Apex Laboratories, LLC
6700 SW Sandburg St. Tigard, Oregon 97223
503.718.2323

Level IV Data Package for
Hahn and Associates
Mult 802 Decommissioning
Apex Laboratories Work Order number:
A9E0902

APEX LABORATORIES, LLC
6700 SW Sandburg St Tigard, OR 97223 phone 503-718-2323

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APEX LABORATORIES, LLC
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Analytical Case Narrative

APEX LABORATORIES, LLC
6700 SW Sandburg St Tigard, OR 97223 phone 503-718-2323

Analytical Case Narrative

Client: Hahn and Associates Date: 10/08/2019
Project: Mult 802 Decommissioning
Apex Work Order Number: A9E0902

This data package contains data associated with analysis of samples for the above referenced Apex work order numbers. The data package Table of Contents, along with the PDF bookmarks, allow for ease of navigation and location of items within the data deliverable.

The Sample Receipt Documentation section of this package contains sample receipt information, including sample temperature and condition of receipt documented on Cooler Receipt Form(s). Apex analyzed the samples by the methods indicated on the Chain of Custody. Any additional analyses requested are indicated on the Apex Work Order.

If any anomalies were encountered during analysis that could potentially impact data quality, sample results are qualified and/or a separate Case Narrative is included in the Analytical Report. Please refer to the Notes and Definition section of the Analytical Report(s) for Qualifier explanations, Conventions, and the Blank Policy.

Data represented in this package are in compliance with the referenced method(s), both technically and for completeness, for all conditions other than those stated above and/or noted by qualification of the reported data. The signature below verifies that the Laboratory Director or his designee has authorized release of this data package.

Estella Rieben,
Quality Systems Manager
Apex Laboratories, LLC

APEX LABORATORIES, LLC
6700 SW Sandburg St. Tigard OR 97223 phone 503-718-2323

Analytical Report

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Wednesday, June 5, 2019

Rob Ede
Hahn and Associates
434 NW 6th Ave. Suite 203
Portland, OR 97209

RE: A9E0902 - Mult 802 Decommissioning - 2708-60F

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A9E0902, which was received by the laboratory on 5/28/2019 at 3:41:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of final reporting, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1 4.5 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

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Philip Nerenberg, Lab Director

Apex Laboratories, LLC

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EPA ID: OR01039

Hahn and Associates	Project: **Mult 802 Decommissioning**	
434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
2708-190524-014	**A9E0902-01**	**Solid**	**05/24/19 12:50**	**05/28/19 15:41**

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434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
2708-190524-014 (A9E0902-01)				**Matrix: Solid**		**Batch: 9051469**		
Diesel	**5250**	---	997	mg/kg	50	06/01/19	NWTPH-Dx	**F-17**
Oil	**3550**	---	1990	mg/kg	50	06/01/19	NWTPH-Dx	**F-17**
Surrogate: o-Terphenyl (Surr)			*Recovery: %*	*Limits: 50-150 %*	*50*	*06/01/19*	*NWTPH-Dx*	*S-01*

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434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
2708-190524-014 (A9E0902-01)				**Matrix: Solid**			**Batch: 9051463**	**V-16**
Gasoline Range Organics	**1870**	---	873	mg/kg	10000	05/31/19	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 100 %*		*Limits: 50-150 %*	*1*	*05/31/19*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*91 %*	*50-150 %*	*1*	*05/31/19*	*NWTPH-Gx (MS)*	

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434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 5035A/8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
2708-190524-014 (A9E0902-01)				**Matrix: Solid**			**Batch: 9051463**	**V-16**
Acetone	ND	---	175000	ug/kg	10000	05/31/19	5035A/8260C	
Acrylonitrile	ND	---	17500	ug/kg	10000	05/31/19	5035A/8260C	
Benzene	**8120**	---	1750	ug/kg	10000	05/31/19	5035A/8260C	
Bromobenzene	ND	---	4360	ug/kg	10000	05/31/19	5035A/8260C	
Bromochloromethane	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
Bromodichloromethane	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
Bromoform	ND	---	17500	ug/kg	10000	05/31/19	5035A/8260C	
Bromomethane	ND	---	87300	ug/kg	10000	05/31/19	5035A/8260C	
2-Butanone (MEK)	ND	---	87300	ug/kg	10000	05/31/19	5035A/8260C	
n-Butylbenzene	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
sec-Butylbenzene	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
tert-Butylbenzene	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
Carbon disulfide	ND	---	87300	ug/kg	10000	05/31/19	5035A/8260C	
Carbon tetrachloride	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
Chlorobenzene	ND	---	4360	ug/kg	10000	05/31/19	5035A/8260C	
Chloroethane	ND	---	87300	ug/kg	10000	05/31/19	5035A/8260C	
Chloroform	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
Chloromethane	ND	---	43600	ug/kg	10000	05/31/19	5035A/8260C	
2-Chlorotoluene	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
4-Chlorotoluene	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
Dibromochloromethane	ND	---	17500	ug/kg	10000	05/31/19	5035A/8260C	
1,2-Dibromo-3-chloropropane	ND	---	43600	ug/kg	10000	05/31/19	5035A/8260C	
1,2-Dibromoethane (EDB)	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
Dibromomethane	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
1,2-Dichlorobenzene	ND	---	4360	ug/kg	10000	05/31/19	5035A/8260C	
1,3-Dichlorobenzene	ND	---	4360	ug/kg	10000	05/31/19	5035A/8260C	
1,4-Dichlorobenzene	ND	---	4360	ug/kg	10000	05/31/19	5035A/8260C	
Dichlorodifluoromethane	ND	---	17500	ug/kg	10000	05/31/19	5035A/8260C	
1,1-Dichloroethane	ND	---	4360	ug/kg	10000	05/31/19	5035A/8260C	
1,2-Dichloroethane (EDC)	ND	---	4360	ug/kg	10000	05/31/19	5035A/8260C	
1,1-Dichloroethene	ND	---	4360	ug/kg	10000	05/31/19	5035A/8260C	
cis-1,2-Dichloroethene	ND	---	4360	ug/kg	10000	05/31/19	5035A/8260C	
trans-1,2-Dichloroethene	ND	---	4360	ug/kg	10000	05/31/19	5035A/8260C	

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EPA ID: OR01039

Hahn and Associates	Project: **Mult 802 Decommissioning**	
434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 5035A/8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
2708-190524-014 (A9E0902-01)				**Matrix: Solid**			**Batch: 9051463**	**V-16**
1,2-Dichloropropane	ND	---	4360	ug/kg	10000	05/31/19	5035A/8260C	
1,3-Dichloropropane	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
2,2-Dichloropropane	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
1,1-Dichloropropene	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
cis-1,3-Dichloropropene	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
trans-1,3-Dichloropropene	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
Ethylbenzene	**6370**	---	4360	ug/kg	10000	05/31/19	5035A/8260C	
Hexachlorobutadiene	ND	---	17500	ug/kg	10000	05/31/19	5035A/8260C	
2-Hexanone	ND	---	87300	ug/kg	10000	05/31/19	5035A/8260C	
Isopropylbenzene	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
4-Isopropyltoluene	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
Methylene chloride	ND	---	43600	ug/kg	10000	05/31/19	5035A/8260C	
4-Methyl-2-pentanone (MiBK)	ND	---	87300	ug/kg	10000	05/31/19	5035A/8260C	
Methyl tert-butyl ether (MTBE)	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
Naphthalene	**677000**	---	17500	ug/kg	10000	05/31/19	5035A/8260C	
n-Propylbenzene	ND	---	4360	ug/kg	10000	05/31/19	5035A/8260C	
Styrene	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
1,1,1,2-Tetrachloroethane	ND	---	4360	ug/kg	10000	05/31/19	5035A/8260C	
1,1,2,2-Tetrachloroethane	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
Tetrachloroethene (PCE)	ND	---	4360	ug/kg	10000	05/31/19	5035A/8260C	
Toluene	**10100**	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
1,2,3-Trichlorobenzene	ND	---	43600	ug/kg	10000	05/31/19	5035A/8260C	
1,2,4-Trichlorobenzene	ND	---	43600	ug/kg	10000	05/31/19	5035A/8260C	
1,1,1-Trichloroethane	ND	---	4360	ug/kg	10000	05/31/19	5035A/8260C	
1,1,2-Trichloroethane	ND	---	4360	ug/kg	10000	05/31/19	5035A/8260C	
Trichloroethene (TCE)	ND	---	4360	ug/kg	10000	05/31/19	5035A/8260C	
Trichlorofluoromethane	ND	---	17500	ug/kg	10000	05/31/19	5035A/8260C	
1,2,3-Trichloropropane	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
1,2,4-Trimethylbenzene	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
1,3,5-Trimethylbenzene	ND	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
Vinyl chloride	ND	---	4360	ug/kg	10000	05/31/19	5035A/8260C	
m,p-Xylene	**10300**	---	8730	ug/kg	10000	05/31/19	5035A/8260C	
o-Xylene	ND	---	4360	ug/kg	10000	05/31/19	5035A/8260C	

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Philip Nerenberg, Lab Director

Apex Laboratories, LLC

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EPA ID: OR01039

Hahn and Associates	Project: **Mult 802 Decommissioning**	
434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 5035A/8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
2708-190524-014 (A9E0902-01)				**Matrix: Solid**			**Batch: 9051463**	**V-16**
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*97 %*	*Limits: 80-120 %*	*1*	*05/31/19*	*5035A/8260C*	
Toluene-d8 (Surr)			*98 %*	*80-120 %*	*1*	*05/31/19*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*104 %*	*80-120 %*	*1*	*05/31/19*	*5035A/8260C*	

