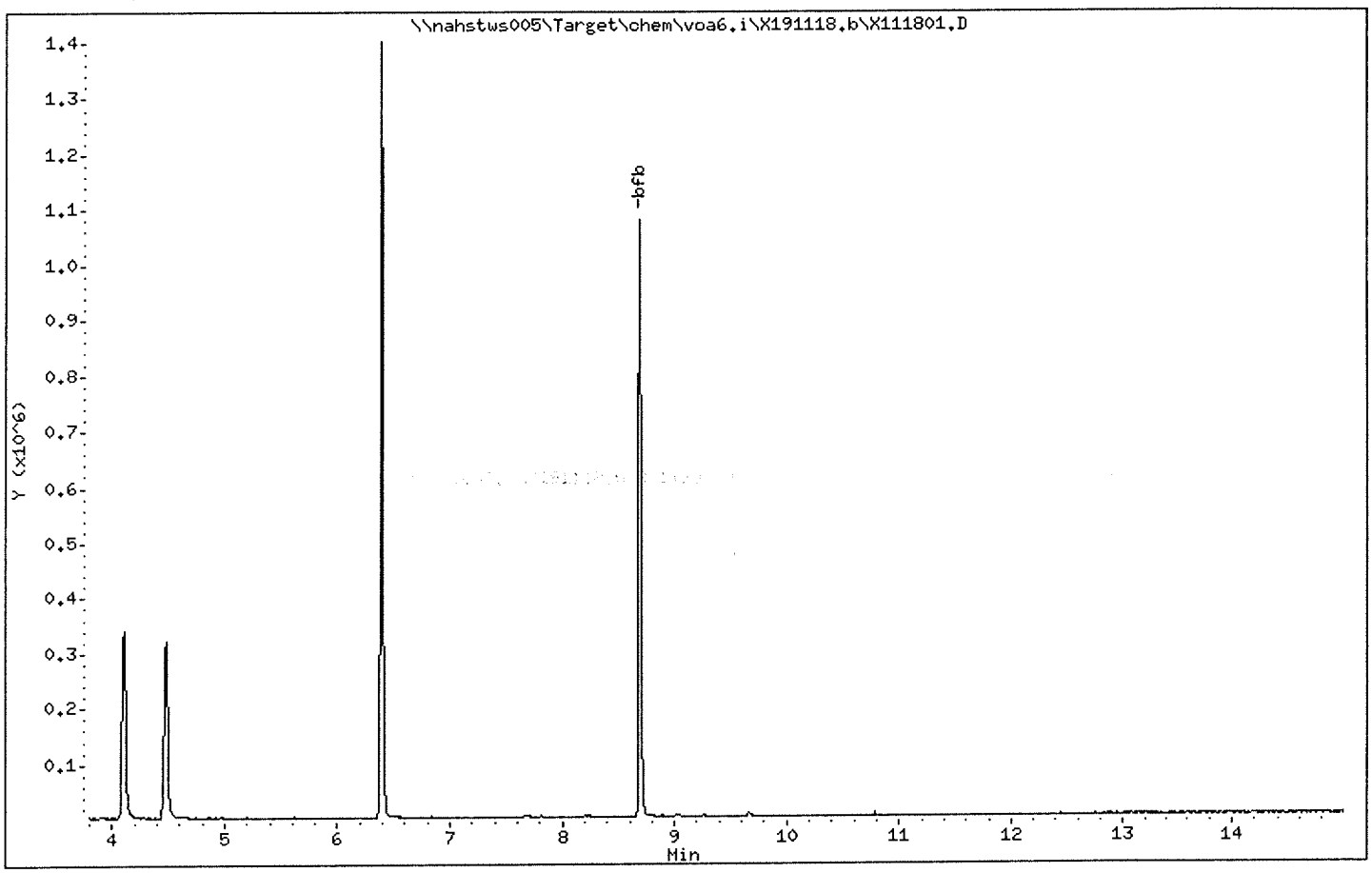
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\X111801.D

Date : 18-NOV-2019 13:23

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

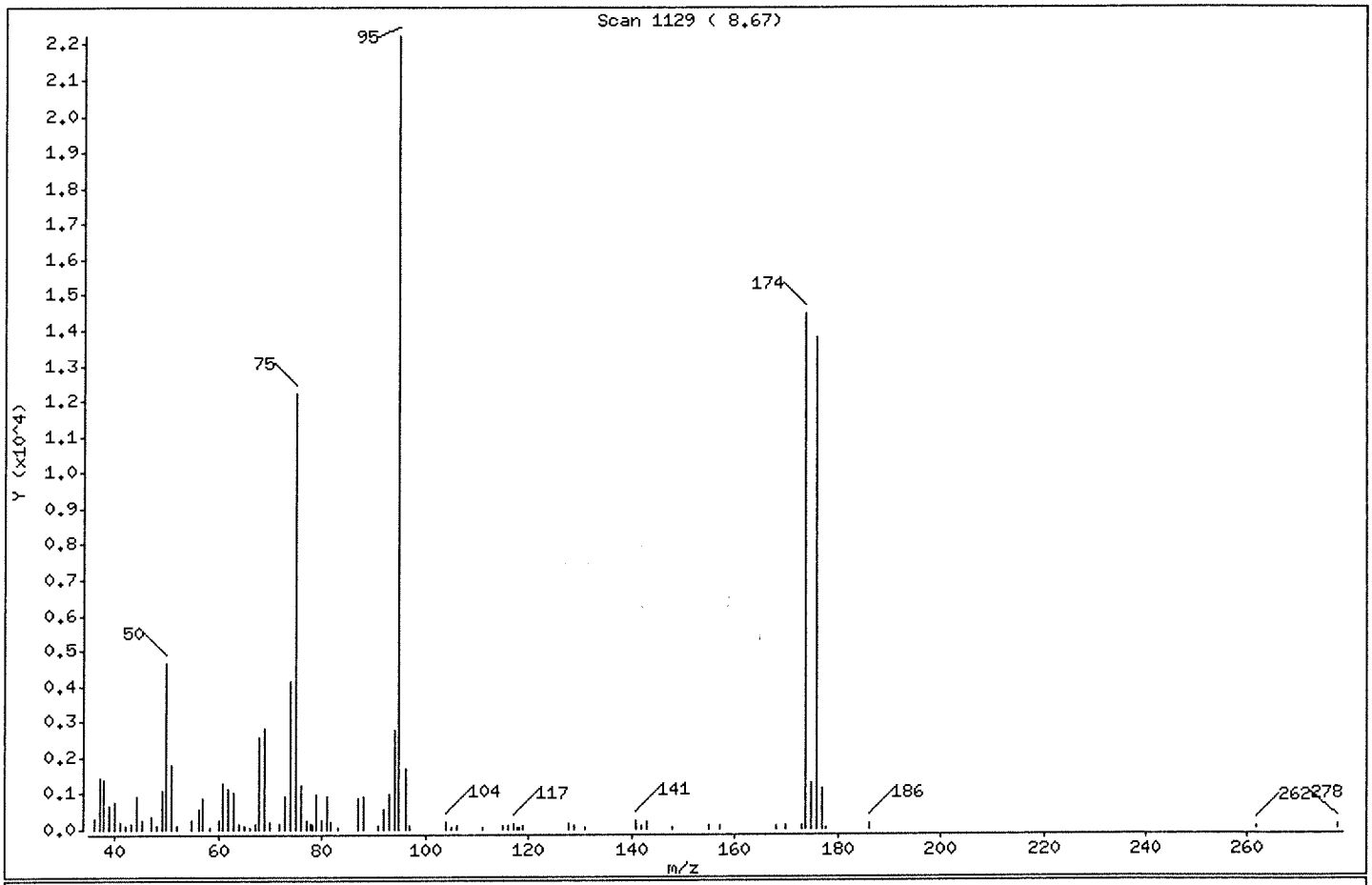
Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	20.86
75	30.00 - 60.00% of mass 95	54.86
96	5.00 - 9.00% of mass 95	7.62
173	Less than 2.00% of mass 174	0.43 (0.66)
174	Greater than 50.00% of mass 95	65.03
175	5.00 - 9.00% of mass 174	5.82 (8.95)
176	95.00 - 101.00% of mass 174	62.04 (95.41)
177	5.00 - 9.00% of mass 176	5.11 (8.24)

Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\X111801.D

Date : 18-NOV-2019 13:23

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

Data File: X111801.D
Spectrum: Scan 1129 (8.67)
Location of Maximum: 95.00
Number of points: 83

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	329	61.00	1259	81.80	217	127.90	153
37.00	1409	62.00	1149	83.00	50	128.90	116
38.00	1370	62.90	1001	86.90	880	130.90	70
39.00	662	64.00	138	88.00	941	141.00	249
40.00	775	65.10	110	91.10	116	141.90	94
41.00	191	66.00	72	92.10	565	142.90	216
42.00	77	67.10	153	93.00	990	148.10	62
43.00	166	68.00	2578	94.00	2783	155.00	87
44.10	928	69.00	2816	95.00	22224	157.00	77
45.10	261	69.90	217	96.10	1694	168.00	85
47.00	367	71.90	143	97.00	111	170.00	86
48.10	104	73.00	931	103.90	180	172.90	96
49.00	1057	74.00	4135	105.10	52	173.90	14452
50.00	4636	75.00	12193	106.00	100	174.90	1293
51.00	1802	76.00	1227	111.10	63	175.90	13788
52.10	85	77.10	248	115.10	93	176.90	1136
55.00	269	77.80	150	116.00	100	177.80	71
56.10	539	78.10	174	117.00	158	186.00	161
56.90	843	78.90	948	117.70	74	261.90	57
58.20	60	79.90	265	118.10	74	277.90	85
60.00	231	80.90	936	119.00	127		

Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\X111802.D Page 1
Report Date: 22-Dec-2019 16:31

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X191118.b\X111802.D
Lab Smp Id: VSTD000.25 Client Smp ID: VSTD000.25
Inj Date : 18-NOV-2019 13:47
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.25;VSTD000.25;1;1;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X191118.b\8260W.m
Meth Date : 22-Dec-2019 16:31 voa6.i Quant Type: ISTD
Cal Date : 18-NOV-2019 13:47 Cal File: X111802.D
Als bottle: 2 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	431958	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	586737	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	529029	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.669	(1.000)	277425	50.0000	
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	1295	0.25000	0.69(a)
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	1323	0.25000	1.05(Ta)
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	5247	0.25000	0.37(Ta)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	3260	0.25000	1.07(a)
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	814	0.25000	0.21(a)
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	1177	0.25000	0.20(a)
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	861	0.25000	0.22(aM)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	656	0.25000	0.23(aM)
22 1,1-Dichloroethane	63	2.922	2.921	(0.699)	1571	0.25000	0.24(aM)
11 1,1-Dichloroethene	96	1.919	1.911	(0.459)	909	0.25000	0.24(a)
32 1,1-Dichloropropene	75	4.283	4.282	(0.862)	1579	0.25000	0.33(a)
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.216)	224	0.25000	(aM)
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.918)	702	0.25000	0.21(aM)
90 1,2,4-Trichlorobenzene	180	11.345	11.338	(1.174)	320	0.25000	0.13(aM)
79 1,2,4-Trimethylbenzene	105	9.383	9.382	(0.971)	2742	0.25000	0.20(a)
89 1,2-Dibromo-3-Chloropropane	155	10.658	10.657	(1.103)	103	0.25000	(aM)
57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	708	0.25000	0.19(a)
88 1,2-Dichlorobenzene	146	9.999	9.998	(1.035)	1523	0.25000	0.20(a)
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	938	0.25000	0.20(aM)

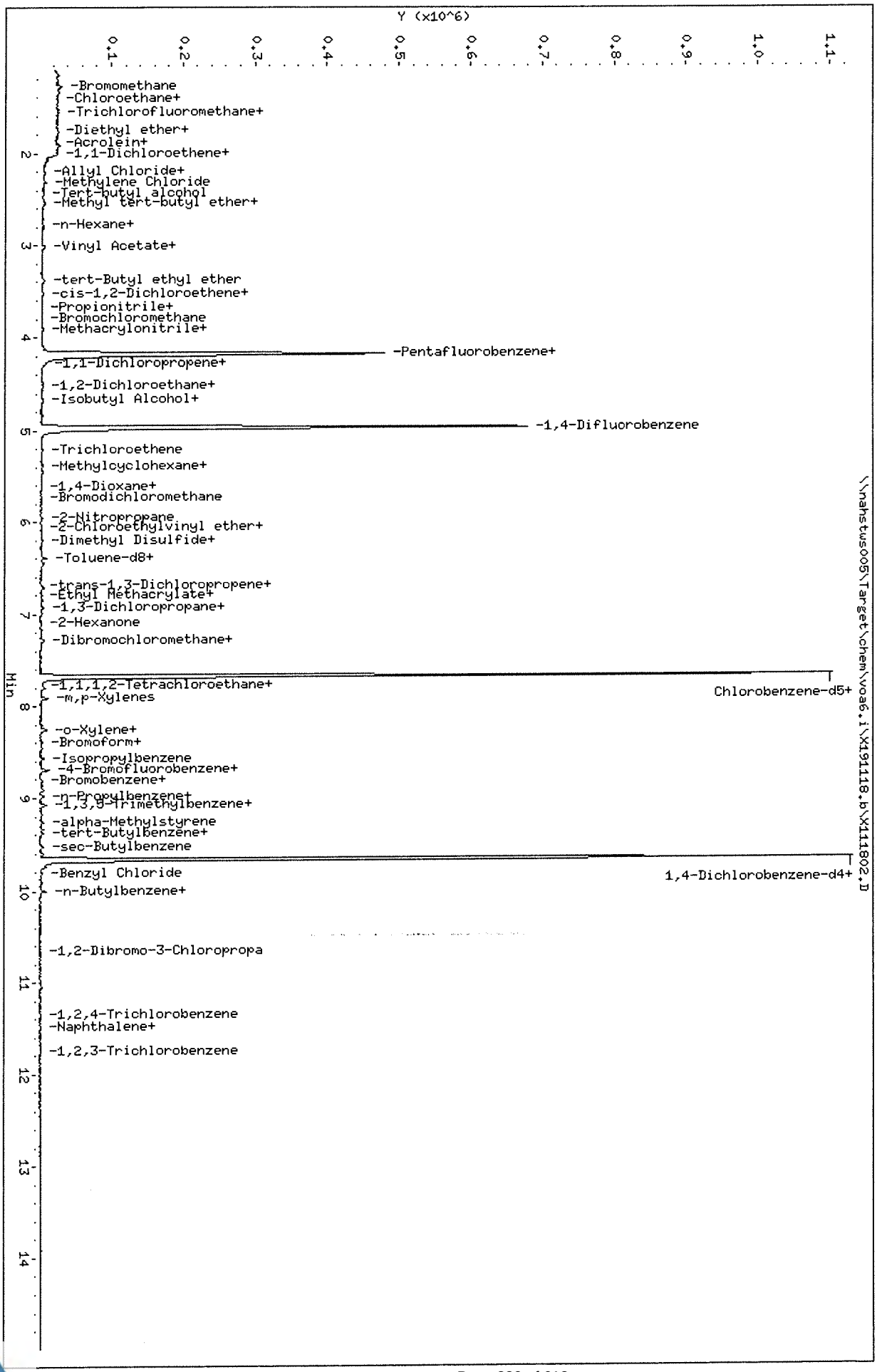
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
42 1,2-Dichloropropane	63	5.450	5.443	(1.097)	858	0.25000	0.24(aM)
75 1,3,5-Trimethylbenzene	105	9.075	9.074	(0.939)	2444	0.25000	0.19(a)
83 1,3-Dichlorobenzene	146	9.612	9.612	(0.995)	1534	0.25000	0.19(a)
54 1,3-Dichloropropane	76	6.983	6.983	(0.910)	1126	0.25000	0.20(a)
84 1,4-Dichlorobenzene	146	9.683	9.683	(1.002)	1760	0.25000	0.21(a)
26 2,2-Dichloropropane	77	3.516	3.516	(0.841)	1234	0.25000	0.21(aM)
24 2-Butanone	43	3.588	3.580	(0.858)	827	0.50000	0.62(aM)
76 2-Chlorotoluene	91	8.974	8.981	(0.929)	2277	0.25000	0.22(a)
52 2-Hexanone	43	7.090	7.090	(0.924)	809	0.50000	0.37(Ta)
77 4-Chlorotoluene	91	9.075	9.074	(0.939)	2873	0.25000	0.23(a)
82 p-Isopropyltoluene	119	9.655	9.655	(0.999)	2596	0.25000	0.19(a)
45 4-Methyl-2-Pentanone	43	6.324	6.331	(0.824)	1190	0.50000	0.38(aM)
10 Acetone	43	1.969	1.976	(0.471)	3213	0.50000	(aM)
37 Benzene	78	4.519	4.512	(0.909)	3088	0.25000	0.23(a)
74 Bromobenzene	156	8.817	8.809	(0.913)	940	0.25000	0.19(a)
29 Bromochloromethane	128	3.795	3.795	(0.908)	660	0.25000	0.28(aM)
39 Bromodichloromethane	83	5.729	5.729	(1.153)	1101	0.25000	0.22(aM)
66 Bromoform	173	8.416	8.415	(1.097)	495	0.25000	1.15(aM)
6 Bromomethane	94	1.339	1.331	(0.320)	1552	0.25000	(aM)
19 Carbon Disulfide	76	2.069	2.069	(0.495)	3999	0.50000	0.40(a)
34 Carbon Tetrachloride	117	4.275	4.268	(0.860)	1084	0.25000	0.20(aM)
59 Chlorobenzene	112	7.692	7.699	(1.003)	2603	0.25000	0.25(a)
7 Chloroethane	64	1.403	1.396	(0.336)	672	0.25000	0.24(aM)
28 Chloroform	83	3.910	3.910	(0.935)	2414	0.25000	0.34(aM)
3 Chloromethane	50	1.074	1.073	(0.257)	1640	0.25000	0.53(aM)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	1103	0.25000	0.26(a)
46 cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	1351	0.25000	0.23(aM)
55 Dibromochloromethane	129	7.184	7.183	(0.937)	883	0.25000	0.21(a)
44 Dibromomethane	93	5.558	5.557	(1.118)	573	0.25000	0.23(aM)
2 Dichlorodifluoromethane	85	0.973	0.966	(0.233)	642	0.25000	1.04(aM)
61 Ethylbenzene	106	7.800	7.807	(1.017)	1072	0.25000	0.20(a)
91 Hexachlorobutadiene	225	11.481	11.488	(1.188)	367	0.25000	(aM)
67 Isopropylbenzene	105	8.566	8.566	(1.117)	2992	0.25000	0.18(a)
62 m,p-Xylenes	106	7.907	7.907	(1.031)	2521	0.50000	0.39(a)
17 Methylene Chloride	84	2.306	2.305	(0.551)	1174	0.25000	0.30(a)
87 n-Butylbenzene	91	9.999	9.998	(1.035)	2169	0.25000	0.19(a)
73 n-Propylbenzene	91	8.917	8.917	(0.923)	3456	0.25000	0.20(a)
92 Naphthalene	128	11.553	11.546	(1.196)	764	0.25000	0.25(a)
63 o-Xylene	106	8.244	8.244	(1.075)	1221	0.25000	0.19(a)
81 sec-Butylbenzene	105	9.526	9.526	(0.986)	3012	0.25000	0.20(a)
64 Styrene	104	8.265	8.265	(1.078)	2388	0.25000	0.21(a)
78 tert-Butylbenzene	119	9.340	9.339	(0.967)	2350	0.25000	0.21(a)
56 Tetrachloroethene	164	6.933	6.933	(0.904)	914	0.25000	0.24(a)
50 Toluene	91	6.453	6.453	(0.841)	3631	0.25000	0.24(a)
20 trans-1,2-Dichloroethene	96	2.535	2.527	(0.606)	826	0.25000	0.23(aM)
51 trans-1,3-Dichloropropene	75	6.689	6.682	(1.346)	996	0.25000	0.19(a)
38 Trichloroethene	130	5.214	5.206	(1.049)	945	0.25000	0.23(a)
8 Trichlorofluoromethane	101	1.561	1.553	(0.373)	1233	0.25000	0.18(a)
5 Vinyl Chloride	62	1.138	1.138	(0.272)	1052	0.25000	0.23(a)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

QC Flag Legend

M - Compound response manually integrated.



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Sample Info: VSTD000.25;VSTD000.25;1;1;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X191118.b\X111803.D
Lab Smp Id: VSTD000.5 Client Smp ID: VSTD000.5
Inj Date : 18-NOV-2019 14:35
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.5;VSTD000.5;1;2;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X191118.b\8260W.m
Meth Date : 22-Dec-2019 16:31 voa6.i Quant Type: ISTD
Cal Date : 18-NOV-2019 14:35 Cal File: X111803.D
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	417797	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	575000	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.670	(1.000)	520290	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	274172	50.0000	
$ 30 Dibromofluoromethane	113	4.110	4.103	(0.983)	2303	0.50000	0.96(a)
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	2522	0.50000	1.36(Ta)
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	8468	0.50000	0.61(a)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	3844	0.50000	1.20(a)
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	1290	0.50000	0.34(a)
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	2055	0.50000	0.36(a)
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	1652	0.50000	0.42(aM)
53 1,1,2-Trichloroethane	83	6.840	6.847	(0.892)	936	0.50000	0.34(a)
22 1,1-Dichloroethane	63	2.928	2.921	(0.700)	2376	0.50000	0.39(Ta)
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	1458	0.50000	0.41(aM)
32 1,1-Dichloropropene	75	4.289	4.282	(0.863)	1907	0.50000	0.41(a)
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	421	0.50000	(aM)
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	1248	0.50000	0.38(aM)
90 1,2,4-Trichlorobenzene	180	11.345	11.338	(1.173)	892	0.50000	0.38(aM)
79 1,2,4-Trimethylbenzene	105	9.382	9.382	(0.970)	4769	0.50000	0.36(aM)
89 1,2-Dibromo-3-Chloropropane	155	10.665	10.657	(1.103)	125	0.50000	(aM)
57 1,2-Dibromoethane	107	7.269	7.262	(0.948)	1273	0.50000	0.34(a)
88 1,2-Dichlorobenzene	146	9.998	9.998	(1.034)	2511	0.50000	0.34(a)
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	1591	0.50000	0.34(aM)

Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\X111803.D Page 2
Report Date: 22-Dec-2019 16:31

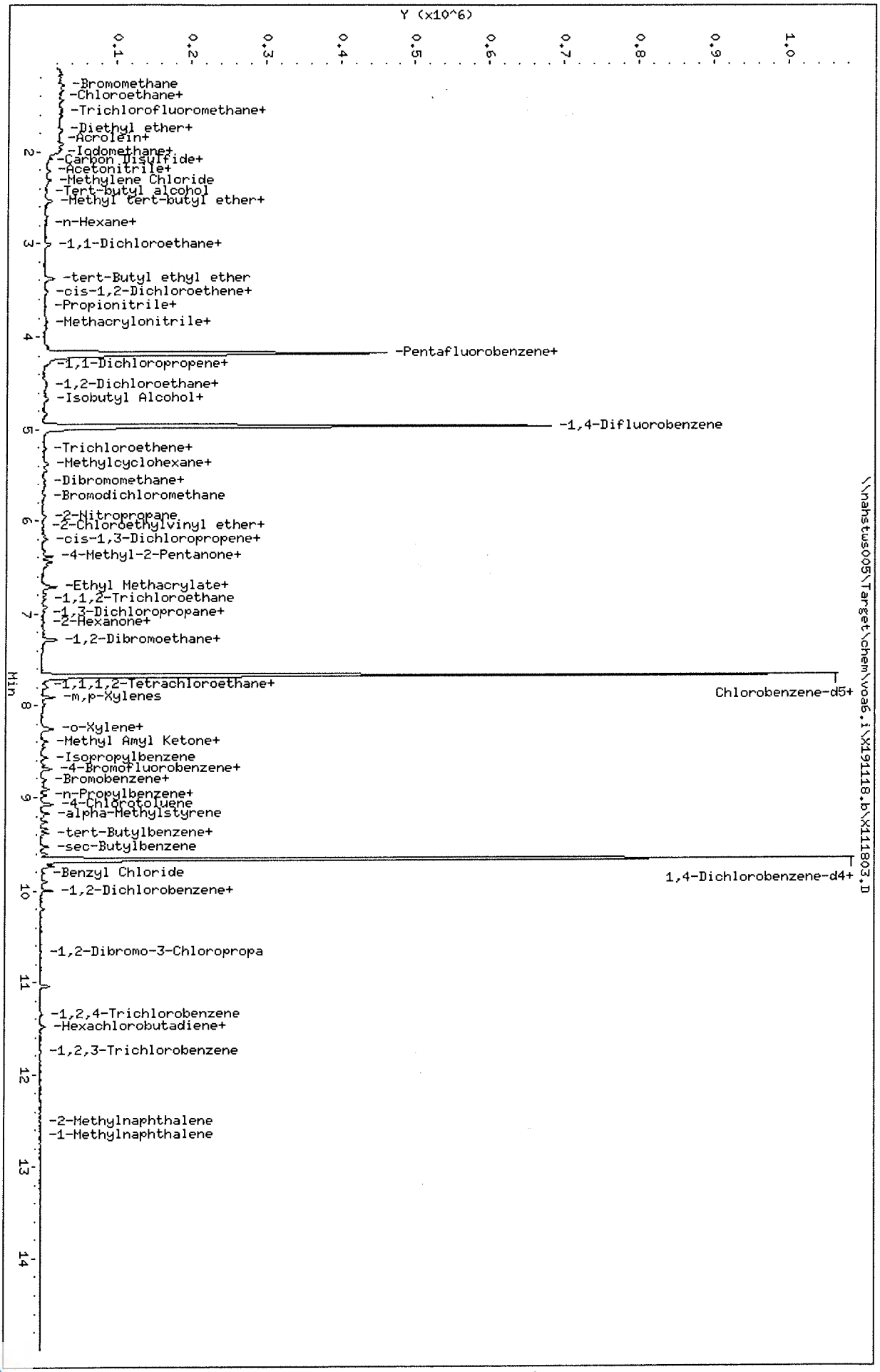
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
42 1,2-Dichloropropane	63	5.443	5.443	(1.095)	1693	0.50000	0.49(aM)
75 1,3,5-Trimethylbenzene	105	9.067	9.074	(0.938)	4403	0.50000	0.35(a)
83 1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	2841	0.50000	0.36(a)
54 1,3-Dichloropropane	76	6.983	6.983	(0.910)	2241	0.50000	0.40(a)
84 1,4-Dichlorobenzene	146	9.683	9.683	(1.001)	3038	0.50000	0.38(a)
26 2,2-Dichloropropane	77	3.523	3.516	(0.842)	2284	0.50000	0.41(aM)
24 2-Butanone	43	3.595	3.580	(0.860)	1395	1.00000	1.08(aM)
76 2-Chlorotoluene	91	8.981	8.981	(0.929)	3464	0.50000	0.35(a)
52 2-Hexanone	43	7.090	7.090	(0.924)	1875	1.00000	0.87(a)
77 4-Chlorotoluene	91	9.074	9.074	(0.939)	4251	0.50000	0.35(a)
82 p-Isopropyltoluene	119	9.655	9.655	(0.999)	5043	0.50000	0.37(a)
45 4-Methyl-2-Pentanone	43	6.331	6.331	(0.825)	2291	1.00000	0.75(a)
10 Acetone	43	1.976	1.976	(0.473)	4579	1.00000	0.53(aM)
37 Benzene	78	4.519	4.512	(0.909)	4530	0.50000	0.34(a)
74 Bromobenzene	156	8.809	8.809	(0.911)	1601	0.50000	0.33(a)
29 Bromochloromethane	128	3.802	3.795	(0.909)	956	0.50000	0.42(a)
39 Bromodichloromethane	83	5.729	5.729	(1.153)	1712	0.50000	0.35(aM)
66 Bromoform	173	8.415	8.415	(1.097)	887	0.50000	1.27(aM)
6 Bromomethane	94	1.338	1.331	(0.320)	2741	0.50000	(a)
19 Carbon Disulfide	76	2.069	2.069	(0.495)	6243	1.00000	0.64(aM)
34 Carbon Tetrachloride	117	4.268	4.268	(0.859)	1955	0.50000	0.38(aM)
59 Chlorobenzene	112	7.699	7.699	(1.004)	3839	0.50000	0.37(a)
7 Chloroethane	64	1.403	1.396	(0.336)	1164	0.50000	0.44(aM)
28 Chloroform	83	3.917	3.910	(0.937)	3238	0.50000	0.47(a)
3 Chloromethane	50	1.073	1.073	(0.257)	2201	0.50000	0.67(a)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	1368	0.50000	0.34(a)
46 cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	1873	0.50000	0.33(a)
55 Dibromochloromethane	129	7.176	7.183	(0.936)	1318	0.50000	0.33(a)
44 Dibromomethane	93	5.564	5.557	(1.120)	802	0.50000	0.32(a)
2 Dichlorodifluoromethane	85	0.973	0.966	(0.233)	1269	0.50000	1.20(aM)
61 Ethylbenzene	106	7.807	7.807	(1.018)	1838	0.50000	0.35(a)
91 Hexachlorobutadiene	225	11.481	11.488	(1.187)	1376	0.50000	0.21(a)
67 Isopropylbenzene	105	8.566	8.566	(1.117)	5484	0.50000	0.35(a)
62 m,p-Xylenes	106	7.907	7.907	(1.031)	4089	1.00000	0.64(a)
17 Methylene Chloride	84	2.305	2.305	(0.551)	1764	0.50000	0.46(aM)
87 n-Butylbenzene	91	9.998	9.998	(1.034)	4442	0.50000	0.39(aM)
73 n-Propylbenzene	91	8.917	8.917	(0.922)	6280	0.50000	0.37(a)
92 Naphthalene	128	11.560	11.546	(1.196)	1399	0.50000	0.47(a)
63 o-Xylene	106	8.243	8.244	(1.075)	2028	0.50000	0.32(a)
81 sec-Butylbenzene	105	9.526	9.526	(0.985)	5469	0.50000	0.37(a)
64 Styrene	104	8.265	8.265	(1.078)	3653	0.50000	0.33(a)
78 tert-Butylbenzene	119	9.339	9.339	(0.966)	3670	0.50000	0.34(a)
56 Tetrachloroethene	164	6.933	6.933	(0.904)	1382	0.50000	0.37(a)
50 Toluene	91	6.453	6.453	(0.841)	5603	0.50000	0.37(a)
20 trans-1,2-Dichloroethene	96	2.535	2.527	(0.606)	1192	0.50000	0.34(a)
51 trans-1,3-Dichloropropene	75	6.689	6.682	(1.346)	1749	0.50000	0.34(a)
38 Trichloroethene	130	5.206	5.206	(1.048)	1298	0.50000	0.32(a)
8 Trichlorofluoromethane	101	1.560	1.553	(0.373)	2137	0.50000	0.32(a)
5 Vinyl Chloride	62	1.138	1.138	(0.272)	2046	0.50000	0.48(aM)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

QC Flag Legend

M - Compound response manually integrated.



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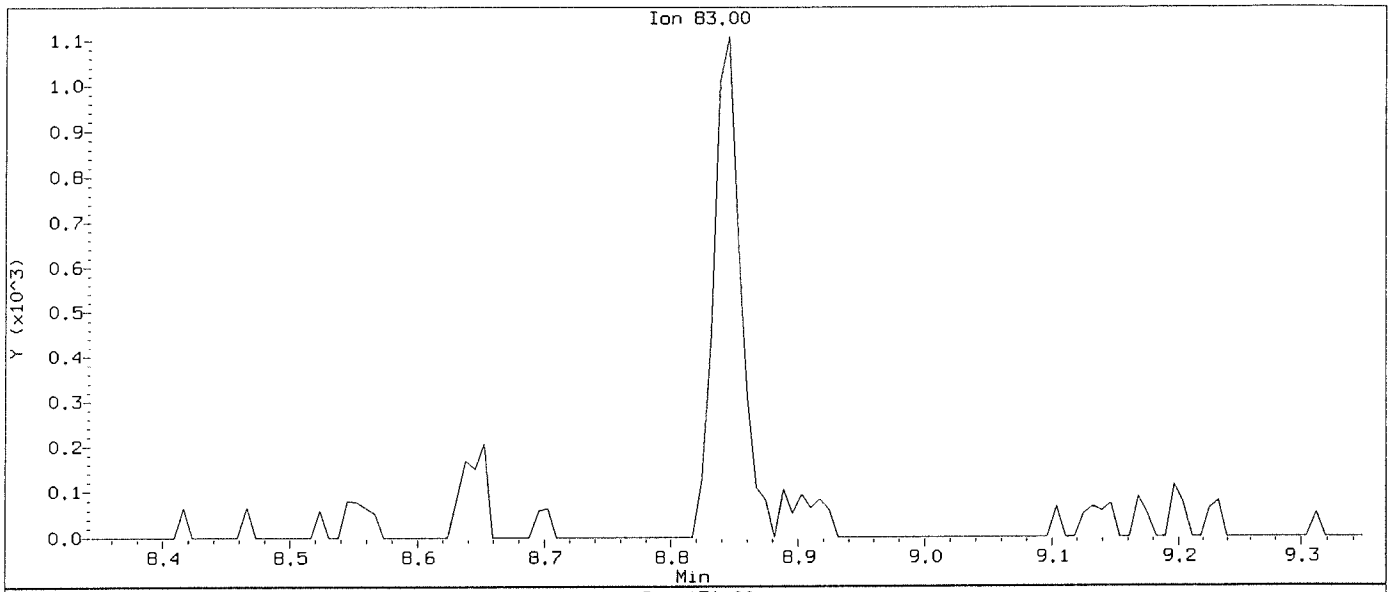
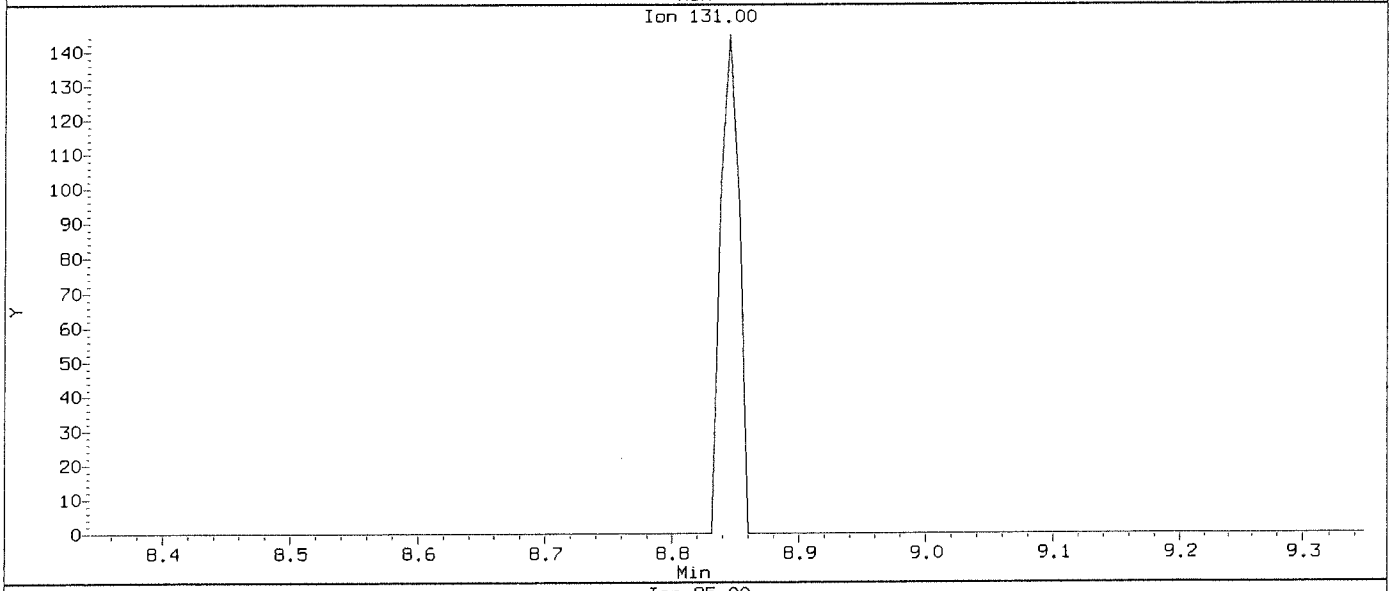
Client ID: VSTD000.5
Sample Info: VSTD000.5;VSTD000.5;1;2;
Purge Volume: 5.0
Column phase: DB624

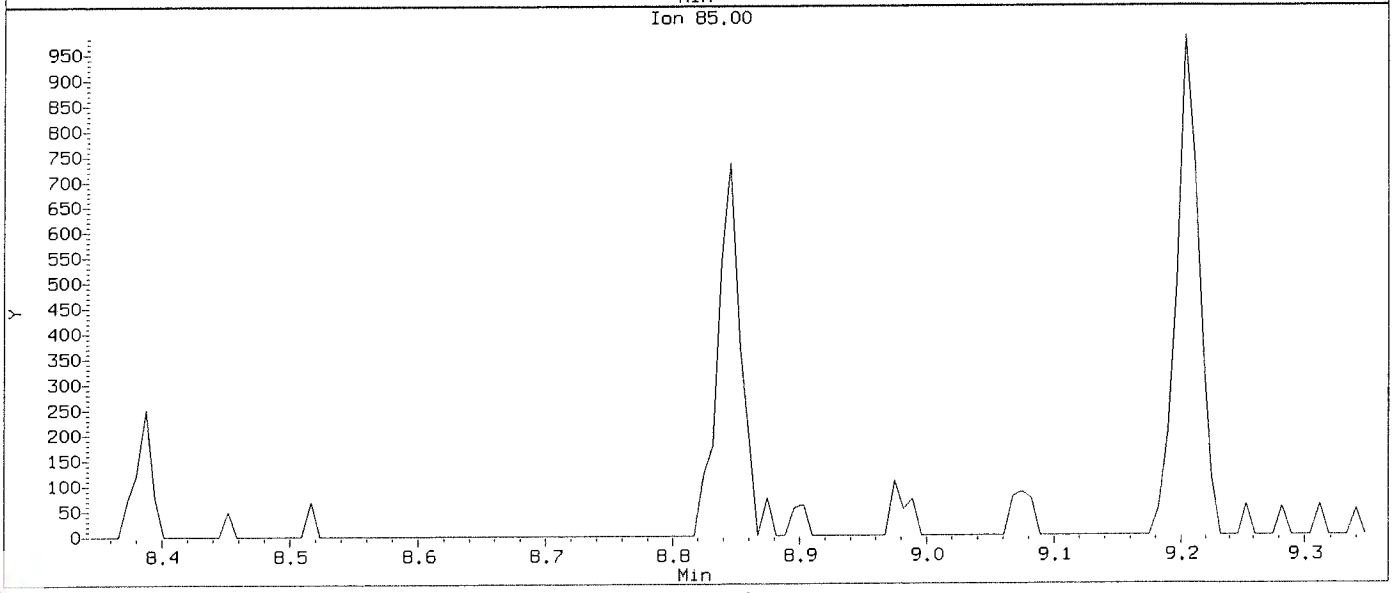
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\Before2\X111803.D
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,1,2,2-Tetrachloroethane
CAS Number: 79-34-5







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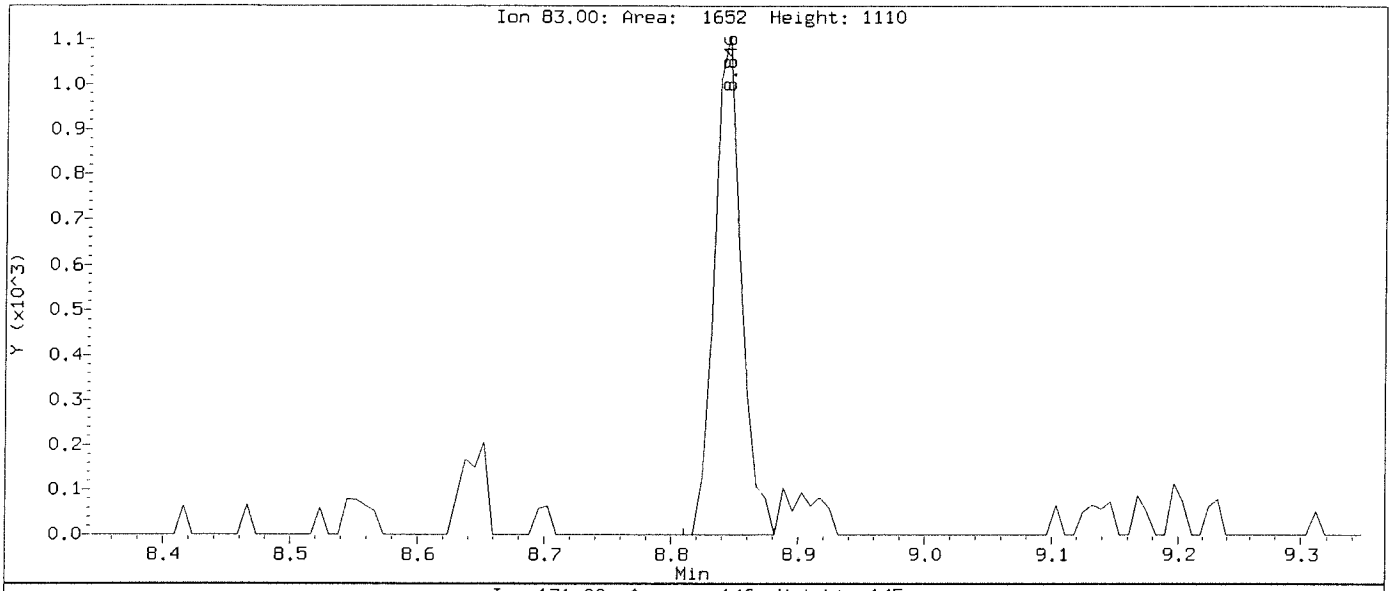
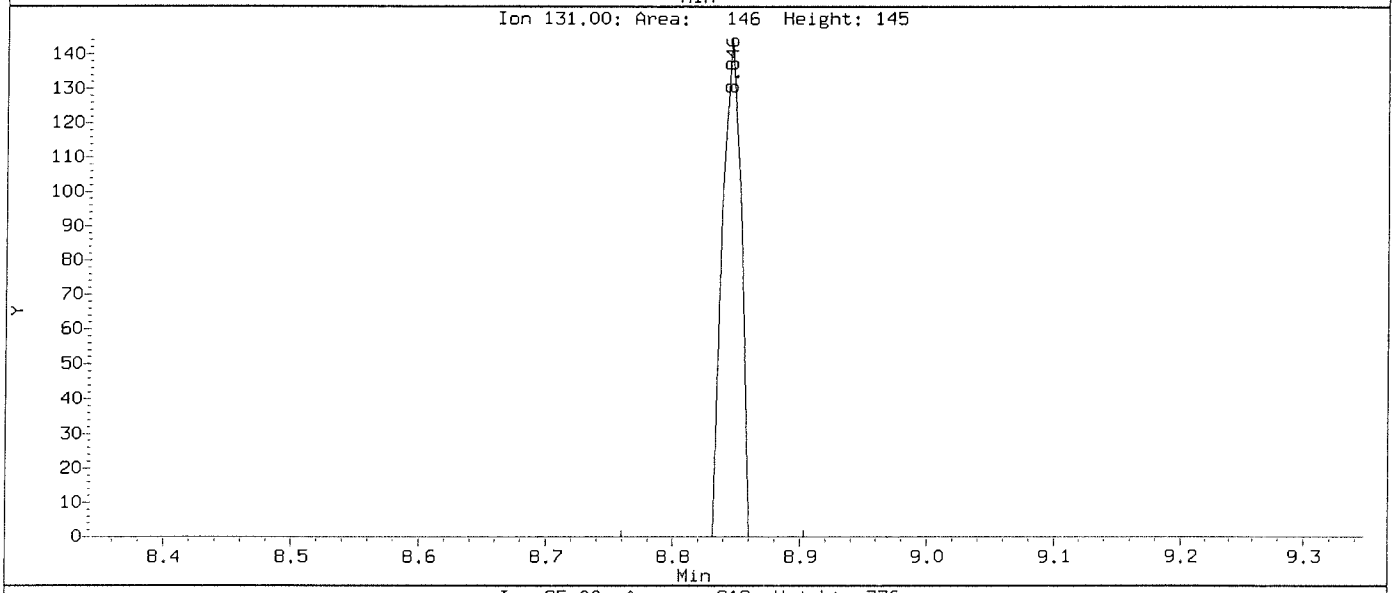
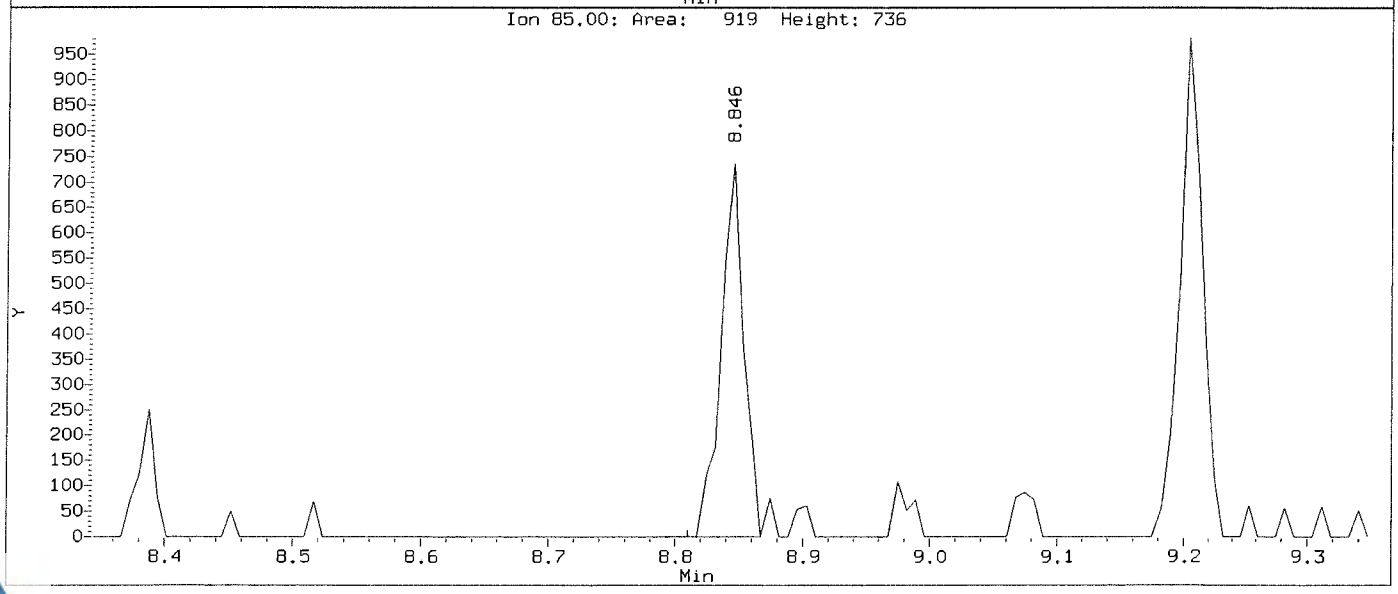
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,1,2,2-Tetrachloroethane
CAS Number: 79-34-5