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434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
2708-190524-014 (A9E0902-01)				**Matrix: Solid**		**Batch: 9051465**		
Acenaphthene	**349000**	---	994	ug/kg	100	05/31/19	EPA 8270D (SIM)	
Acenaphthylene	**8360**	---	994	ug/kg	100	05/31/19	EPA 8270D (SIM)	
Anthracene	**206000**	---	994	ug/kg	100	05/31/19	EPA 8270D (SIM)	
Benz(a)anthracene	**157000**	---	994	ug/kg	100	05/31/19	EPA 8270D (SIM)	
Benzo(a)pyrene	**185000**	---	994	ug/kg	100	05/31/19	EPA 8270D (SIM)	
Benzo(b)fluoranthene	**175000**	---	994	ug/kg	100	05/31/19	EPA 8270D (SIM)	**M-05**
Benzo(k)fluoranthene	**67300**	---	994	ug/kg	100	05/31/19	EPA 8270D (SIM)	**M-05**
Benzo(g,h,i)perylene	**101000**	---	994	ug/kg	100	05/31/19	EPA 8270D (SIM)	
Chrysene	**142000**	---	994	ug/kg	100	05/31/19	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	**15900**	---	994	ug/kg	100	05/31/19	EPA 8270D (SIM)	
Dibenzofuran	**217000**	---	994	ug/kg	100	05/31/19	EPA 8270D (SIM)	
Fluorene	**207000**	---	994	ug/kg	100	05/31/19	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	**106000**	---	994	ug/kg	100	05/31/19	EPA 8270D (SIM)	
1-Methylnaphthalene	**113000**	---	994	ug/kg	100	05/31/19	EPA 8270D (SIM)	
2-Methylnaphthalene	**226000**	---	994	ug/kg	100	05/31/19	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery: 78 %*		*Limits: 44-120 %*	*100*	*05/31/19*	*EPA 8270D (SIM)*	*S-05*
p-Terphenyl-d14 (Surr)			*121 %*	*54-127 %*	*100*	*05/31/19*	*EPA 8270D (SIM)*	*S-05*
2708-190524-014 (A9E0902-01RE1)				**Matrix: Solid**		**Batch: 9051465**		
Fluoranthene	**1180000**	---	9940	ug/kg	1000	06/03/19	EPA 8270D (SIM)	
Naphthalene	**1190000**	---	9940	ug/kg	1000	06/03/19	EPA 8270D (SIM)	
Phenanthrene	**1470000**	---	9940	ug/kg	1000	06/03/19	EPA 8270D (SIM)	
Pyrene	**1070000**	---	9940	ug/kg	1000	06/03/19	EPA 8270D (SIM)	

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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
2708-190524-014 (A9E0902-01)				**Matrix: Solid**				
Batch: 9051429								
Aluminum	**7540**	---	49.3	mg/kg	10	05/31/19	EPA 6020A	**Q-42**
Antimony	ND	---	0.986	mg/kg	10	05/31/19	EPA 6020A	
Arsenic	**2.63**	---	0.986	mg/kg	10	05/31/19	EPA 6020A	**Q-42**
Barium	**94.6**	---	0.986	mg/kg	10	05/31/19	EPA 6020A	**Q-42**
Beryllium	**0.512**	---	0.197	mg/kg	10	05/31/19	EPA 6020A	**Q-42**
Cadmium	**0.546**	---	0.197	mg/kg	10	05/31/19	EPA 6020A	**Q-42**
Calcium	**3840**	---	98.6	mg/kg	10	05/31/19	EPA 6020A	
Chromium	**2.14**	---	0.986	mg/kg	10	05/31/19	EPA 6020A	**Q-42**
Copper	**9.88**	---	0.986	mg/kg	10	05/31/19	EPA 6020A	
Iron	**43800**	---	49.3	mg/kg	10	05/31/19	EPA 6020A	**Q-42**
Lead	**6.19**	---	0.197	mg/kg	10	05/31/19	EPA 6020A	
Magnesium	**1400**	---	49.3	mg/kg	10	05/31/19	EPA 6020A	
Manganese	**323**	---	0.986	mg/kg	10	05/31/19	EPA 6020A	
Mercury	ND	---	0.0789	mg/kg	10	05/31/19	EPA 6020A	
Nickel	**4.06**	---	0.986	mg/kg	10	05/31/19	EPA 6020A	**Q-42**
Potassium	**466**	---	98.6	mg/kg	10	05/31/19	EPA 6020A	
Selenium	ND	---	0.986	mg/kg	10	05/31/19	EPA 6020A	
Silver	ND	---	0.197	mg/kg	10	05/31/19	EPA 6020A	
Sodium	**231**	---	98.6	mg/kg	10	05/31/19	EPA 6020A	
Thallium	ND	---	0.197	mg/kg	10	05/31/19	EPA 6020A	Q-42
Vanadium	**83.2**	---	0.986	mg/kg	10	05/31/19	EPA 6020A	**Q-42**
Zinc	**40.1**	---	3.94	mg/kg	10	05/31/19	EPA 6020A	**Q-42**

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Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

ANALYTICAL SAMPLE RESULTS

Total Cyanide by UV Digestion/Gas Diffusion/Amperometric Detection

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
2708-190524-014 (A9E0902-01)				**Matrix: Solid**			**Batch: 9051383**	
Cyanide, Total	**1.28**	---	0.975	mg/kg	10	05/30/19	D7511-12	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051469 - EPA 3546 (Fuels)							**Solid**					
Blank (9051469-BLK1)			Prepared: 05/31/19 13:21		Analyzed: 06/01/19 00:03							
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg	1	---	---	---	---	---	---	
Oil	ND	---	50.0	mg/kg	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 91 %*		*Limits: 50-150 %*		*Dilution: 1x*					
LCS (9051469-BS1)			Prepared: 05/31/19 13:21		Analyzed: 06/01/19 00:25							
NWTPH-Dx												
Diesel	110	---	25.0	mg/kg	1	125	---	88	70-130%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 101 %*		*Limits: 50-150 %*		*Dilution: 1x*					
Duplicate (9051469-DUP1)			Prepared: 05/31/19 13:21		Analyzed: 06/01/19 01:11							
QC Source Sample: 2708-190524-014 (A9E0902-01)												
NWTPH-Dx												
Diesel	**4230**	---	995	mg/kg	50	---	5250	---	---	22	30%	F-17
Oil	**2840**	---	1990	mg/kg	50	---	3550	---	---	22	30%	F-17
Surr: o-Terphenyl (Surr)			*Recovery: %*		*Limits: 50-150 %*		*Dilution: 50x*					S-01

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503-718-2323
EPA ID: OR01039

Hahn and Associates	Project: **Mult 802 Decommissioning**	
434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051463 - EPA 5035A								Soil				
Blank (9051463-BLK1)			Prepared: 05/31/19 13:00 Analyzed: 05/31/19 15:19									
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 101 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*93 %*	*50-150 %*		*"*							
LCS (9051463-BS3)			Prepared: 05/31/19 13:00 Analyzed: 05/31/19 14:51									
NWTPH-Gx (MS)												
Gasoline Range Organics	25.1	---	5.00	mg/kg	50	25.0	---	100	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 100 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*94 %*	*50-150 %*		*"*							
Duplicate (9051463-DUP1)			Prepared: 05/31/19 15:27 Analyzed: 05/31/19 17:10									
QC Source Sample: Non-SDG (A9E0895-06)												
Gasoline Range Organics	ND	---	5.71	mg/kg	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 107 %*	*Limits: 50-150 %*		*Dilution: 1x*							
1,4-Difluorobenzene (Sur)		*93 %*	*50-150 %*		*"*							

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Hahn and Associates	Project: **Mult 802 Decommissioning**	
434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	A9E0902 - 06 05 19 0934

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 5035A/8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051463 - EPA 5035A							Soil					
Blank (9051463-BLK1)			Prepared: 05/31/19 13:00 Analyzed: 05/31/19 15:19									
5035A/8260C												
Acetone	ND	---	667	ug/kg	50	---	---	---	---	---	---	
Acrylonitrile	ND	---	66.7	ug/kg	50	---	---	---	---	---	---	
Benzene	ND	---	6.67	ug/kg	50	---	---	---	---	---	---	
Bromobenzene	ND	---	16.7	ug/kg	50	---	---	---	---	---	---	
Bromochloromethane	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
Bromodichloromethane	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
Bromoform	ND	---	66.7	ug/kg	50	---	---	---	---	---	---	
Bromomethane	ND	---	333	ug/kg	50	---	---	---	---	---	---	
2-Butanone (MEK)	ND	---	333	ug/kg	50	---	---	---	---	---	---	
n-Butylbenzene	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
sec-Butylbenzene	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
tert-Butylbenzene	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
Carbon disulfide	ND	---	333	ug/kg	50	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
Chlorobenzene	ND	---	16.7	ug/kg	50	---	---	---	---	---	---	
Chloroethane	ND	---	333	ug/kg	50	---	---	---	---	---	---	
Chloroform	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
Chloromethane	ND	---	167	ug/kg	50	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
Dibromochloromethane	ND	---	66.7	ug/kg	50	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	167	ug/kg	50	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
Dibromomethane	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	16.7	ug/kg	50	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	16.7	ug/kg	50	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	16.7	ug/kg	50	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	66.7	ug/kg	50	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	16.7	ug/kg	50	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	16.7	ug/kg	50	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	16.7	ug/kg	50	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	16.7	ug/kg	50	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	16.7	ug/kg	50	---	---	---	---	---	---	

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EPA ID: OR01039

Hahn and Associates	Project: **Mult 802 Decommissioning**	
434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 5035A/8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051463 - EPA 5035A							**Soil**					
Blank (9051463-BLK1)			Prepared: 05/31/19 13:00 Analyzed: 05/31/19 15:19									
1,2-Dichloropropane	ND	---	16.7	ug/kg	50	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
Ethylbenzene	ND	---	16.7	ug/kg	50	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	66.7	ug/kg	50	---	---	---	---	---	---	
2-Hexanone	ND	---	333	ug/kg	50	---	---	---	---	---	---	
Isopropylbenzene	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
4-Isopropyltoluene	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
Methylene chloride	ND	---	167	ug/kg	50	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	---	333	ug/kg	50	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
Naphthalene	ND	---	66.7	ug/kg	50	---	---	---	---	---	---	
n-Propylbenzene	ND	---	16.7	ug/kg	50	---	---	---	---	---	---	
Styrene	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	---	16.7	ug/kg	50	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	16.7	ug/kg	50	---	---	---	---	---	---	
Toluene	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	167	ug/kg	50	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	167	ug/kg	50	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	16.7	ug/kg	50	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	16.7	ug/kg	50	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	16.7	ug/kg	50	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	66.7	ug/kg	50	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
Vinyl chloride	ND	---	16.7	ug/kg	50	---	---	---	---	---	---	
m,p-Xylene	ND	---	33.3	ug/kg	50	---	---	---	---	---	---	
o-Xylene	ND	---	16.7	ug/kg	50	---	---	---	---	---	---	

Surr: 1,4-Difluorobenzene (Surr) *Recovery: 100 %* *Limits: 80-120 %* *Dilution: 1x*