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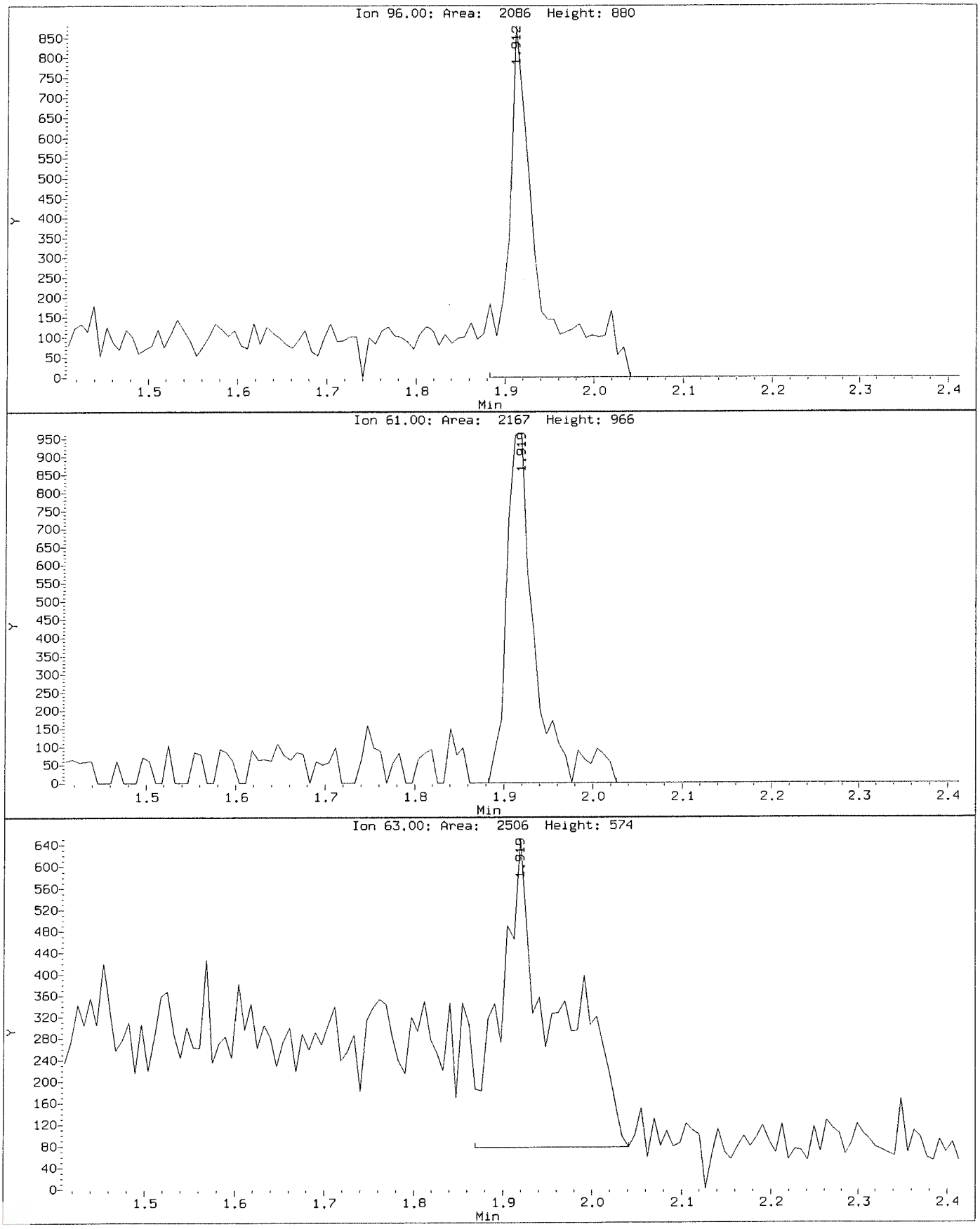
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,1-Dichloroethene
CAS Number: 75-35-4



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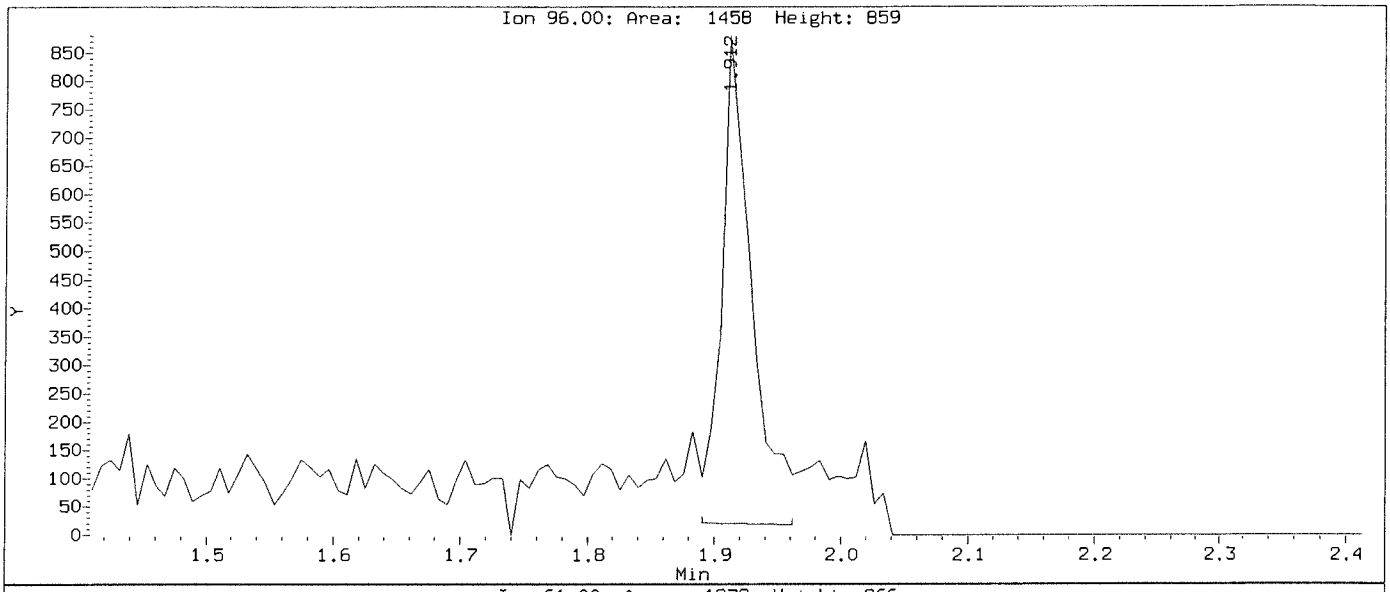
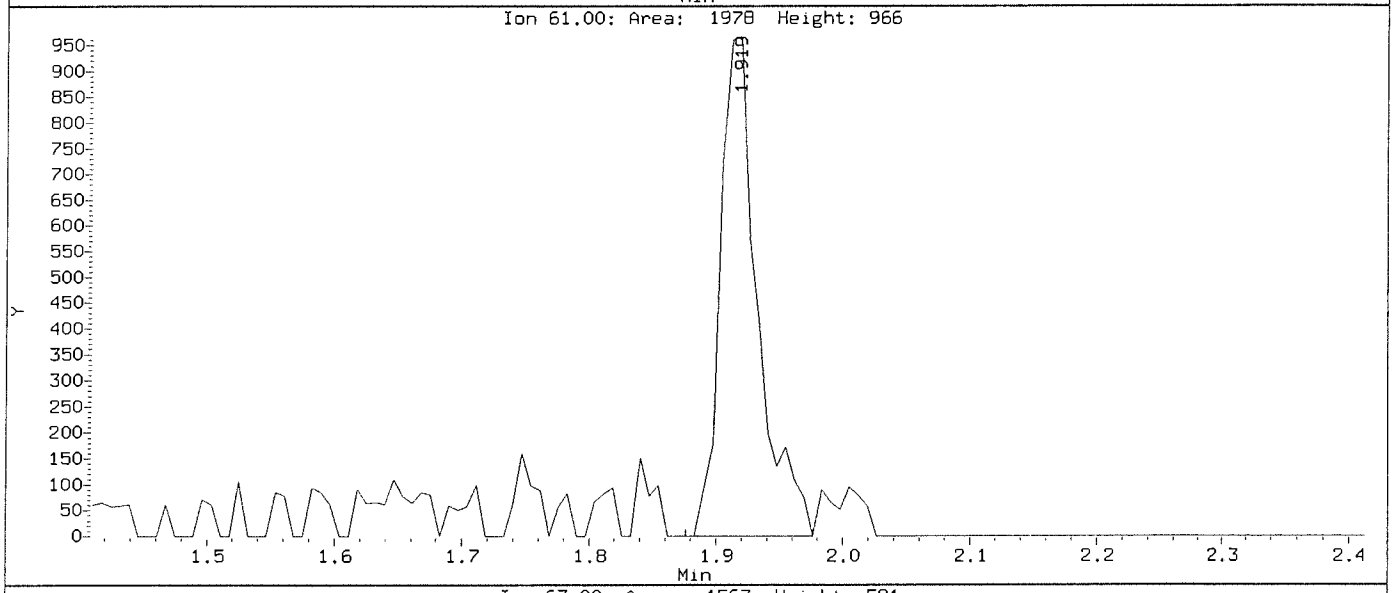
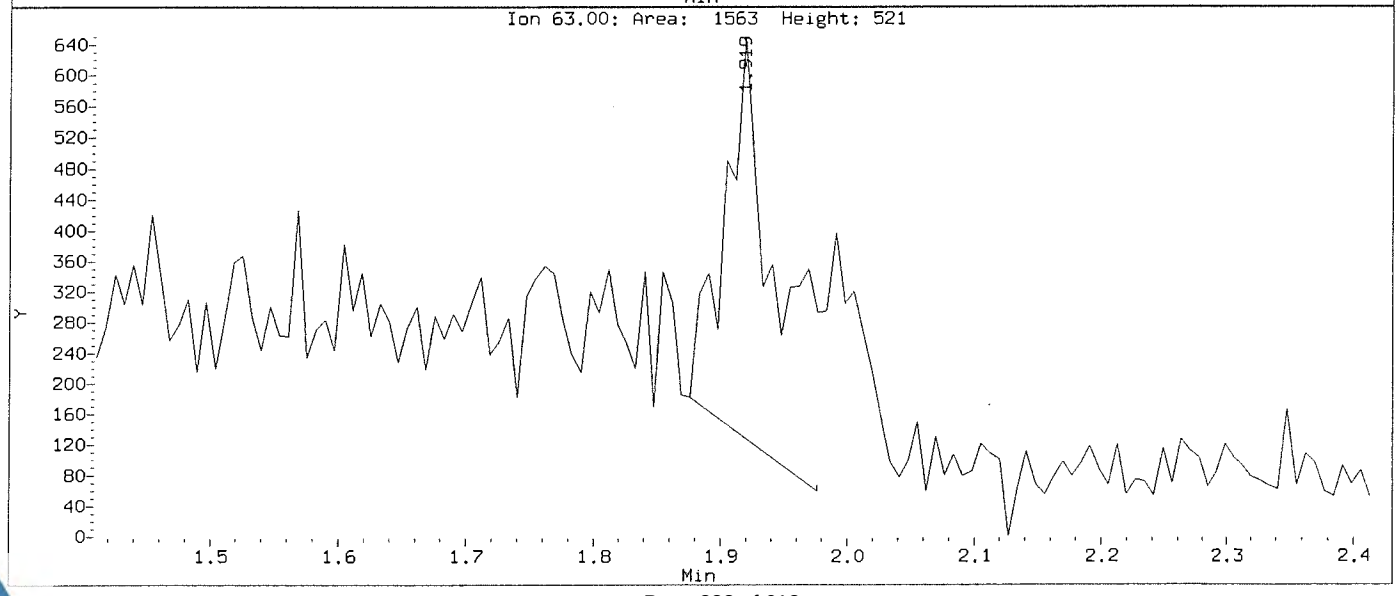
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,1-Dichloroethene
CAS Number: 75-35-4







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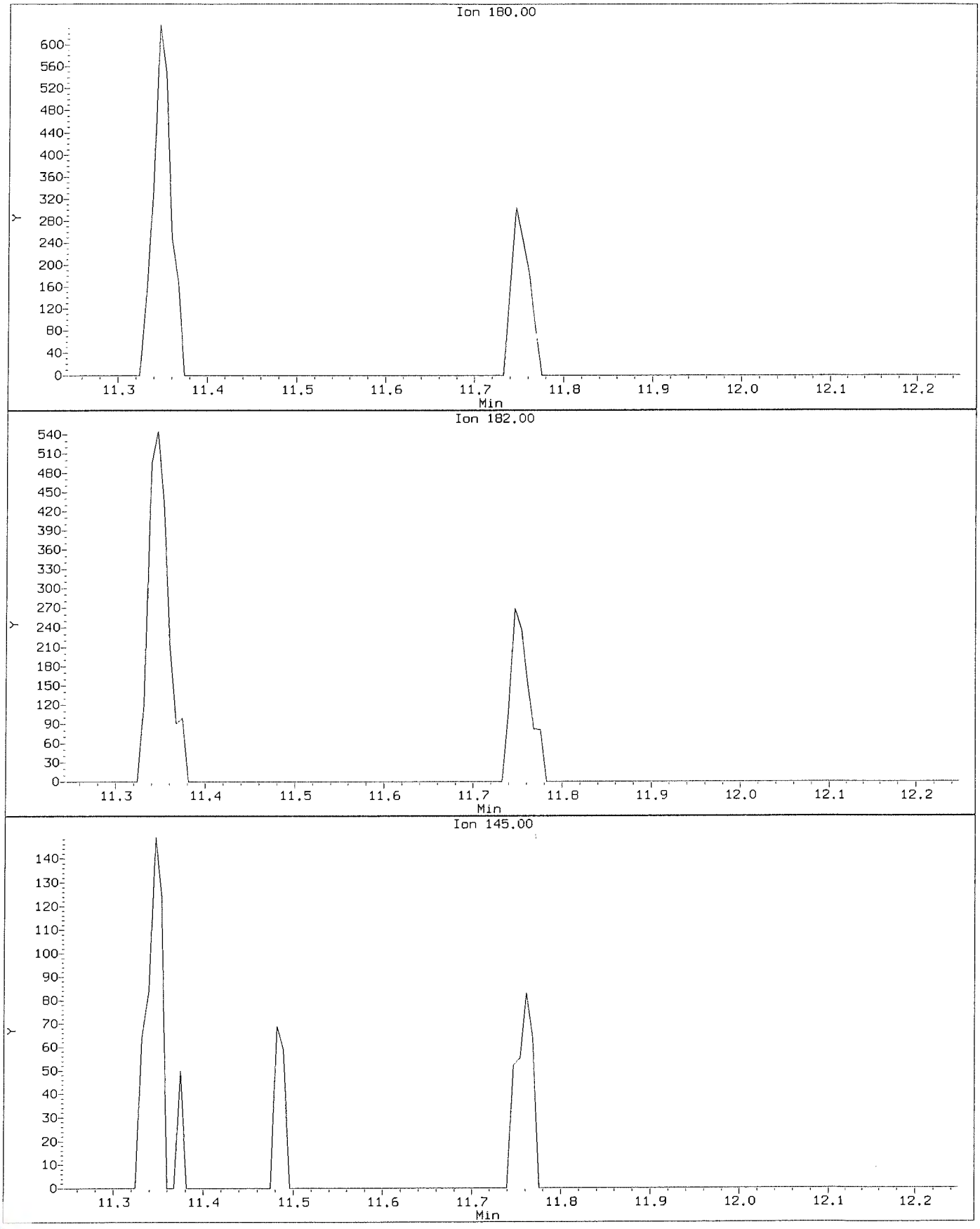
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,2,3-Trichlorobenzene
CAS Number: 87-61-6



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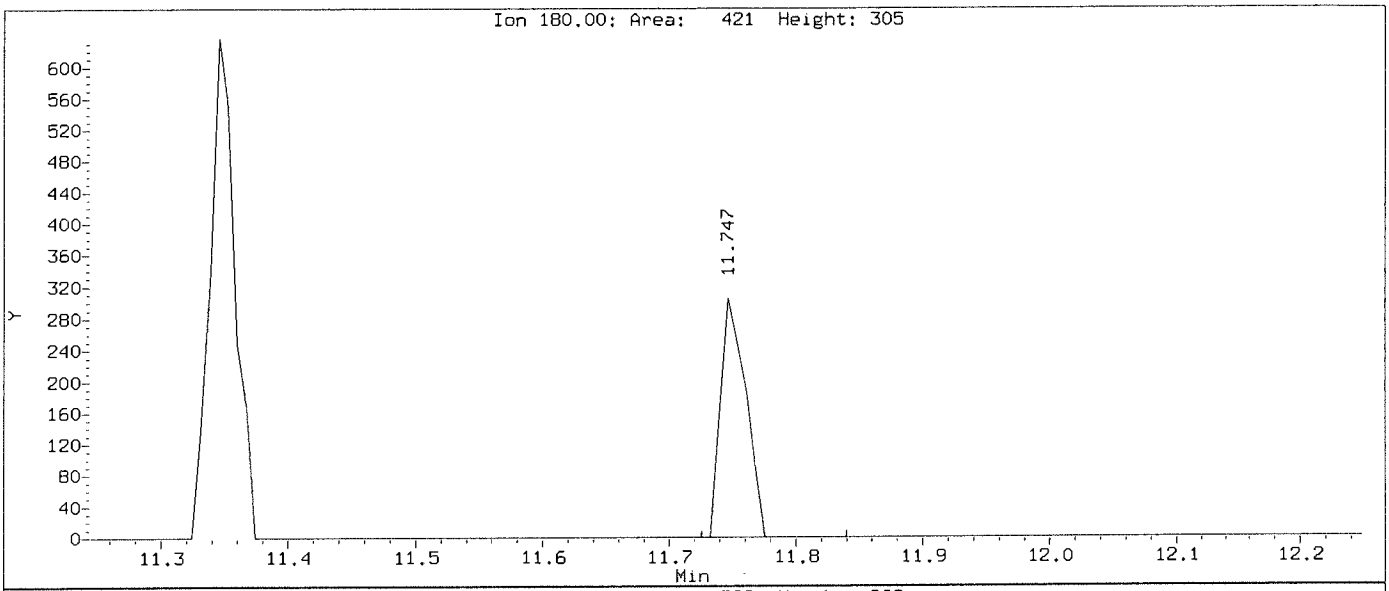
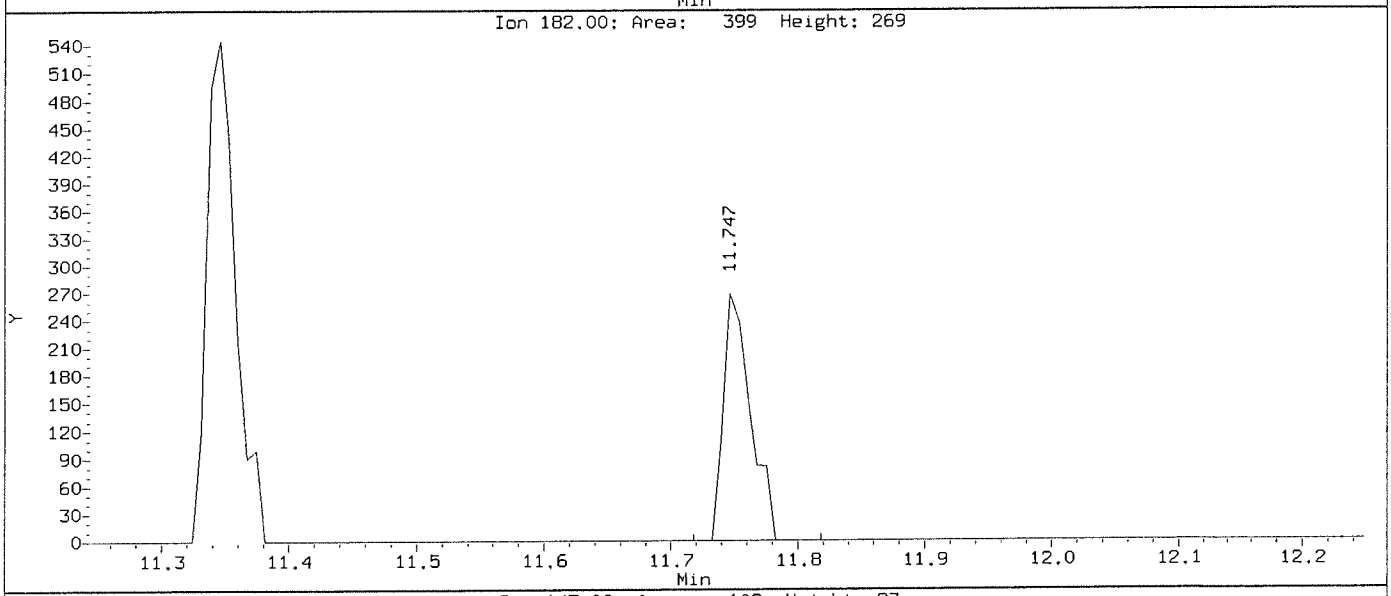
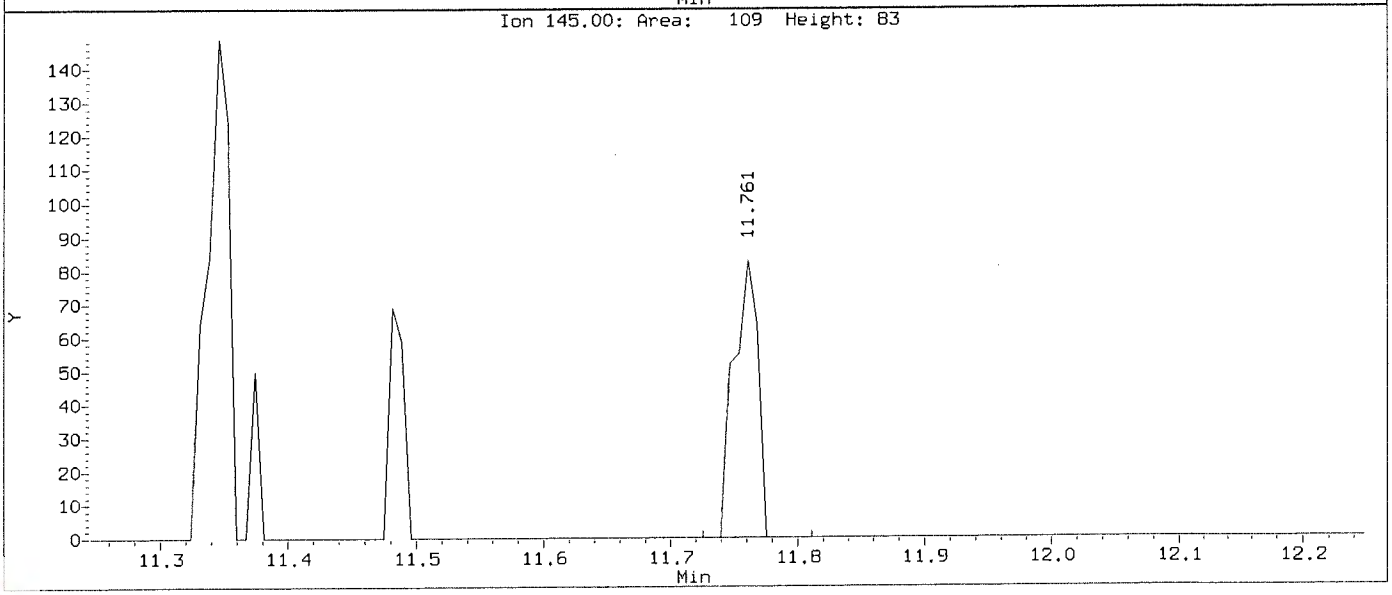
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,2,3-Trichlorobenzene
CAS Number: 87-61-6







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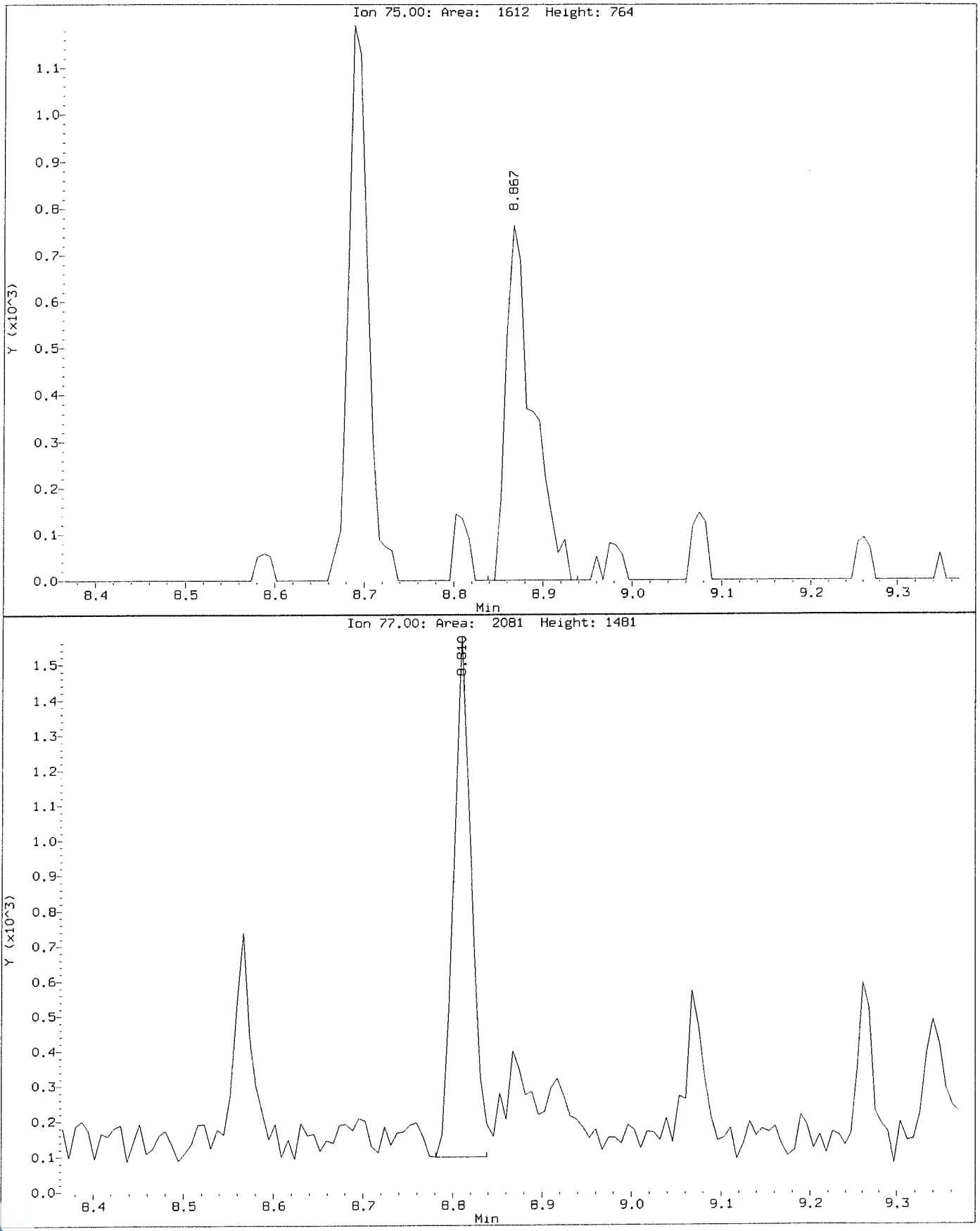
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



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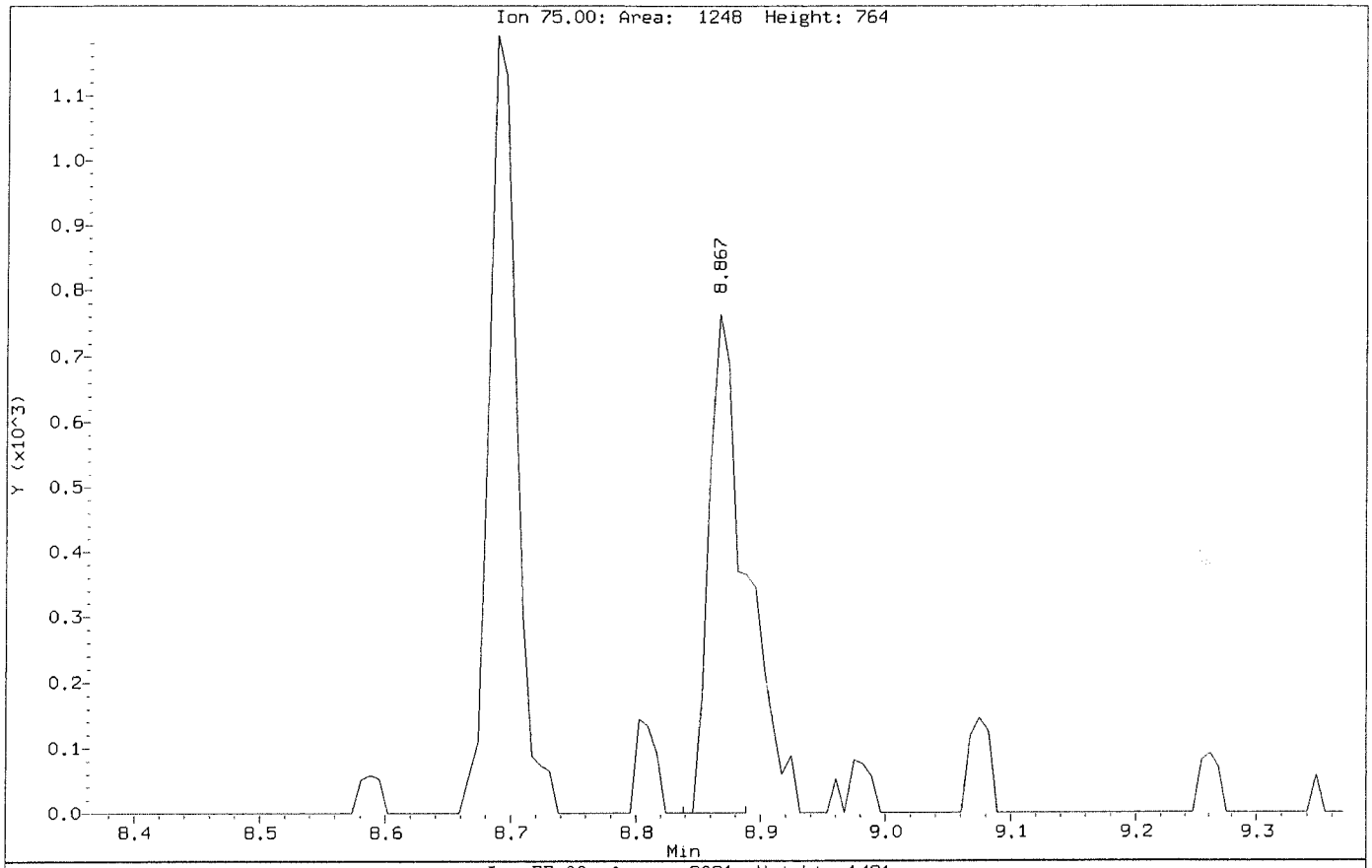
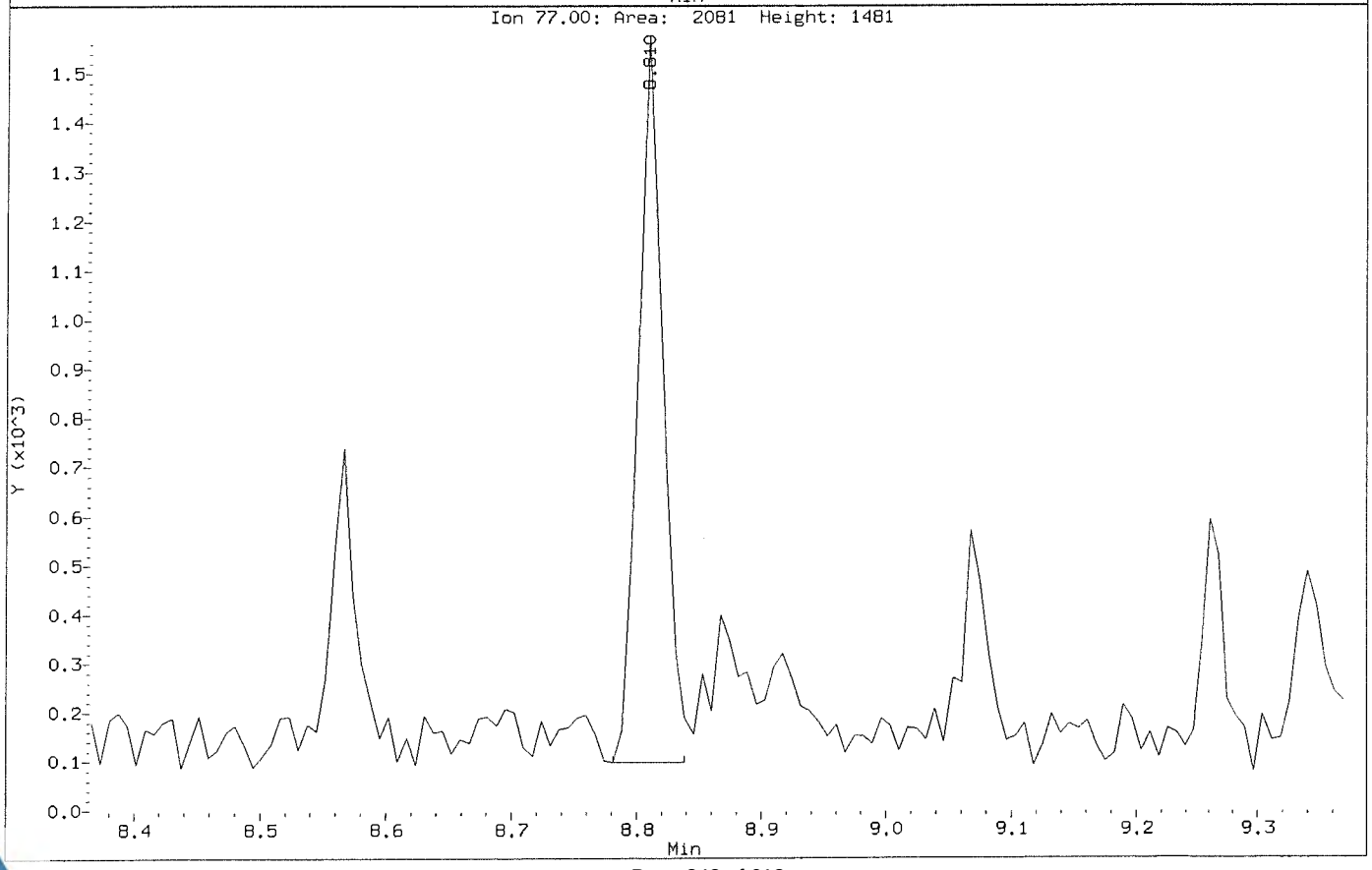
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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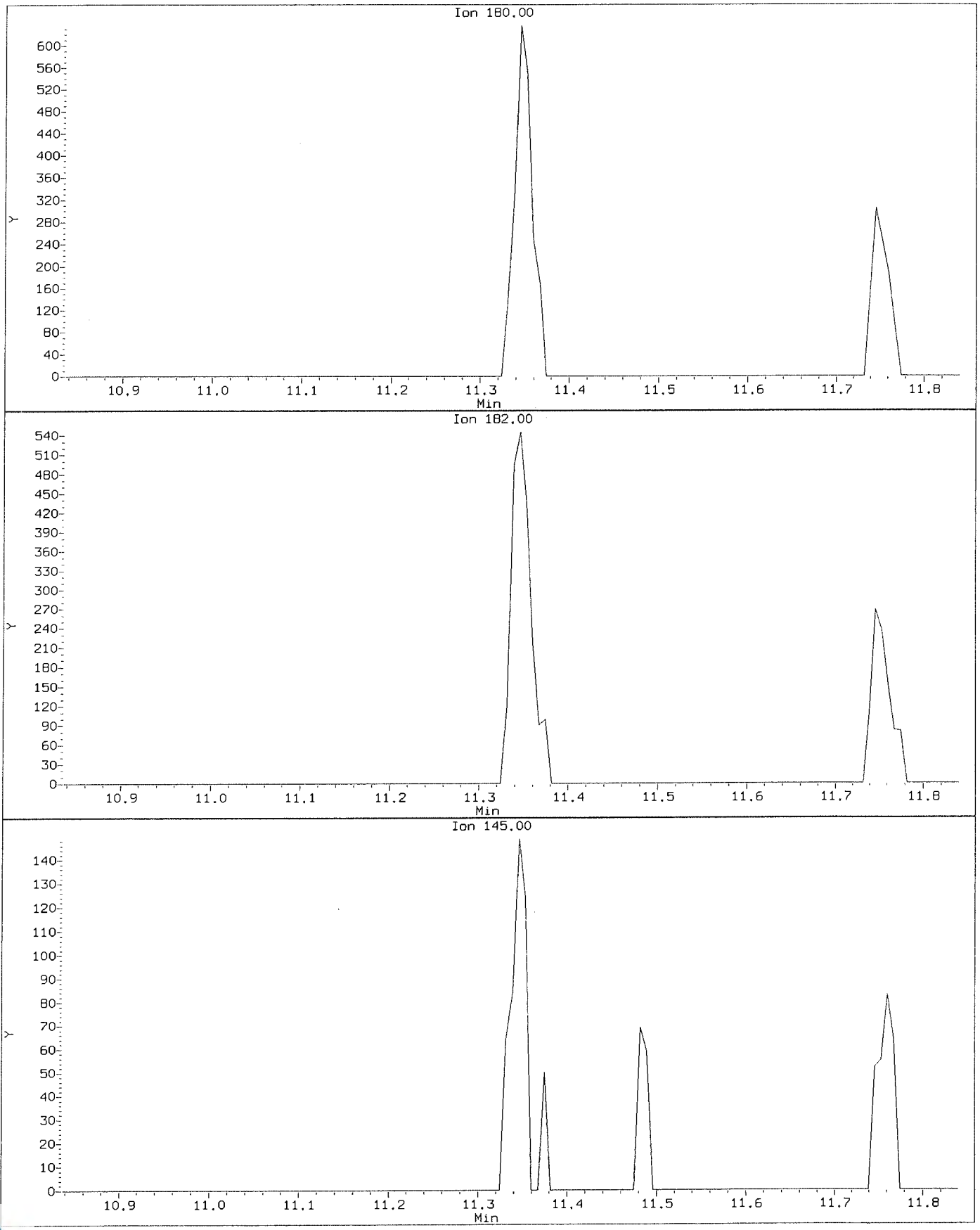
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,2,4-Trichlorobenzene
CAS Number: 120-82-1