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434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 5035A/8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051463 - EPA 5035A							**Soil**					
Blank (9051463-BLK1)			Prepared: 05/31/19 13:00 Analyzed: 05/31/19 15:19									
Surr: Toluene-d8 (Surr)			*Recovery: 99 %*	*Limits: 80-120 %*				*Dilution: 1x*				
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*				*"*				
LCS (9051463-BS2)			Prepared: 05/31/19 13:00 Analyzed: 05/31/19 14:24									
5035A/8260C												
Acetone	2160	---	1000	ug/kg	50	2000	---	108	80-120%	---	---	
Acrylonitrile	1070	---	100	ug/kg	50	1000	---	107	80-120%	---	---	
Benzene	988	---	10.0	ug/kg	50	1000	---	99	80-120%	---	---	
Bromobenzene	1050	---	25.0	ug/kg	50	1000	---	105	80-120%	---	---	
Bromochloromethane	1060	---	50.0	ug/kg	50	1000	---	106	80-120%	---	---	
Bromodichloromethane	1020	---	50.0	ug/kg	50	1000	---	102	80-120%	---	---	
Bromoform	846	---	100	ug/kg	50	1000	---	85	80-120%	---	---	
Bromomethane	1010	---	500	ug/kg	50	1000	---	101	80-120%	---	---	
2-Butanone (MEK)	2090	---	500	ug/kg	50	2000	---	105	80-120%	---	---	
n-Butylbenzene	995	---	50.0	ug/kg	50	1000	---	100	80-120%	---	---	
sec-Butylbenzene	989	---	50.0	ug/kg	50	1000	---	99	80-120%	---	---	
tert-Butylbenzene	978	---	50.0	ug/kg	50	1000	---	98	80-120%	---	---	
Carbon disulfide	966	---	500	ug/kg	50	1000	---	97	80-120%	---	---	
Carbon tetrachloride	994	---	50.0	ug/kg	50	1000	---	99	80-120%	---	---	
Chlorobenzene	972	---	25.0	ug/kg	50	1000	---	97	80-120%	---	---	
Chloroethane	806	---	500	ug/kg	50	1000	---	81	80-120%	---	---	
Chloroform	973	---	50.0	ug/kg	50	1000	---	97	80-120%	---	---	
Chloromethane	898	---	250	ug/kg	50	1000	---	90	80-120%	---	---	
2-Chlorotoluene	1010	---	50.0	ug/kg	50	1000	---	101	80-120%	---	---	
4-Chlorotoluene	993	---	50.0	ug/kg	50	1000	---	99	80-120%	---	---	
Dibromochloromethane	890	---	100	ug/kg	50	1000	---	89	80-120%	---	---	
1,2-Dibromo-3-chloropropane	918	---	250	ug/kg	50	1000	---	92	80-120%	---	---	
1,2-Dibromoethane (EDB)	1080	---	50.0	ug/kg	50	1000	---	108	80-120%	---	---	
Dibromomethane	1030	---	50.0	ug/kg	50	1000	---	103	80-120%	---	---	
1,2-Dichlorobenzene	962	---	25.0	ug/kg	50	1000	---	96	80-120%	---	---	
1,3-Dichlorobenzene	970	---	25.0	ug/kg	50	1000	---	97	80-120%	---	---	
1,4-Dichlorobenzene	944	---	25.0	ug/kg	50	1000	---	94	80-120%	---	---	
Dichlorodifluoromethane	962	---	100	ug/kg	50	1000	---	96	80-120%	---	---	
1,1-Dichloroethane	1050	---	25.0	ug/kg	50	1000	---	105	80-120%	---	---	

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434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 5035A/8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051463 - EPA 5035A							**Soil**					
LCS (9051463-BS2)			Prepared: 05/31/19 13:00 Analyzed: 05/31/19 14:24									
1,2-Dichloroethane (EDC)	1000	---	25.0	ug/kg	50	1000	---	100	80-120%	---	---	
1,1-Dichloroethene	1020	---	25.0	ug/kg	50	1000	---	102	80-120%	---	---	
cis-1,2-Dichloroethene	1010	---	25.0	ug/kg	50	1000	---	101	80-120%	---	---	
trans-1,2-Dichloroethene	1020	---	25.0	ug/kg	50	1000	---	102	80-120%	---	---	
1,2-Dichloropropane	1020	---	25.0	ug/kg	50	1000	---	102	80-120%	---	---	
1,3-Dichloropropane	1030	---	50.0	ug/kg	50	1000	---	103	80-120%	---	---	
2,2-Dichloropropane	1100	---	50.0	ug/kg	50	1000	---	110	80-120%	---	---	
1,1-Dichloropropene	962	---	50.0	ug/kg	50	1000	---	96	80-120%	---	---	
cis-1,3-Dichloropropene	1060	---	50.0	ug/kg	50	1000	---	106	80-120%	---	---	
trans-1,3-Dichloropropene	1060	---	50.0	ug/kg	50	1000	---	106	80-120%	---	---	
Ethylbenzene	980	---	25.0	ug/kg	50	1000	---	98	80-120%	---	---	
Hexachlorobutadiene	1010	---	100	ug/kg	50	1000	---	101	80-120%	---	---	
2-Hexanone	1960	---	500	ug/kg	50	2000	---	98	80-120%	---	---	
Isopropylbenzene	1000	---	50.0	ug/kg	50	1000	---	100	80-120%	---	---	
4-Isopropyltoluene	1020	---	50.0	ug/kg	50	1000	---	102	80-120%	---	---	
Methylene chloride	820	---	250	ug/kg	50	1000	---	82	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	1880	---	500	ug/kg	50	2000	---	94	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	997	---	50.0	ug/kg	50	1000	---	100	80-120%	---	---	
Naphthalene	1010	---	100	ug/kg	50	1000	---	101	80-120%	---	---	
n-Propylbenzene	1010	---	25.0	ug/kg	50	1000	---	101	80-120%	---	---	
Styrene	1050	---	50.0	ug/kg	50	1000	---	105	80-120%	---	---	
1,1,1,2-Tetrachloroethane	1080	---	25.0	ug/kg	50	1000	---	108	80-120%	---	---	
1,1,2,2-Tetrachloroethane	1030	---	50.0	ug/kg	50	1000	---	103	80-120%	---	---	
Tetrachloroethene (PCE)	941	---	25.0	ug/kg	50	1000	---	94	80-120%	---	---	
Toluene	972	---	50.0	ug/kg	50	1000	---	97	80-120%	---	---	
1,2,3-Trichlorobenzene	1040	---	250	ug/kg	50	1000	---	104	80-120%	---	---	
1,2,4-Trichlorobenzene	1020	---	250	ug/kg	50	1000	---	102	80-120%	---	---	
1,1,1-Trichloroethane	1010	---	25.0	ug/kg	50	1000	---	101	80-120%	---	---	
1,1,2-Trichloroethane	1020	---	25.0	ug/kg	50	1000	---	102	80-120%	---	---	
Trichloroethene (TCE)	946	---	25.0	ug/kg	50	1000	---	95	80-120%	---	---	
Trichlorofluoromethane	756	---	100	ug/kg	50	1000	---	**76**	**80-120%**	---	---	Q-55
1,2,3-Trichloropropane	1020	---	50.0	ug/kg	50	1000	---	102	80-120%	---	---	
1,2,4-Trimethylbenzene	1010	---	50.0	ug/kg	50	1000	---	101	80-120%	---	---	
1,3,5-Trimethylbenzene	1030	---	50.0	ug/kg	50	1000	---	103	80-120%	---	---	

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Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 5035A/8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051463 - EPA 5035A							**Soil**					
LCS (9051463-BS2)			Prepared: 05/31/19 13:00 Analyzed: 05/31/19 14:24									
Vinyl chloride	908	---	25.0	ug/kg	50	1000	---	91	80-120%	---	---	
m,p-Xylene	2010	---	50.0	ug/kg	50	2000	---	100	80-120%	---	---	
o-Xylene	984	---	25.0	ug/kg	50	1000	---	98	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 100 %*		*Limits: 80-120 %*		*Dilution: 1x*					
Toluene-d8 (Surr)			*98 %*		*80-120 %*		*"*					
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*		*"*					
Duplicate (9051463-DUP1)			Prepared: 05/31/19 15:27 Analyzed: 05/31/19 17:10									
QC Source Sample: Non-SDG (A9E0895-06)												
Acetone	ND	---	1140	ug/kg	50	---	ND	---	---	---	30%	
Acrylonitrile	ND	---	114	ug/kg	50	---	ND	---	---	---	30%	
Benzene	ND	---	11.4	ug/kg	50	---	ND	---	---	---	30%	
Bromobenzene	ND	---	28.6	ug/kg	50	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
Bromoform	ND	---	114	ug/kg	50	---	ND	---	---	---	30%	
Bromomethane	ND	---	571	ug/kg	50	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	---	571	ug/kg	50	---	ND	---	---	---	30%	
n-Butylbenzene	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
Carbon disulfide	ND	---	571	ug/kg	50	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	28.6	ug/kg	50	---	ND	---	---	---	30%	
Chloroethane	ND	---	571	ug/kg	50	---	ND	---	---	---	30%	
Chloroform	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
Chloromethane	ND	---	286	ug/kg	50	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	114	ug/kg	50	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	286	ug/kg	50	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
Dibromomethane	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	28.6	ug/kg	50	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director

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503-718-2323
EPA ID: OR01039

Hahn and Associates	Project: **Mult 802 Decommissioning**	
434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	A9E0902 - 06 05 19 0934

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 5035A/8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051463 - EPA 5035A							**Soil**					
Duplicate (9051463-DUP1)			Prepared: 05/31/19 15:27 Analyzed: 05/31/19 17:10									
QC Source Sample: Non-SDG (A9E0895-06)												
1,3-Dichlorobenzene	ND	---	28.6	ug/kg	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	28.6	ug/kg	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	114	ug/kg	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	28.6	ug/kg	50	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	28.6	ug/kg	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	28.6	ug/kg	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	28.6	ug/kg	50	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	28.6	ug/kg	50	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	28.6	ug/kg	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	28.6	ug/kg	50	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	114	ug/kg	50	---	ND	---	---	---	30%	
2-Hexanone	ND	---	571	ug/kg	50	---	ND	---	---	---	30%	
Isopropylbenzene	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
Methylene chloride	ND	---	286	ug/kg	50	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	---	571	ug/kg	50	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
Naphthalene	ND	---	114	ug/kg	50	---	ND	---	---	---	30%	
n-Propylbenzene	ND	---	28.6	ug/kg	50	---	ND	---	---	---	30%	
Styrene	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	28.6	ug/kg	50	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	28.6	ug/kg	50	---	ND	---	---	---	30%	
Toluene	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	286	ug/kg	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	286	ug/kg	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	28.6	ug/kg	50	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	28.6	ug/kg	50	---	ND	---	---	---	30%	

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EPA ID: OR01039

Hahn and Associates	Project: **Mult 802 Decommissioning**	
434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	A9E0902 - 06 05 19 0934