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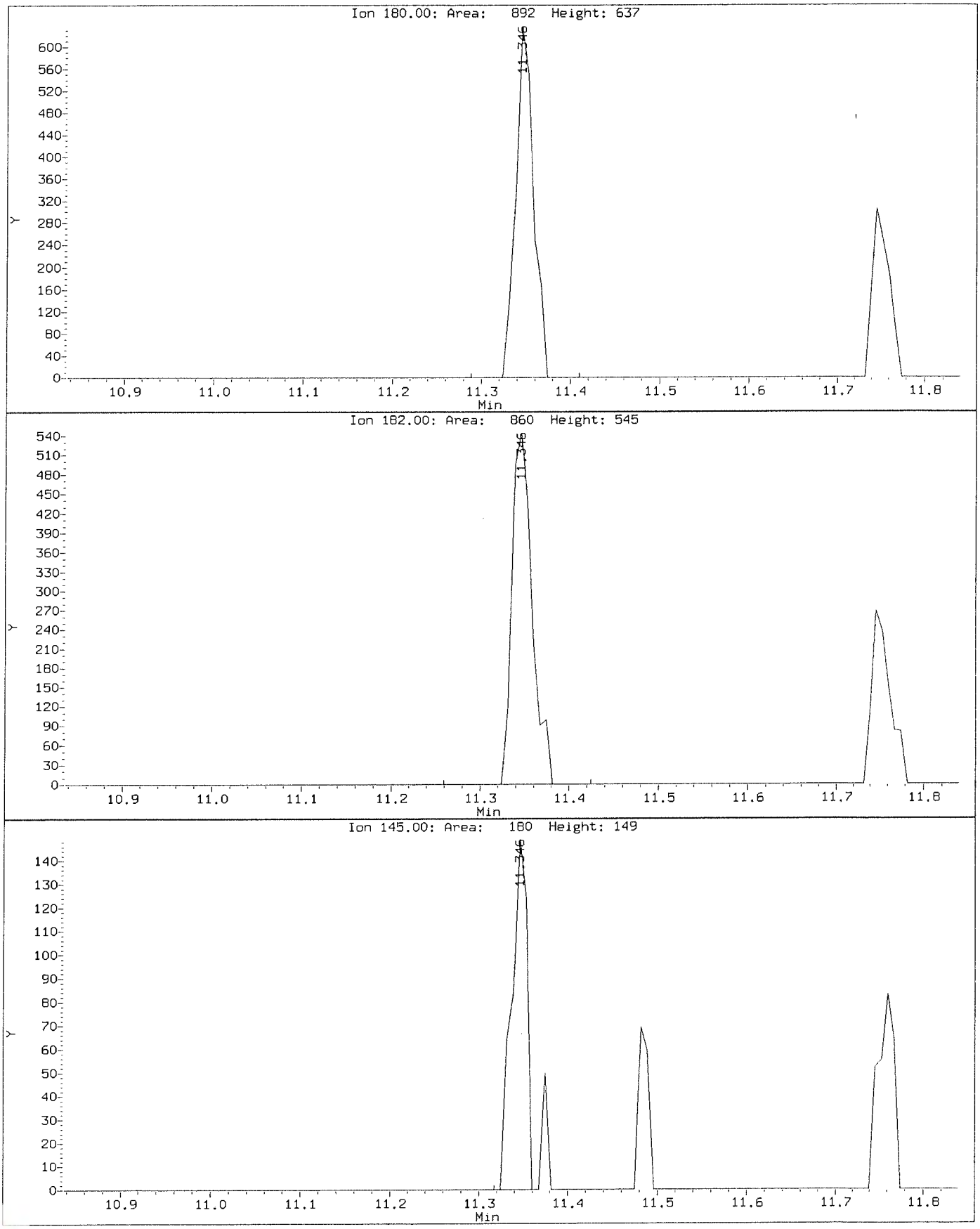
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,2,4-Trichlorobenzene
CAS Number: 120-82-1



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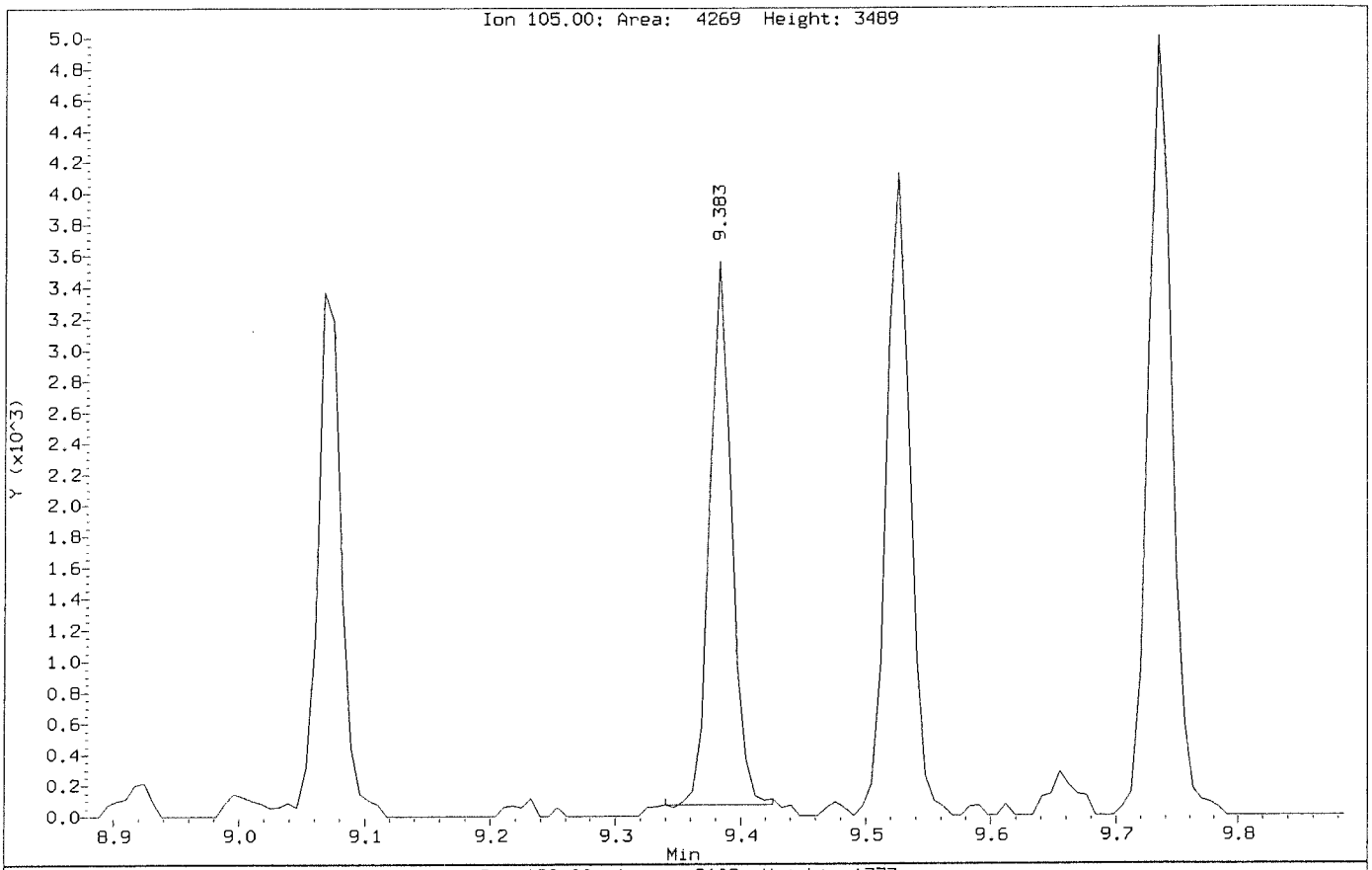
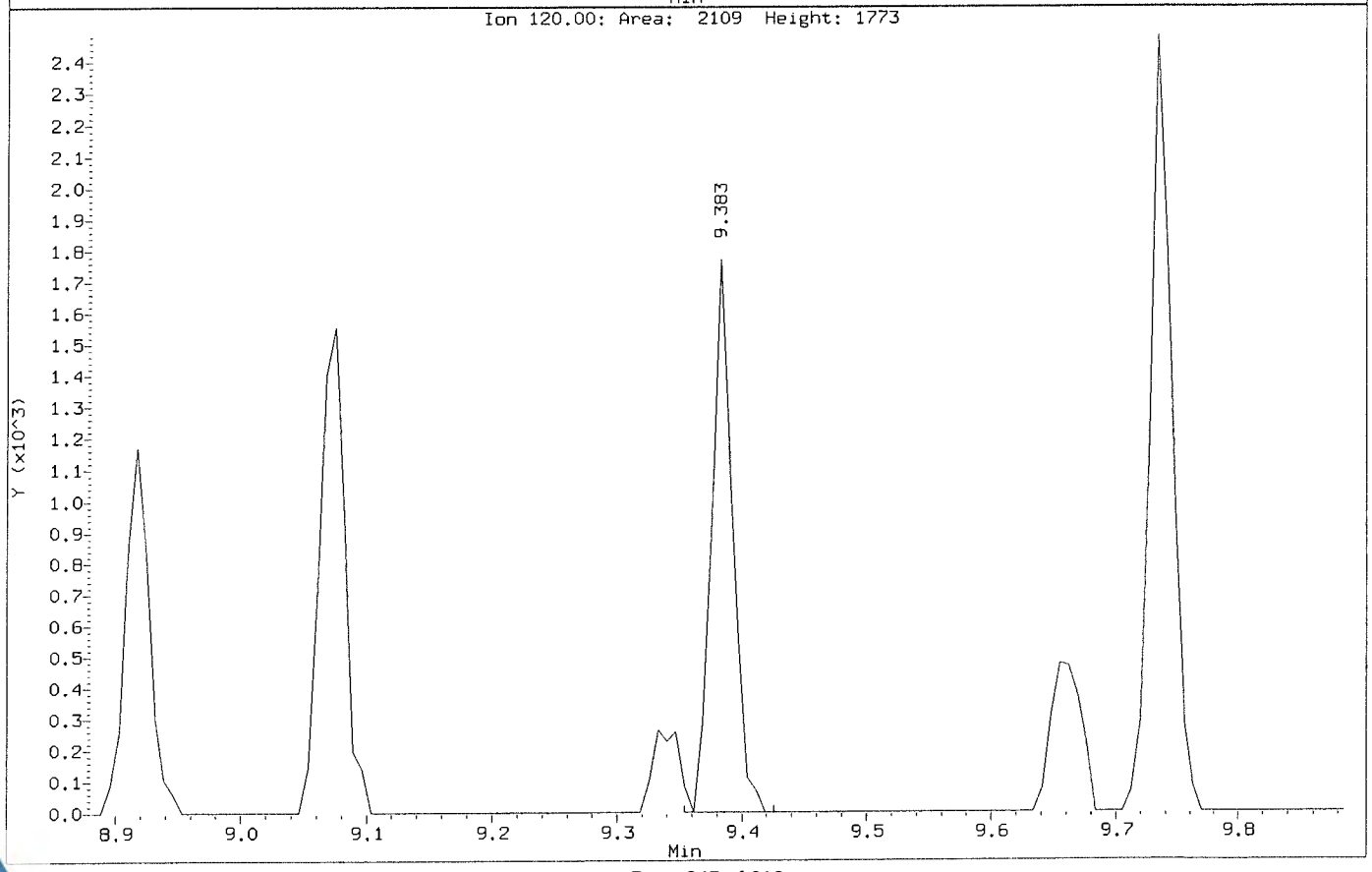
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,2,4-Trimethylbenzene
CAS Number: 95-63-6





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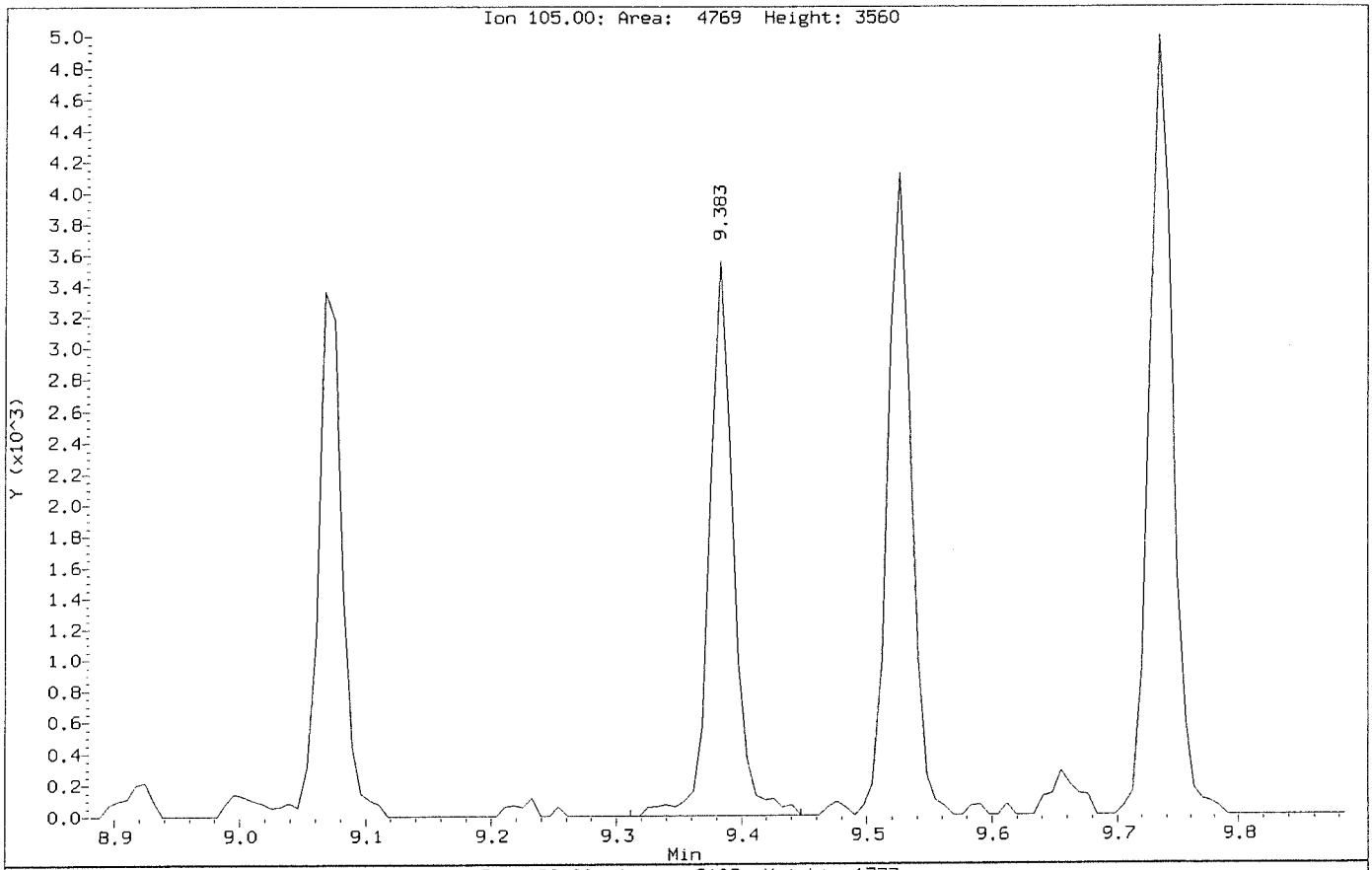
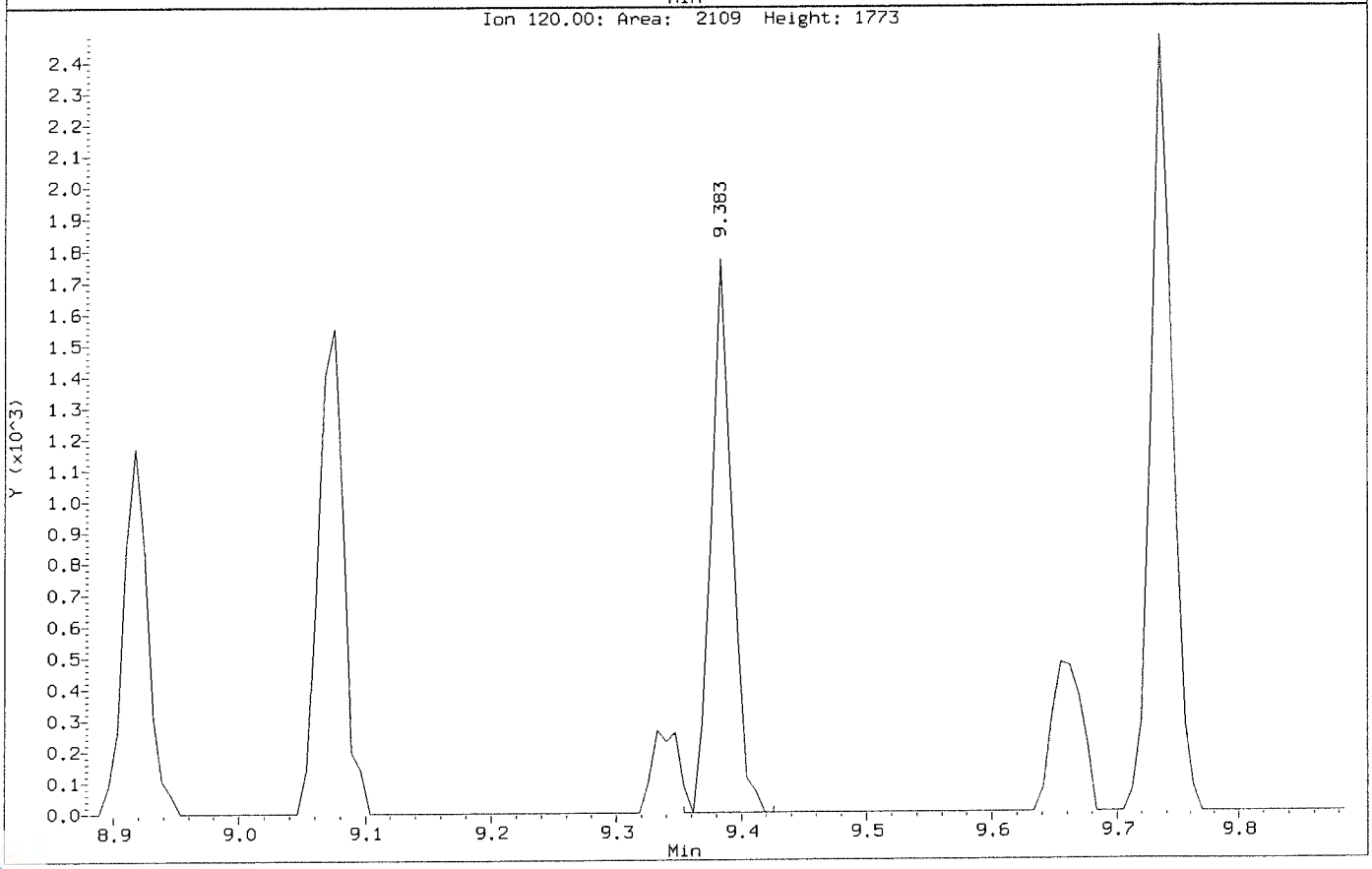
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,2,4-Trimethylbenzene
CAS Number: 95-63-6





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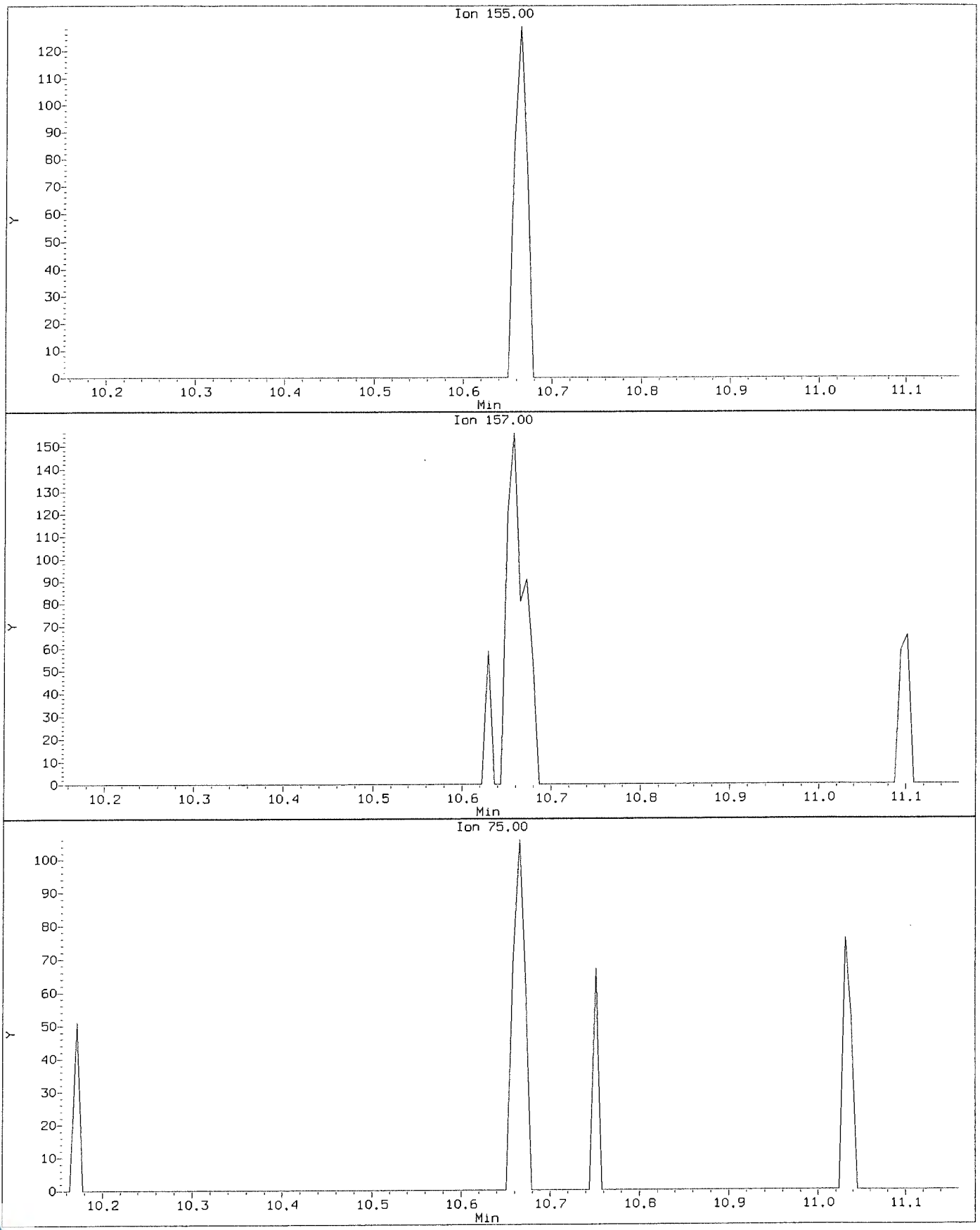
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,2-Dibromo-3-Chloropropane
CAS Number: 96-12-8



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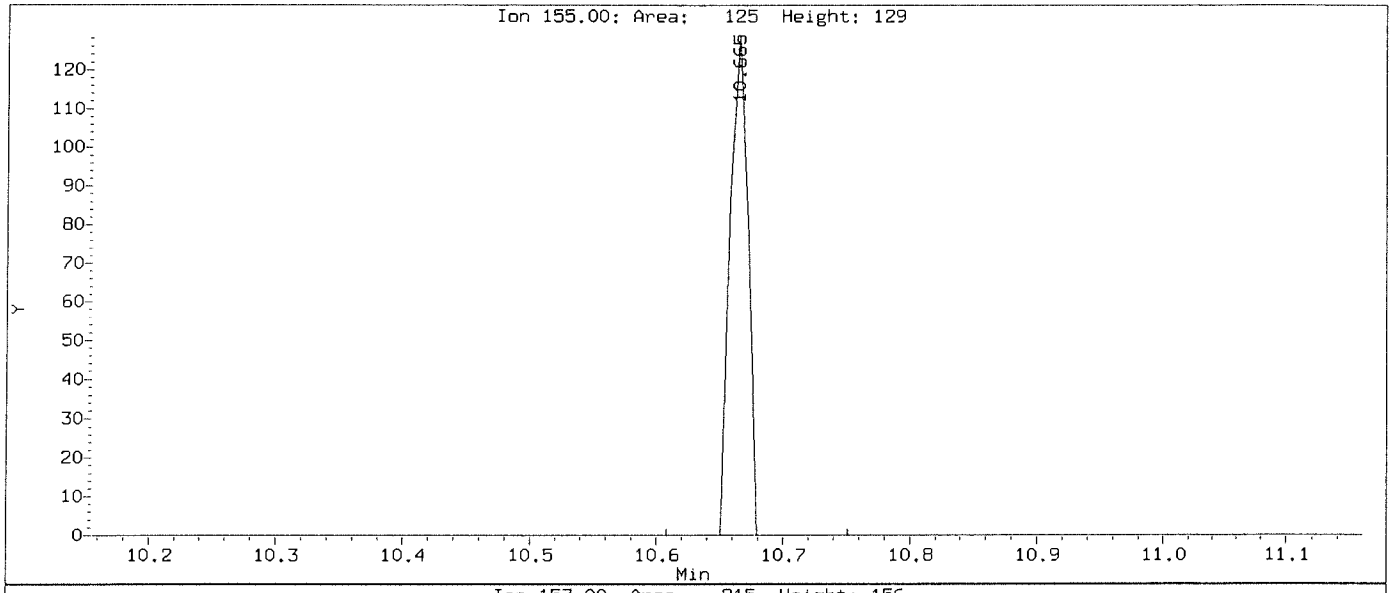
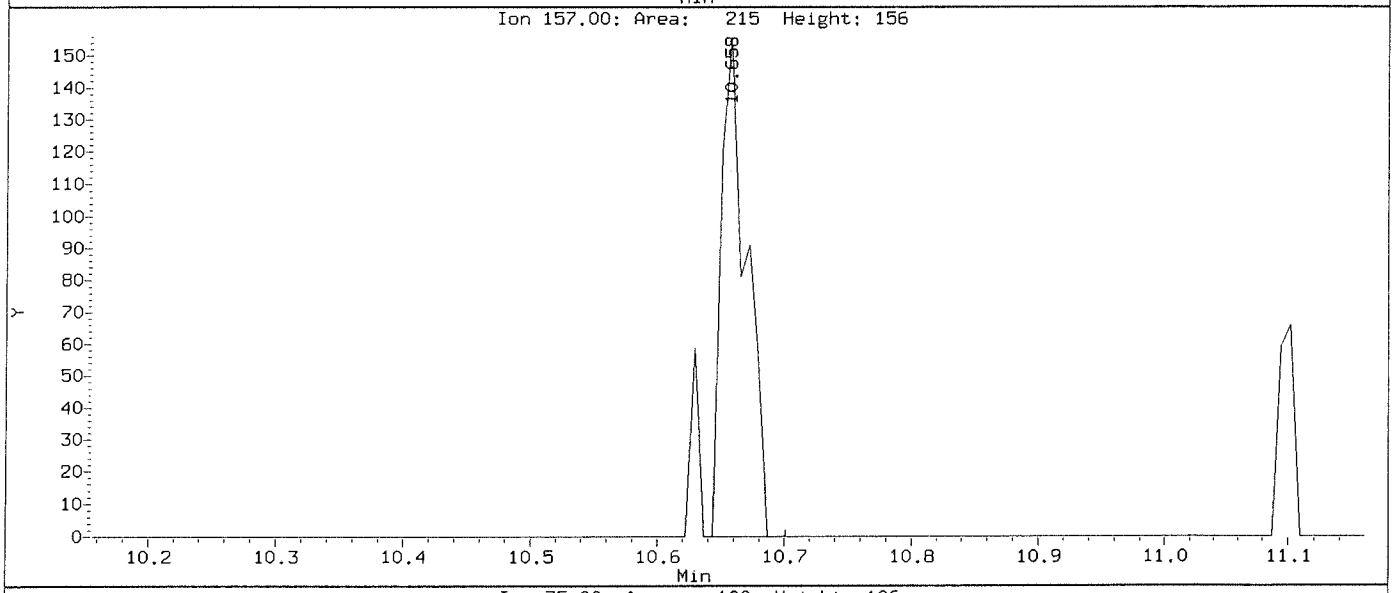
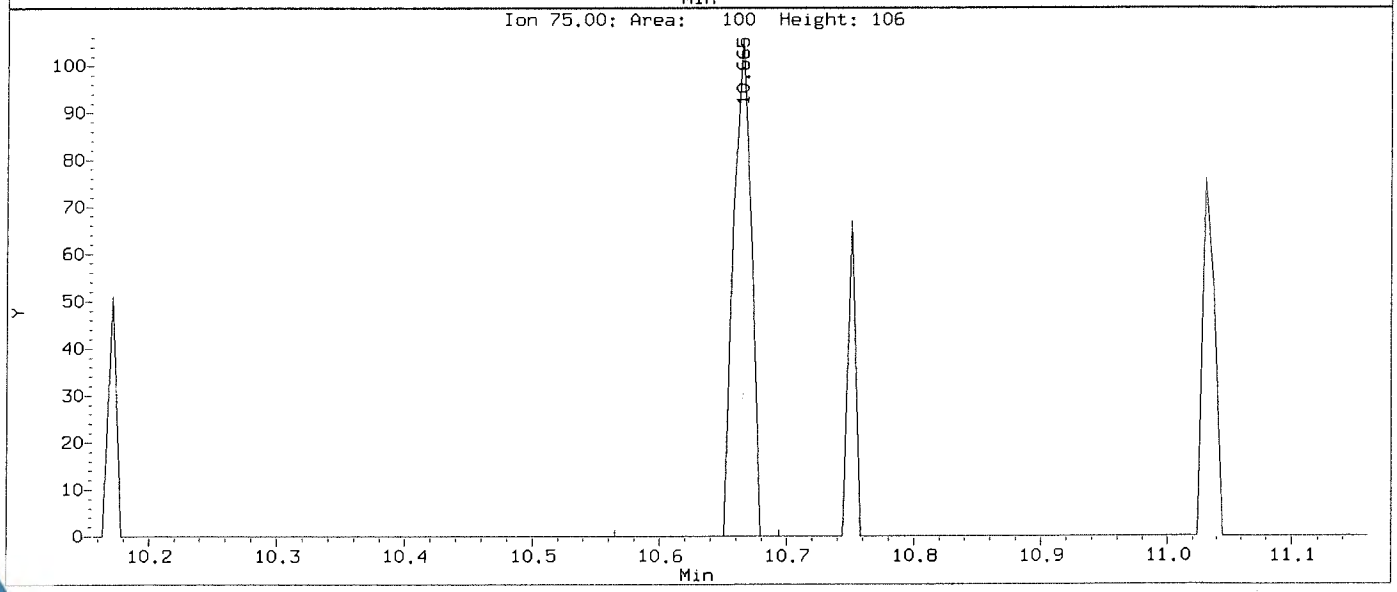
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,2-Dibromo-3-Chloropropane
CAS Number: 96-12-8







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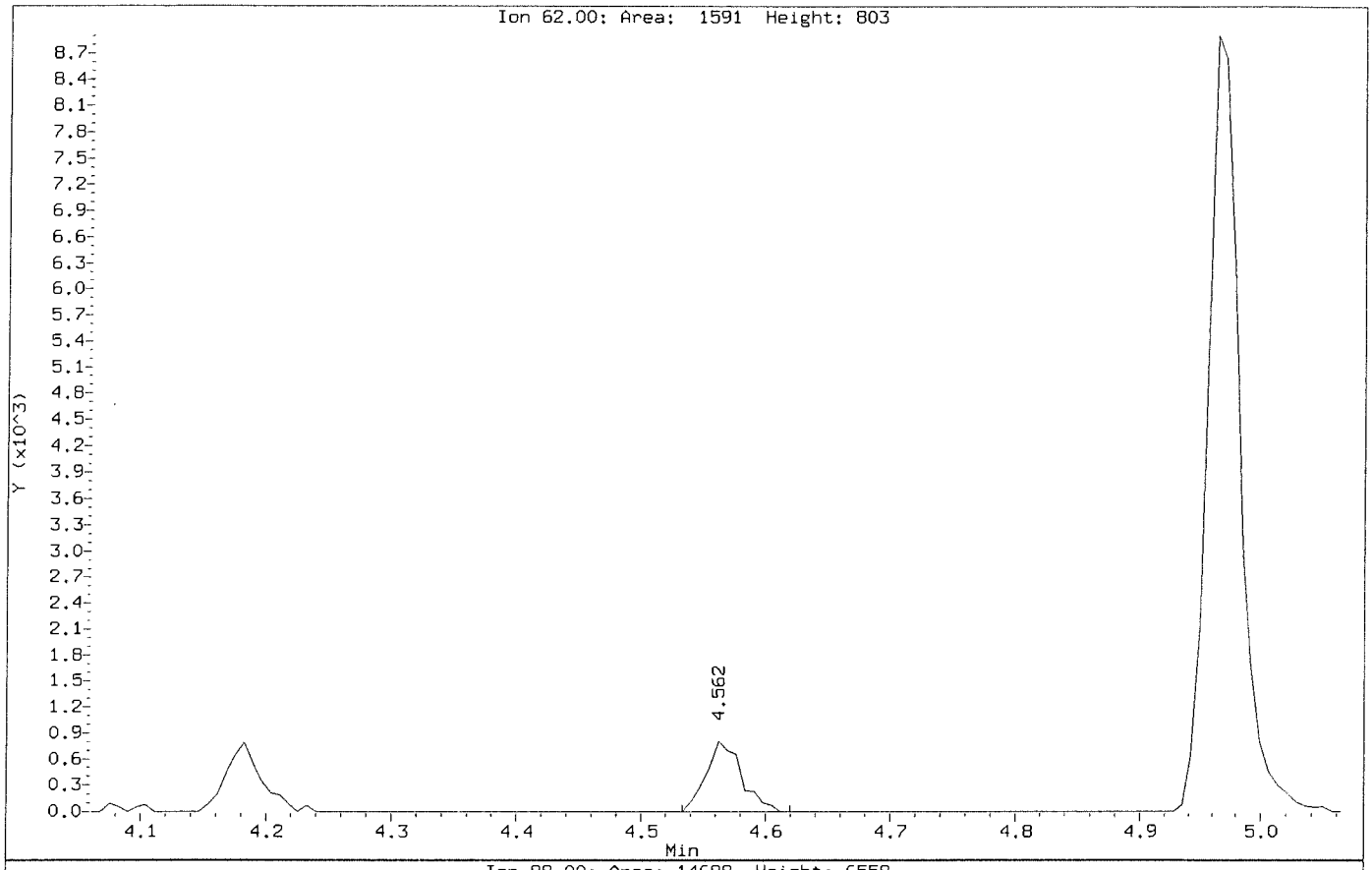
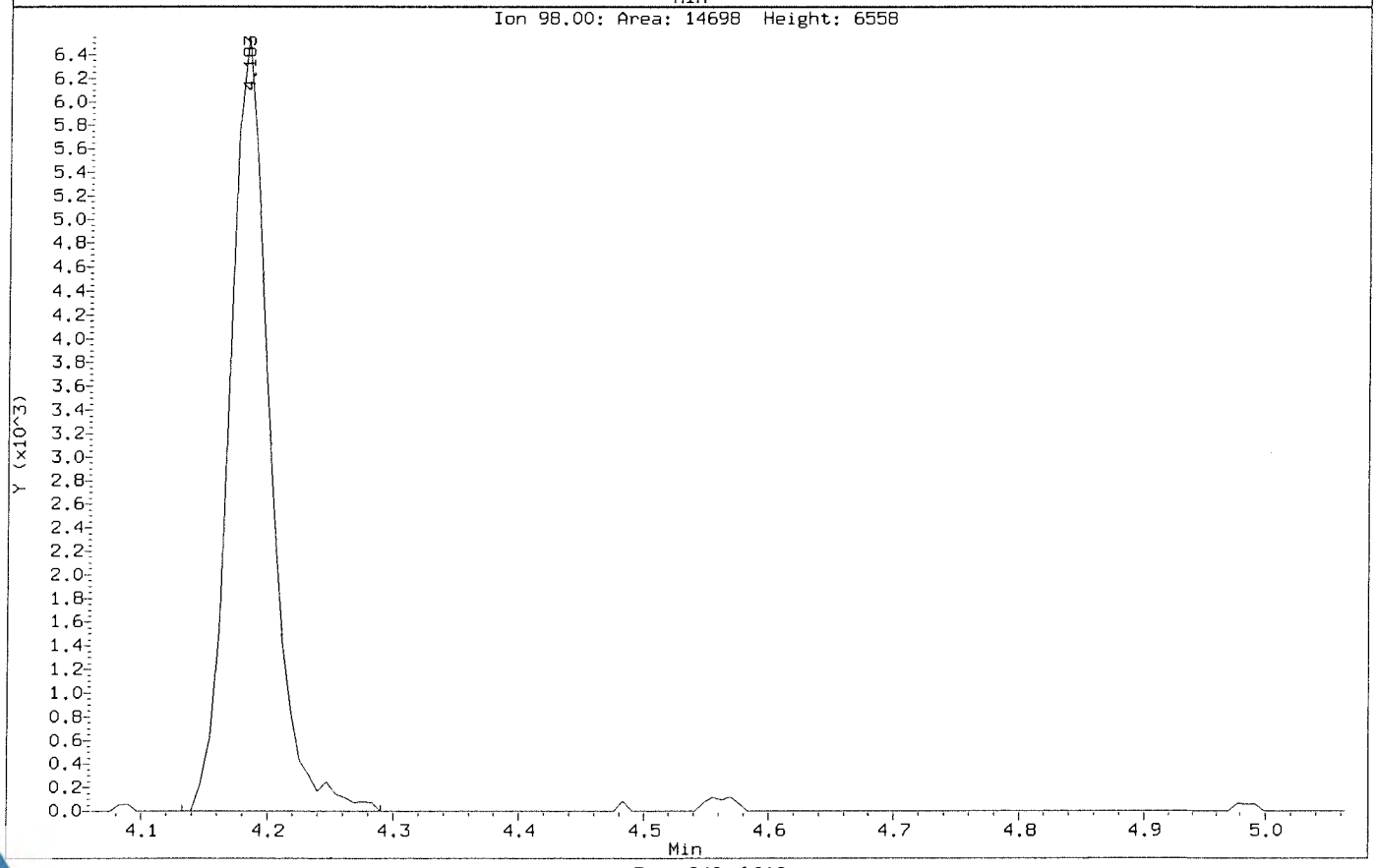
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

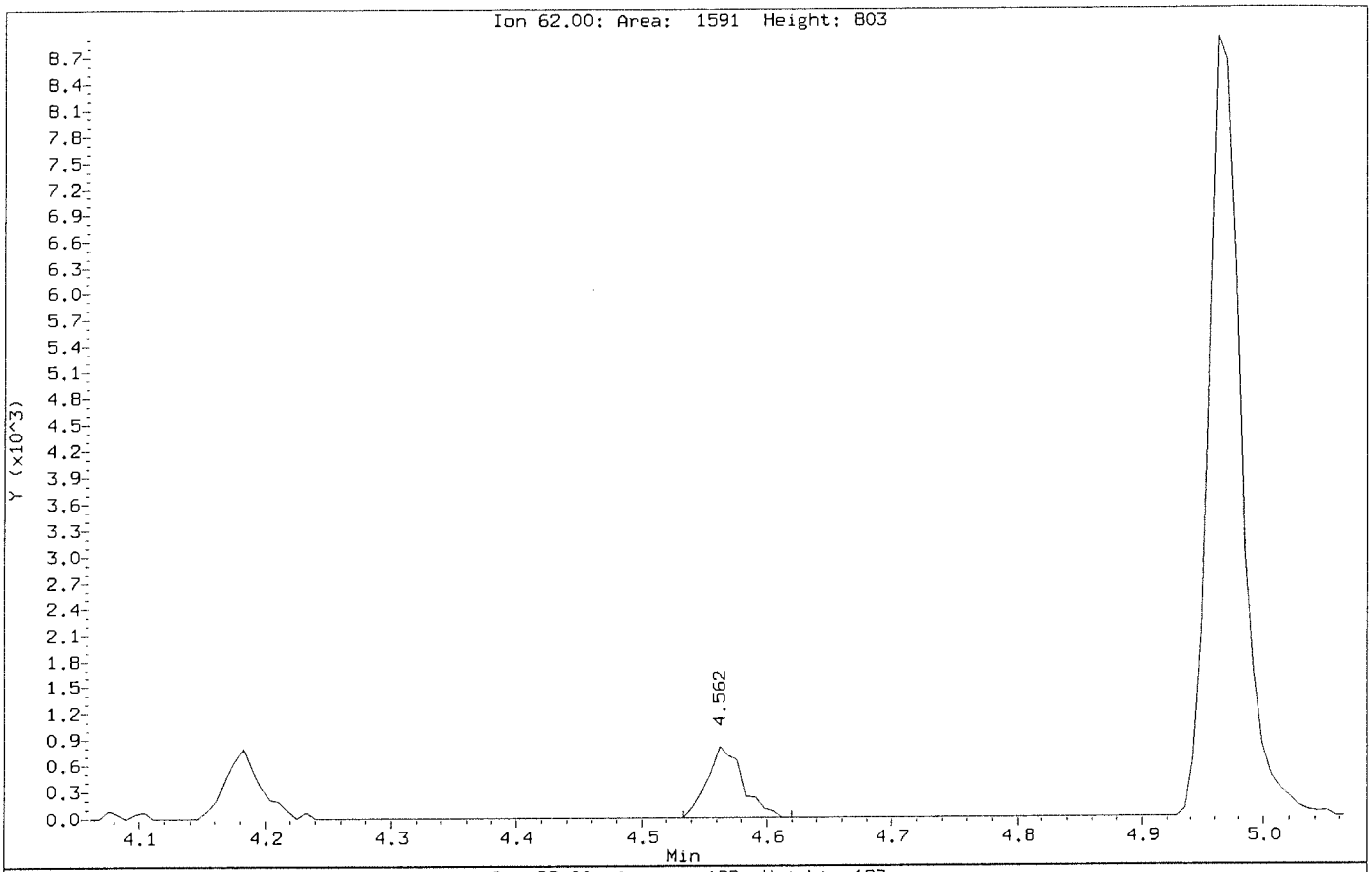
Compound: 1,2-Dichloroethane
CAS Number: 107-06-2

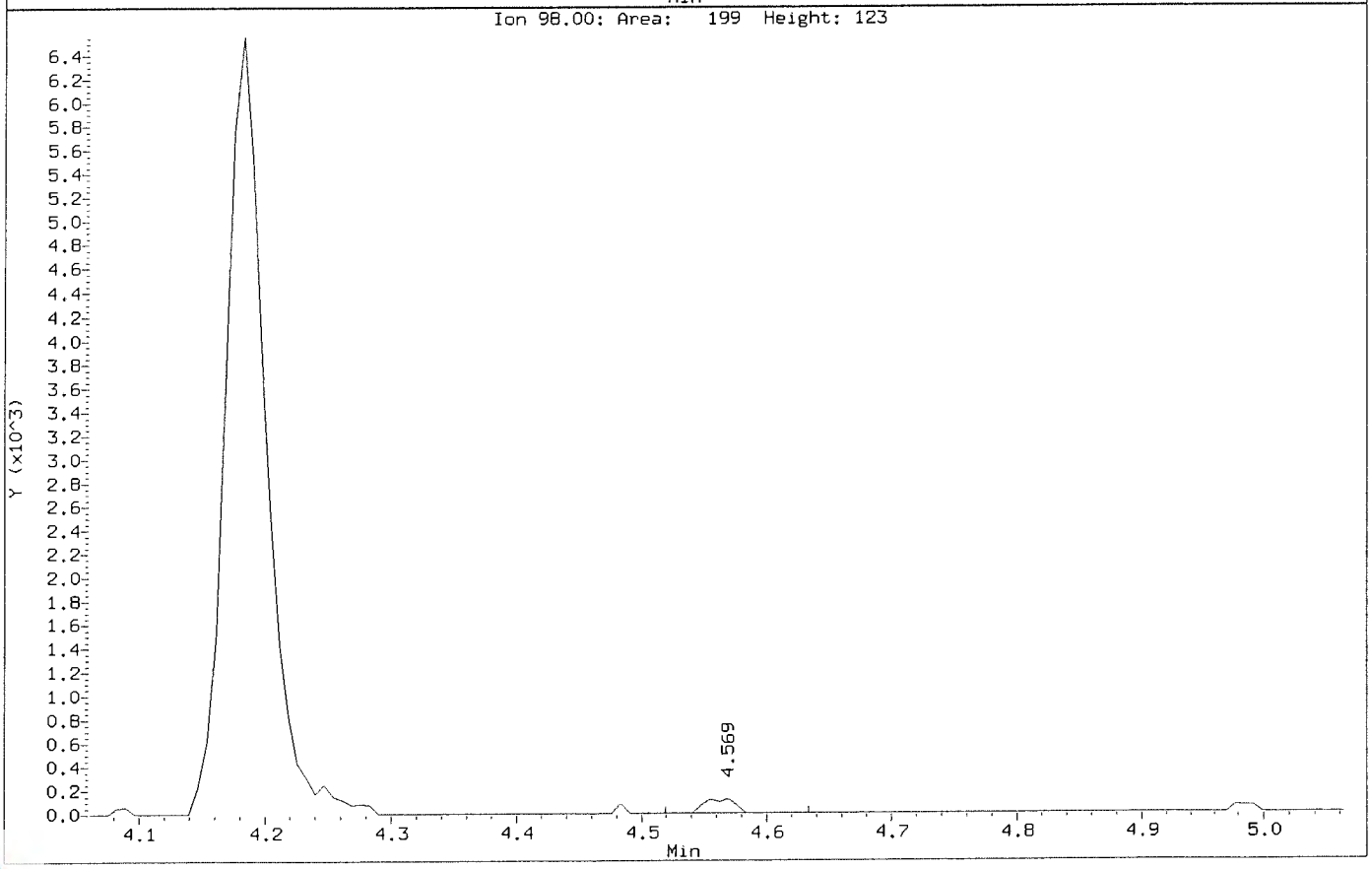




Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\X111803.D
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