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 5035A/8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051463 - EPA 5035A							**Soil**					
Duplicate (9051463-DUP1)			Prepared: 05/31/19 15:27 Analyzed: 05/31/19 17:10									
QC Source Sample: Non-SDG (A9E0895-06)												
Trichloroethene (TCE)	ND	---	28.6	ug/kg	50	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	114	ug/kg	50	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	28.6	ug/kg	50	---	ND	---	---	---	30%	
m,p-Xylene	ND	---	57.1	ug/kg	50	---	ND	---	---	---	30%	
o-Xylene	ND	---	28.6	ug/kg	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 99 %*		*Limits: 80-120 %*		*Dilution: 1x*					
Toluene-d8 (Surr)			*97 %*		*80-120 %*		*"*					
4-Bromofluorobenzene (Surr)			*103 %*		*80-120 %*		*"*					
Matrix Spike (9051463-MS1)			Prepared: 05/31/19 15:27 Analyzed: 05/31/19 20:51									
QC Source Sample: Non-SDG (A9E0895-13)												
5035A/8260C												
Acetone	3670	---	1400	ug/kg	50	2800	ND	131	36-164%	---	---	
Acrylonitrile	1600	---	140	ug/kg	50	1400	ND	114	65-134%	---	---	
Benzene	1410	---	14.0	ug/kg	50	1400	ND	100	77-121%	---	---	
Bromobenzene	1510	---	35.1	ug/kg	50	1400	ND	108	78-121%	---	---	
Bromochloromethane	1530	---	70.1	ug/kg	50	1400	ND	109	78-125%	---	---	
Bromodichloromethane	1480	---	70.1	ug/kg	50	1400	ND	105	75-127%	---	---	
Bromoform	1280	---	140	ug/kg	50	1400	ND	92	67-132%	---	---	
Bromomethane	1410	---	701	ug/kg	50	1400	ND	100	53-143%	---	---	
2-Butanone (MEK)	3260	---	701	ug/kg	50	2800	ND	116	51-148%	---	---	
n-Butylbenzene	1430	---	70.1	ug/kg	50	1400	ND	102	70-128%	---	---	
sec-Butylbenzene	1430	---	70.1	ug/kg	50	1400	ND	102	73-126%	---	---	
tert-Butylbenzene	1400	---	70.1	ug/kg	50	1400	ND	100	73-125%	---	---	
Carbon disulfide	1410	---	701	ug/kg	50	1400	ND	101	63-132%	---	---	
Carbon tetrachloride	1420	---	70.1	ug/kg	50	1400	ND	102	70-135%	---	---	
Chlorobenzene	1390	---	35.1	ug/kg	50	1400	ND	99	79-120%	---	---	
Chloroethane	1390	---	701	ug/kg	50	1400	ND	99	59-139%	---	---	
Chloroform	1430	---	70.1	ug/kg	50	1400	ND	102	78-123%	---	---	
Chloromethane	1310	---	351	ug/kg	50	1400	ND	94	50-136%	---	---	

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Hahn and Associates	Project: **Mult 802 Decommissioning**	
434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 5035A/8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051463 - EPA 5035A							**Soil**					
Matrix Spike (9051463-MS1)			Prepared: 05/31/19 15:27		Analyzed: 05/31/19 20:51							
QC Source Sample: Non-SDG (A9E0895-13)												
2-Chlorotoluene	1460	---	70.1	ug/kg	50	1400	ND	104	75-122%	---	---	
4-Chlorotoluene	1450	---	70.1	ug/kg	50	1400	ND	103	72-124%	---	---	
Dibromochloromethane	1290	---	140	ug/kg	50	1400	ND	92	74-126%	---	---	
1,2-Dibromo-3-chloropropane	1310	---	351	ug/kg	50	1400	ND	94	61-132%	---	---	
1,2-Dibromoethane (EDB)	1550	---	70.1	ug/kg	50	1400	ND	111	78-122%	---	---	
Dibromomethane	1520	---	70.1	ug/kg	50	1400	ND	109	78-125%	---	---	
1,2-Dichlorobenzene	1350	---	35.1	ug/kg	50	1400	ND	96	78-121%	---	---	
1,3-Dichlorobenzene	1410	---	35.1	ug/kg	50	1400	ND	100	77-121%	---	---	
1,4-Dichlorobenzene	1420	---	35.1	ug/kg	50	1400	31.6	99	75-120%	---	---	
Dichlorodifluoromethane	1530	---	140	ug/kg	50	1400	ND	109	29-149%	---	---	
1,1-Dichloroethane	1630	---	35.1	ug/kg	50	1400	ND	116	76-125%	---	---	
1,2-Dichloroethane (EDC)	1450	---	35.1	ug/kg	50	1400	ND	103	73-128%	---	---	
1,1-Dichloroethene	1520	---	35.1	ug/kg	50	1400	ND	109	70-131%	---	---	
cis-1,2-Dichloroethene	1460	---	35.1	ug/kg	50	1400	ND	104	77-123%	---	---	
trans-1,2-Dichloroethene	1480	---	35.1	ug/kg	50	1400	ND	105	74-125%	---	---	
1,2-Dichloropropane	1430	---	35.1	ug/kg	50	1400	ND	102	76-123%	---	---	
1,3-Dichloropropane	1490	---	70.1	ug/kg	50	1400	ND	106	77-121%	---	---	
2,2-Dichloropropane	1380	---	70.1	ug/kg	50	1400	ND	99	67-133%	---	---	
1,1-Dichloropropene	1390	---	70.1	ug/kg	50	1400	ND	99	76-125%	---	---	
cis-1,3-Dichloropropene	1470	---	70.1	ug/kg	50	1400	ND	105	74-126%	---	---	
trans-1,3-Dichloropropene	1490	---	70.1	ug/kg	50	1400	ND	106	71-130%	---	---	
Ethylbenzene	1410	---	35.1	ug/kg	50	1400	ND	101	76-122%	---	---	
Hexachlorobutadiene	1490	---	140	ug/kg	50	1400	ND	106	61-135%	---	---	
2-Hexanone	3050	---	701	ug/kg	50	2800	ND	109	53-145%	---	---	
Isopropylbenzene	1450	---	70.1	ug/kg	50	1400	ND	104	68-134%	---	---	
4-Isopropyltoluene	1440	---	70.1	ug/kg	50	1400	ND	103	73-127%	---	---	
Methylene chloride	1080	---	351	ug/kg	50	1400	ND	77	70-128%	---	---	
4-Methyl-2-pentanone (MiBK)	2910	---	701	ug/kg	50	2800	ND	104	65-135%	---	---	
Methyl tert-butyl ether (MTBE)	1400	---	70.1	ug/kg	50	1400	ND	100	73-125%	---	---	
Naphthalene	1430	---	140	ug/kg	50	1400	ND	102	62-129%	---	---	
n-Propylbenzene	1410	---	35.1	ug/kg	50	1400	ND	100	73-125%	---	---	
Styrene	1580	---	70.1	ug/kg	50	1400	ND	112	76-124%	---	---	
1,1,1,2-Tetrachloroethane	1520	---	35.1	ug/kg	50	1400	ND	109	78-125%	---	---	

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434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 5035A/8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051463 - EPA 5035A							**Soil**					
Matrix Spike (9051463-MS1)			Prepared: 05/31/19 15:27		Analyzed: 05/31/19 20:51							
QC Source Sample: Non-SDG (A9E0895-13)												
1,1,2,2-Tetrachloroethane	1440	---	70.1	ug/kg	50	1400	ND	103	70-124%	---	---	
Tetrachloroethene (PCE)	1320	---	35.1	ug/kg	50	1400	ND	94	73-128%	---	---	
Toluene	1380	---	70.1	ug/kg	50	1400	ND	99	77-121%	---	---	
1,2,3-Trichlorobenzene	1430	---	351	ug/kg	50	1400	ND	102	66-130%	---	---	
1,2,4-Trichlorobenzene	1420	---	351	ug/kg	50	1400	ND	101	67-129%	---	---	
1,1,1-Trichloroethane	1470	---	35.1	ug/kg	50	1400	ND	105	73-130%	---	---	
1,1,2-Trichloroethane	1510	---	35.1	ug/kg	50	1400	ND	107	78-121%	---	---	
Trichloroethene (TCE)	1350	---	35.1	ug/kg	50	1400	ND	96	77-123%	---	---	
Trichlorofluoromethane	1290	---	140	ug/kg	50	1400	ND	92	62-140%	---	---	Q-54
1,2,3-Trichloropropane	1470	---	70.1	ug/kg	50	1400	ND	105	73-125%	---	---	
1,2,4-Trimethylbenzene	1430	---	70.1	ug/kg	50	1400	ND	102	75-123%	---	---	
1,3,5-Trimethylbenzene	1450	---	70.1	ug/kg	50	1400	ND	103	73-124%	---	---	
Vinyl chloride	1410	---	35.1	ug/kg	50	1400	ND	101	56-135%	---	---	
m,p-Xylene	2910	---	70.1	ug/kg	50	2800	ND	104	77-124%	---	---	
o-Xylene	1460	---	35.1	ug/kg	50	1400	ND	104	77-123%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 99 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*98 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*			*"*				

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434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051465 - EPA 3546							**Solid**					
Blank (9051465-BLK1)			Prepared: 05/31/19 13:13		Analyzed: 05/31/19 20:48							
EPA 8270D (SIM)												
Acenaphthene	ND	---	9.09	ug/kg	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	9.09	ug/kg	1	---	---	---	---	---	---	
Anthracene	ND	---	9.09	ug/kg	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	9.09	ug/kg	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	9.09	ug/kg	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	9.09	ug/kg	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	9.09	ug/kg	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	9.09	ug/kg	1	---	---	---	---	---	---	
Chrysene	ND	---	9.09	ug/kg	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	9.09	ug/kg	1	---	---	---	---	---	---	
Dibenzofuran	ND	---	9.09	ug/kg	1	---	---	---	---	---	---	
Fluoranthene	ND	---	9.09	ug/kg	1	---	---	---	---	---	---	
Fluorene	ND	---	9.09	ug/kg	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	9.09	ug/kg	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	9.09	ug/kg	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	9.09	ug/kg	1	---	---	---	---	---	---	
Naphthalene	ND	---	9.09	ug/kg	1	---	---	---	---	---	---	
Phenanthrene	ND	---	9.09	ug/kg	1	---	---	---	---	---	---	
Pyrene	ND	---	9.09	ug/kg	1	---	---	---	---	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 82 %*		*Limits: 44-120 %*			*Dilution: 1x*				
p-Terphenyl-d14 (Surr)			*74 %*		*54-127 %*			*"*				
LCS (9051465-BS1)			Prepared: 05/31/19 13:13		Analyzed: 05/31/19 21:14							**Q-18**
EPA 8270D (SIM)												
Acenaphthene	763	---	10.0	ug/kg	1	800	---	95	40-122%	---	---	
Acenaphthylene	781	---	10.0	ug/kg	1	800	---	98	32-132%	---	---	
Anthracene	769	---	10.0	ug/kg	1	800	---	96	47-123%	---	---	
Benz(a)anthracene	720	---	10.0	ug/kg	1	800	---	90	49-126%	---	---	
Benzo(a)pyrene	790	---	10.0	ug/kg	1	800	---	99	45-129%	---	---	
Benzo(b)fluoranthene	715	---	10.0	ug/kg	1	800	---	89	45-132%	---	---	
Benzo(k)fluoranthene	738	---	10.0	ug/kg	1	800	---	92	47-132%	---	---	
Benzo(g,h,i)perylene	634	---	10.0	ug/kg	1	800	---	79	43-134%	---	---	
Chrysene	742	---	10.0	ug/kg	1	800	---	93	50-124%	---	---	