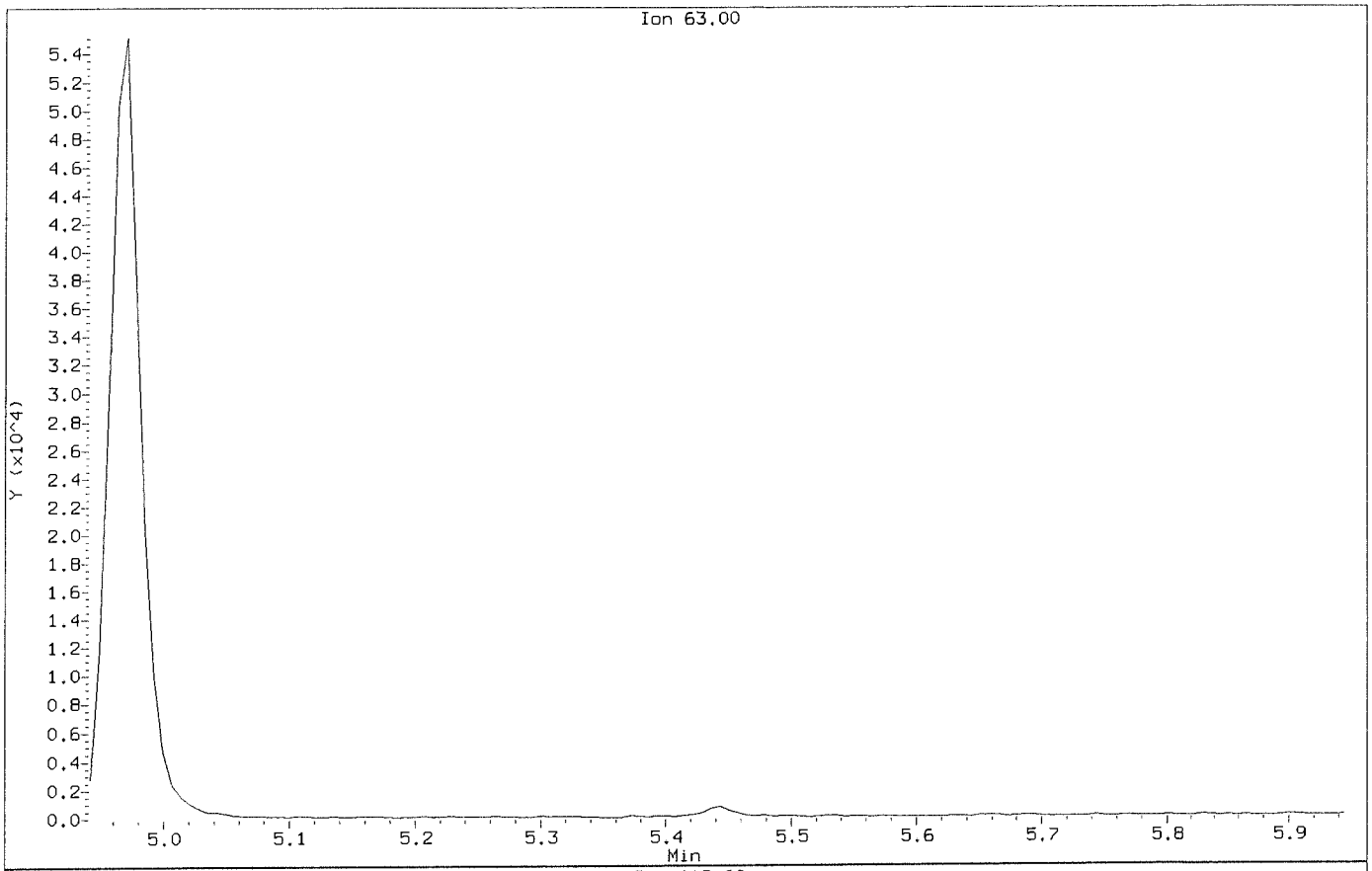
Compound: 1,2-Dichloroethane
CAS Number: 107-06-2

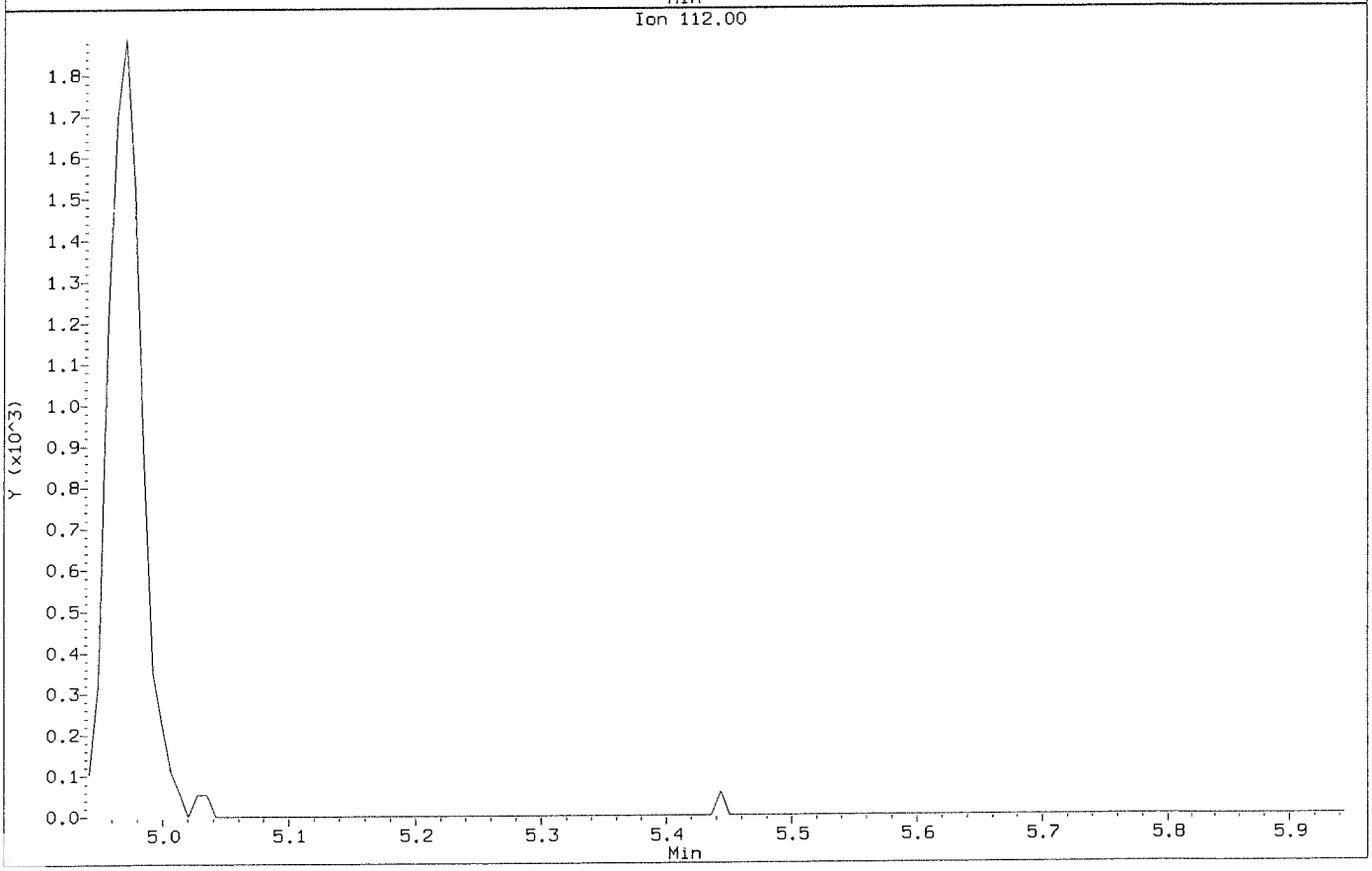




Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\Before2\X111803.D
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

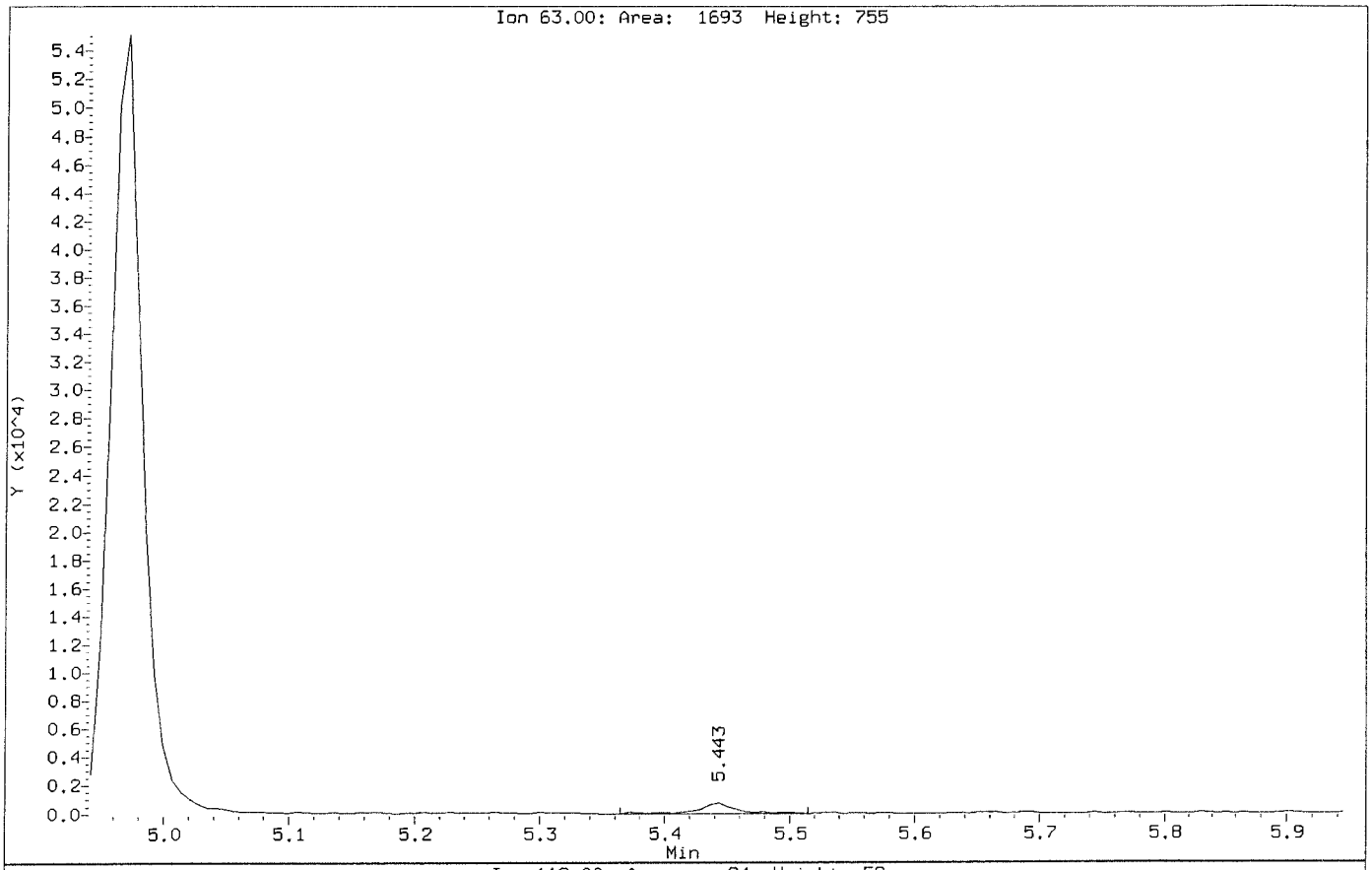
Compound: 1,2-Dichloropropane
CAS Number: 78-87-5

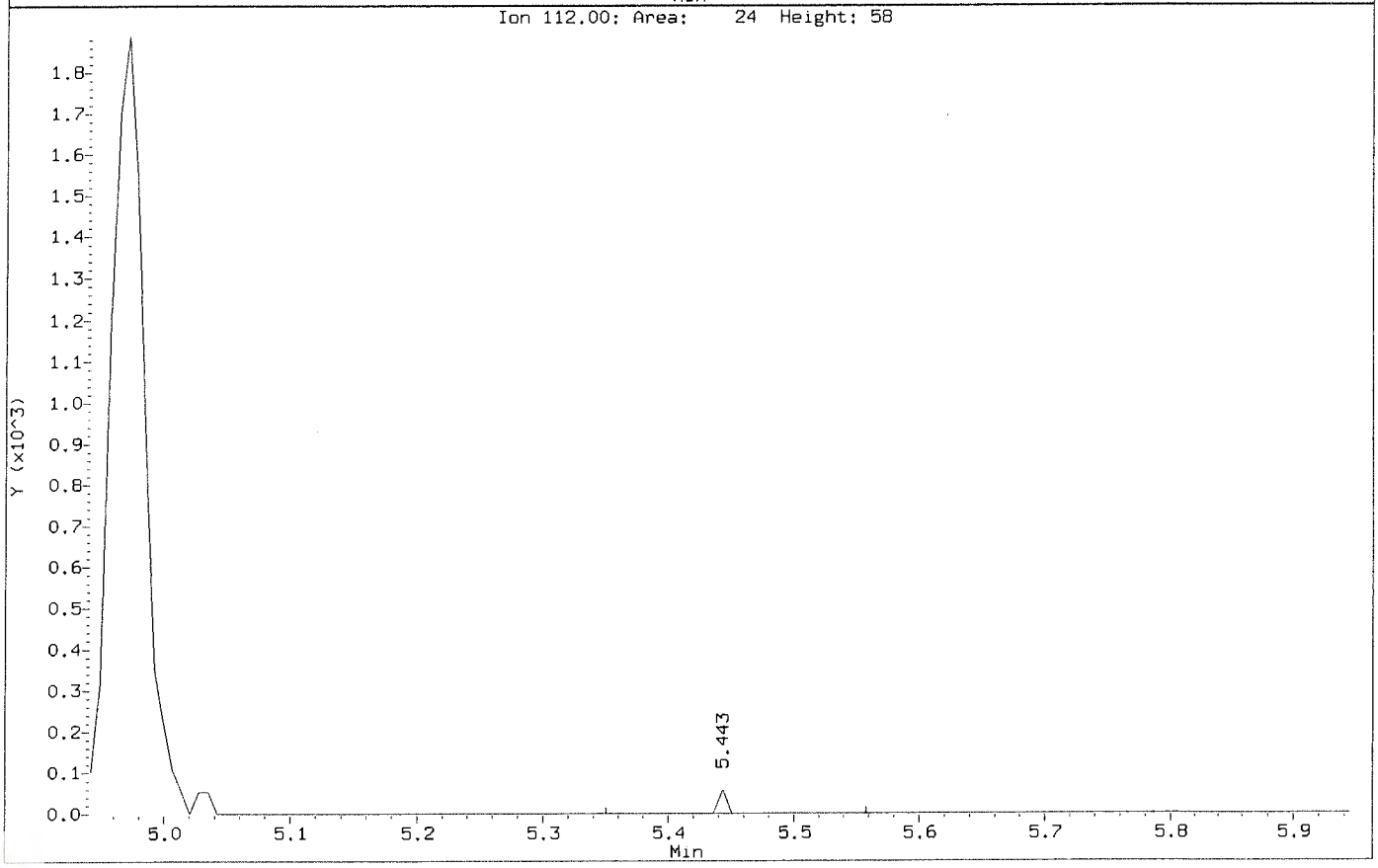




Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\X111803.D
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 1,2-Dichloropropane
CAS Number: 78-87-5





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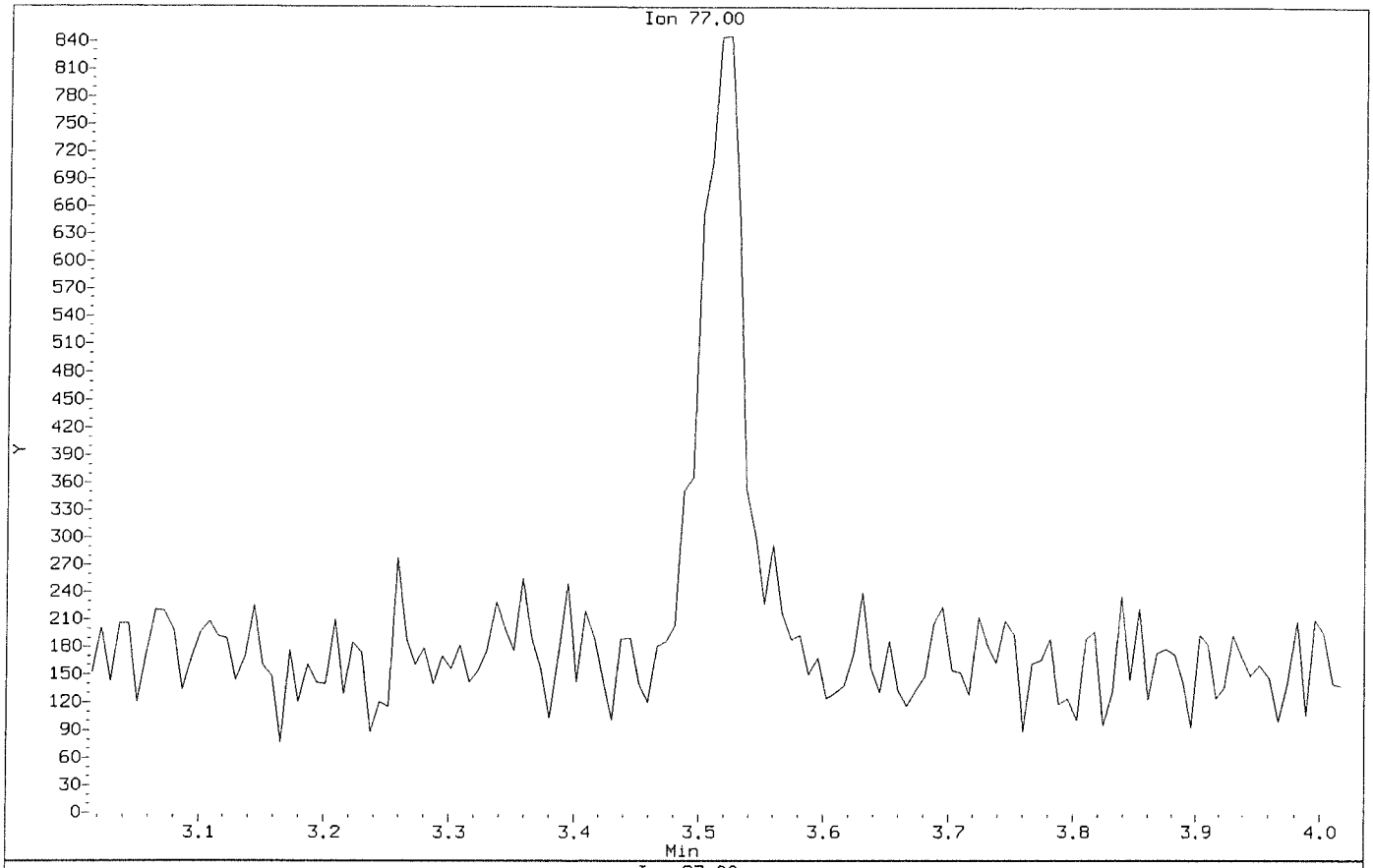
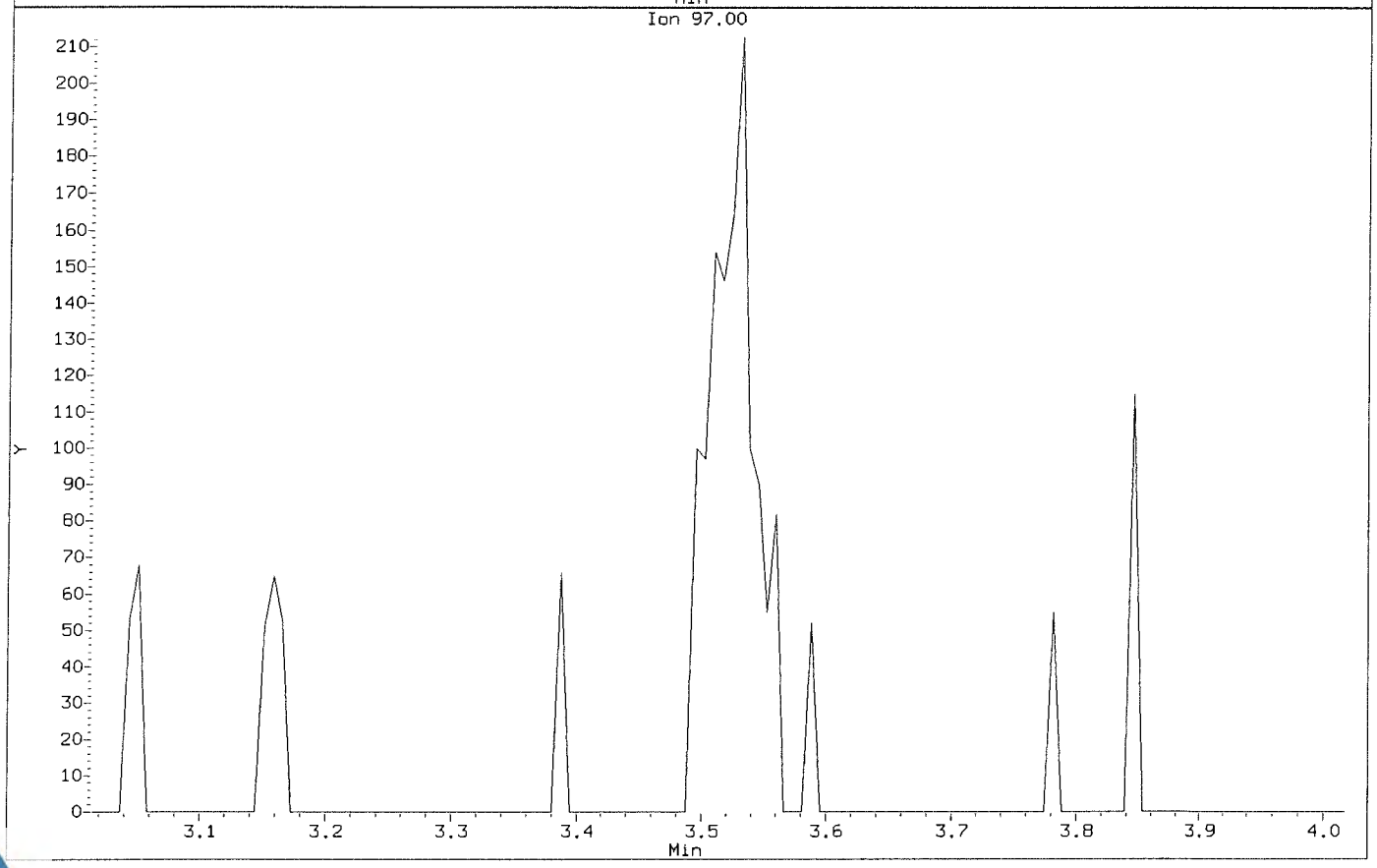
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 2,2-Dichloropropane
CAS Number: 594-20-7





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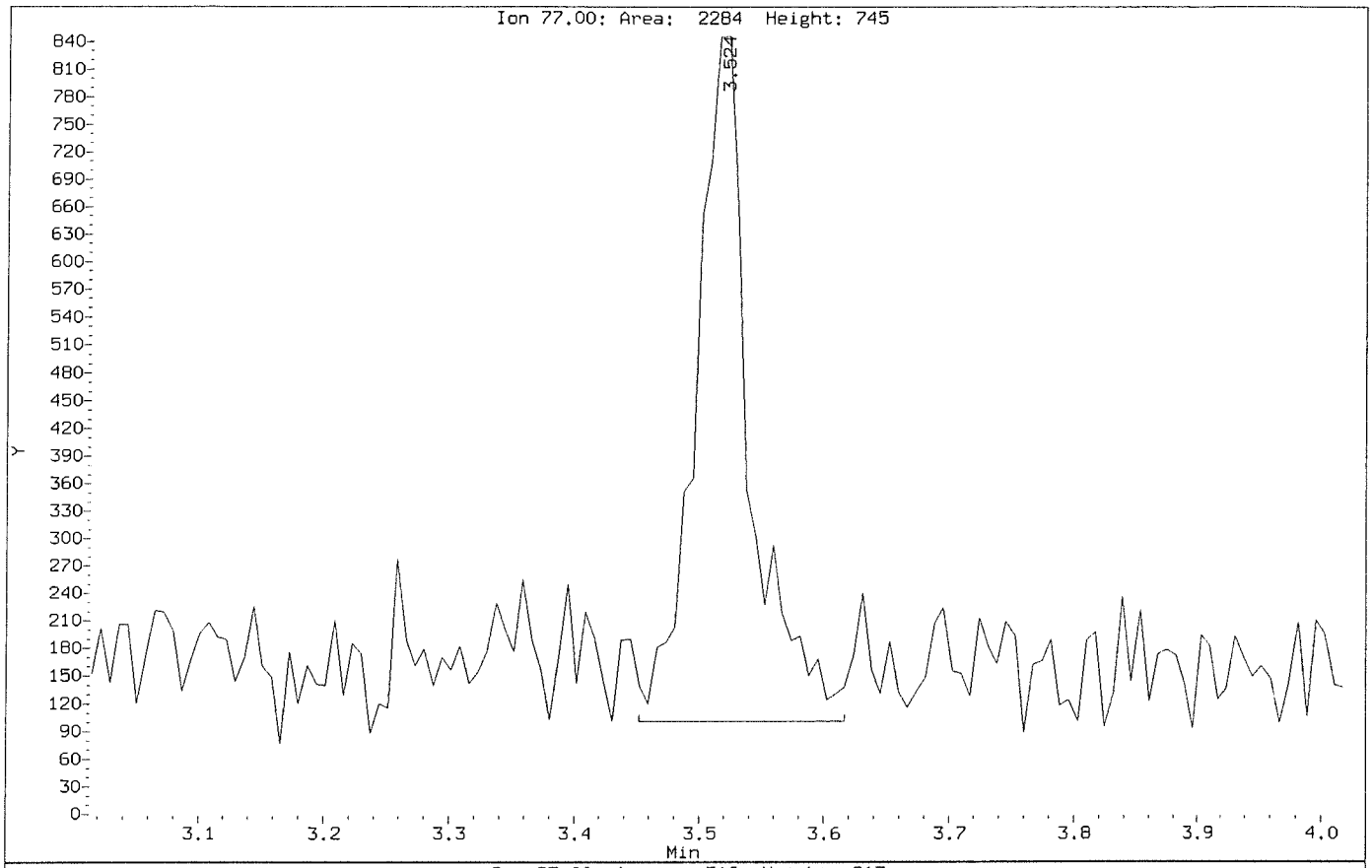
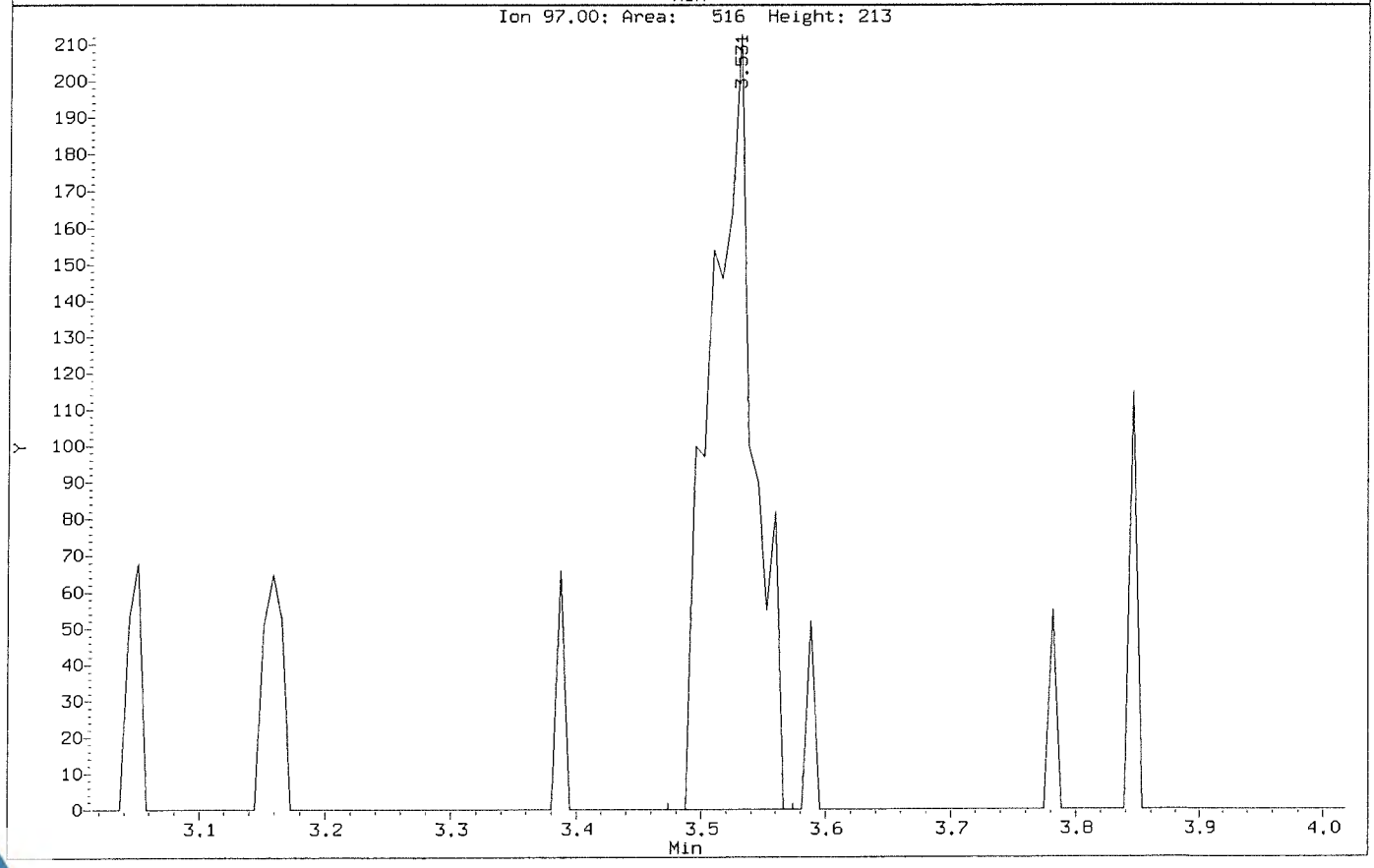
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 2,2-Dichloropropane
CAS Number: 594-20-7





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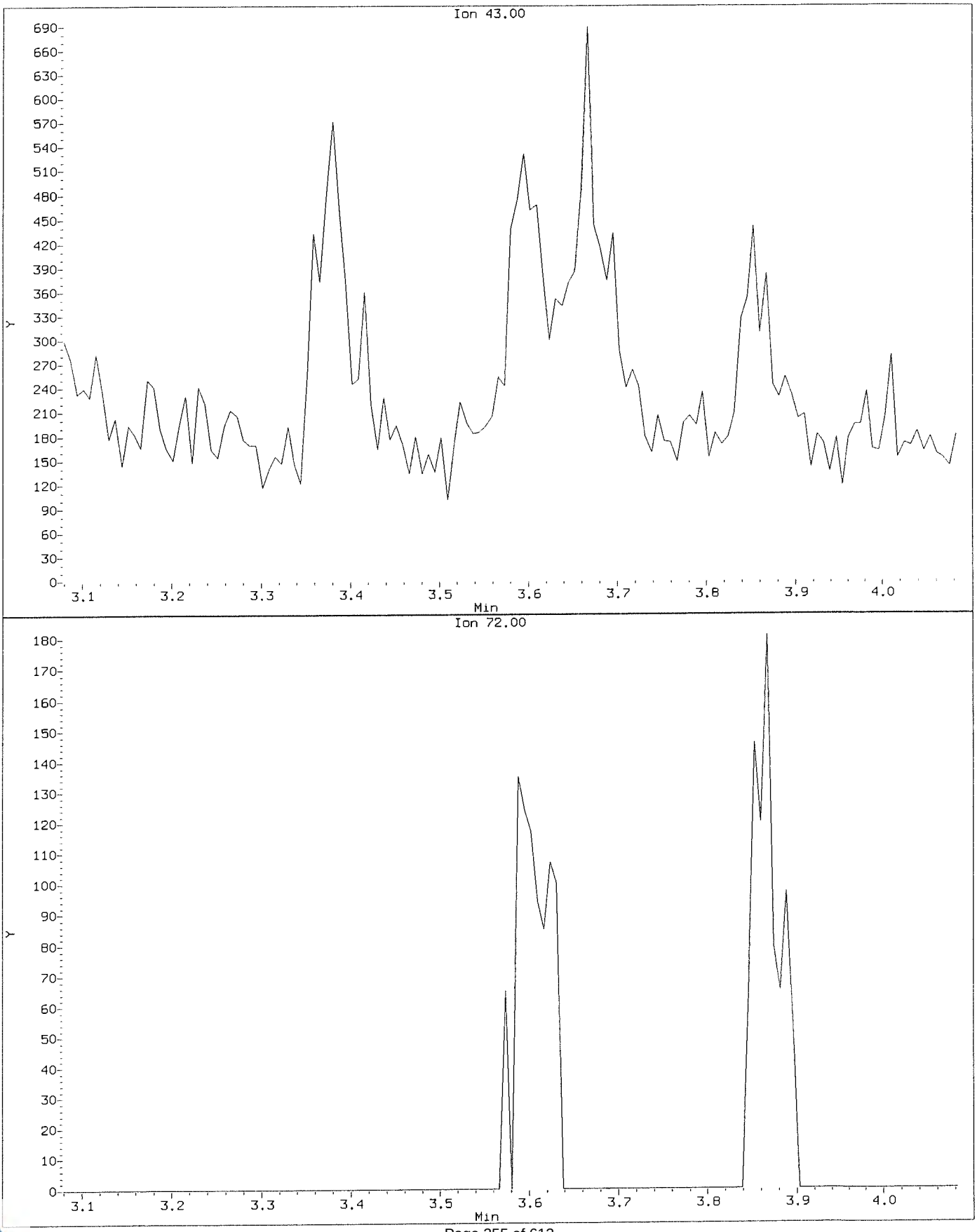
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 2-Butanone
CAS Number: 78-93-3



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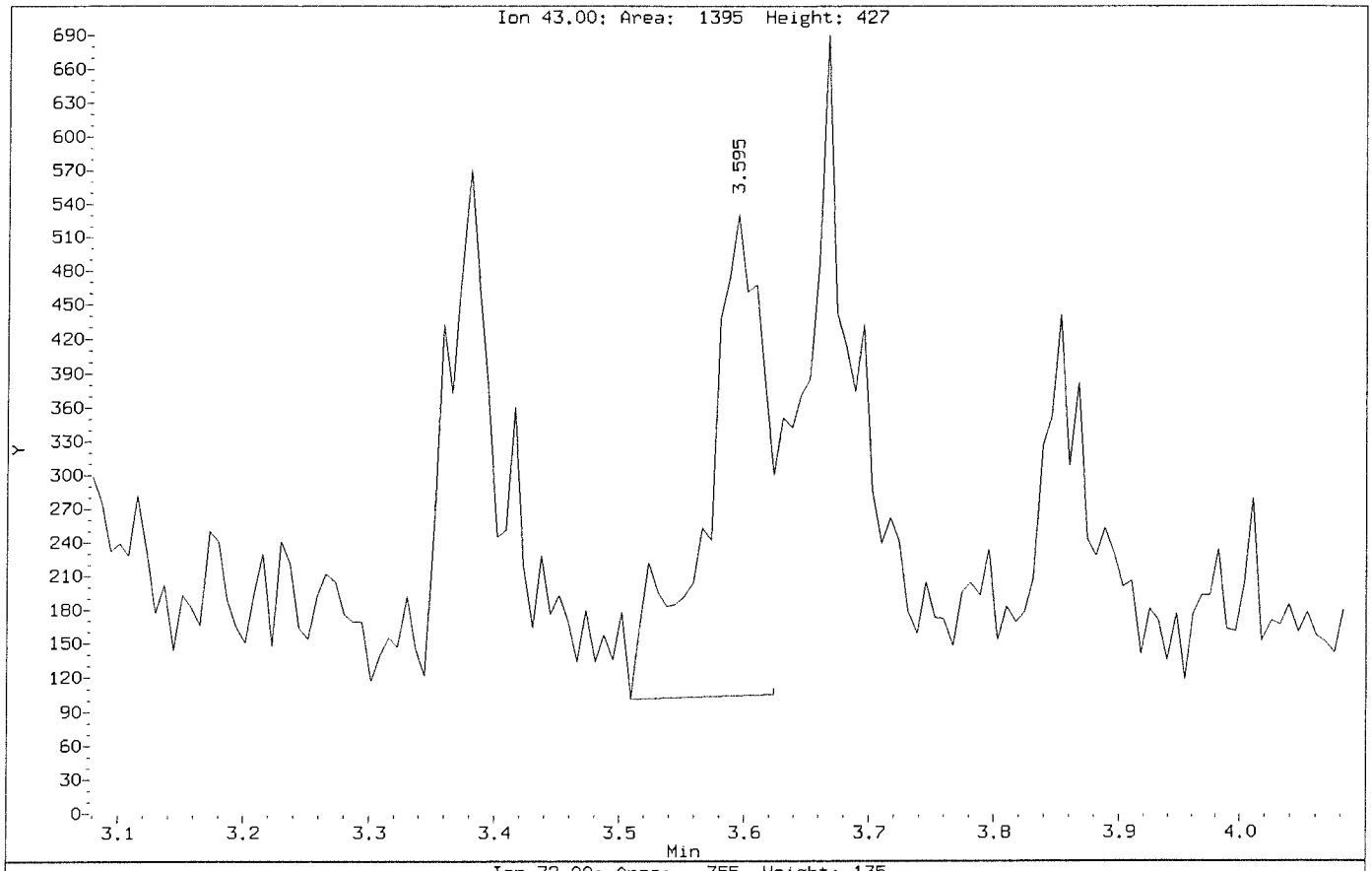
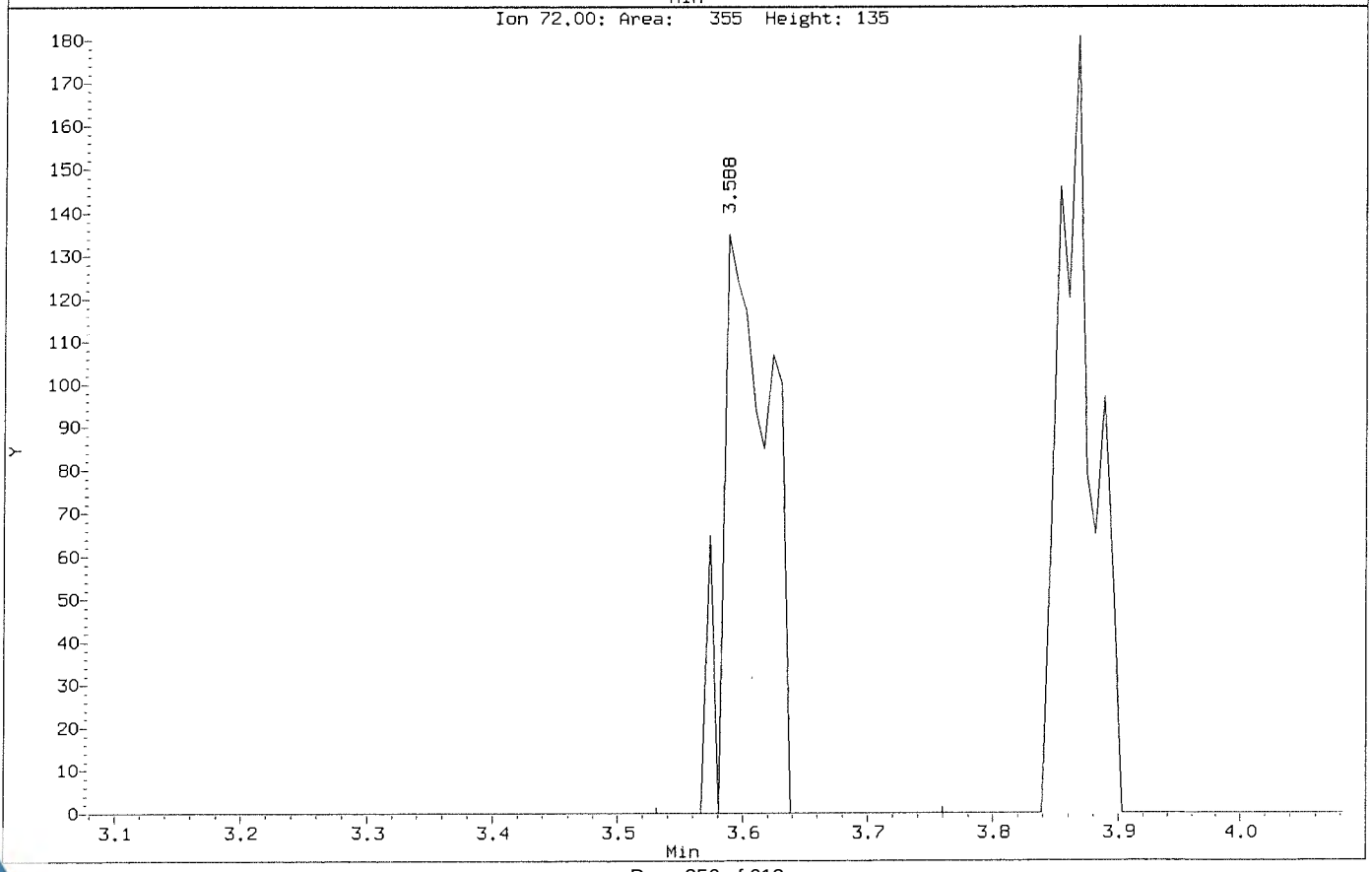
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: 2-Butanone
CAS Number: 78-93-3