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Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Hahn and Associates	Project: **Mult 802 Decommissioning**	
434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051465 - EPA 3546							**Solid**					
LCS (9051465-BS1)			Prepared: 05/31/19 13:13		Analyzed: 05/31/19 21:14							**Q-18**
Dibenz(a,h)anthracene	741	---	10.0	ug/kg	1	800	---	93	45-134%	---	---	
Dibenzofuran	788	---	10.0	ug/kg	1	800	---	98	44-120%	---	---	
Fluoranthene	815	---	10.0	ug/kg	1	800	---	102	50-127%	---	---	
Fluorene	806	---	10.0	ug/kg	1	800	---	101	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	671	---	10.0	ug/kg	1	800	---	84	45-133%	---	---	
1-Methylnaphthalene	731	---	10.0	ug/kg	1	800	---	91	40-120%	---	---	
2-Methylnaphthalene	736	---	10.0	ug/kg	1	800	---	92	38-122%	---	---	
Naphthalene	727	---	10.0	ug/kg	1	800	---	91	35-123%	---	---	
Phenanthrene	738	---	10.0	ug/kg	1	800	---	92	50-121%	---	---	
Pyrene	822	---	10.0	ug/kg	1	800	---	103	47-127%	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 83 %*		*Limits: 44-120 %*		*Dilution: 1x*					
p-Terphenyl-d14 (Surr)			*73 %*		*54-127 %*		*"*					
Duplicate (9051465-DUP1)			Prepared: 05/31/19 13:13		Analyzed: 05/31/19 22:07							
QC Source Sample: 2708-190524-014 (A9E0902-01)												
EPA 8270D (SIM)												
Acenaphthene	**263000**	---	987	ug/kg	100	---	349000	---	---	28	30%	
Acenaphthylene	**6450**	---	987	ug/kg	100	---	8360	---	---	26	30%	
Anthracene	**161000**	---	987	ug/kg	100	---	206000	---	---	24	30%	
Benz(a)anthracene	**126000**	---	987	ug/kg	100	---	157000	---	---	21	30%	
Benzo(a)pyrene	**146000**	---	987	ug/kg	100	---	185000	---	---	24	30%	
Benzo(b)fluoranthene	**143000**	---	987	ug/kg	100	---	175000	---	---	20	30%	M-05
Benzo(k)fluoranthene	**51400**	---	987	ug/kg	100	---	67300	---	---	27	30%	M-05
Benzo(g,h,i)perylene	**86000**	---	987	ug/kg	100	---	101000	---	---	16	30%	
Chrysene	**115000**	---	987	ug/kg	100	---	142000	---	---	21	30%	
Dibenz(a,h)anthracene	**13300**	---	987	ug/kg	100	---	15900	---	---	18	30%	
Dibenzofuran	**167000**	---	987	ug/kg	100	---	217000	---	---	26	30%	
Fluorene	**157000**	---	987	ug/kg	100	---	207000	---	---	28	30%	
Indeno(1,2,3-cd)pyrene	**89000**	---	987	ug/kg	100	---	106000	---	---	17	30%	
1-Methylnaphthalene	**86500**	---	987	ug/kg	100	---	113000	---	---	27	30%	
2-Methylnaphthalene	**177000**	---	987	ug/kg	100	---	226000	---	---	24	30%	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 80 %*		*Limits: 44-120 %*		*Dilution: 100x*					S-05
p-Terphenyl-d14 (Surr)			*104 %*		*54-127 %*		*"*					S-05

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Hahn and Associates	Project: **Mult 802 Decommissioning**	
434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051465 - EPA 3546							**Solid**					
Duplicate (9051465-DUP2)			Prepared: 05/31/19 13:13 Analyzed: 06/03/19 11:31									
QC Source Sample: 2708-190524-014 (A9E0902-01RE1)												
EPA 8270D (SIM)												
Fluoranthene	**909000**	---	9870	ug/kg	1000	---	1180000	---	---	26	30%	
Naphthalene	**916000**	---	9870	ug/kg	1000	---	1190000	---	---	26	30%	
Phenanthrene	**1110000**	---	9870	ug/kg	1000	---	1470000	---	---	27	30%	
Pyrene	**830000**	---	9870	ug/kg	1000	---	1070000	---	---	25	30%	

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Hahn and Associates	Project: **Mult 802 Decommissioning**	
434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	A9E0902 - 06 05 19 0934

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051429 - EPA 3051A							**Solid**					
Blank (9051429-BLK1)			Prepared: 05/30/19 14:33		Analyzed: 05/31/19 16:12							
EPA 6020A												
Aluminum	ND	---	48.1	mg/kg	10	---	---	---	---	---	---	
Antimony	ND	---	0.962	mg/kg	10	---	---	---	---	---	---	
Arsenic	ND	---	0.962	mg/kg	10	---	---	---	---	---	---	
Barium	ND	---	0.962	mg/kg	10	---	---	---	---	---	---	
Beryllium	ND	---	0.192	mg/kg	10	---	---	---	---	---	---	
Cadmium	ND	---	0.192	mg/kg	10	---	---	---	---	---	---	
Calcium	ND	---	96.2	mg/kg	10	---	---	---	---	---	---	
Chromium	ND	---	0.962	mg/kg	10	---	---	---	---	---	---	
Copper	ND	---	0.962	mg/kg	10	---	---	---	---	---	---	
Iron	ND	---	48.1	mg/kg	10	---	---	---	---	---	---	
Lead	ND	---	0.192	mg/kg	10	---	---	---	---	---	---	
Magnesium	ND	---	48.1	mg/kg	10	---	---	---	---	---	---	
Manganese	ND	---	0.962	mg/kg	10	---	---	---	---	---	---	
Mercury	ND	---	0.0769	mg/kg	10	---	---	---	---	---	---	
Nickel	ND	---	0.962	mg/kg	10	---	---	---	---	---	---	
Potassium	ND	---	96.2	mg/kg	10	---	---	---	---	---	---	
Selenium	ND	---	0.962	mg/kg	10	---	---	---	---	---	---	
Silver	ND	---	0.192	mg/kg	10	---	---	---	---	---	---	
Sodium	ND	---	96.2	mg/kg	10	---	---	---	---	---	---	
Thallium	ND	---	0.192	mg/kg	10	---	---	---	---	---	---	
Vanadium	ND	---	0.962	mg/kg	10	---	---	---	---	---	---	
Zinc	ND	---	3.85	mg/kg	10	---	---	---	---	---	---	
LCS (9051429-BS1)			Prepared: 05/30/19 14:33		Analyzed: 05/31/19 16:17							
EPA 6020A												
Aluminum	2470	---	50.0	mg/kg	10	2500	---	99	80-120%	---	---	
Antimony	23.4	---	1.00	mg/kg	10	25.0	---	94	80-120%	---	---	
Arsenic	48.8	---	1.00	mg/kg	10	50.0	---	98	80-120%	---	---	
Barium	50.7	---	1.00	mg/kg	10	50.0	---	101	80-120%	---	---	
Beryllium	25.3	---	0.200	mg/kg	10	25.0	---	101	80-120%	---	---	
Cadmium	48.9	---	0.200	mg/kg	10	50.0	---	98	80-120%	---	---	
Calcium	2440	---	100	mg/kg	10	2500	---	98	80-120%	---	---	
Chromium	47.7	---	1.00	mg/kg	10	50.0	---	95	80-120%	---	---	

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EPA ID: OR01039

Hahn and Associates	Project: **Mult 802 Decommissioning**	
434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051429 - EPA 3051A							**Solid**					
LCS (9051429-BS1)			Prepared: 05/30/19 14:33		Analyzed: 05/31/19 16:17							
Copper	52.3	---	1.00	mg/kg	10	50.0	---	105	80-120%	---	---	
Iron	2420	---	50.0	mg/kg	10	2500	---	97	80-120%	---	---	
Lead	51.9	---	0.200	mg/kg	10	50.0	---	104	80-120%	---	---	
Magnesium	2460	---	50.0	mg/kg	10	2500	---	98	80-120%	---	---	
Manganese	49.9	---	1.00	mg/kg	10	50.0	---	100	80-120%	---	---	
Mercury	0.985	---	0.0800	mg/kg	10	1.00	---	99	80-120%	---	---	
Nickel	51.4	---	1.00	mg/kg	10	50.0	---	103	80-120%	---	---	
Potassium	2490	---	100	mg/kg	10	2500	---	100	80-120%	---	---	
Selenium	22.7	---	1.00	mg/kg	10	25.0	---	91	80-120%	---	---	
Silver	24.3	---	0.200	mg/kg	10	25.0	---	97	80-120%	---	---	
Sodium	2540	---	100	mg/kg	10	2500	---	101	80-120%	---	---	
Thallium	24.6	---	0.200	mg/kg	10	25.0	---	98	80-120%	---	---	
Vanadium	49.7	---	1.00	mg/kg	10	50.0	---	99	80-120%	---	---	
Zinc	51.2	---	4.00	mg/kg	10	50.0	---	102	80-120%	---	---	
Duplicate (9051429-DUP1)			Prepared: 05/30/19 14:33		Analyzed: 05/31/19 16:27							
QC Source Sample: 2708-190524-014 (A9E0902-01)												
EPA 6020A												
Aluminum	**4940**	---	51.1	mg/kg	10	---	7540	---	---	**42**	**40%**	Q-04
Antimony	ND	---	1.02	mg/kg	10	---	ND	---	---	---	40%	
Arsenic	ND	---	1.02	mg/kg	10	---	2.63	---	---	***	**40%**	Q-04, Q-05
Barium	**50.9**	---	1.02	mg/kg	10	---	94.6	---	---	**60**	**40%**	Q-04
Beryllium	**0.276**	---	0.204	mg/kg	10	---	0.512	---	---	**60**	**40%**	Q-04, Q-05
Cadmium	**0.332**	---	0.204	mg/kg	10	---	0.546	---	---	**49**	**40%**	Q-04, Q-05
Calcium	**2810**	---	102	mg/kg	10	---	3840	---	---	31	40%	
Chromium	**1.24**	---	1.02	mg/kg	10	---	2.14	---	---	**53**	**40%**	Q-04, Q-05
Copper	**6.79**	---	1.02	mg/kg	10	---	9.88	---	---	37	40%	
Iron	**21500**	---	51.1	mg/kg	10	---	43800	---	---	**68**	**40%**	Q-04
Lead	**4.40**	---	0.204	mg/kg	10	---	6.19	---	---	34	40%	
Magnesium	**1090**	---	51.1	mg/kg	10	---	1400	---	---	25	40%	
Manganese	**214**	---	1.02	mg/kg	10	---	323	---	---	40	40%	
Mercury	ND	---	0.0818	mg/kg	10	---	ND	---	---	---	40%	
Nickel	**1.44**	---	1.02	mg/kg	10	---	4.06	---	---	**95**	**40%**	Q-04, Q-05
Potassium	**352**	---	102	mg/kg	10	---	466	---	---	28	40%	