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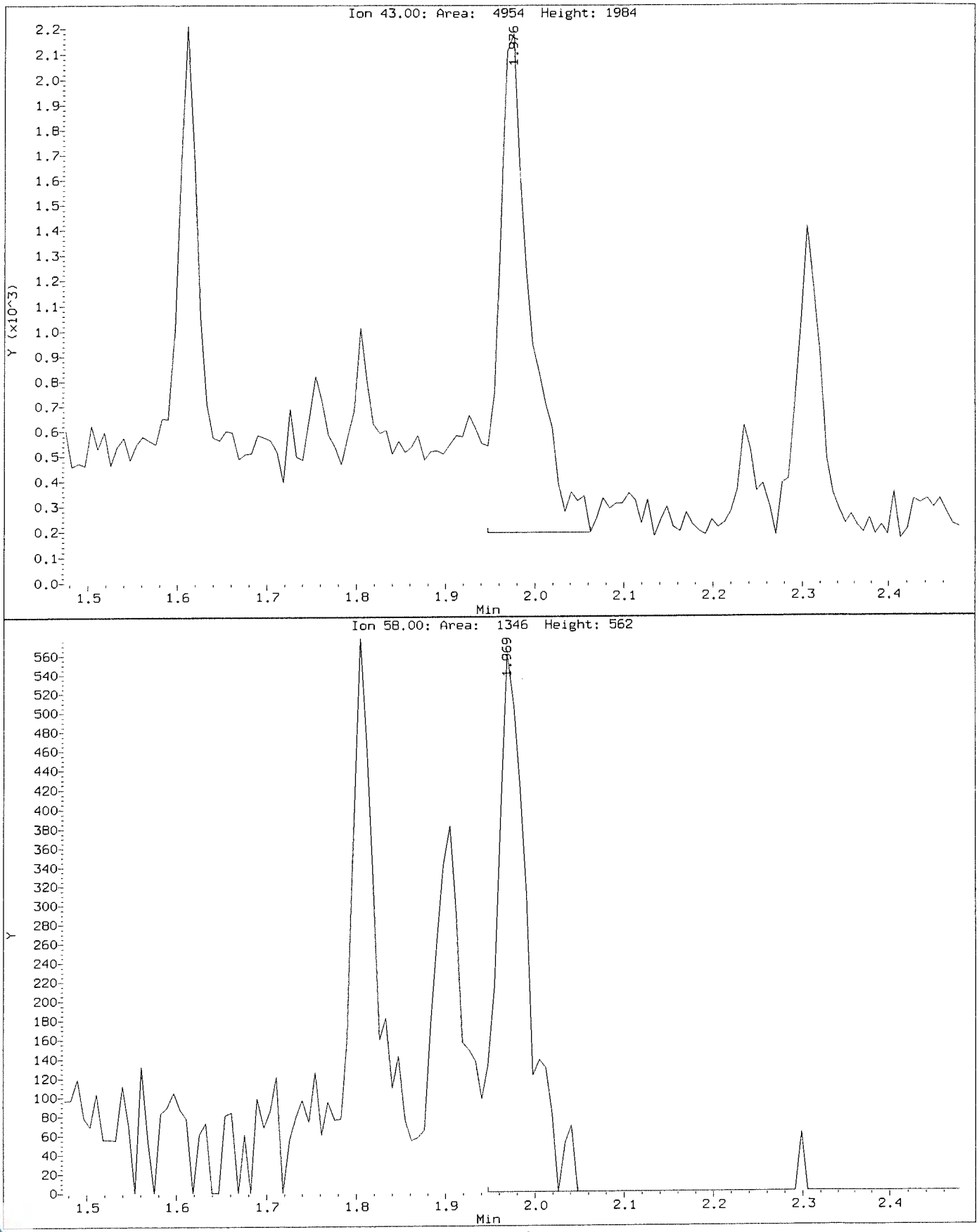
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Acetone
CAS Number: 67-64-1



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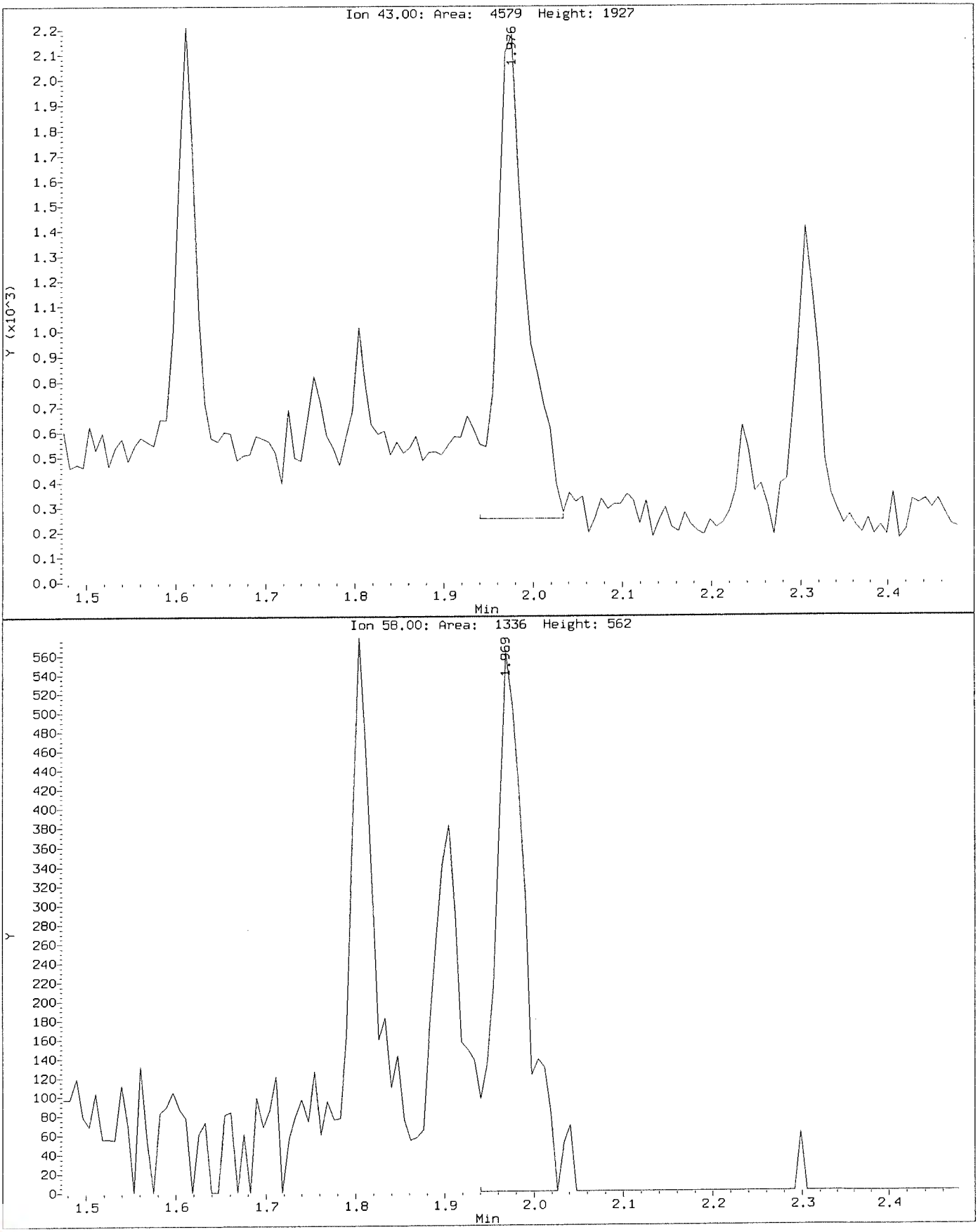
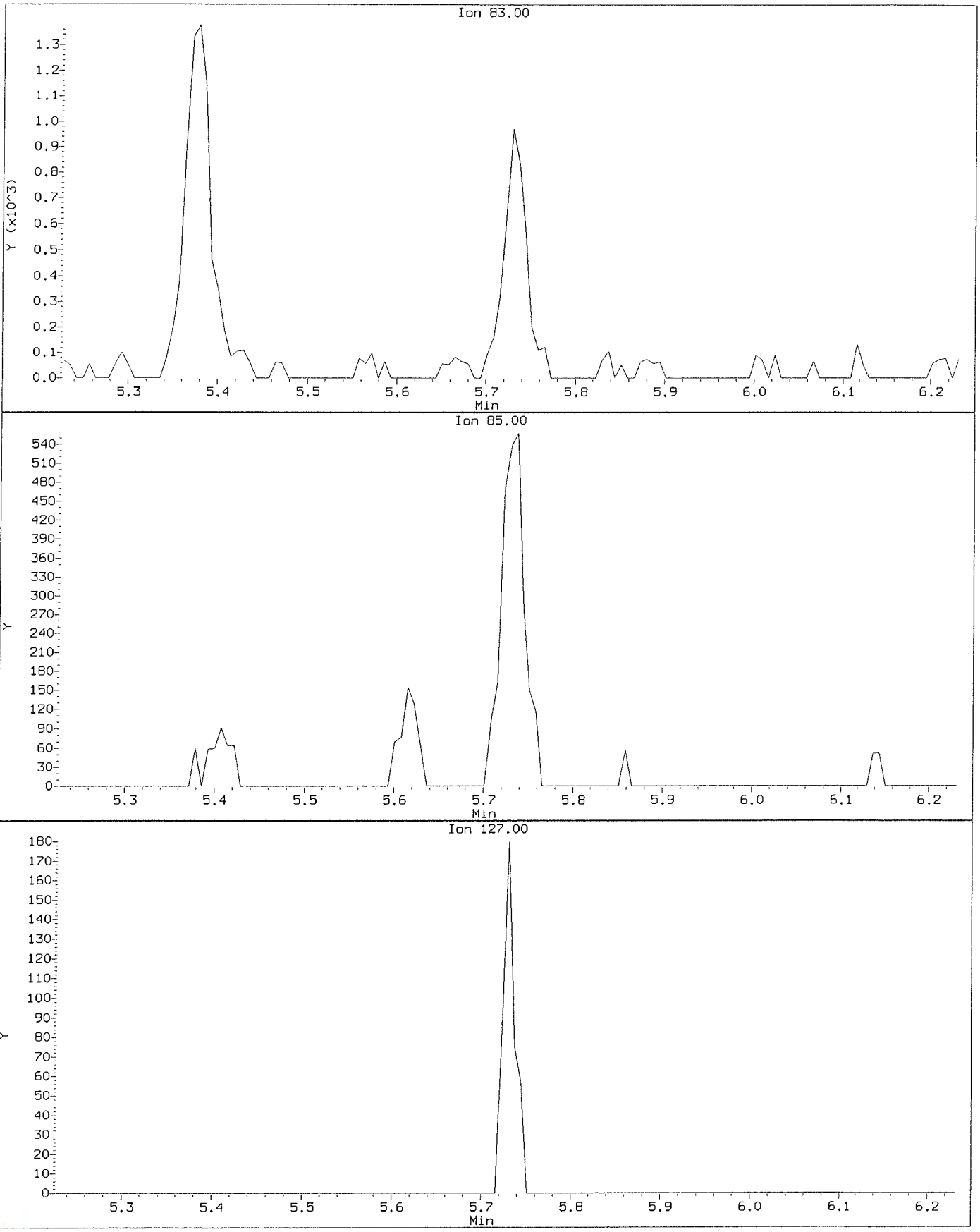
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Acetone
CAS Number: 67-64-1



Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\Before2\X111803.D
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Bromodichloromethane
CAS Number: 75-27-4



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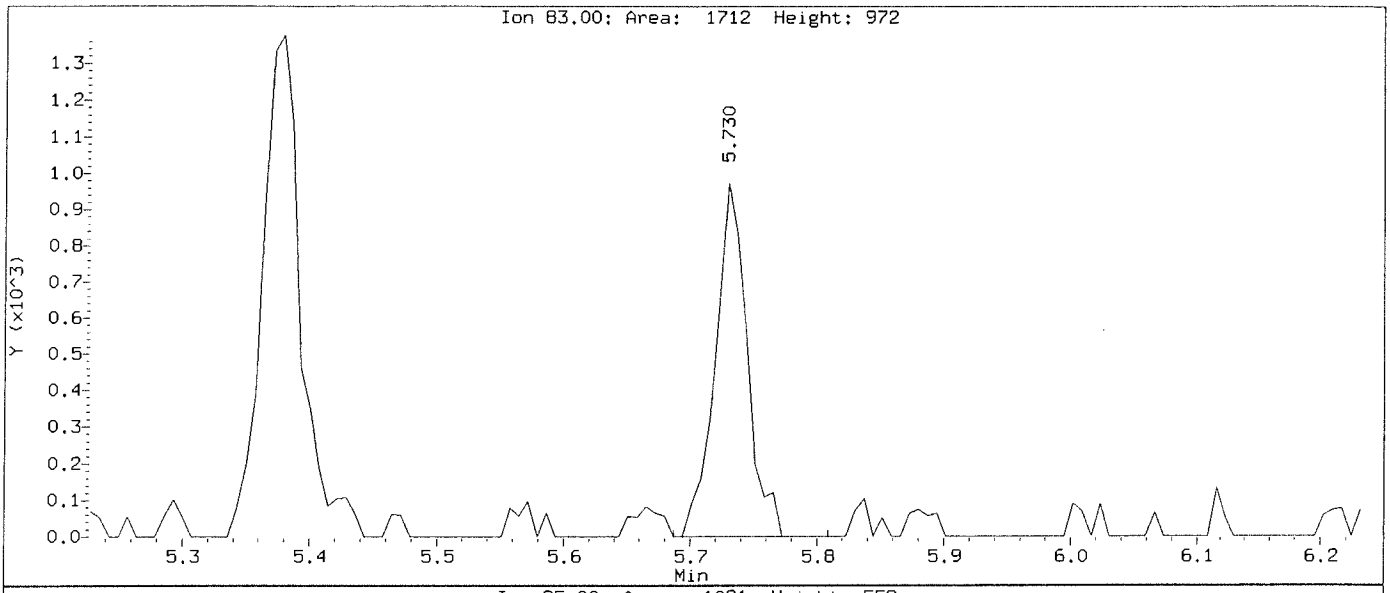
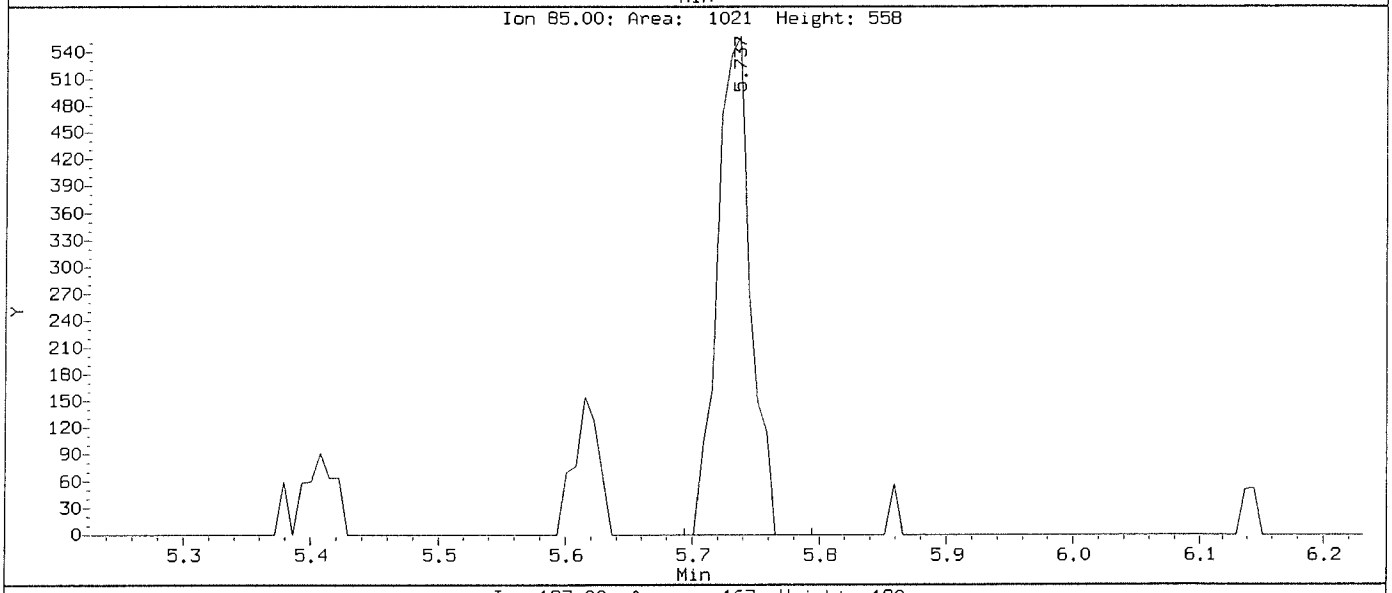
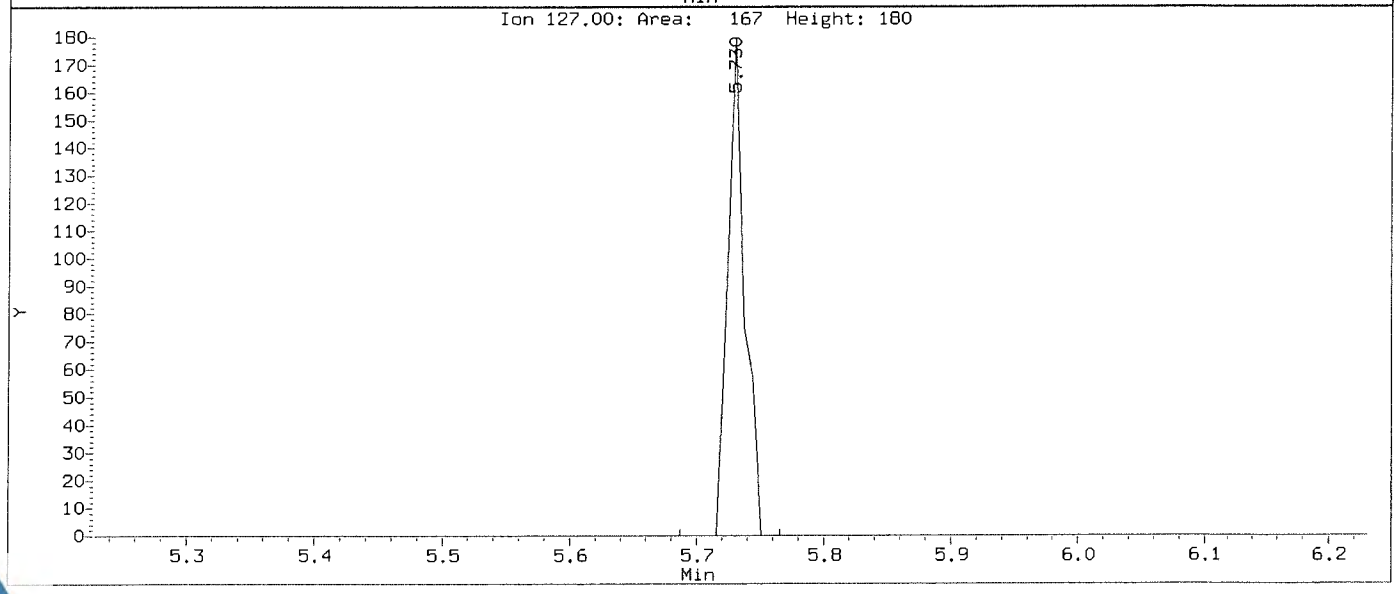
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Bromodichloromethane
CAS Number: 75-27-4

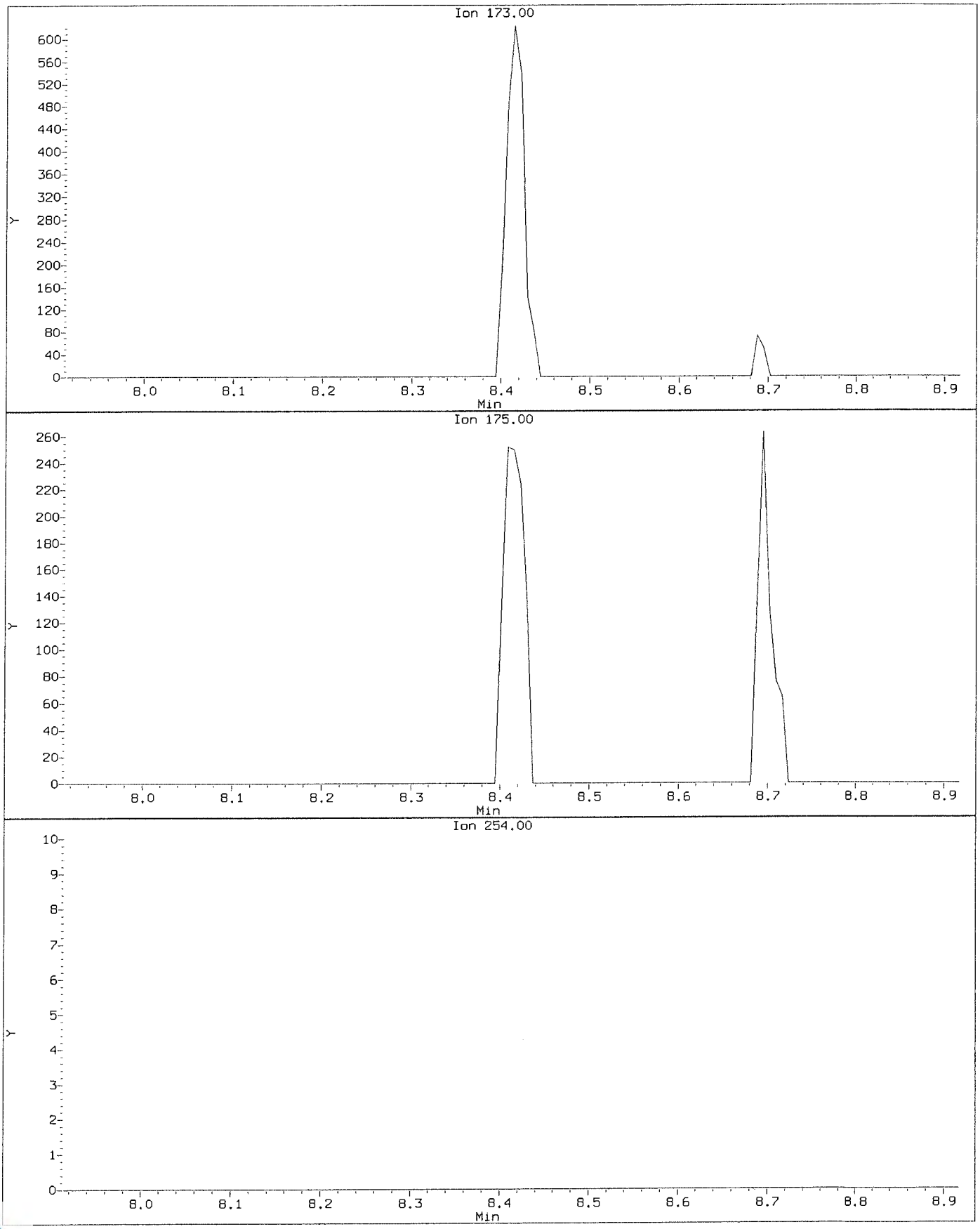






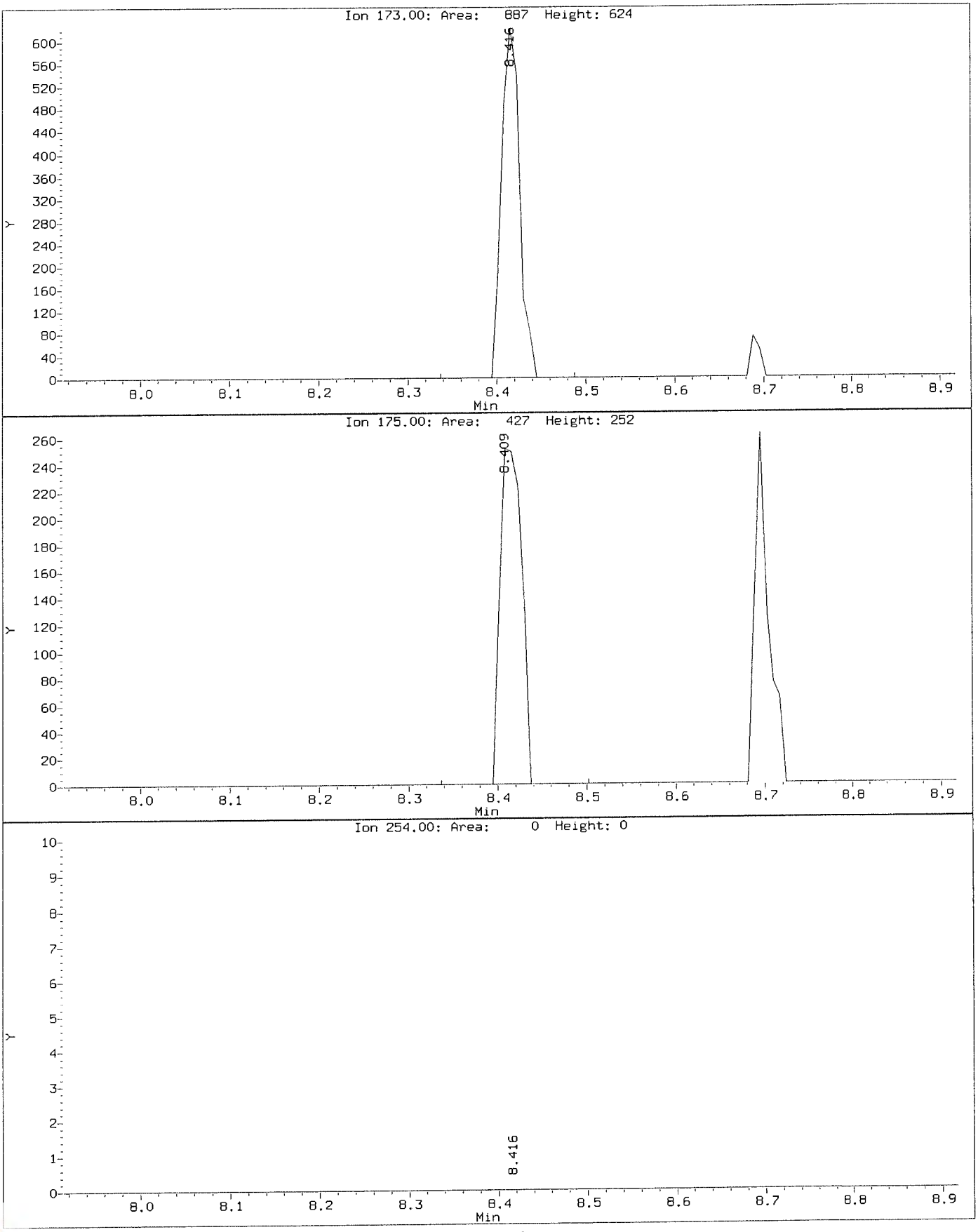
Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\Before2\X111803.D
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Bromoform
CAS Number: 75-25-2



Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\X111803.D
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Bromoform
CAS Number: 75-25-2



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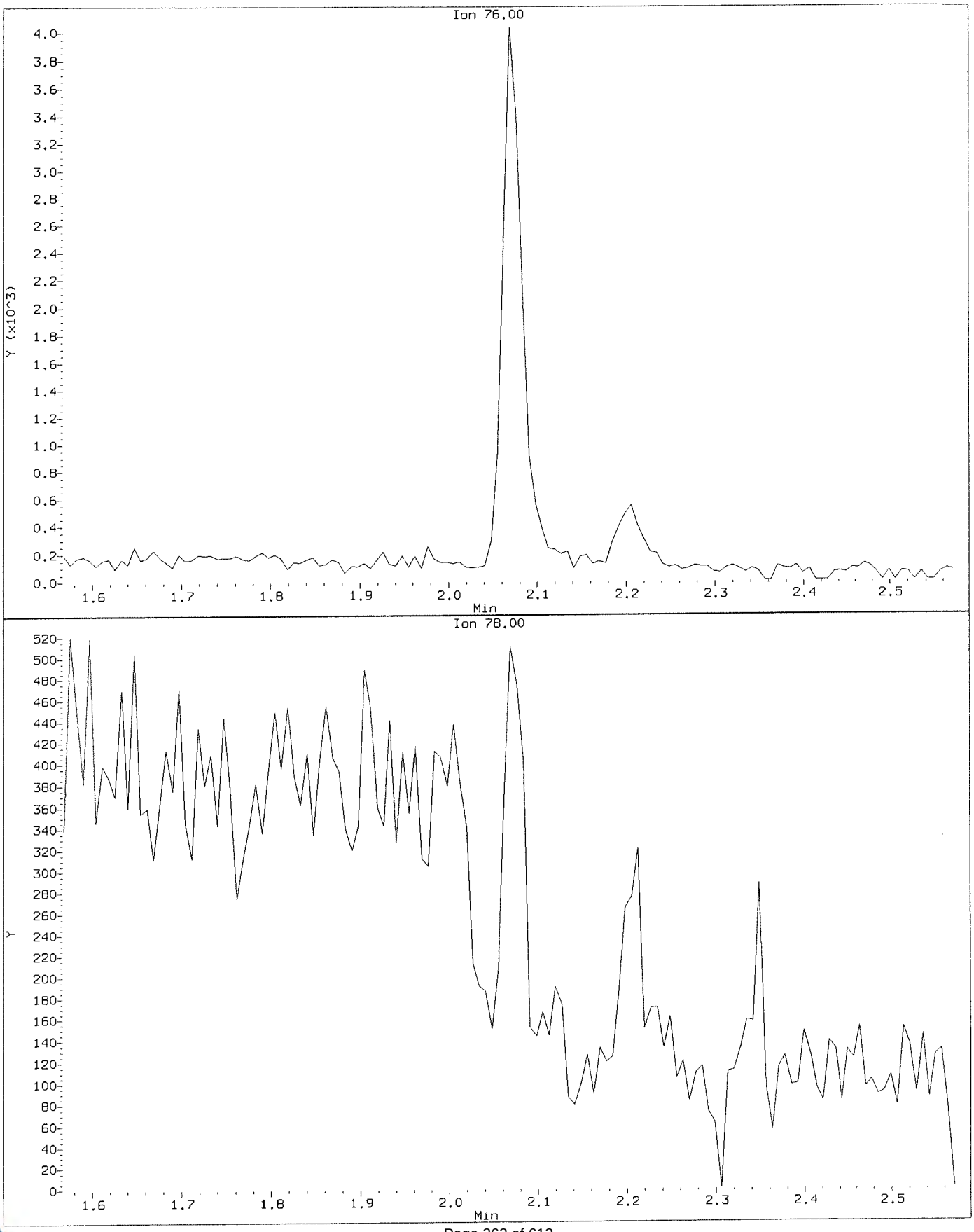
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Carbon Disulfide
CAS Number: 75-15-0



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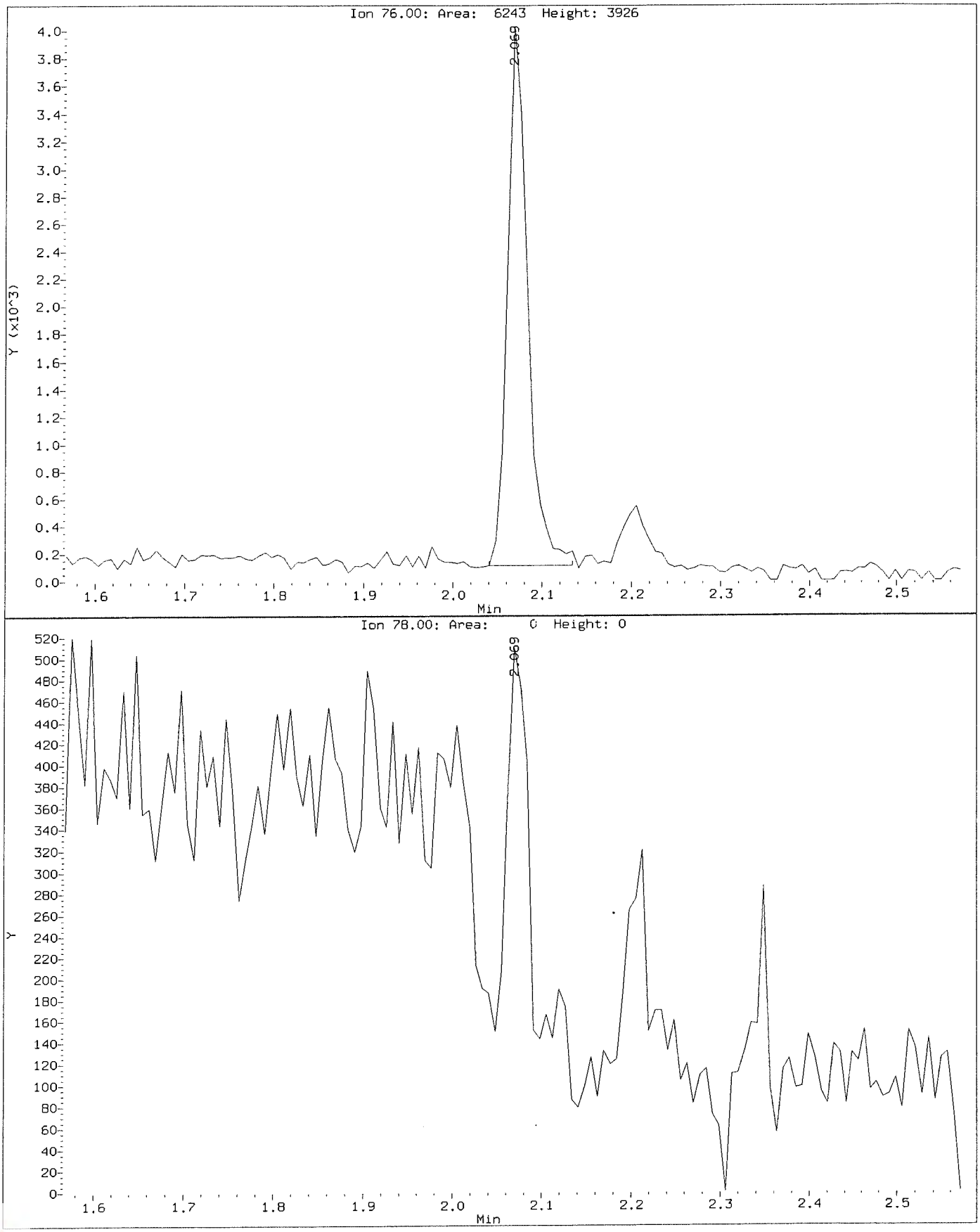
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Carbon Disulfide
CAS Number: 75-15-0



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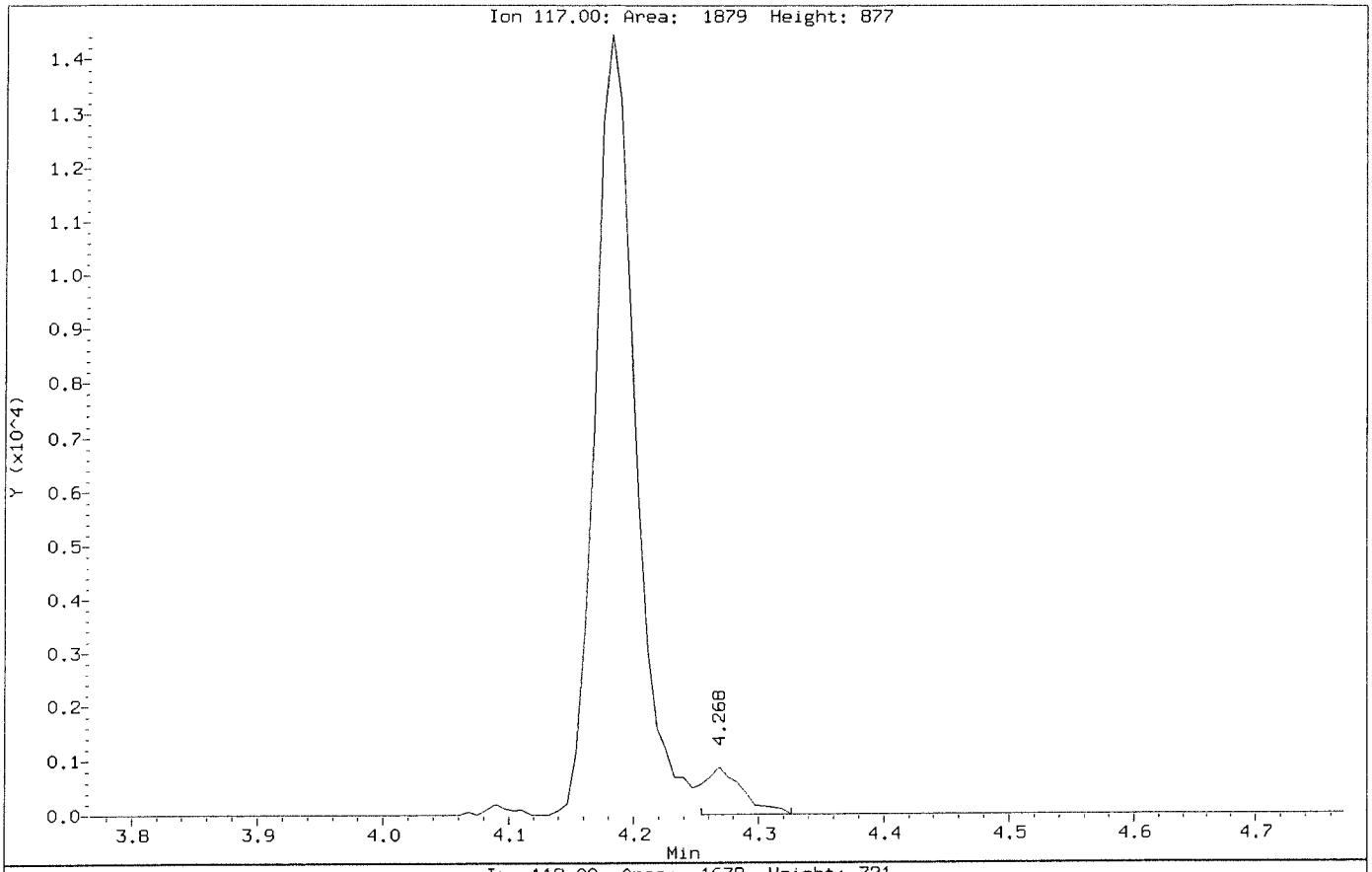
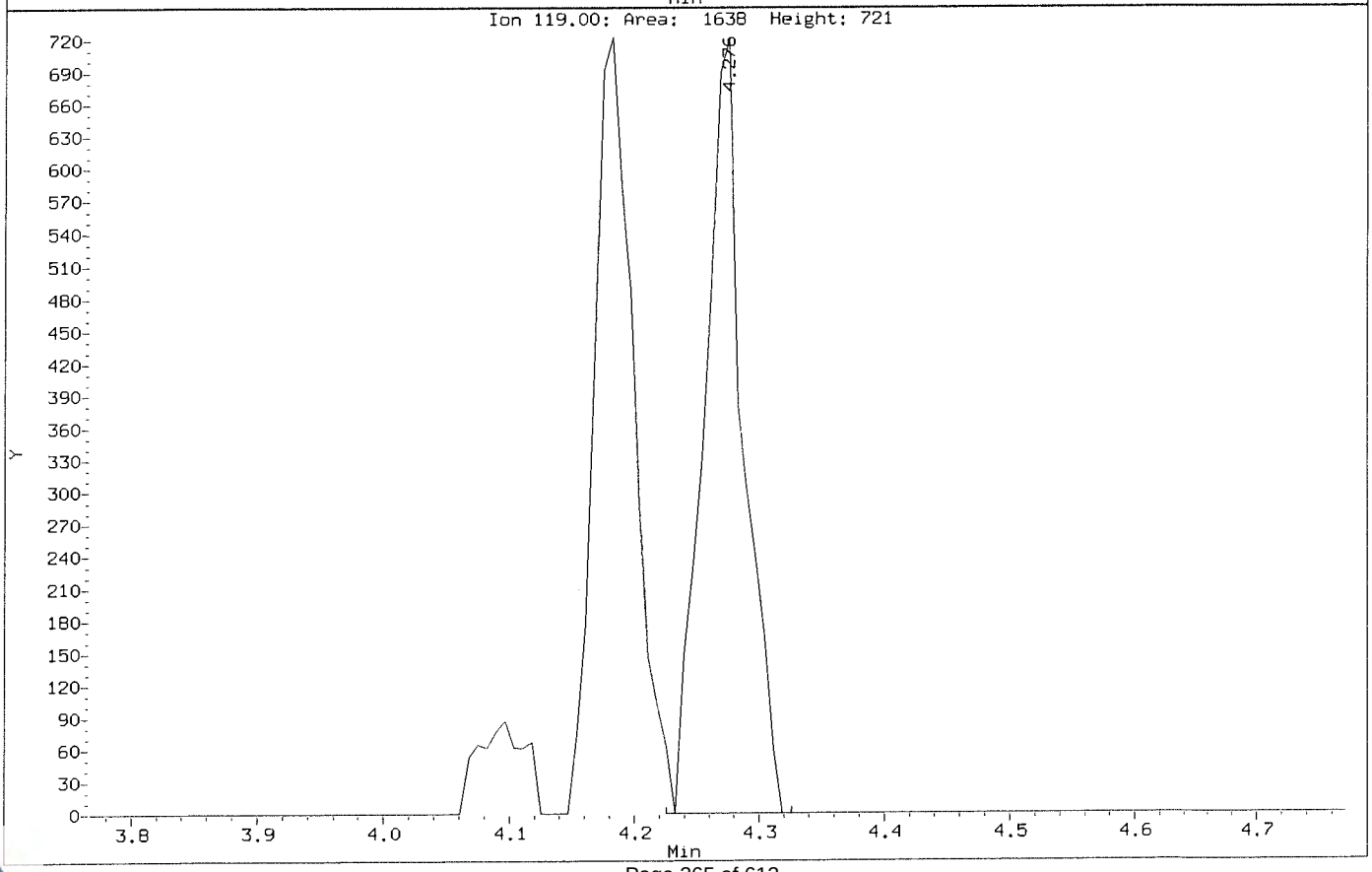
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

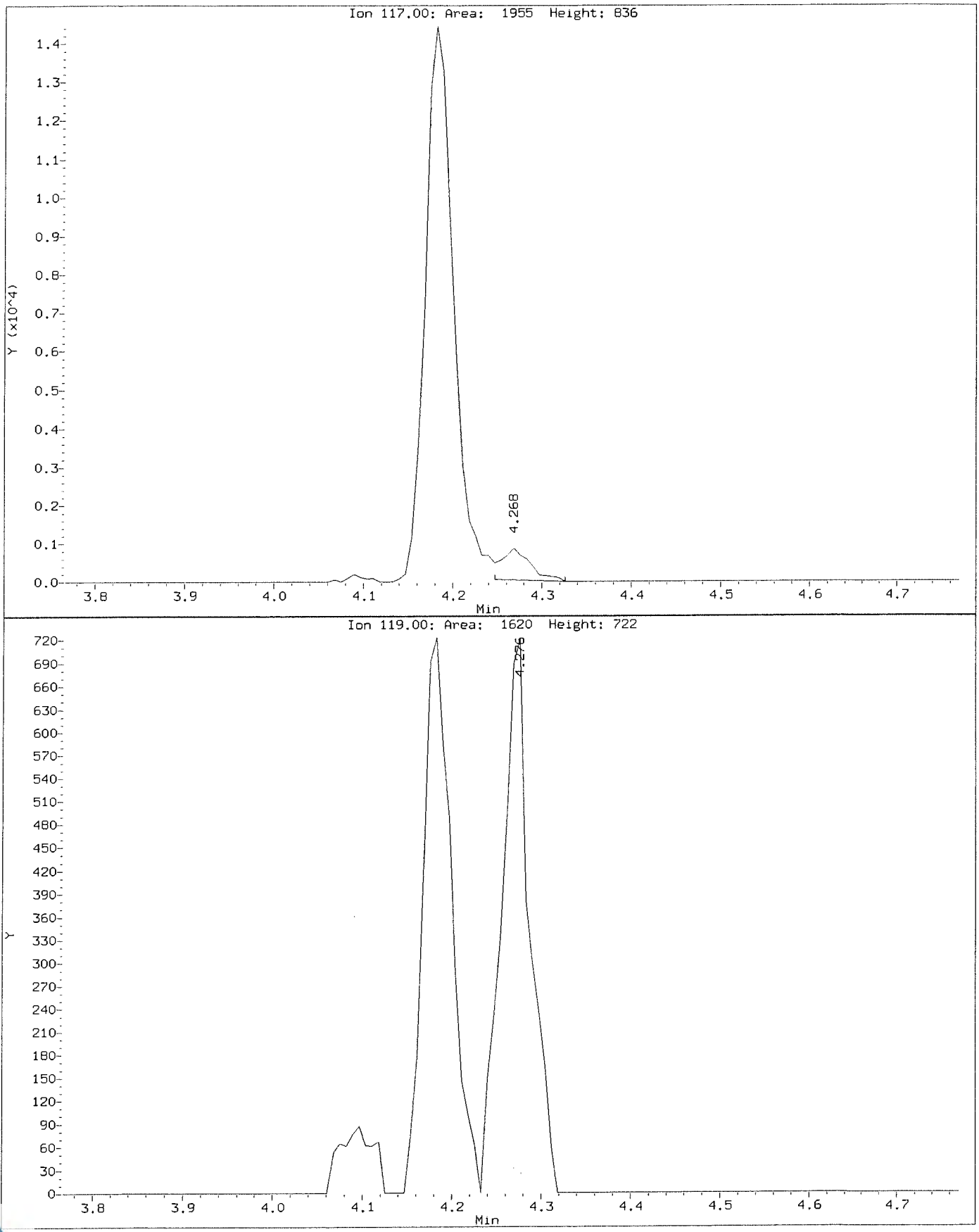
Compound: Carbon Tetrachloride
CAS Number: 56-23-5





Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\X111803.D
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Carbon Tetrachloride
CAS Number: 56-23-5



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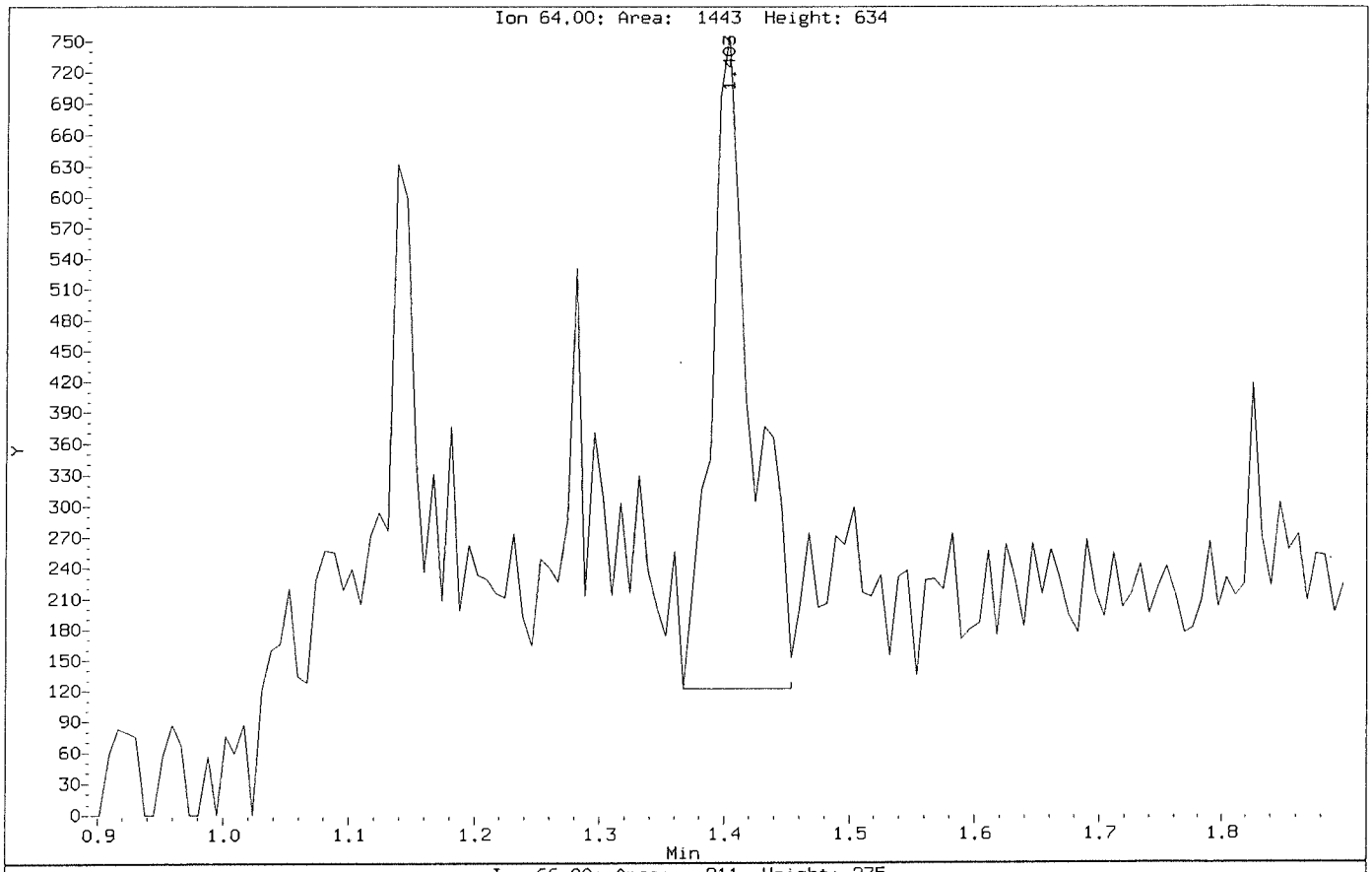
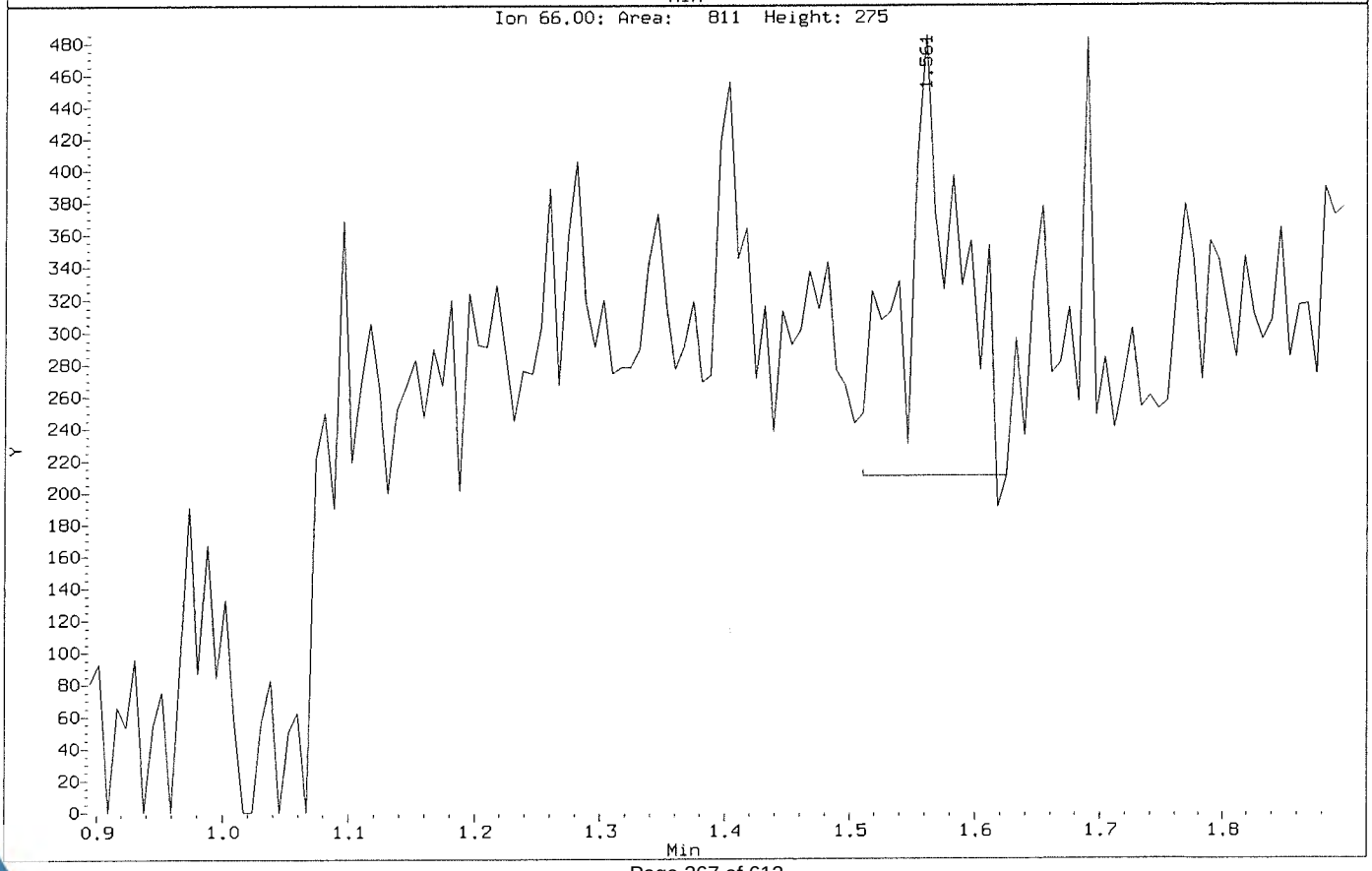
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

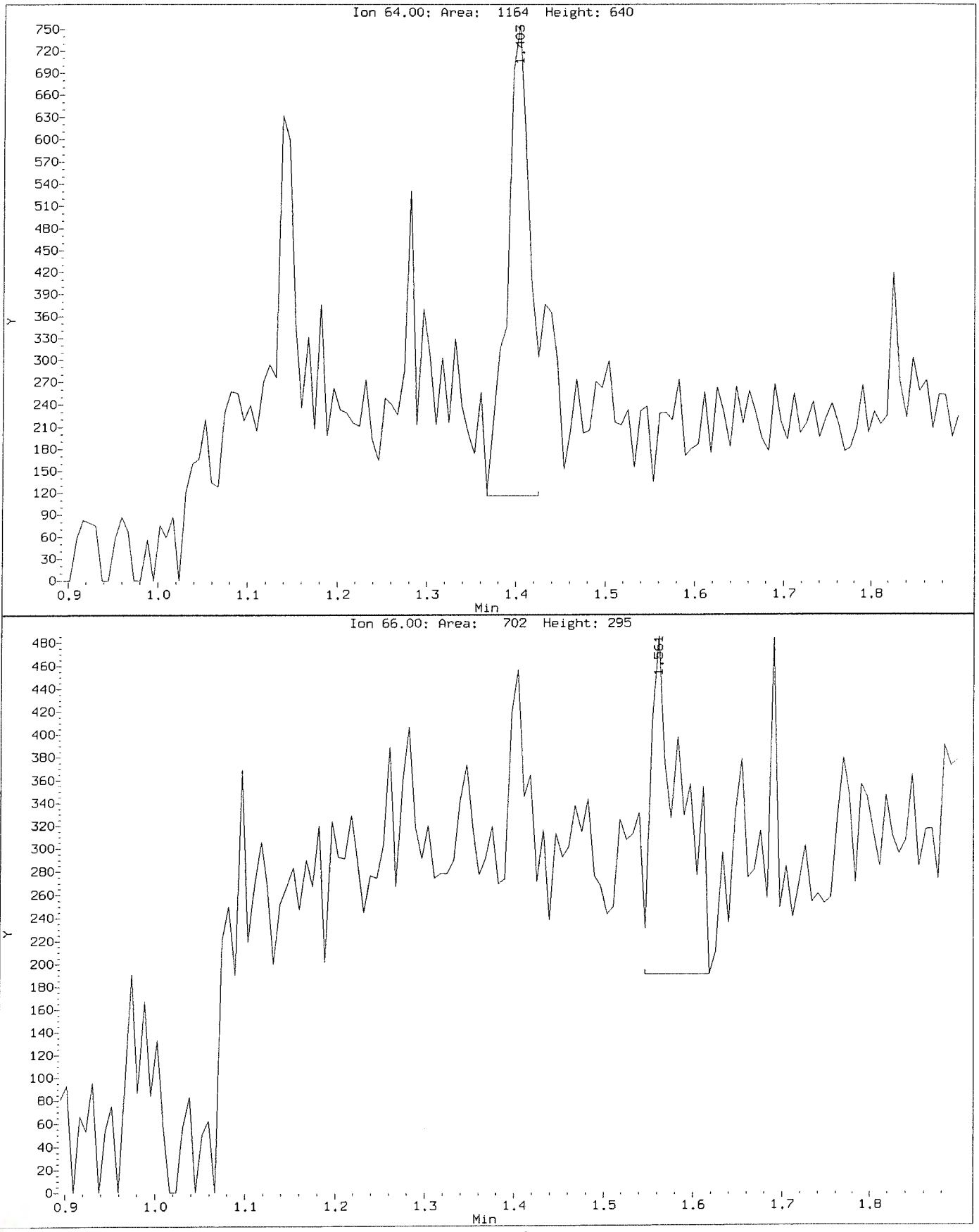
Compound: Chloroethane
CAS Number: 75-00-3





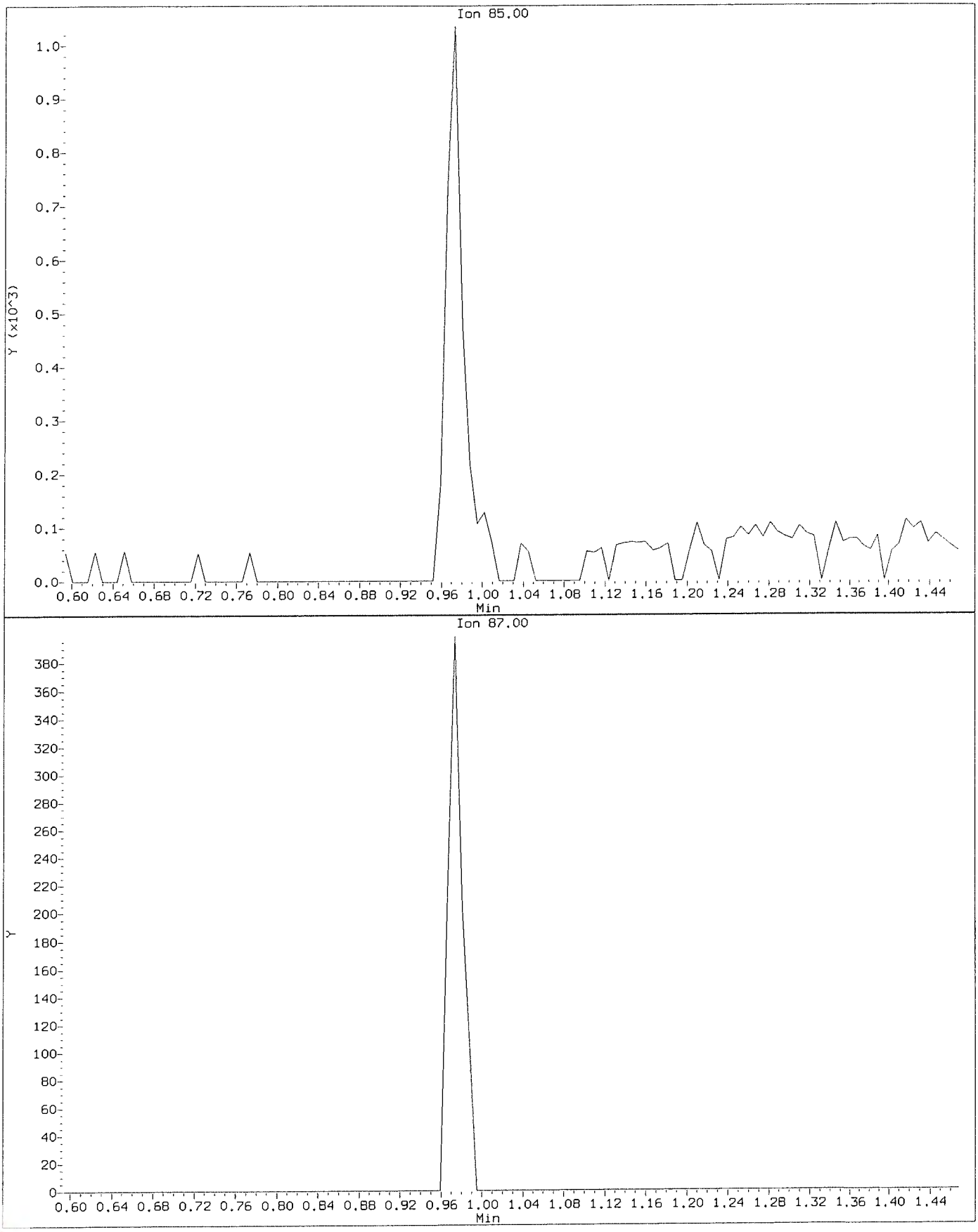
Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\X111803.D
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Chloroethane
CAS Number: 75-00-3



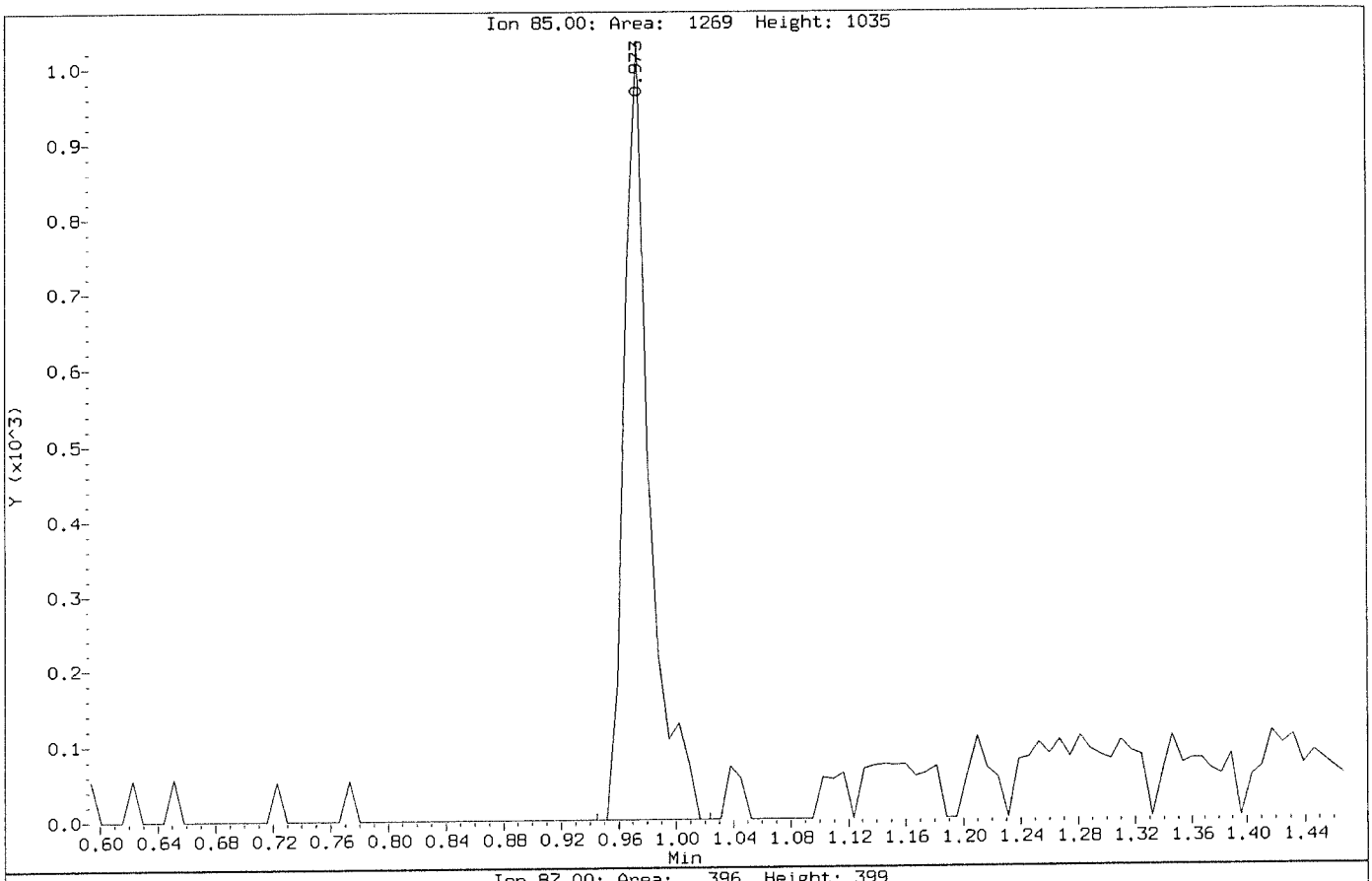
Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\Before2\X111803.D
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

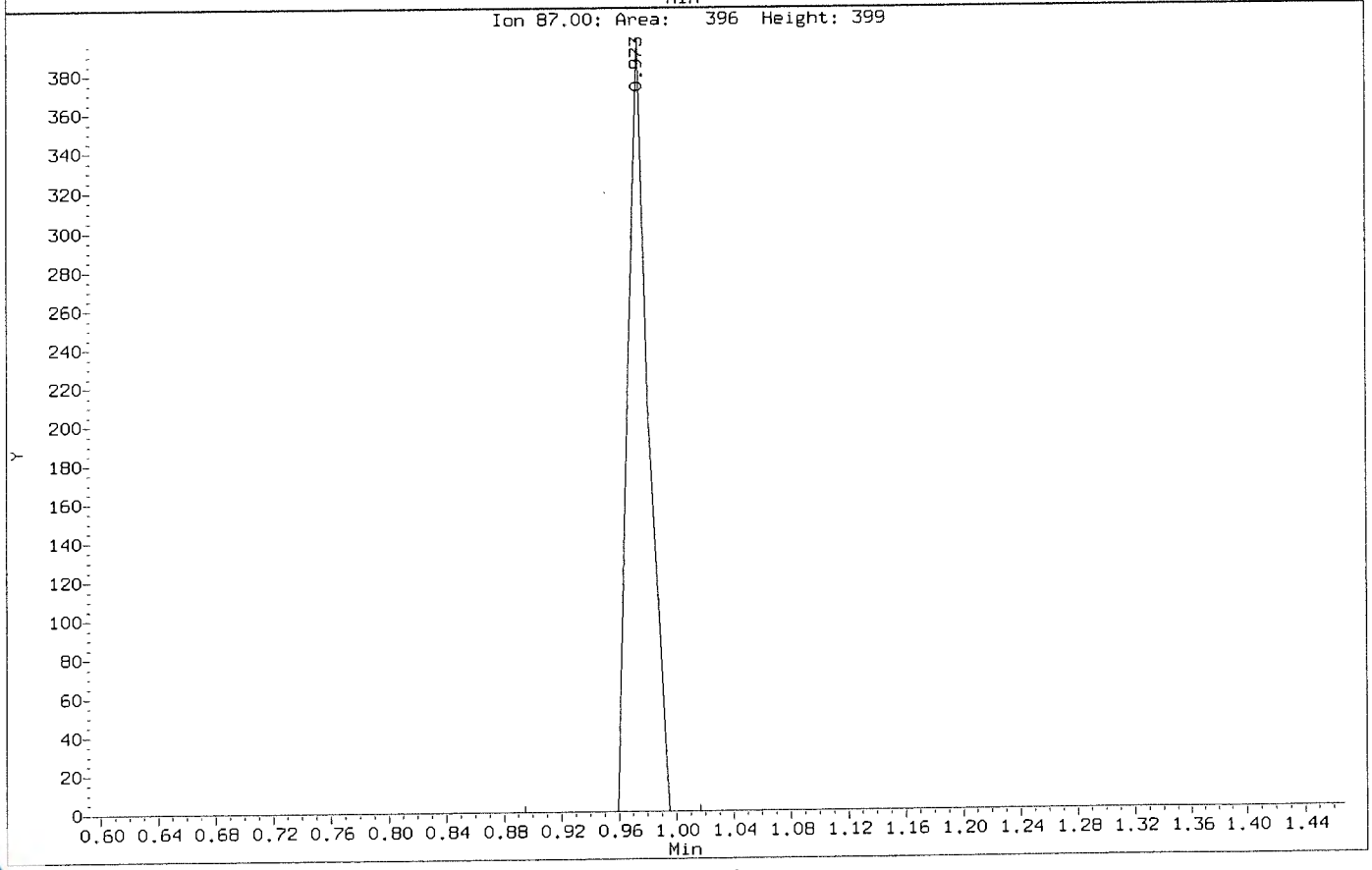
Compound: Dichlorodifluoromethane
CAS Number: 75-71-8



Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\X111803.D
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

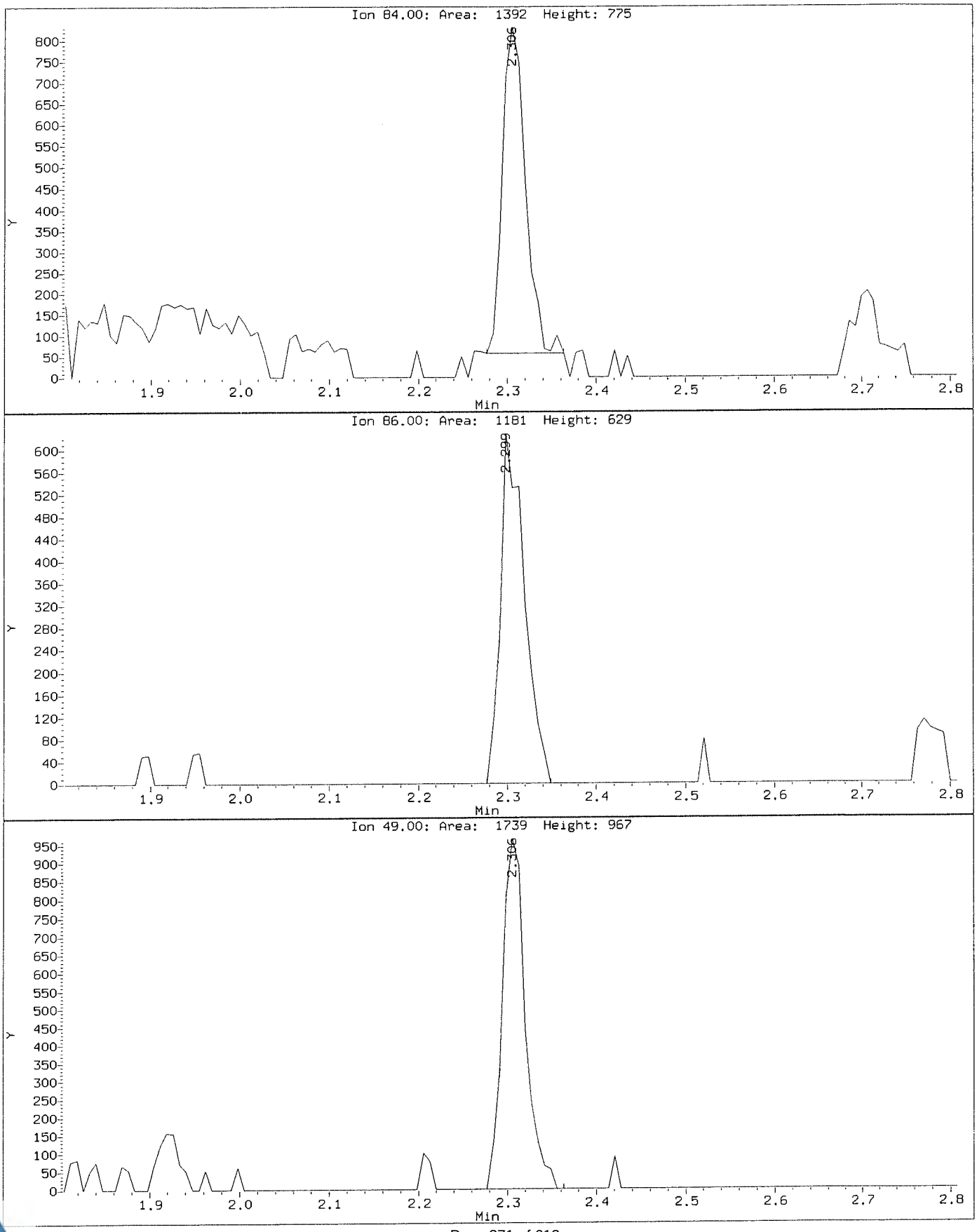
Compound: Dichlorodifluoromethane
CAS Number: 75-71-8





Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\Before2\X111803.D
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Methylene Chloride
CAS Number: 75-09-2



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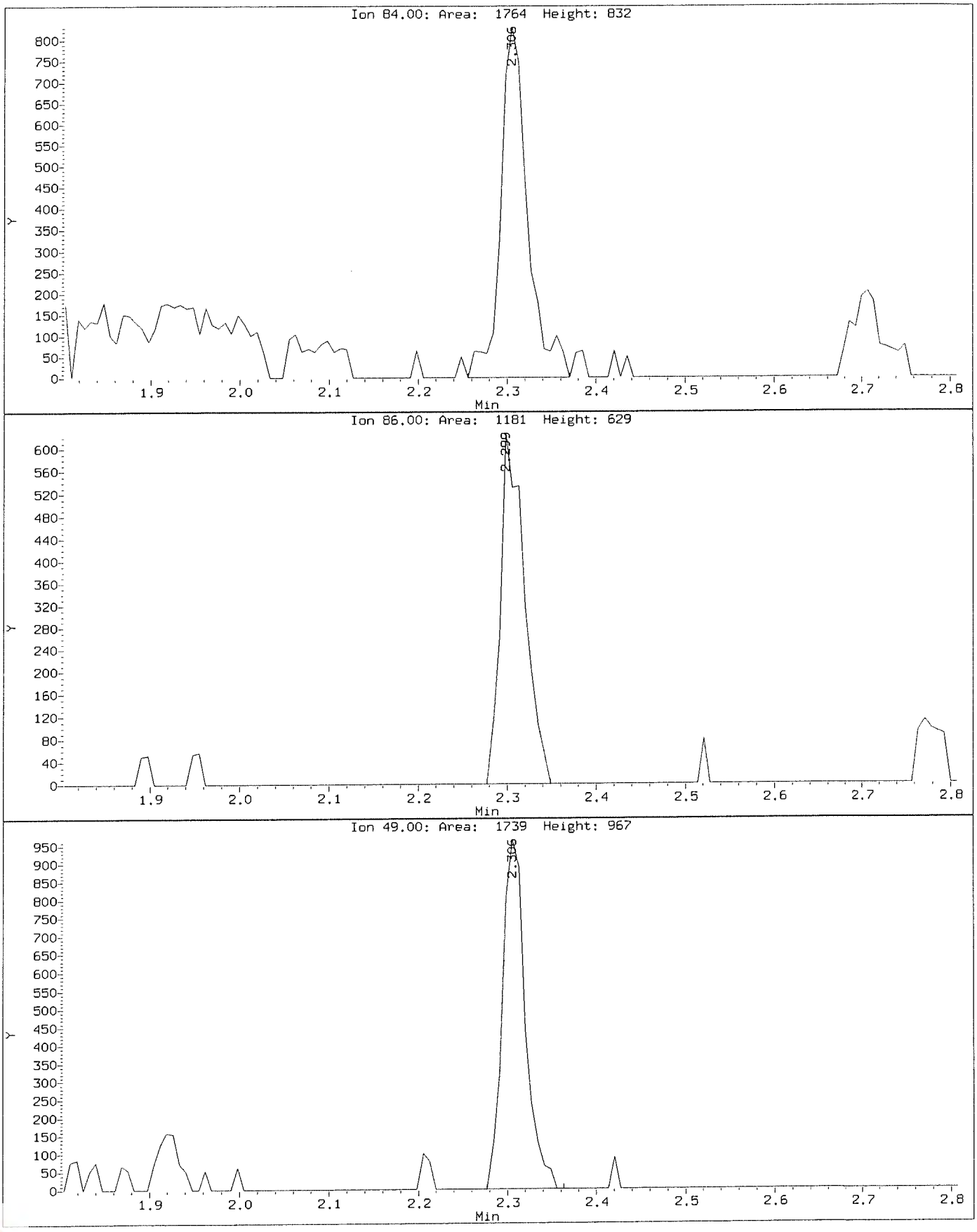
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Methylene Chloride
CAS Number: 75-09-2



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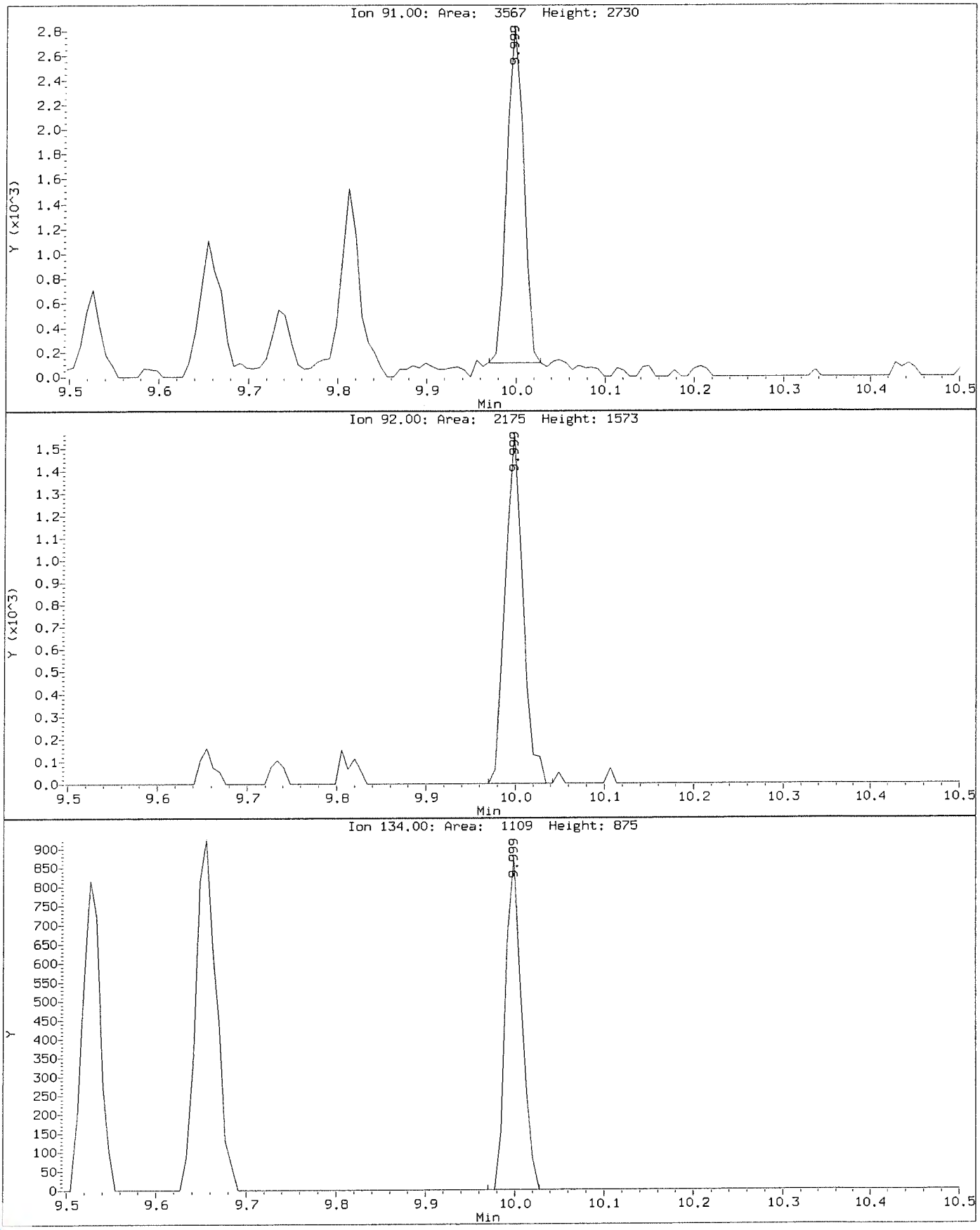
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: n-Butylbenzene
CAS Number: 104-51-8



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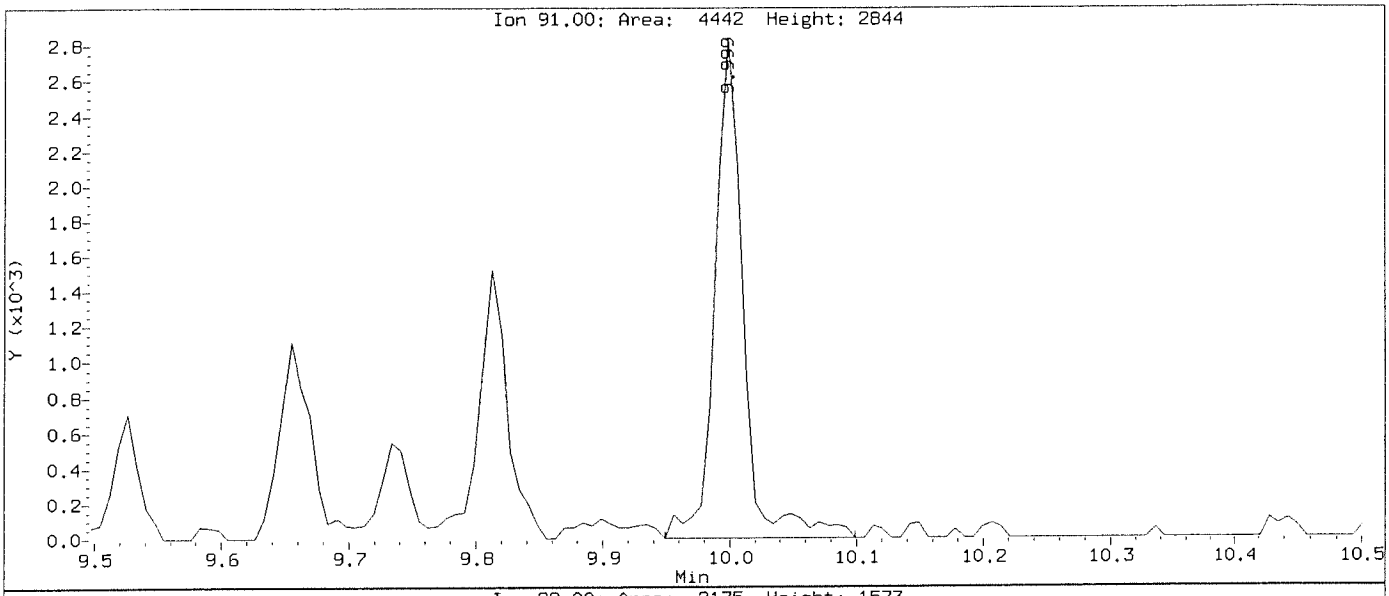
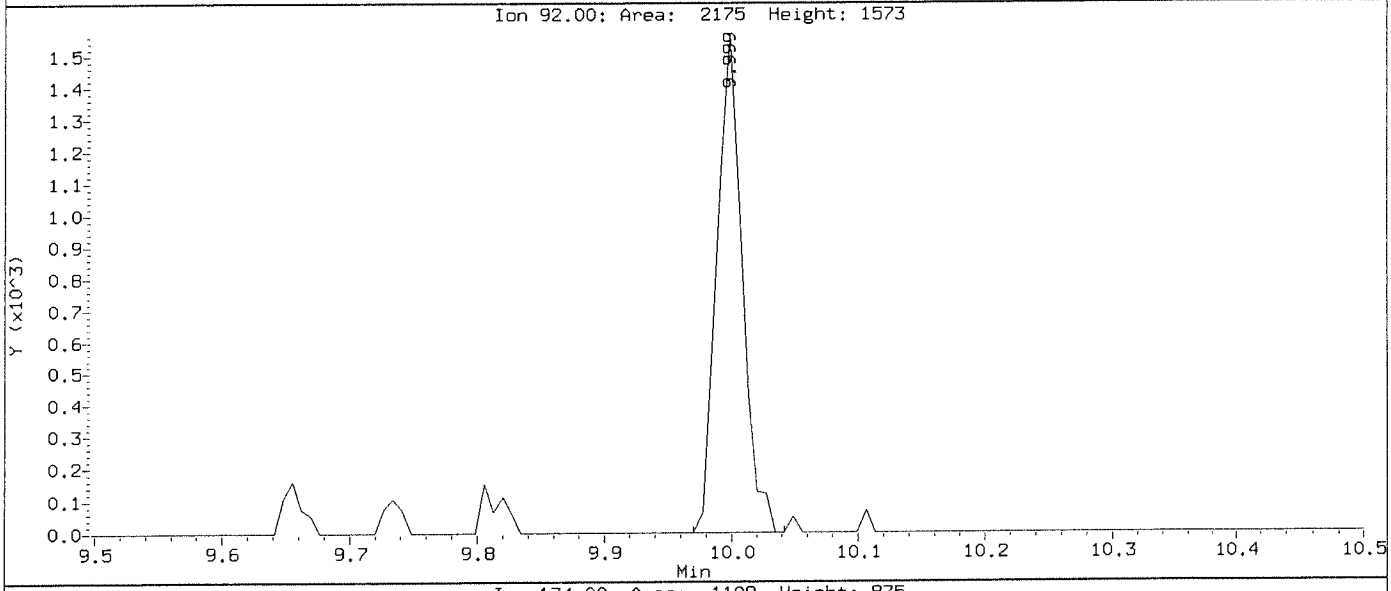
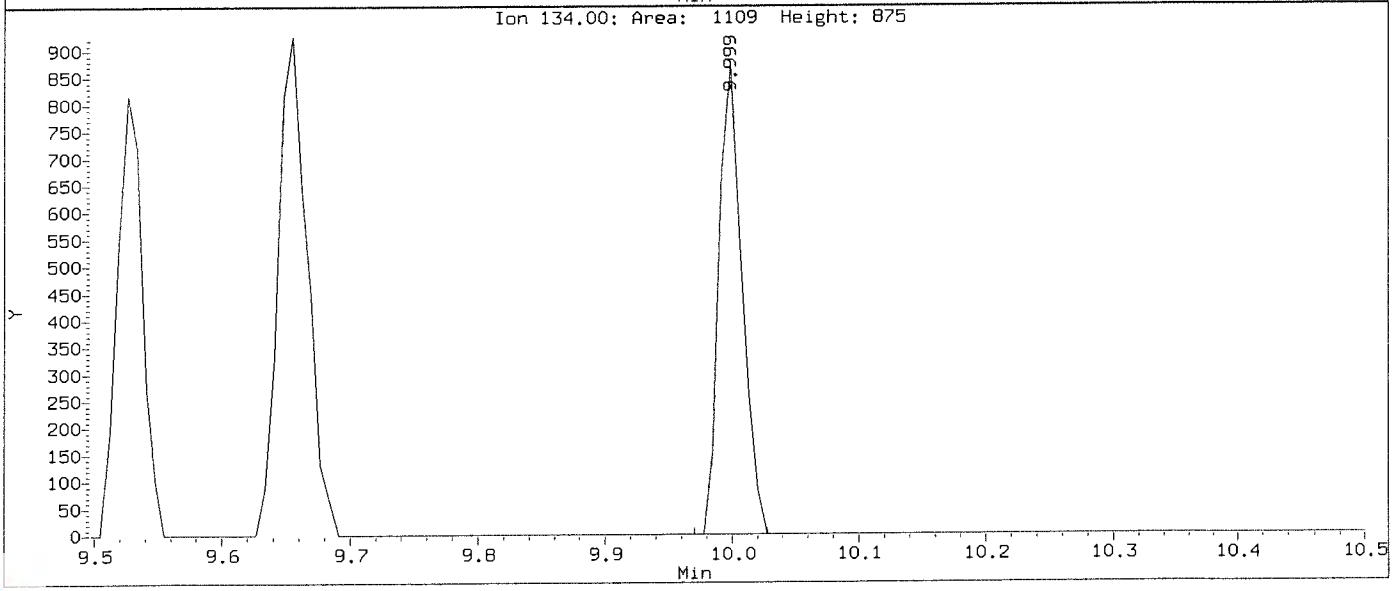
Client Sample ID: VSTD000.5