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Hahn and Associates	Project: **Mult 802 Decommissioning**	
434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051429 - EPA 3051A							**Solid**					
Duplicate (9051429-DUP1)			Prepared: 05/30/19 14:33		Analyzed: 05/31/19 16:27							
QC Source Sample: 2708-190524-014 (A9E0902-01)												
Selenium	ND	---	1.02	mg/kg	10	---	ND	---	---	---	40%	
Silver	ND	---	0.204	mg/kg	10	---	ND	---	---	---	40%	
Sodium	**214**	---	102	mg/kg	10	---	231	---	---	8	40%	
Thallium	ND	---	0.204	mg/kg	10	---	ND	---	---	**---**	**40%**	Q-04, Q-05
Vanadium	**51.0**	---	1.02	mg/kg	10	---	83.2	---	---	**48**	**40%**	Q-04
Zinc	**26.3**	---	4.09	mg/kg	10	---	40.1	---	---	**42**	**40%**	Q-04
Matrix Spike (9051429-MS1)			Prepared: 05/30/19 14:33		Analyzed: 05/31/19 16:32							
QC Source Sample: 2708-190524-014 (A9E0902-01)												
EPA 6020A												
Aluminum	10200	---	52.2	mg/kg	10	2610	7540	102	75-125%	---	---	
Antimony	21.9	---	1.04	mg/kg	10	26.1	ND	84	75-125%	---	---	
Arsenic	49.7	---	1.04	mg/kg	10	52.2	2.63	90	75-125%	---	---	
Barium	128	---	1.04	mg/kg	10	52.2	94.6	**63**	**75-125%**	---	---	Q-04
Beryllium	25.4	---	0.209	mg/kg	10	26.1	0.512	95	75-125%	---	---	
Cadmium	49.5	---	0.209	mg/kg	10	52.2	0.546	94	75-125%	---	---	
Calcium	5940	---	104	mg/kg	10	2610	3840	80	75-125%	---	---	
Chromium	51.7	---	1.04	mg/kg	10	52.2	2.14	95	75-125%	---	---	
Copper	64.4	---	1.04	mg/kg	10	52.2	9.88	104	75-125%	---	---	
Iron	31900	---	52.2	mg/kg	10	2610	43800	**-455**	**75-125%**	---	---	Q-03, Q-04
Lead	58.4	---	0.209	mg/kg	10	52.2	6.19	100	75-125%	---	---	
Magnesium	3820	---	52.2	mg/kg	10	2610	1400	93	75-125%	---	---	
Manganese	356	---	1.04	mg/kg	10	52.2	323	**63**	**75-125%**	---	---	Q-03, Q-04
Mercury	1.05	---	0.0835	mg/kg	10	1.04	ND	101	75-125%	---	---	
Nickel	55.0	---	1.04	mg/kg	10	52.2	4.06	98	75-125%	---	---	
Potassium	2960	---	104	mg/kg	10	2610	466	96	75-125%	---	---	
Selenium	23.2	---	1.04	mg/kg	10	26.1	ND	89	75-125%	---	---	
Silver	24.8	---	0.209	mg/kg	10	26.1	ND	95	75-125%	---	---	
Sodium	2780	---	104	mg/kg	10	2610	231	98	75-125%	---	---	
Thallium	24.7	---	0.209	mg/kg	10	26.1	ND	95	75-125%	---	---	
Vanadium	130	---	1.04	mg/kg	10	52.2	83.2	89	75-125%	---	---	
Zinc	87.7	---	4.18	mg/kg	10	52.2	40.1	91	75-125%	---	---	

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434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Cyanide by UV Digestion/Gas Diffusion/Amperometric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9051383 - ASTM D7511-12mod (S)							**Solid**					
Blank (9051383-BLK1)			Prepared: 05/30/19 06:59		Analyzed: 05/30/19 14:39							
D7511-12												
Cyanide, Total	ND	---	0.100	mg/kg	1	---	---	---	---	---	---	
LCS (9051383-BS1)			Prepared: 05/30/19 06:59		Analyzed: 05/30/19 14:41							
D7511-12												
Cyanide, Total	0.400	---	0.100	mg/kg	1	0.400	---	100	84-116%	---	---	
Matrix Spike (9051383-MS1)			Prepared: 05/30/19 06:59		Analyzed: 05/30/19 14:53							
QC Source Sample: 2708-190524-014 (A9E0902-01)												
D7511-12												
Cyanide, Total	1.58	---	0.970	mg/kg	10	0.388	1.28	79	64-136%	---	---	
Matrix Spike Dup (9051383-MSD1)			Prepared: 05/30/19 06:59		Analyzed: 05/30/19 14:57							
QC Source Sample: 2708-190524-014 (A9E0902-01)												
D7511-12												
Cyanide, Total	1.68	---	0.973	mg/kg	10	0.389	1.28	104	64-136%	6	47%	

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Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 9051469							
A9E0902-01	Solid	NWTPH-Dx	05/24/19 12:50	05/31/19 13:21	10.03g/5mL	10g/5mL	1.00

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 9051463							
A9E0902-01	Solid	NWTPH-Gx (MS)	05/24/19 12:50	05/29/19 17:00	5.73g/5mL	5g/5mL	0.87

Volatile Organic Compounds by EPA 5035A/8260C

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 9051463							
A9E0902-01	Solid	5035A/8260C	05/24/19 12:50	05/29/19 17:00	5.73g/5mL	5g/5mL	0.87

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 9051465							
A9E0902-01	Solid	EPA 8270D (SIM)	05/24/19 12:50	05/31/19 13:13	10.06g/5mL	10g/5mL	0.99
A9E0902-01RE1	Solid	EPA 8270D (SIM)	05/24/19 12:50	05/31/19 13:13	10.06g/5mL	10g/5mL	0.99

Total Metals by EPA 6020A (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 9051429							
A9E0902-01	Solid	EPA 6020A	05/24/19 12:50	05/30/19 14:33	0.507g/50mL	0.5g/50mL	0.99

Total Cyanide by UV Digestion/Gas Diffusion/Amperometric Detection

Prep: ASTM D7511-12mod (S)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 9051383							

Apex Laboratories

Philip Nerenberg, Lab Director

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

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Hahn and Associates	Project: **Mult 802 Decommissioning**	
434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

SAMPLE PREPARATION INFORMATION

Total Cyanide by UV Digestion/Gas Diffusion/Amperometric Detection

Prep: ASTM D7511-12mod (S)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A9E0902-01	Solid	D7511-12	05/24/19 12:50	05/30/19 06:59	2.5654g/50mL	2.5g/50mL	0.98

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QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

F-17	No fuel pattern detected. The Diesel result represents carbon range C12 to C24, and the Oil result represents >C24 to C40.
M-05	Estimated results. Peak separation for structural isomers is insufficient for accurate quantification.
Q-03	Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-18	Matrix Spike results for this extraction batch are not reported due to the high dilution necessary for analysis of the source sample.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
Q-54	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by -4.4%. The results are reported as Estimated Values.
Q-55	Daily CCV/LCS recovery for this analyte was below the +/-20% criteria listed in EPA 8260C, however there is adequate sensitivity to ensure detection at the reporting level.
S-01	Surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.
S-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.
V-16	Sample aliquot was subsampled from the sample container in the laboratory. The subsampled aliquot was not preserved within 48 hours of sampling.

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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

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Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**

LABORATORY ACCREDITATION INFORMATION

TNI Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

Philip Nerenberg, Lab Director

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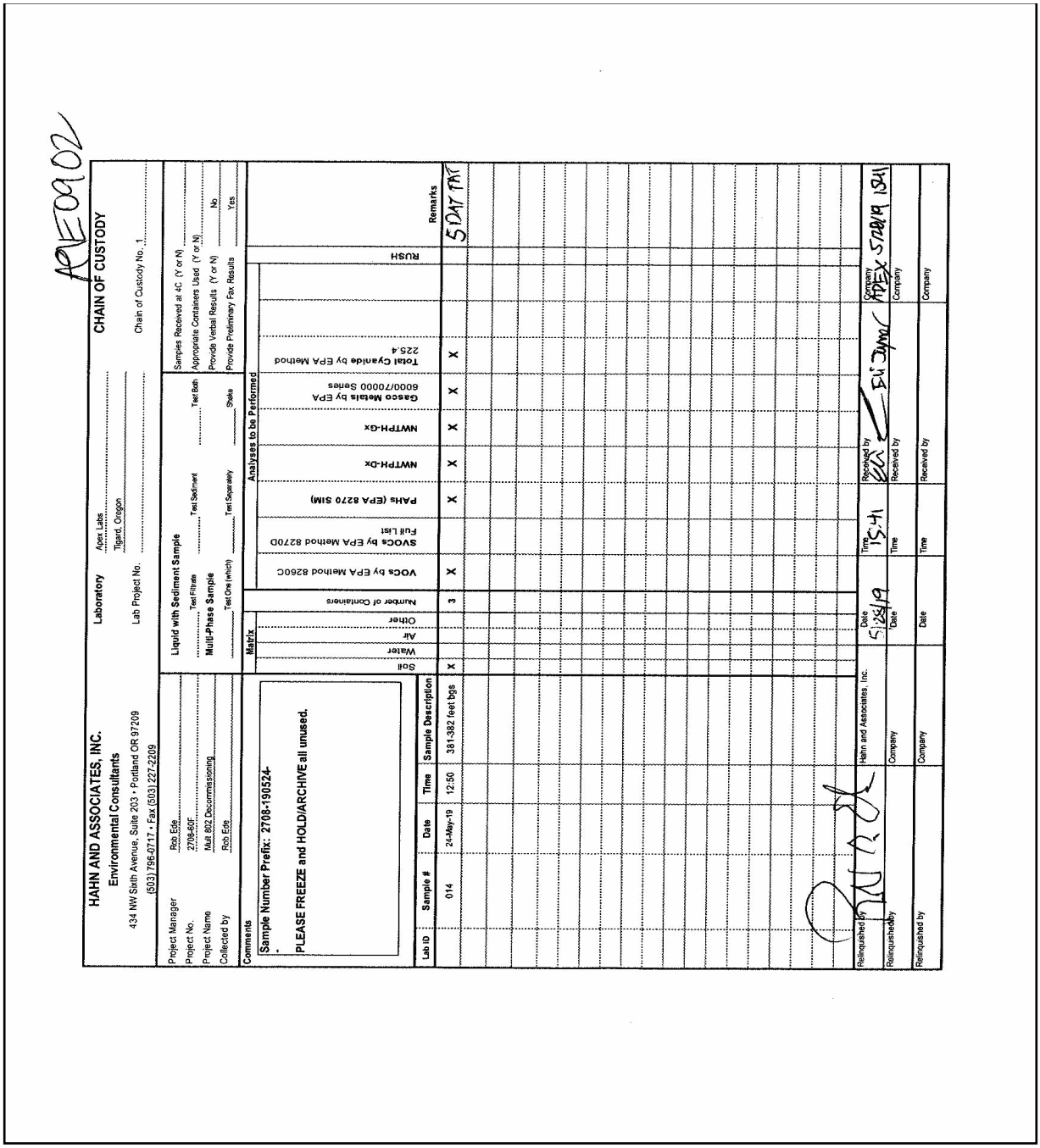
434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	**A9E0902 - 06 05 19 0934**