Compound: n-Butylbenzene
CAS Number: 104-51-8







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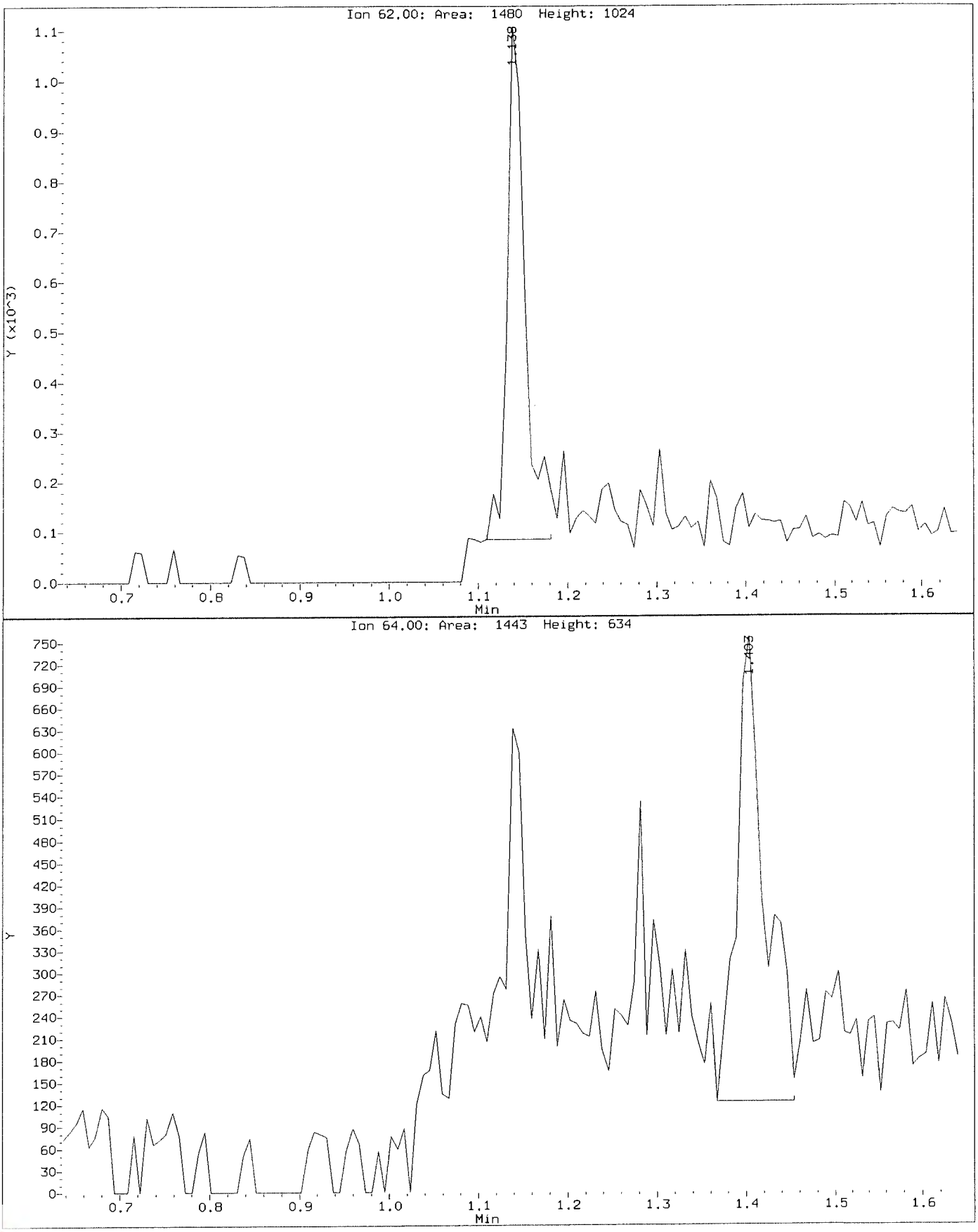
Injection Date: 18-NOV-2019 14:35
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Vinyl Chloride
CAS Number: 75-01-4



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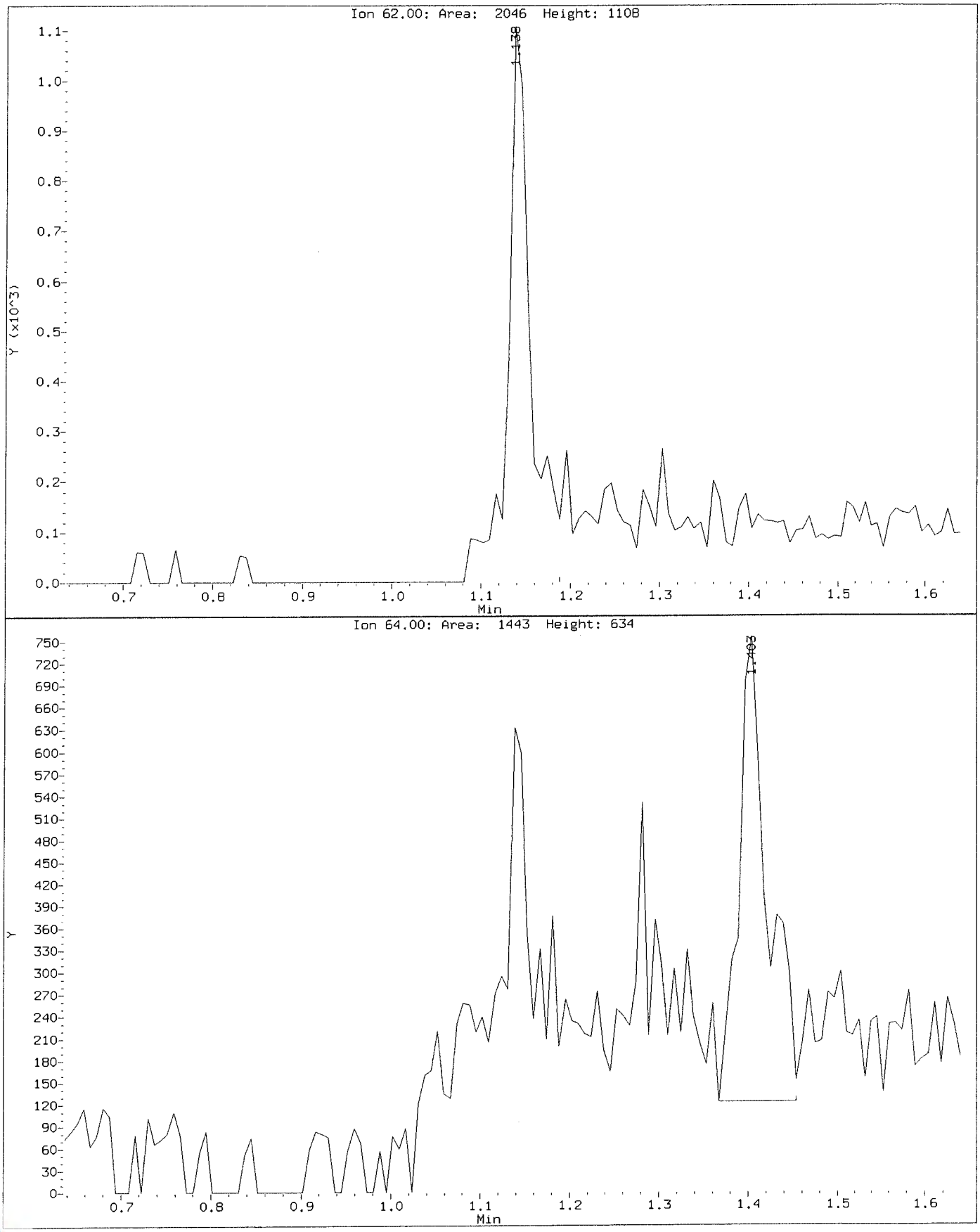
Instrument: voa6.i
Client Sample ID: VSTD000.5

Compound: Vinyl Chloride
CAS Number: 75-01-4



Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\X111804.D Page 1
Report Date: 22-Dec-2019 16:31

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X191118.b\X111804.D
Lab Smp Id: VSTD001 Client Smp ID: VSTD001
Inj Date : 18-NOV-2019 14:59
Operator : PC Inst ID: voa6.i
Smp Info : VSTD001;VSTD001;1;3;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X191118.b\8260W.m
Meth Date : 22-Dec-2019 16:31 voa6.i Quant Type: ISTD
Cal Date : 18-NOV-2019 14:59 Cal File: X111804.D
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: bhate.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	416007	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	570122	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	516622	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	279609	50.0000	
$ 30 Dibromofluoromethane	113	4.104	4.103	(0.981)	3882	1.00000	1.38(a)
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	4458	1.00000	1.85(a)
$ 48 Toluene-d8	98	6.389	6.388	(0.833)	13715	1.00000	1.00(a)
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	5731	1.00000	1.60(a)
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	4166	1.00000	1.11(a)
31 1,1,1-Trichloroethane	97	4.082	4.089	(0.976)	6451	1.00000	1.14(a)
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	4719	1.00000	1.20(aM)
53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	3216	1.00000	1.19(a)
22 1,1-Dichloroethane	63	2.929	2.921	(0.700)	6907	1.00000	1.14(a)
11 1,1-Dichloroethene	96	1.912	1.911	(0.457)	3522	1.00000	0.99(a)
32 1,1-Dichloropropene	75	4.283	4.282	(0.862)	5427	1.00000	1.18(a)
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	1182	1.00000	0.29(a)
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	4081	1.00000	1.22(aM)
90 1,2,4-Trichlorobenzene	180	11.345	11.338	(1.173)	2432	1.00000	1.03(aM)
79 1,2,4-Trimethylbenzene	105	9.383	9.382	(0.970)	14648	1.00000	1.10(a)
89 1,2-Dibromo-3-Chloropropane	155	10.665	10.657	(1.103)	464	1.00000	0.73(aM)
57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	3982	1.00000	1.09(a)
88 1,2-Dichlorobenzene	146	9.999	9.998	(1.034)	8297	1.00000	1.11(a)
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	5359	1.00000	1.18(a)

Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\X111804.D Page 2
Report Date: 22-Dec-2019 16:31

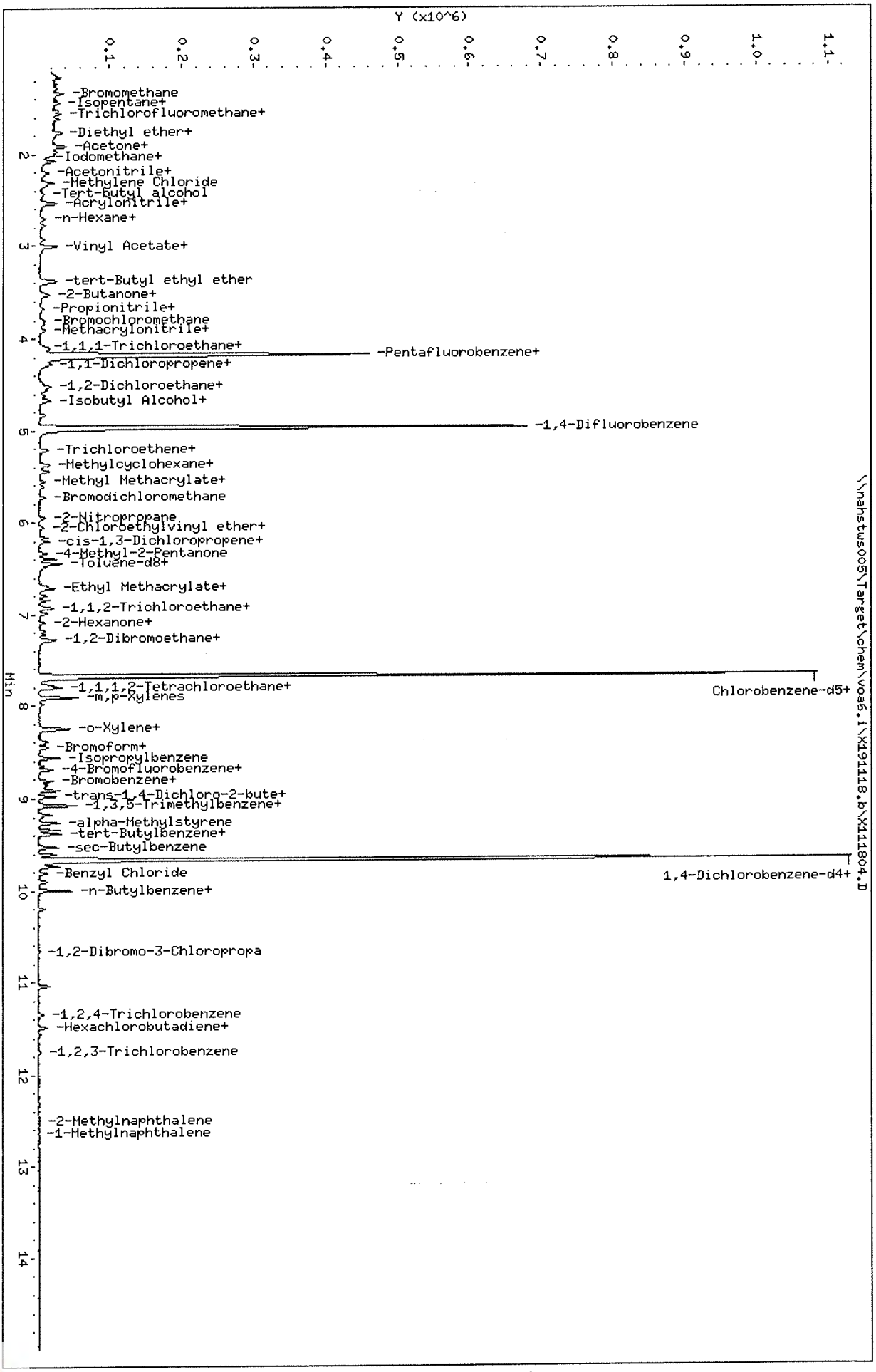
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
42 1,2-Dichloropropane	63	5.443	5.443	(1.095)	3352	1.00000	0.98(aM)
75 1,3,5-Trimethylbenzene	105	9.067	9.074	(0.938)	13162	1.00000	1.03(a)
83 1,3-Dichlorobenzene	146	9.605	9.612	(0.993)	8955	1.00000	1.11(a)
54 1,3-Dichloropropane	76	6.983	6.983	(0.910)	6334	1.00000	1.15(a)
84 1,4-Dichlorobenzene	146	9.684	9.683	(1.001)	9129	1.00000	1.12(a)
26 2,2-Dichloropropane	77	3.516	3.516	(0.841)	6785	1.00000	1.23(a)
24 2-Butanone	43	3.588	3.580	(0.858)	2602	2.00000	2.03(a)
76 2-Chlorotoluene	91	8.974	8.981	(0.928)	11127	1.00000	1.10(a)
52 2-Hexanone	43	7.090	7.090	(0.924)	4893	2.00000	2.30(a)
77 4-Chlorotoluene	91	9.075	9.074	(0.939)	13982	1.00000	1.14(a)
82 p-Isopropyltoluene	119	9.655	9.655	(0.999)	14705	1.00000	1.07(a)
45 4-Methyl-2-Pentanone	43	6.331	6.331	(0.825)	6643	2.00000	2.19(a)
10 Acetone	43	1.969	1.976	(0.471)	5956	2.00000	1.88(a)
37 Benzene	78	4.519	4.512	(0.909)	15129	1.00000	1.16(a)
74 Bromobenzene	156	8.810	8.809	(0.911)	5611	1.00000	1.15(a)
29 Bromochloromethane	128	3.803	3.795	(0.909)	2687	1.00000	1.19(a)
39 Bromodichloromethane	83	5.730	5.729	(1.153)	5583	1.00000	1.18(aM)
66 Bromoform	173	8.416	8.415	(1.097)	3197	1.00000	2.01(Ta)
6 Bromomethane	94	1.339	1.331	(0.320)	6334	1.00000	(aM)
19 Carbon Disulfide	76	2.069	2.069	(0.495)	20920	2.00000	2.18(a)
34 Carbon Tetrachloride	117	4.268	4.268	(0.859)	5740	1.00000	1.13(aM)
59 Chlorobenzene	112	7.699	7.699	(1.004)	11449	1.00000	1.13(a)
7 Chloroethane	64	1.403	1.396	(0.336)	3001	1.00000	1.14(aM)
28 Chloroform	83	3.910	3.910	(0.935)	8234	1.00000	1.22(a)
3 Chloromethane	50	1.074	1.073	(0.257)	6118	1.00000	1.53(aM)
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	4494	1.00000	1.13(a)
46 cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	6302	1.00000	1.13(a)
55 Dibromochloromethane	129	7.176	7.183	(0.936)	4470	1.00000	1.13(a)
44 Dibromomethane	93	5.558	5.557	(1.118)	2789	1.00000	1.15(a)
2 Dichlorodifluoromethane	85	0.973	0.966	(0.233)	3829	1.00000	1.87(aM)
61 Ethylbenzene	106	7.800	7.807	(1.017)	5813	1.00000	1.11(a)
91 Hexachlorobutadiene	225	11.481	11.488	(1.187)	2468	1.00000	0.76(a)
67 Isopropylbenzene	105	8.566	8.566	(1.117)	16809	1.00000	1.08(a)
62 m,p-Xylenes	106	7.907	7.907	(1.031)	13495	2.00000	2.14(a)
17 Methylene Chloride	84	2.306	2.305	(0.551)	4626	1.00000	1.22(a)
87 n-Butylbenzene	91	9.999	9.998	(1.034)	11491	1.00000	1.00(a)
73 n-Propylbenzene	91	8.917	8.917	(0.922)	18779	1.00000	1.08(a)
92 Naphthalene	128	11.553	11.546	(1.195)	3182	1.00000	1.05(a)
63 o-Xylene	106	8.244	8.244	(1.075)	6995	1.00000	1.12(a)
81 sec-Butylbenzene	105	9.526	9.526	(0.985)	15987	1.00000	1.06(a)
64 Styrene	104	8.265	8.265	(1.078)	11719	1.00000	1.08(a)
78 tert-Butylbenzene	119	9.340	9.339	(0.966)	12122	1.00000	1.11(a)
56 Tetrachloroethene	164	6.933	6.933	(0.904)	4263	1.00000	1.17(a)
50 Toluene	91	6.453	6.453	(0.841)	16346	1.00000	1.11(a)
20 trans-1,2-Dichloroethene	96	2.535	2.527	(0.606)	4068	1.00000	1.18(a)
51 trans-1,3-Dichloropropene	75	6.689	6.682	(1.346)	5295	1.00000	1.04(a)
38 Trichloroethene	130	5.214	5.206	(1.049)	4445	1.00000	1.11(a)
8 Trichlorofluoromethane	101	1.561	1.553	(0.373)	6912	1.00000	1.07(a)
5 Vinyl Chloride	62	1.138	1.138	(0.272)	4533	1.00000	1.06(aM)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

QC Flag Legend

M - Compound response manually integrated.



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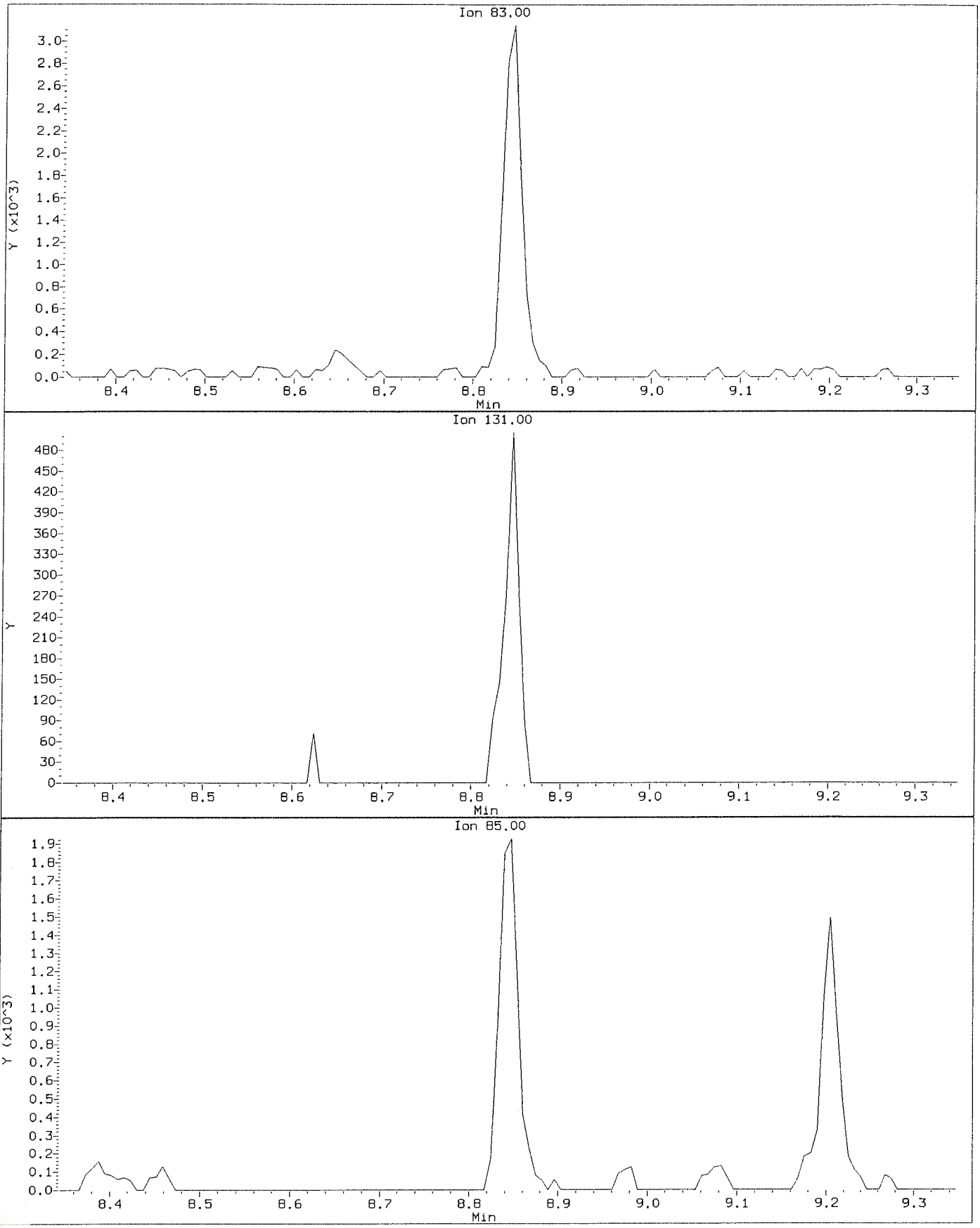
Client ID: VSTD001
Sample Info: VSTD001;VSTD001;1;3;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\Before2\X111804.D
Injection Date: 18-NOV-2019 14:59
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: 1,1,2,2-Tetrachloroethane
CAS Number: 79-34-5



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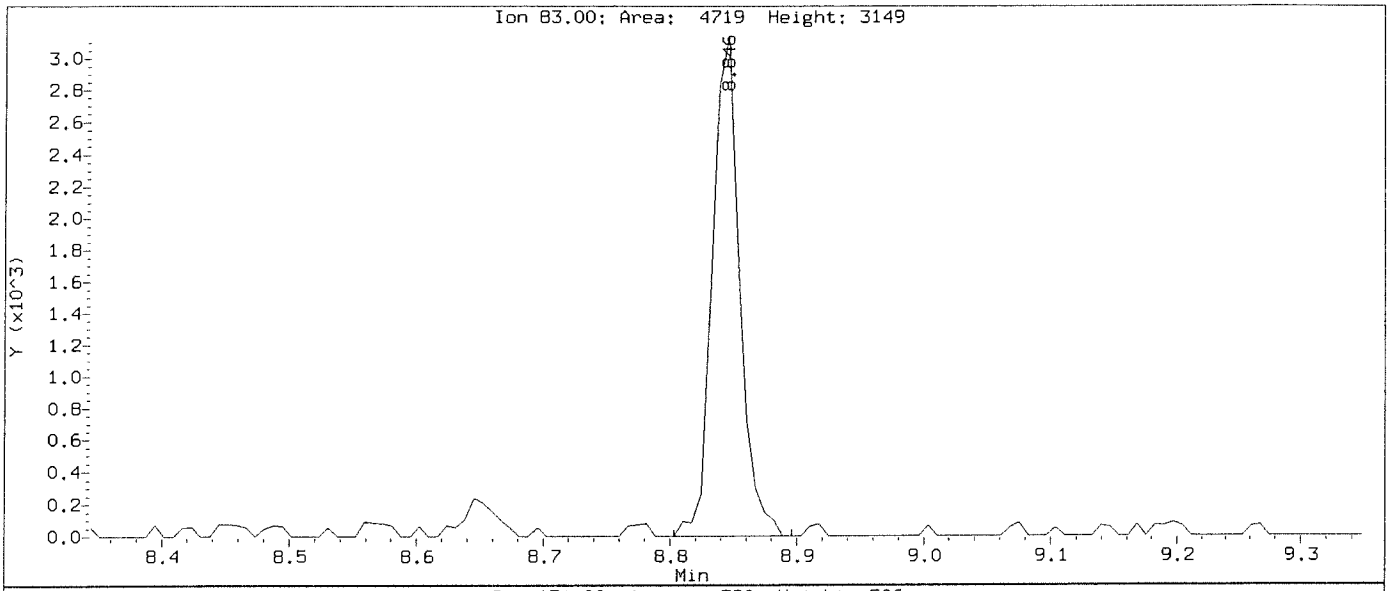
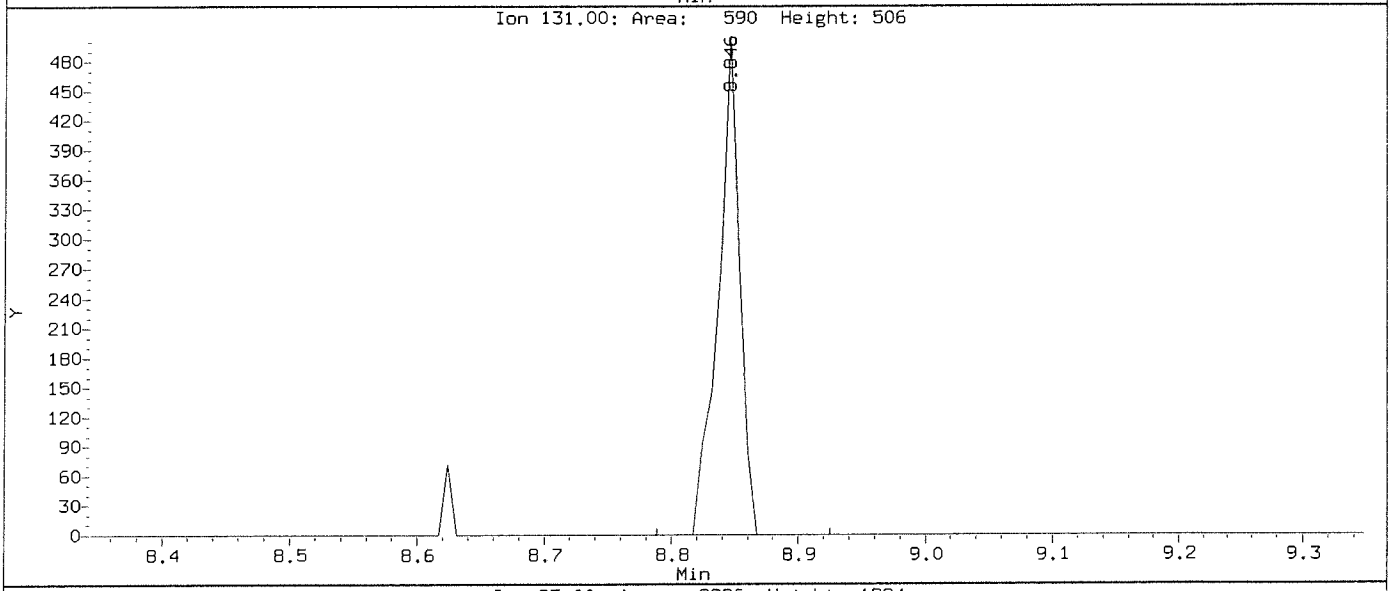
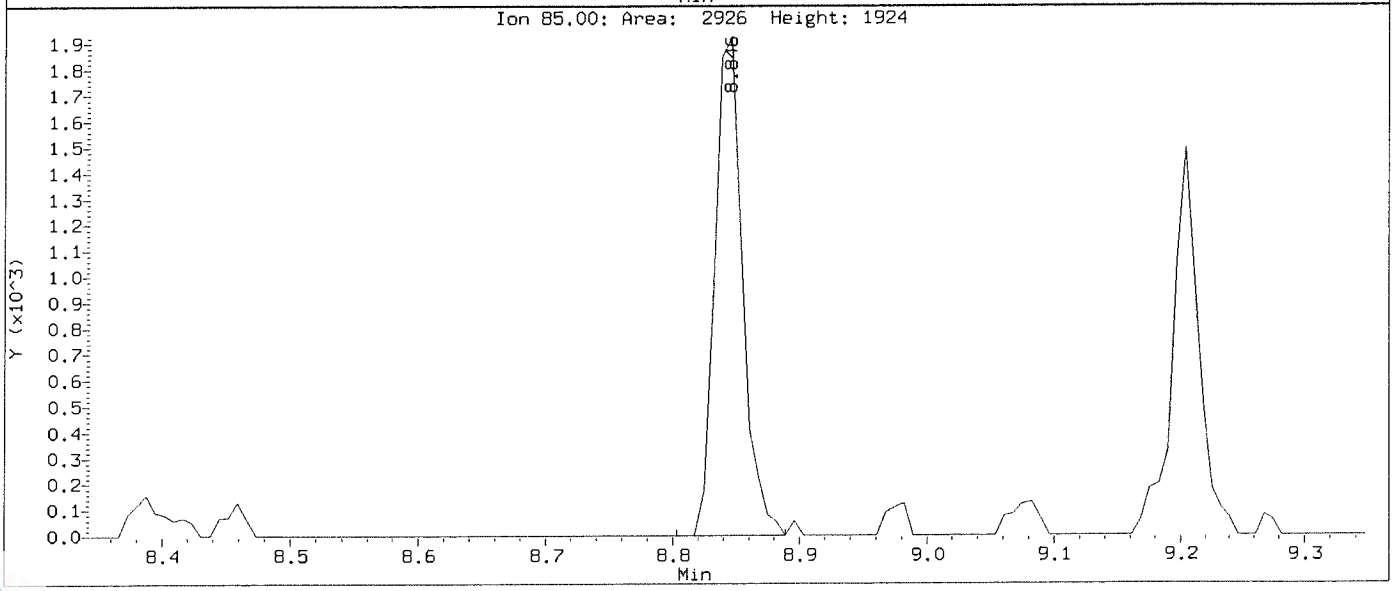
Injection Date: 18-NOV-2019 14:59
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: 1,1,2,2-Tetrachloroethane
CAS Number: 79-34-5







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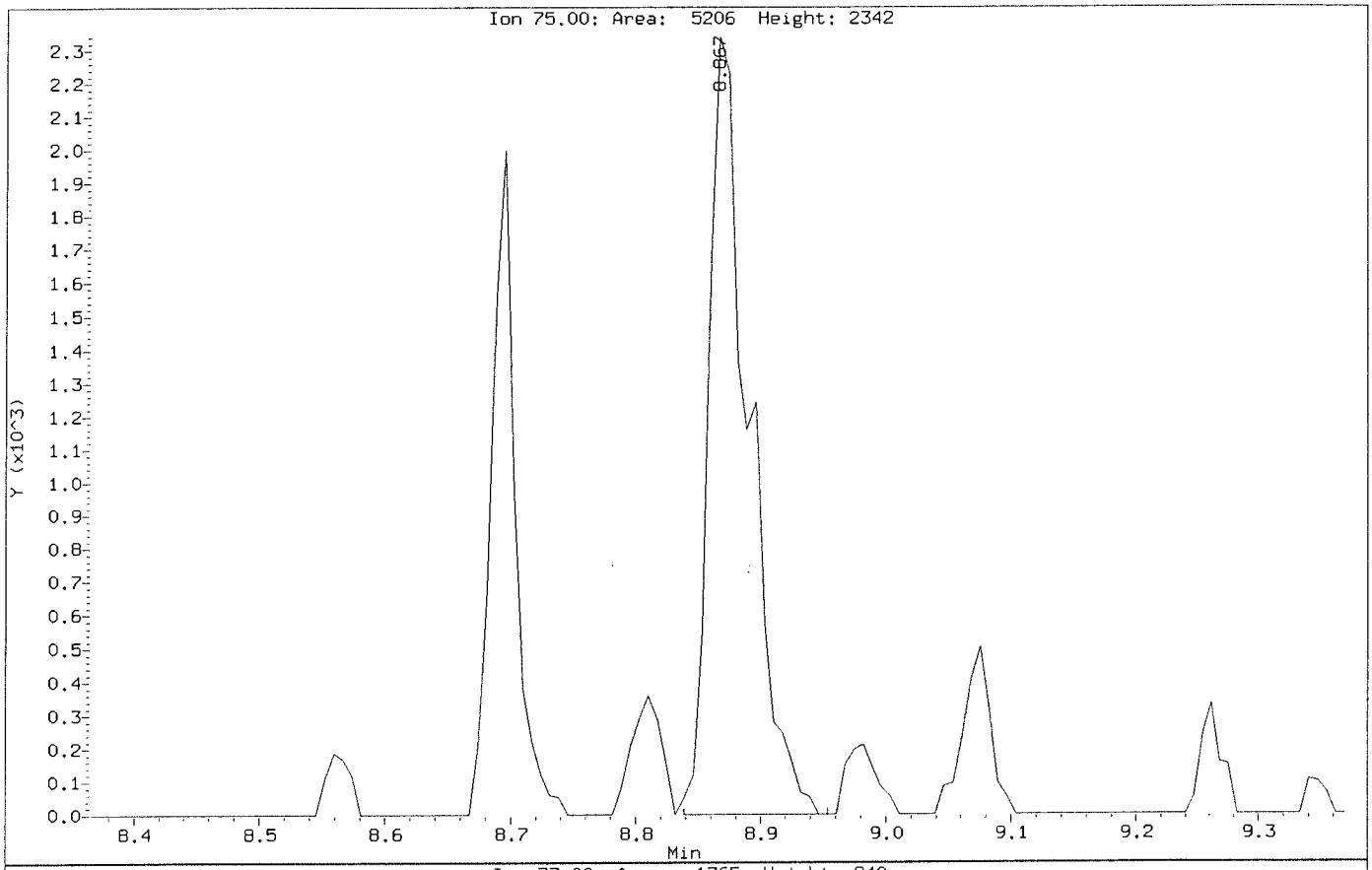
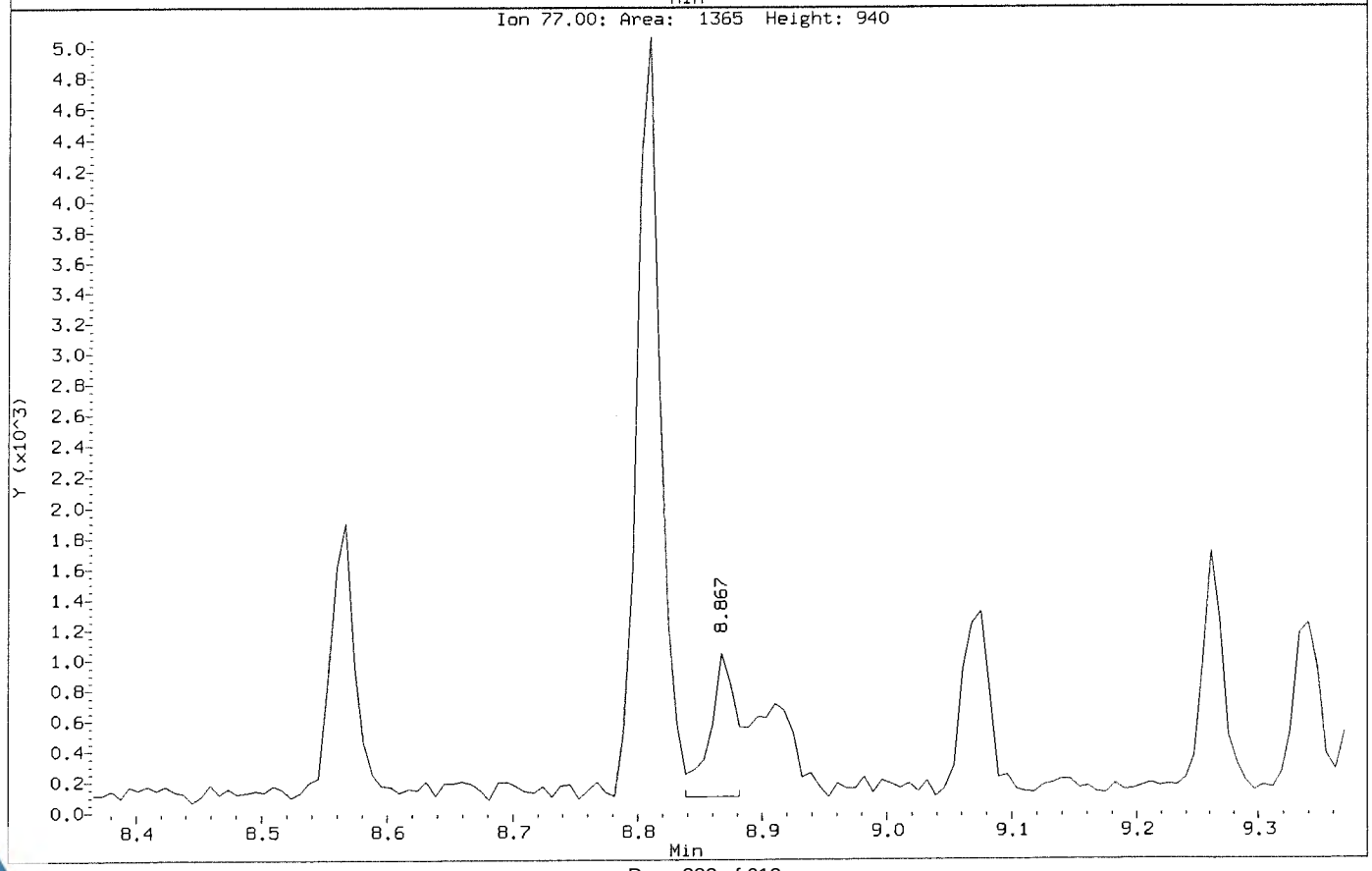
Injection Date: 18-NOV-2019 14:59
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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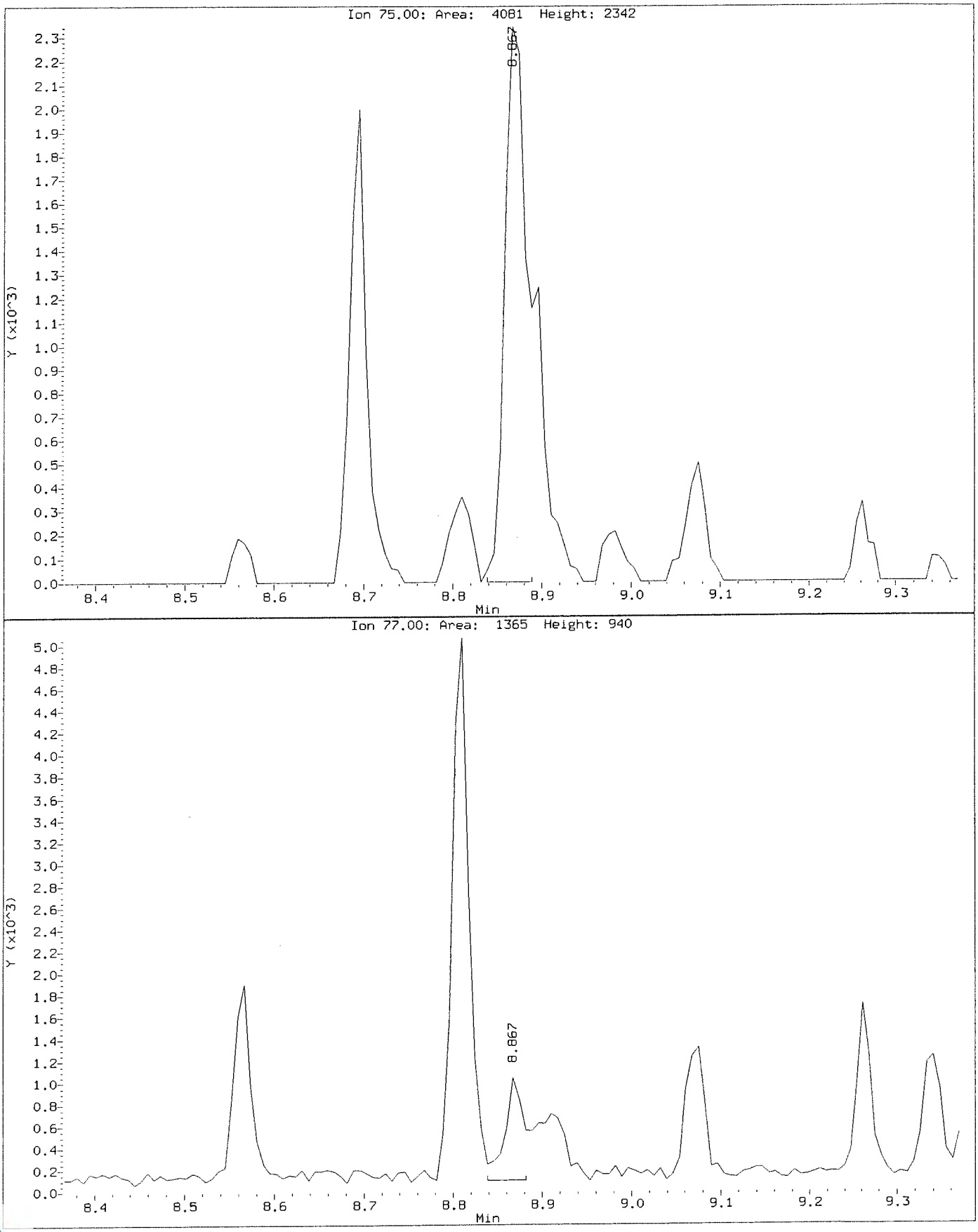
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



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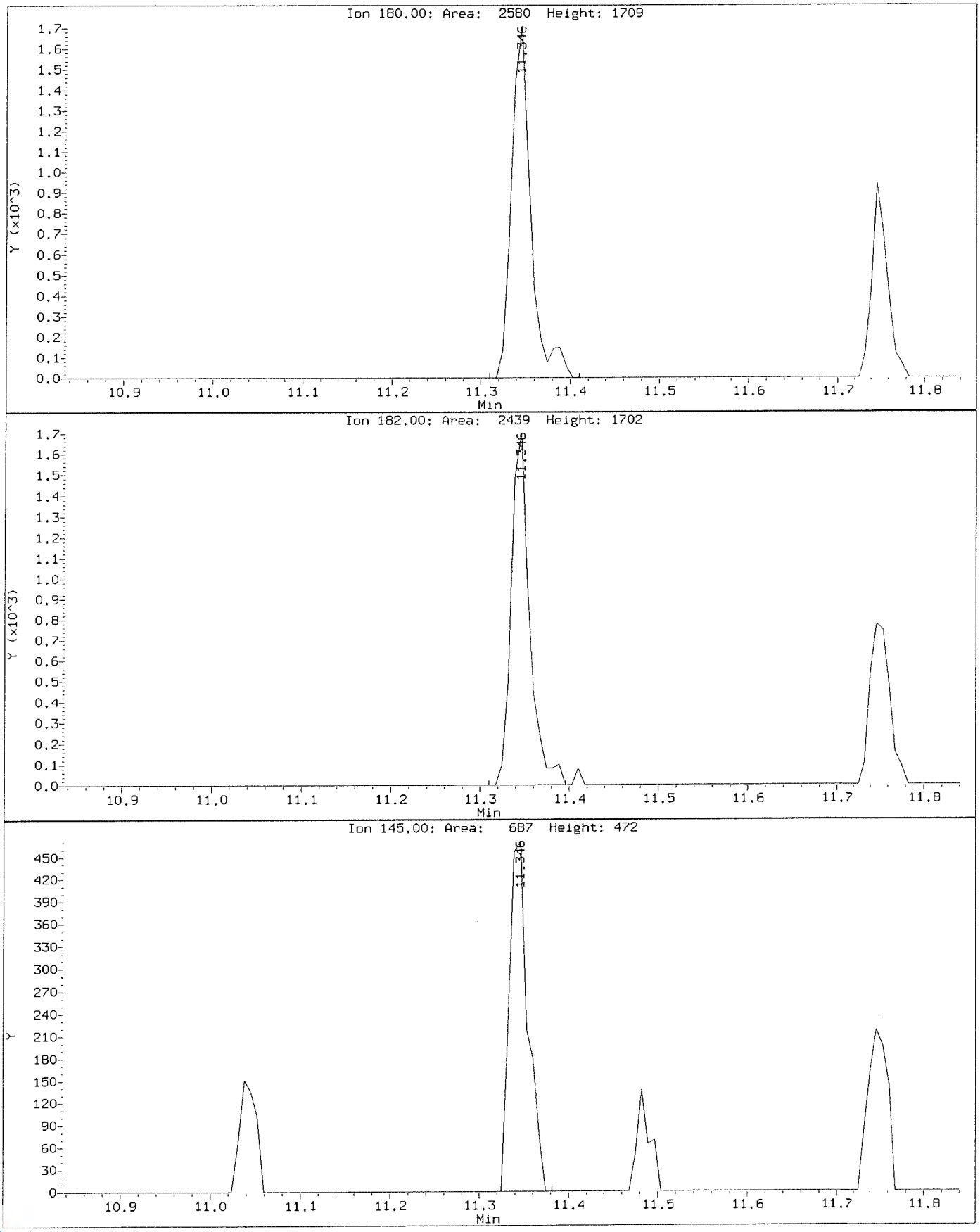
Injection Date: 18-NOV-2019 14:59
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: 1,2,4-Trichlorobenzene
CAS Number: 120-82-1