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Philip Nerenberg, Lab Director

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EPA ID: OR01039

Hahn and Associates	Project: **Mult 802 Decommissioning**	
434 NW 6th Ave. Suite 203	Project Number: **2708-60F**	**Report ID:**
Portland, OR 97209	Project Manager: **Rob Ede**	A9E0902 - 06 05 19 0934

APEX LABS COOLER RECEIPT FORM

Client: Hahn Element WO#: A9 E0902

Project/Project #: Mult 802 Decommissioning 2708-60F

Delivery Info:

Date/time received: 5-28-19 @ 1541 By: EJ

Delivered by: Apex X Client ___ ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Date/time inspected: 5-18-19 @ 1825 By: EJ

Chain of Custody included? Yes X No ___ Custody seals? Yes ___ No X

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	4.5						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	N						
Ice type: (Gel/Real/Other)	Gel						
Condition:	Good						

Cooler out of temp? (Y/(N)) Possible reason why: ___

If some coolers are in temp and some out, were green dots applied to out of temperature samples? Yes/No/(NA)

Out of temperature samples form initiated? Yes/No/(NA)

Samples Inspection: Date/time inspected: 5/29/19 @ 1650 By: CB

All samples intact? Yes X No ___ Comments: ___

Bottle labels/COCs agree? Yes ___ No X Comments: Time on conts. read 11:20

COC/container discrepancies form initiated? Yes ___ No ___ NA X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: ___

Do VOA vials have visible headspace? Yes ___ No ___ NA X

Comments ___

Water samples: pH checked: Yes ___ No ___ NA X pH appropriate? Yes ___ No ___ NA X

Comments: ___

Additional information: ___

Labeled by: WB Witness: Cooler Inspected by: CB See Project Contact Form: Y

APEX LABORATORIES, LLC
6700 SW Sandburg St. Tigard OR 97223 phone 503-718-2323

Sample Receipt Documentation
(Work orders, Chain of Custody & Cooler Receipt Forms)

A9E0902

Apex Laboratories

Client: Hahn and Associates
Project: Mult 802 Decommissioning

Project Manager: Philip Nerenberg
Project Number: 2708-60F

Report To:
Hahn and Associates
Rob Ede
434 NW 6th Ave. Suite 203
Portland, OR 97209
Phone: (503) 796-0717
Fax: (503) 227-2209

Invoice To:
Hahn and Associates
Rob Ede
434 NW 6th Ave. Suite 203
Portland, OR 97209
Phone :(503) 796-0717
Fax: (503) 227-2209

Date Due: 06/04/19 17:00 (5 day TAT)

Received By: Eli S. Joyner
Date Received: 05/28/19 15:41

Logged In By: Cameron L O'Brien
Date Logged In: 05/29/19 16:48

Cooler #1 received at 4.5°C

Custody Seals	No	Containers Intact	Yes	COC/Labels Agree	No	PH Confirmed	No	Received On Ice	Yes
Temperature OK	Yes								

Analysis	Due	TAT	Expires	Comments
A9E0902-01 2708-190524-014 [Solid] Sampled 05/24/19 12:50 (GMT-08:00) Pacific Time (US & Canada) 4 Containers				**381-382 feet bgs. Time on conts. read 11:20**
Dry Weight				
~~Dry Weight~~	06/03/19 17:00	5	05/26/19 12:50	For 8260C Full List in batch 9050345
Fuels				
NWTPH-Dx (Diesel/Oil)	06/03/19 17:00	5	06/07/19 12:50	
Metals				
Metals, Select 1	06/03/19 17:00	5	11/20/19 12:50	Ag, Al, As, Ba, Be, Cd, Cr, Cu, Fe, Hg, Mn, Ni, Pb, Sb, Se, Tl, V
Project Mgmt				
Data Package	07/01/19 17:00	10	08/31/19 12:50	Added 5/31 ST
Sample Control				
Archive Samples - Frozen	05/29/20 17:00	1	05/25/19 12:50	
Semivols (SIM)				
8270 SIM PAH	06/03/19 17:00	5	06/07/19 12:50	
Volatiles				
8260C Full List	06/03/19 17:00	5	05/26/19 12:50	
NWTPH-Gx	06/03/19 17:00	5	05/26/19 12:50	
Wet Chem				
Cyanide, Total (ASTM D7511, OIA)	06/03/19 17:00	5	06/07/19 12:50	

Analysis groups included in this work order

Metals, Select 1

Ag (Silver) - 6020 - Total	Al (Aluminum) - 6020 - Total	As (Arsenic) - 6020 - Total	Ba (Barium) - 6020 - Total
Be (Beryllium) - 6020 - Total	Ca (Calcium) - 6020 - Total	Cd (Cadmium) - 6020 - Total	Cr (Chromium) - 6020 - Total
Cu (Copper) - 6020 - Total	Fe (Iron) - 6020 - Total	Hg (Mercury) - 6020 - Total	K (Potassium) - 6020 - Total
Mg (Magnesium) - 6020 - Total	Mn (Manganese) - 6020 - Total	Na (Sodium) - 6020 - Total	Ni (Nickel) - 6020 - Total
Pb (Lead) - 6020 - Total	Sb (Antimony) - 6020 - Total	Se (Selenium) - 6020 - Total	Tl (Thallium) - 6020 - Total
V (Vanadium) - 6020 - Total	Zn (Zinc) - 6020 - Total		

Reviewed By

Date

A9E0902

Apex Laboratories

Client:	**Hahn and Associates**	**Project Manager:**	**Philip Nerenberg**
Project:	**Mult 802 Decommissioning**	**Project Number:**	**2708-60F**

Reviewed By

Date

APE0902

HAHN AND ASSOCIATES, INC.
Environmental Consultants
434 NW Sixth Avenue, Suite 203 • Portland OR 97209
(503) 796-0717 • Fax (503) 227-2209

Laboratory Apex Labs
Tigard, Oregon
Lab Project No.

CHAIN OF CUSTODY
Chain of Custody No. 1

Project Manager	Rob Ede
Project No.	2708-60F
Project Name	Mult 802 Decommissioning
Collected by	Rob Ede

Liquid with Sediment Sample
___ Test Filtrate ___ Test Sediment ___ Test Both
Multi-Phase Sample
___ Test One (which) ___ Test Separately ___ Shake

Samples Received at 4C (Y or N)	
Appropriate Containers Used (Y or N)	
Provide Verbal Results (Y or N)	No
Provide Preliminary Fax Results	Yes

Comments
Sample Number Prefix: 2708-190524-
-
PLEASE FREEZE and HOLD/ARCHIVE all unused.

Lab ID	Sample #	Date	Time	Sample Description	Matrix: Soil	Water	Air	Other	Number of Containers	VOCs by EPA Method 8260C	SVOCs by EPA Method 8270D Full List	PAHs (EPA 8270 SIM)	NWTPH-Dx	NWTPH-Gx	Gasco Metals by EPA 6000/70000 Series	Total Cyanide by EPA Method 225.4			RUSH	Remarks
	014	24-May-19	12:50	381-382 feet bgs	X				3	X		X	X	X	X	X				5 DAY TAT

Relinquished by	Hahn and Associates, Inc.	Date 5/28/19	Time 15:41	Received by	Company APEX 5/28/19 1541
Relinquished by	Company	Date	Time	Received by	Company
Relinquished by	Company	Date	Time	Received by	Company

APEX LABS COOLER RECEIPT FORM

Client: Hahn Element WO#: A9 E09102

Project/Project #: Mult 802 Decommissioning 2708-601F

Delivery Info:

Date/time received: 5-28-19 @ 1541 By: EJ

Delivered by: Apex X Client ___ ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Date/time inspected: 5-18-19 @ 1825 By: EJ

Chain of Custody included? Yes X No ___ Custody seals? Yes ___ No X

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	4.5						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	N						
Ice type: (Gel/Real/Other)	Gel						
Condition:	Good						

Cooler out of temp? (Y(N) Possible reason why: ___

If some coolers are in temp and some out, were green dots applied to out of temperature samples? Yes/No/(NA)

Out of temperature samples form initiated? Yes/No/(NA)

Samples Inspection: Date/time inspected: 5/29/19 @ 1610 By: CB

All samples intact? Yes X No ___ Comments: ___

Bottle labels/COCs agree? Yes ___ No X Comments: Time on conts. read 11:20

COC/container discrepancies form initiated? Yes ___ No ___ NA X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: ___

Do VOA vials have visible headspace? Yes ___ No ___ NA X

Comments ___

Water samples: pH checked: Yes ___ No ___ NA X pH appropriate? Yes ___ No ___ NA X

Comments: ___

Additional information: ___

Labeled by: WB Witness: Cooler Inspected by: CB See Project Contact Form: Y

APEX LABORATORIES, LLC
6700 SW Sandburg St. Tigard OR 97223 phone 503-718-2323

CLP-Like Forms

Apex Laboratories

SDG: A9E0902

CLASS: GC

METHOD: NWTPH-Dx

ANALYSES DATA PACKAGE COVER PAGE

NWTPH-Dx

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning

Client Sample Id:	Lab Sample Id:	Matrix
2708-190524-014	A9E0902-01	Solid

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been autorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

Signature: 
Name: David G. Jack

Forms Created: 10/1/2019 11:52AM
Title: Technical Manager

METHOD DETECTION AND REPORTING LIMITS

NWTPH-Dx

Laboratory: Apex Laboratories **SDG:** A9E0902

Client: Hahn and Associates **Project:** Mult 802 Decommissioning

Batch Matrix: Solid

Analyte	MDL	MRL	Units
Diesel	10.0	20.0	mg/kg
Oil	20.0	40.0	mg/kg

Note: MDLs are listed only if the corresponding analyte was evalutated to the MDL in this report .