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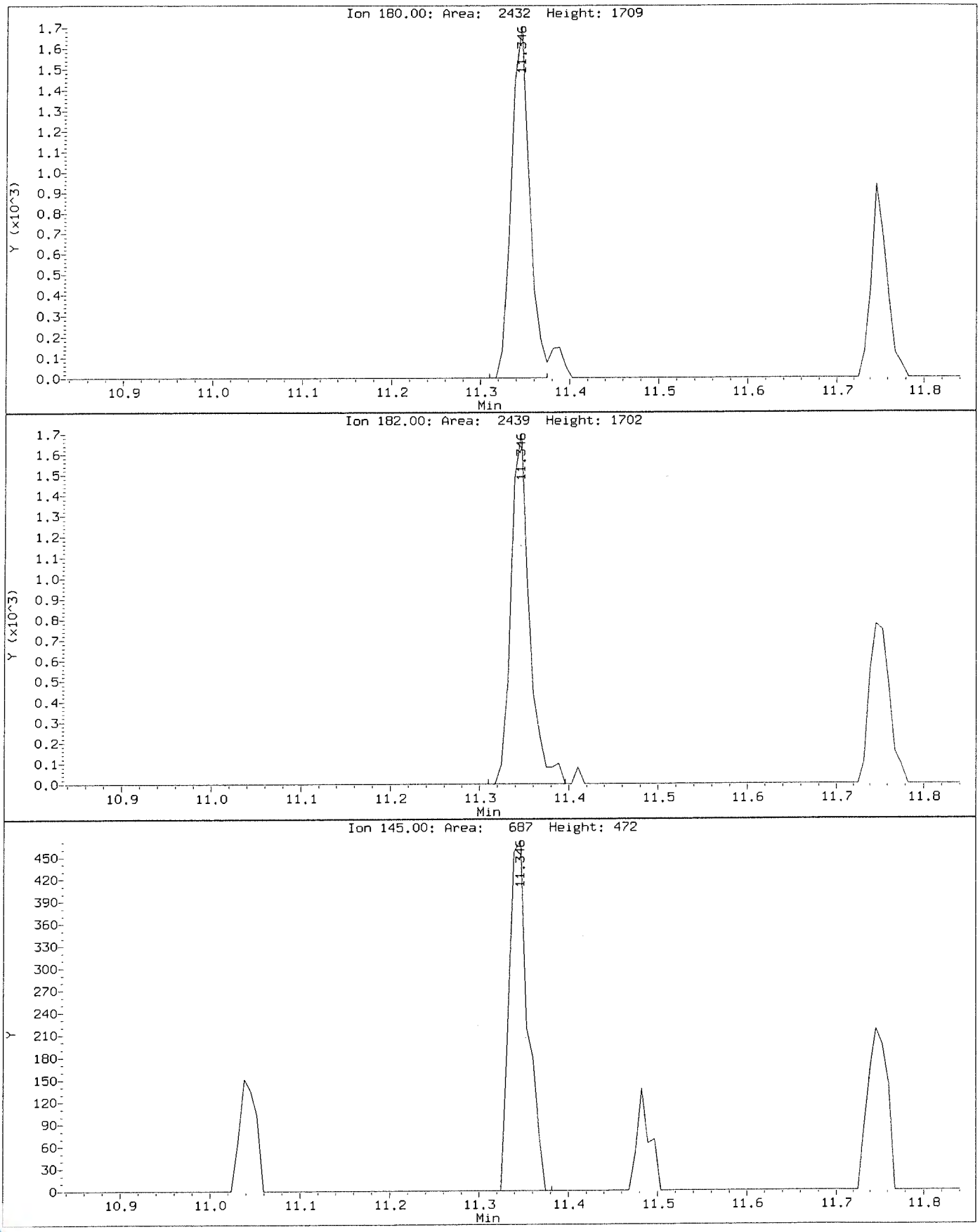
Injection Date: 18-NOV-2019 14:59
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: 1,2,4-Trichlorobenzene
CAS Number: 120-82-1



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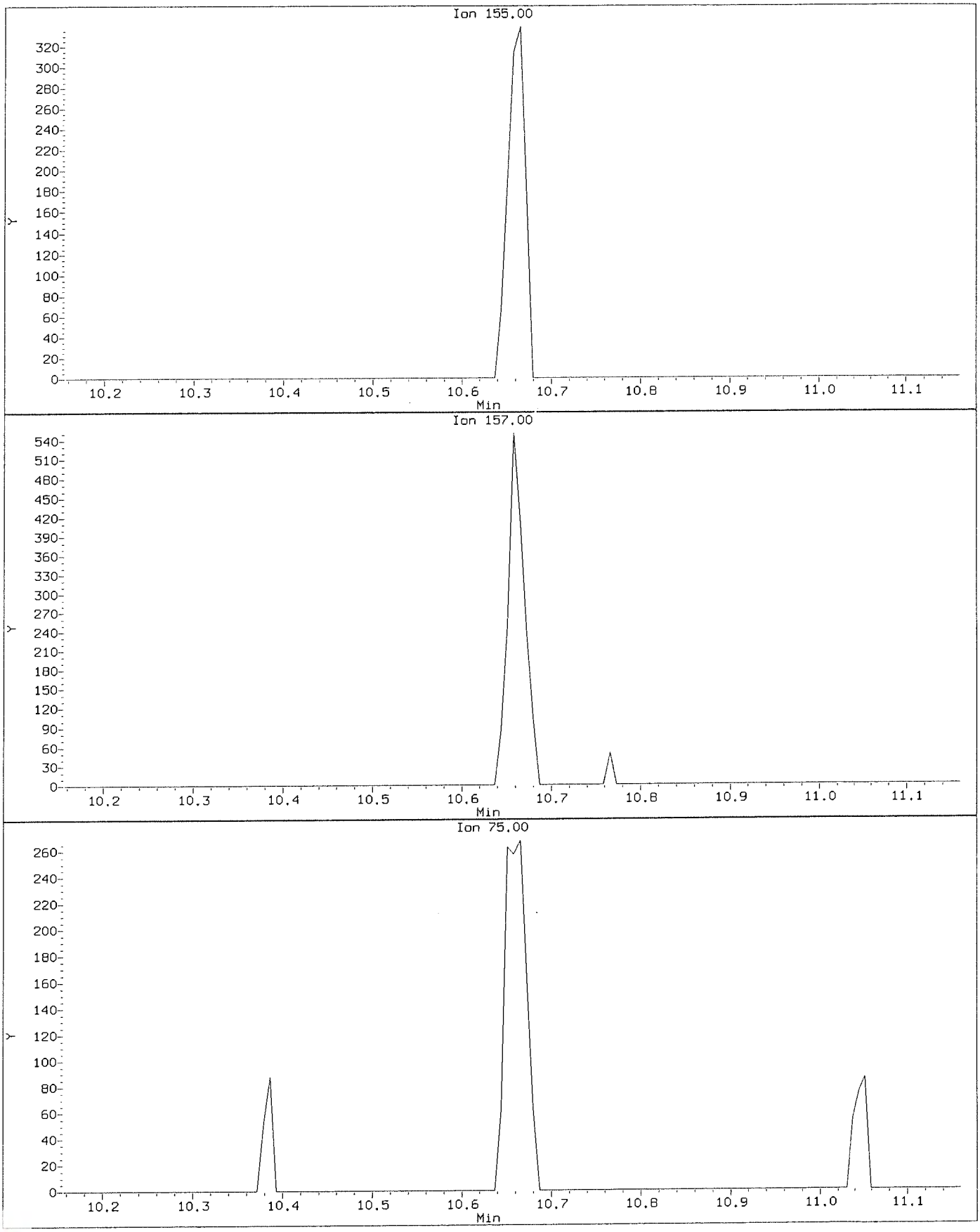
Injection Date: 18-NOV-2019 14:59
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: 1,2-Dibromo-3-Chloropropane
CAS Number: 96-12-8



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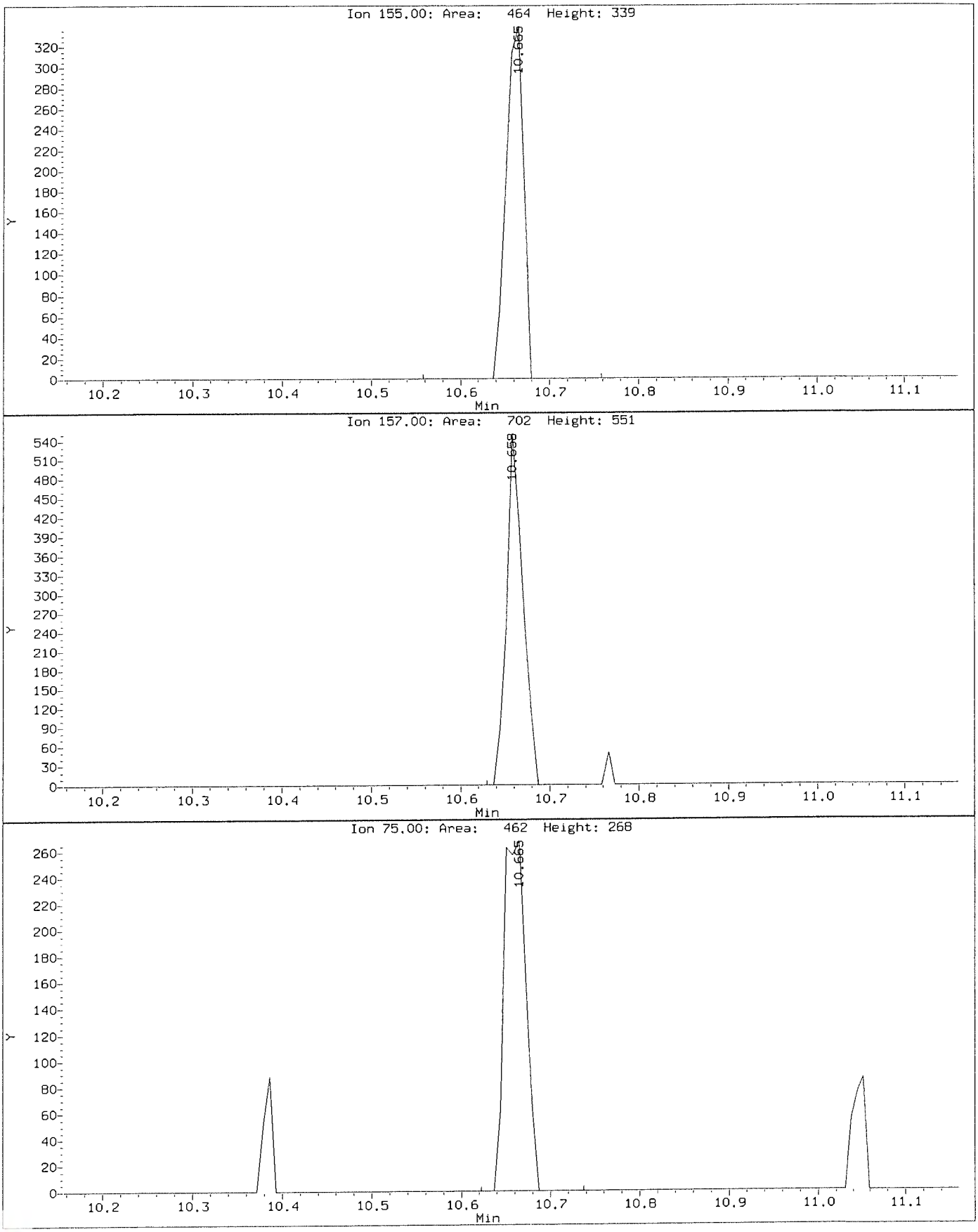
Injection Date: 18-NOV-2019 14:59
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: 1,2-Dibromo-3-Chloropropane
CAS Number: 96-12-8



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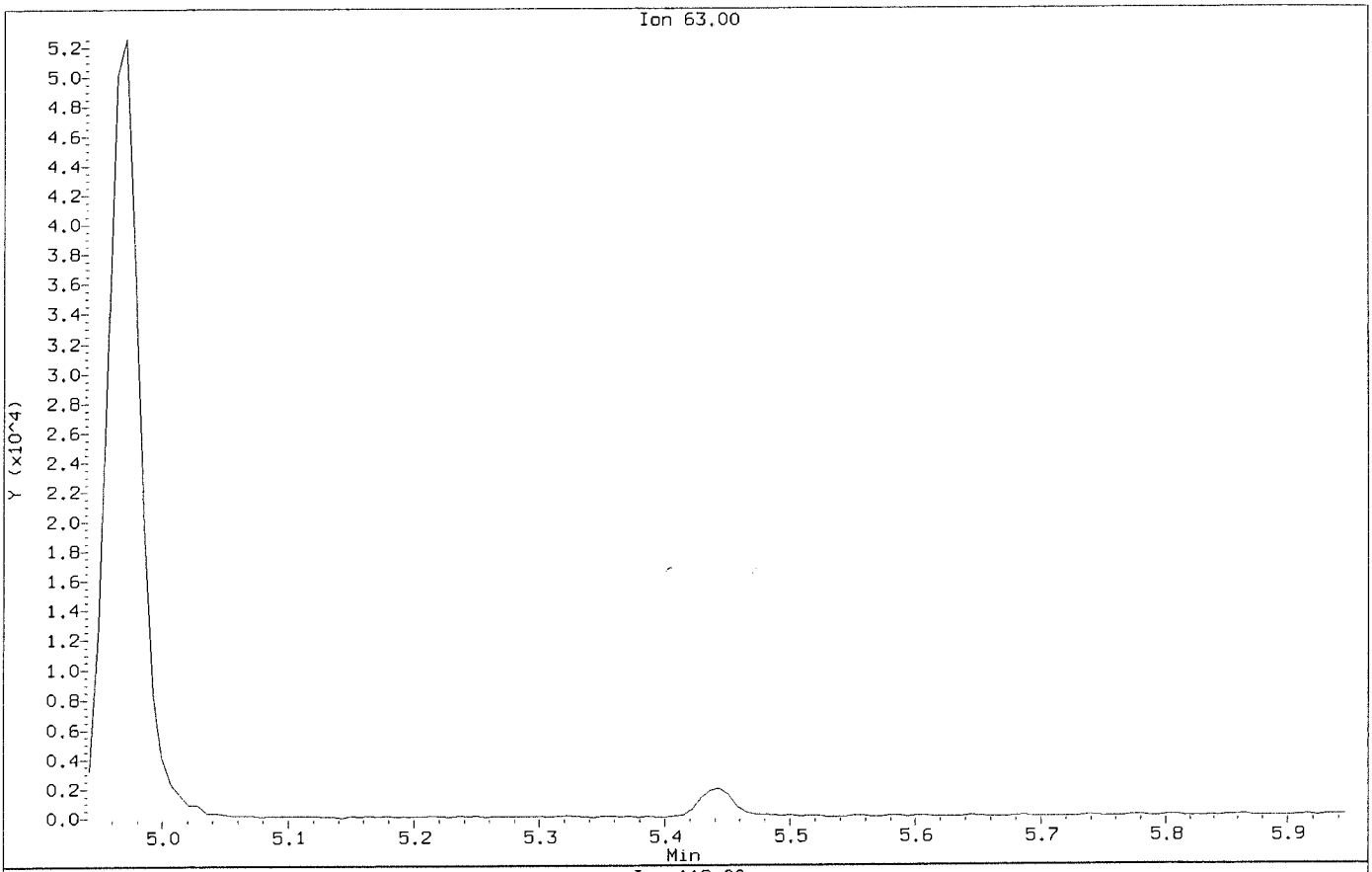
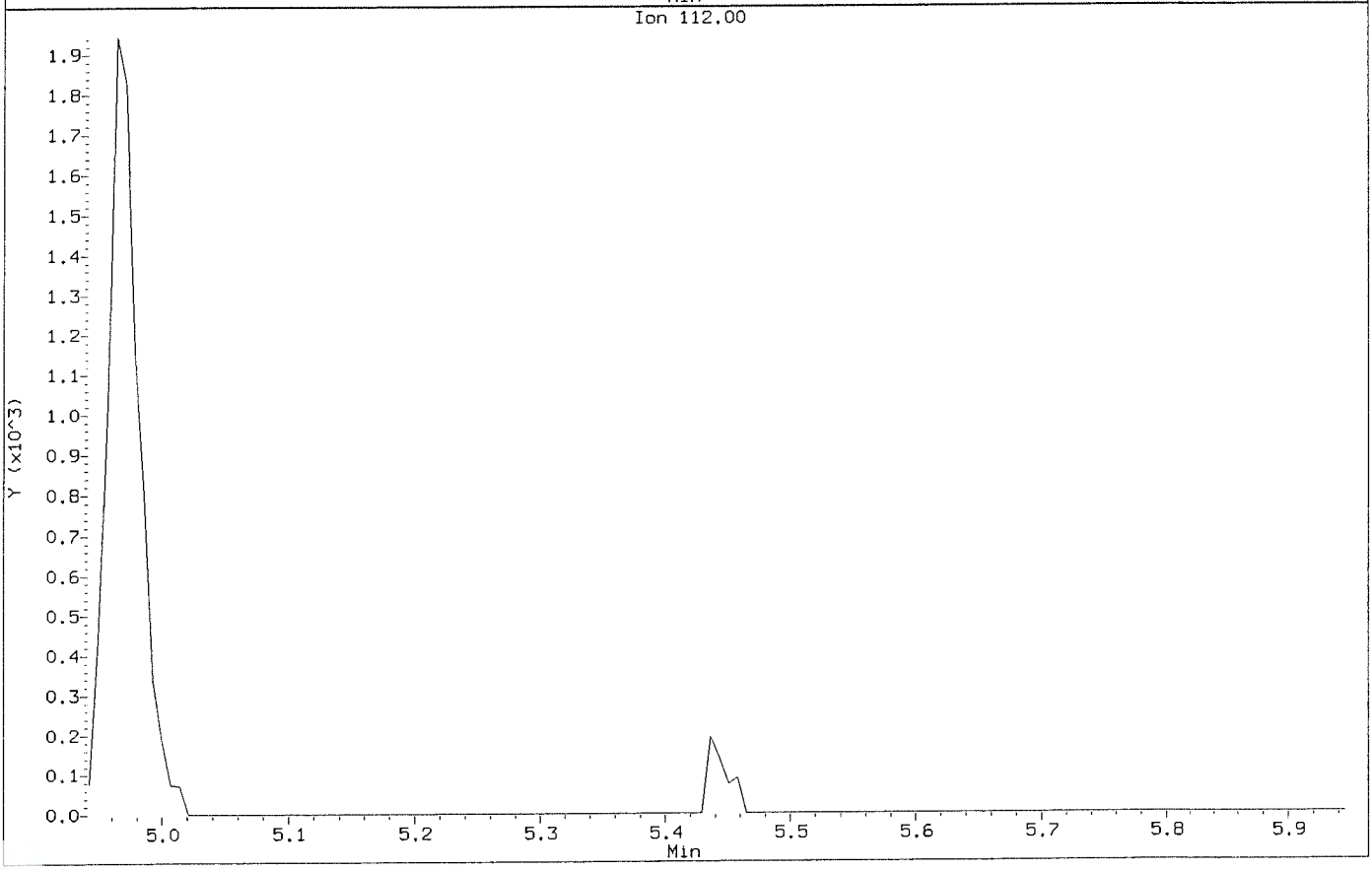
Injection Date: 18-NOV-2019 14:59
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: 1,2-Dichloropropane
CAS Number: 78-87-5





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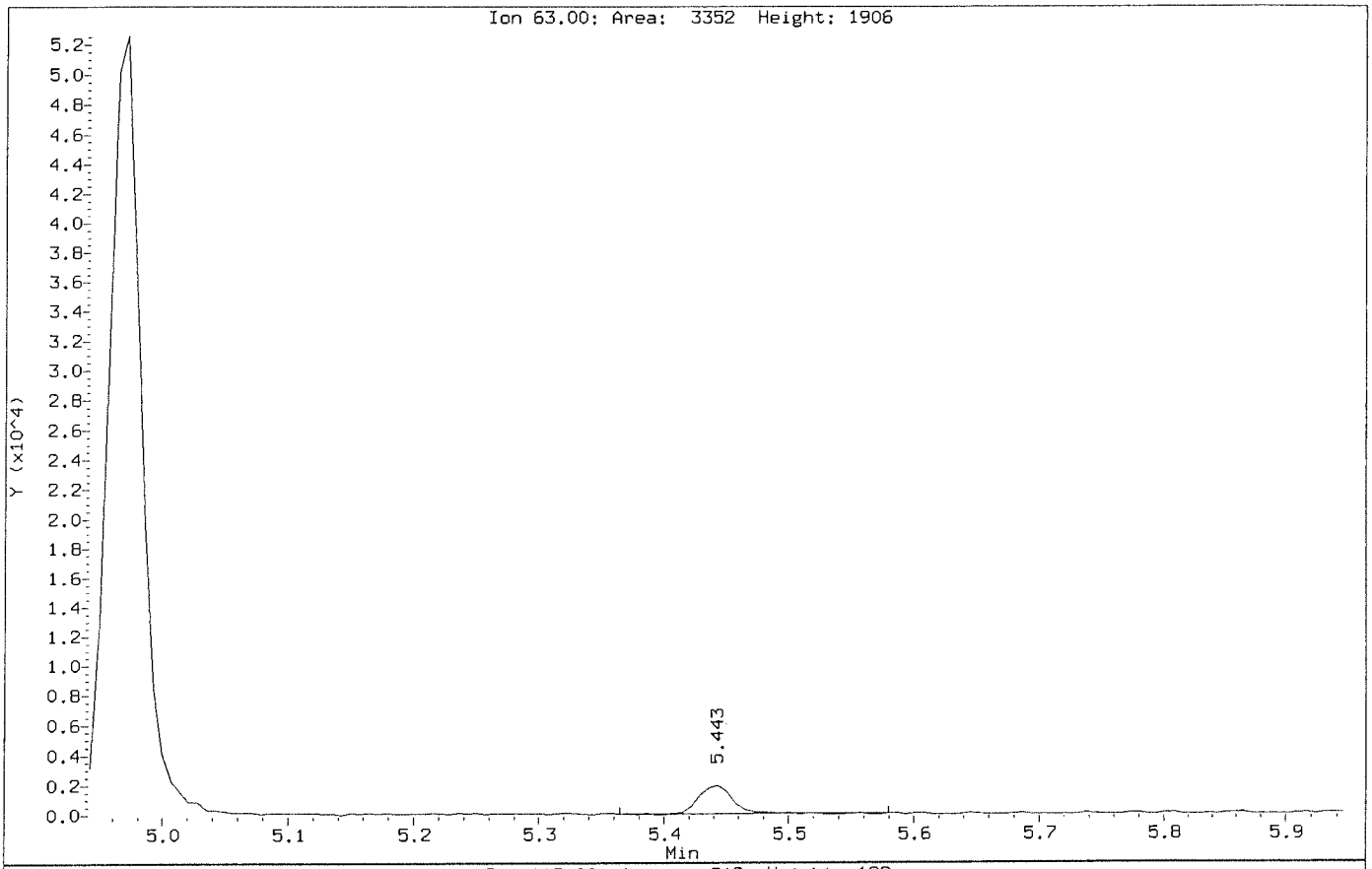
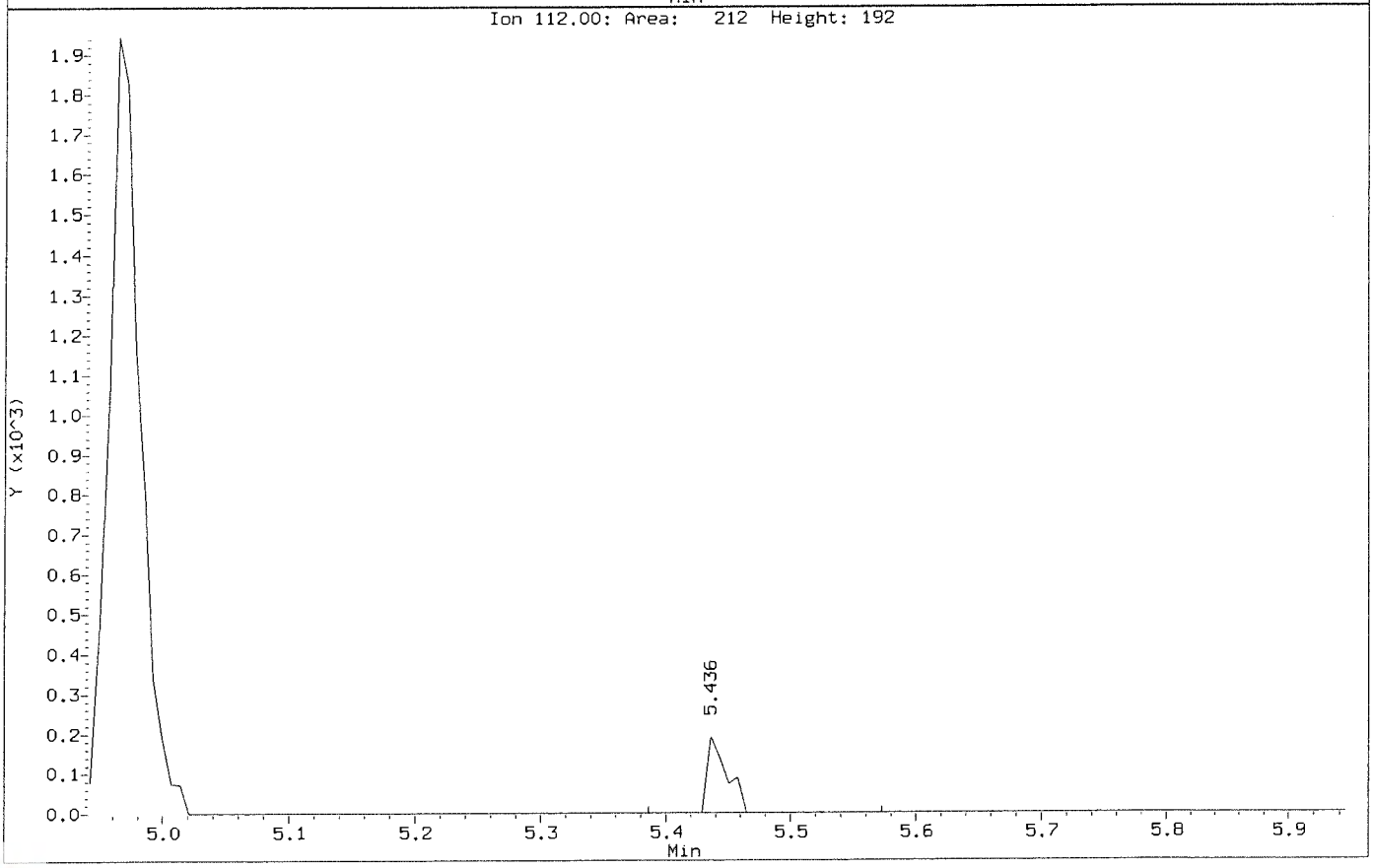
Injection Date: 18-NOV-2019 14:59
Instrument: voa6.i
Client Sample ID: VSTD001

Compound: 1,2-Dichloropropane
CAS Number: 78-87-5





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Compound: Bromodichloromethane
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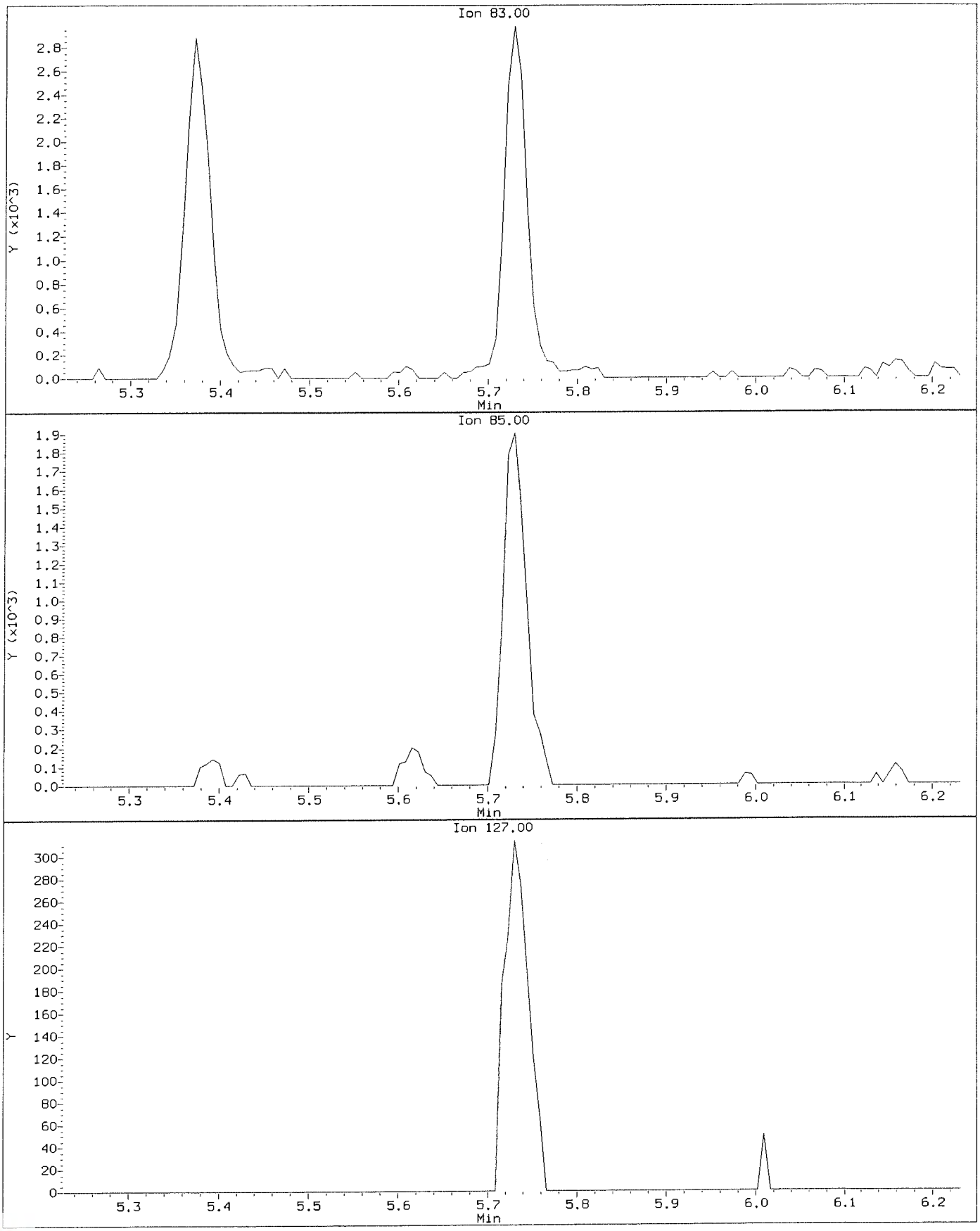

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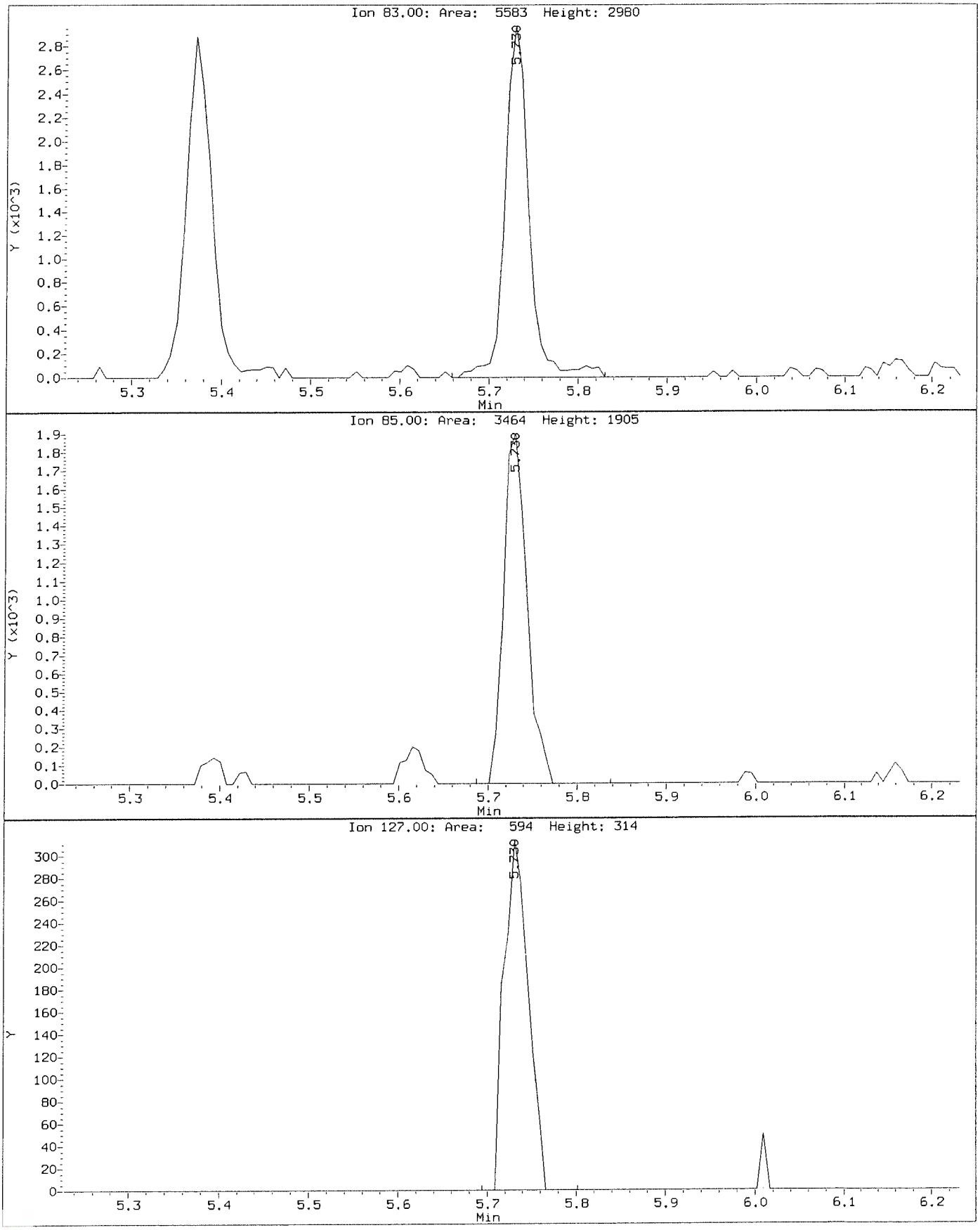
CAS Number: 75-27-4



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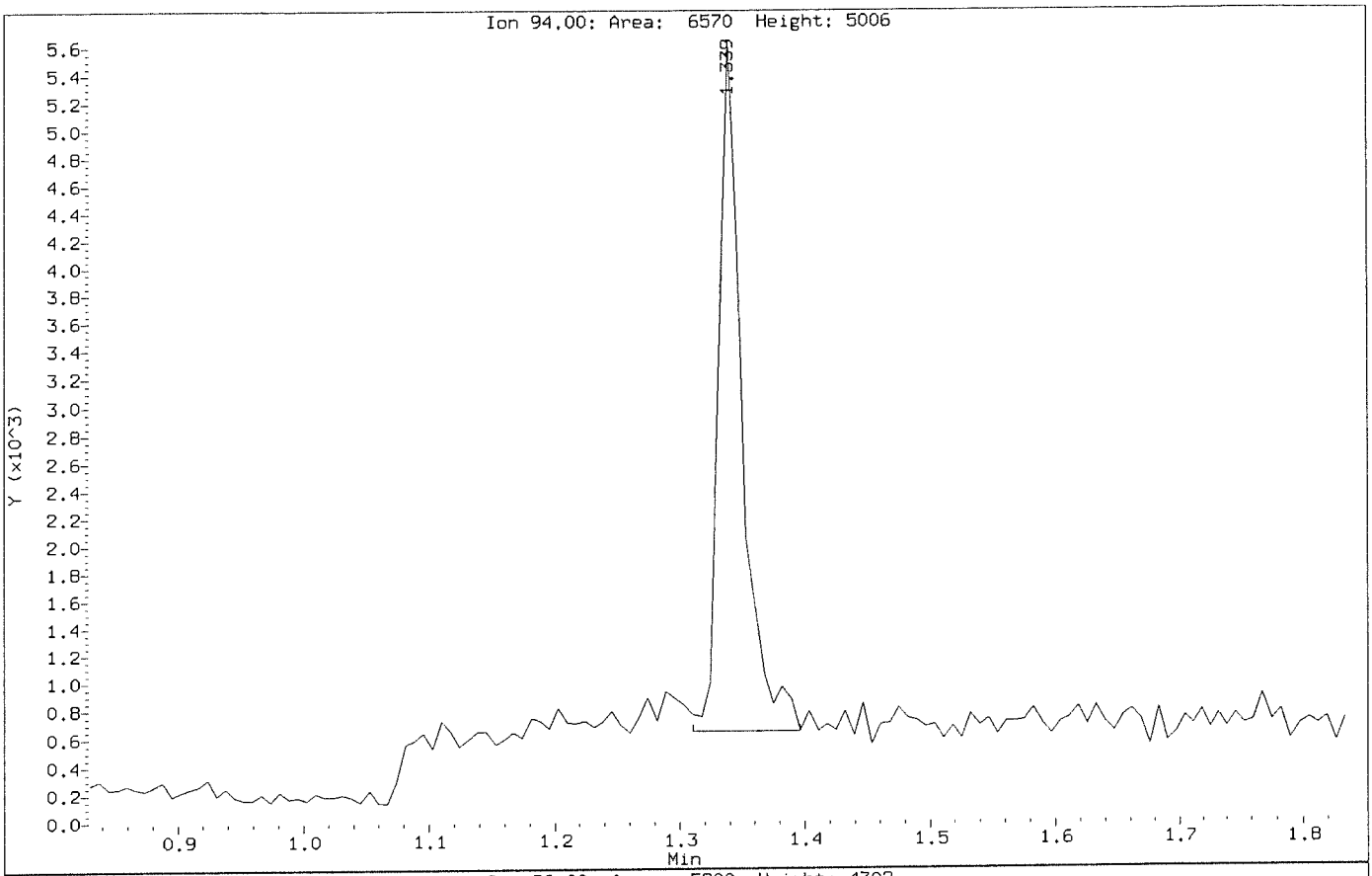
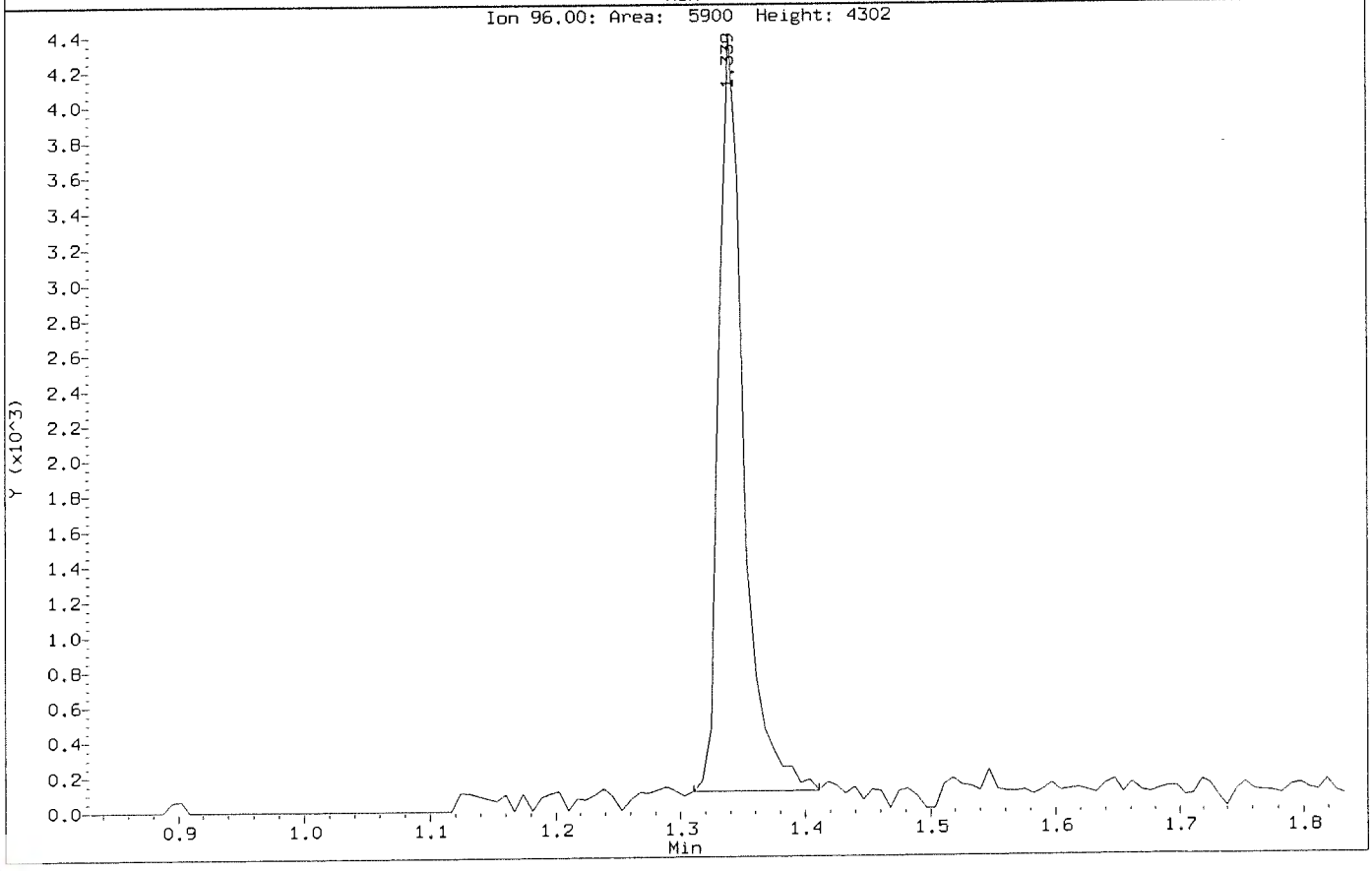
Compound: Bromomethane
CAS Number: 74-83-9





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Instrument: voa6.i
Client Sample ID: VSTD001

Compound: Bromomethane
CAS Number: 74-83-9