ORGANIC ANALYSIS DATA SHEET

NWTPH-Dx

2708-190524-014

Laboratory:	Apex Laboratories			SDG:	A9E0902
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	A9E0902-01	File ID:	1F053114.D
Sampled:	05/24/19 12:50	Prepared:	05/31/19 13:21	Analyzed:	06/01/19 00:48
		Preparation:	EPA 3546 (Fuels)	Initial/Final:	10.03 g / 5 mL

Batch: 9051469 Sequence: 9E31029 Calibration: A9D2602 Instrument: DUALFID1F

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg)	Q
68334-30-5	Diesel	50	5250	D
Oil	Oil	50	3550	D

SYSTEM MONITORING COMPOUND	ADDED (mg/kg)	CONC (mg/kg)	% REC	QC LIMITS	Q
o-Terphenyl (Surr)	24.9	ND		50 - 150	D

* Values outside of QC limits

PREPARATION BATCH SUMMARY

NWTPH-Dx

Laboratory: Apex Laboratories SDG: A9E0902

Client: Hahn and Associates Project: Mult 802 Decommissioning

Batch: 9051469 Batch Matrix: Solid Preparation: EPA 3546 (Fuels)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9051469-BLK1	1F053112.D	05/31/19 13:21	
LCS	9051469-BS1	1F053113.D	05/31/19 13:21	
2708-190524-014 (Dup)	9051469-DUP1	1F053115.D	05/31/19 13:21	
2708-190524-014	A9E0902-01	1F053114.D	05/31/19 13:21	

Note: Client samples are listed only if they are included in this report.
Duplicates and Matrix Spike/Duplicates QC Samples are only listed if sourced from a sample included in this report.

METHOD BLANK DATA SHEET
NWTPH-Dx

Laboratory:	Apex Laboratories			SDG:	A9E0902
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	9051469-BLK1	File ID:	1F053112.D
Prepared:	05/31/19 13:21	Preparation:	EPA 3546 (Fuels)	Initial/Final:	11 g / 5 mL
Analyzed:	06/01/19 00:03	Instrument:	DUALFID1F		
Batch:	9051469	Sequence:	9E31029	Calibration:	A9D2602

CAS NO.	COMPOUND	CONC. (mg/kg)	Q
68334-30-5	Diesel	9.09	U
Oil	Oil	18.2	U

SYSTEM MONITORING COMPOUND	ADDED (mg/kg)	CONC (mg/kg)	% REC	QC LIMITS	Q
o-Terphenyl (Surr)	22.7	20.8	91	50 - 150	

LCS / LCS DUPLICATE RECOVERY

NWTPH-Dx

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Solid		
Batch:	9051469	Laboratory ID:	9051469-BS1
Preparation:	EPA 3546 (Fuels)	Initial/Final:	10 g / 5 mL

COMPOUND	SPIKE ADDED (mg/kg)	LCS CONCENTRATION (mg/kg)	LCS % REC. (*=Out)	QC LIMITS REC.
Diesel	125	110	88	70 - 130

* = Values outside of QC limits

DUPLICATES

NWTPH-Dx

2708-190524-014

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Matrix: Solid
Laboratory ID: 9051469-DUP1
Batch: 9051469
Lab Source ID: A9E0902-01
Preparation: EPA 3546 (Fuels)
Initial/Final: 10.05 g / 5 mL
Source Sample Name: 2708-190524-014
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/kg)	C	DUPLICATE CONCENTRATION (mg/kg)	C	RPD %	Q	METHOD
Diesel	30	5250		4230		22		NWTPH-Dx
Oil	30	3550		2840		22		NWTPH-Dx

* Values outside of QC limits

ANALYSIS BATCH (SEQUENCE) SUMMARY

NWTPH-Dx

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9D25027	Instrument:	DUALFID1F
Matrix:	Solid	Calibration:	A9D2602

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Initial Cal Blank	9D25027-ICB1	1F042503.D	04/25/19 17:18
Cal Standard	9D25027-CAL1	1F042504.D	04/25/19 17:41
Cal Standard	9D25027-CAL2	1F042505.D	04/25/19 18:03
Cal Standard	9D25027-CAL3	1F042506.D	04/25/19 18:26
Cal Standard	9D25027-CAL4	1F042507.D	04/25/19 18:49
Cal Standard	9D25027-CAL5	1F042508.D	04/25/19 19:12
Cal Standard	9D25027-CAL6	1F042509.D	04/25/19 19:35
Cal Standard	9D25027-CAL7	1F042510.D	04/25/19 19:58
Cal Standard	9D25027-CAL8	1F042511.D	04/25/19 20:20
Cal Standard	9D25027-CAL9	1F042512.D	04/25/19 20:43
Cal Standard	9D25027-CALA	1F042513.D	04/25/19 21:06
Cal Standard	9D25027-CALB	1F042514.D	04/25/19 21:29
Cal Standard	9D25027-CALC	1F042515.D	04/25/19 21:51
Cal Standard	9D25027-CALD	1F042516.D	04/25/19 22:14
Cal Standard	9D25027-CALE	1F042517.D	04/25/19 22:37
Cal Standard	9D25027-CALF	1F042518.D	04/25/19 22:59
Cal Standard	9D25027-CALG	1F042519.D	04/25/19 23:22
Cal Standard	9D25027-CALH	1F042520.D	04/25/19 23:45
Cal Standard	9D25027-CALI	1F042521.D	04/26/19 00:07
Cal Standard	9D25027-CALJ	1F042522.D	04/26/19 00:30
Cal Standard	9D25027-CALK	1F042524.D	04/26/19 01:15
Initial Cal Check	9D25027-ICV1	1F042526.D	04/26/19 02:00
Initial Cal Check	9D25027-ICV2	1F042527.D	04/26/19 02:23

Note: Client samples are listed only if they are included in this report.
Duplicates and Matrix Spike/Duplicates QC Samples are only listed if sourced from a sample included in this report.

ANALYSIS BATCH (SEQUENCE) SUMMARY

NWTPH-Dx

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E31029	Instrument:	DUALFID1F
Matrix:	Solid	Calibration:	A9D2602

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	9E31029-CCV1	1F053103.D	05/31/19 18:11
Calibration Check	9E31029-CCV2	1F053104.D	05/31/19 18:34
Calibration Blank	9E31029-CCB1	1F053105.D	05/31/19 21:24
Blank	9051469-BLK1	1F053112.D	06/01/19 00:03
LCS	9051469-BS1	1F053113.D	06/01/19 00:25
2708-190524-014	A9E0902-01	1F053114.D	06/01/19 00:48
2708-190524-014 (Dup)	9051469-DUP1	1F053115.D	06/01/19 01:11
Calibration Check	9E31029-CCV3	1F053117.D	06/01/19 01:56
Calibration Check	9E31029-CCV4	1F053118.D	06/01/19 02:19

Note: Client samples are listed only if they are included in this report.
Duplicates and Matrix Spike/Duplicates QC Samples are only listed if sourced from a sample included in this report.

INITIAL CALIBRATION DATA (Summary)

NWTPH-Dx

Laboratory: Apex Laboratories SDG: A9E0902

Client: Hahn and Associates Project: Mult 802 Decommissioning

Calibration: A9D2602 Date: 04/26/19 09:36 Instrument: DUALFID1F

Compound	Mean RF	FIT	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Diesel	1274651	Ave	2.95218	6	0			15	
Oil	1100493	Ave	5.184329	10	0			15	
o-Terphenyl (Surr)	1391526	Ave	0.8255536	6.794	0.0797912			15	

Note: ** Quad COD may be incorrect if weighting (1/a) or (1/a2) used. Weighting not shown here. Please see instrument calibration printouts for validation.

INITIAL CALIBRATION DATA

NWTPH-Dx

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Calibration: A9D2602
Instrument: DUALFID1F
Calibration Date: 04/26/19 09:36

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF
Diesel	25	1354440	40	1306638	100	1253969	250	1264505	500	1270516	1000	1249782
Diesel Range Organics (C12-C24)	25	1354440	40	1306638	100	1253969	250	1264505	500	1270516	1000	1249782

INITIAL CALIBRATION DATA (Continued)

NWTPH-Dx

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Calibration:	A9D2602	Instrument:	DUALFID1F
Matrix:		Calibration Date:	04/26/19 09:36

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF
Diesel	2500	1250602	5000	1246756								
Diesel Range Organics (C12-C24)	2500	1250602	5000	1246756								
o-Terphenyl (Surr)					10	1392742	25	1381612	50	1404157	100	1400981

INITIAL CALIBRATION DATA (Continued)

NWTPH-Dx

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Calibration:	A9D2602	Instrument:	DUALFID1F
Matrix:		Calibration Date:	04/26/19 09:36

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF	ug/mL	RF
Oil			40	1016461	80	1051013	250	1068527	500	1102754	1000	1146401
o-Terphenyl (Surr)	200	1378140										
Residual Range Organics (>C24-C			40	1016461	80	1051013	250	1068527	500	1102754	1000	1146401

SECOND-SOURCE CALIBRATION VERIFICATION

NWTPH-Dx

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	DUALFID1F	Calibration:	A9D2602
Lab File ID:	1F042526.D		
Sequence:	9D25027	Inject Date:	04/26/19
Lab Sample ID:	9D25027-ICV1	Inject Time:	02:00

ANALYTE	EXPECTED (ug/mL)	FOUND (ug/mL)	% DRIFT	QC LIMIT
Diesel	1000	962	-3.8	85 - 115

SECOND-SOURCE CALIBRATION VERIFICATION

NWTPH-Dx

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	DUALFID1F	Calibration:	A9D2602
Lab File ID:	1F042527.D		
Sequence:	9D25027	Inject Date:	04/26/19
Lab Sample ID:	9D25027-ICV2	Inject Time:	02:23

ANALYTE	EXPECTED (ug/mL)	FOUND (ug/mL)	% DRIFT	QC LIMIT
Oil	1000	1030	3.2	85 - 115

CONTINUING CALIBRATION CHECK

NWTPH-Dx

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	DUALFID1F	Calibration:	A9D2602
Lab File ID:	1F053103.D	Calibration Date:	04/26/19 09:36
Sequence:	9E31029	Injection Date:	05/31/19
Lab Sample ID:	9E31029-CCV1	Injection Time:	18:11

COMPOUND	Curve Fit	Calculated Concentration (ug/mL) [L/Q Fits]			Response Factors [Ave RF]			Limit
		STD	CCV	% DIFF	ICAL	CCV	% Drift	
Diesel	Ave	1000	952		1274651	1213156	-4.8	15

** Quadratic Curve fit may be weighted (1/a or 1/a2).

* = Values outside of QC limits

CONTINUING CALIBRATION CHECK

NWTPH-Dx

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	DUALFID1F	Calibration:	A9D2602
Lab File ID:	1F053104.D	Calibration Date:	04/26/19 09:36
Sequence:	9E31029	Injection Date:	05/31/19
Lab Sample ID:	9E31029-CCV2	Injection Time:	18:34

COMPOUND	Curve Fit	Calculated Concentration (ug/mL) [L/Q Fits]			Response Factors [Ave RF]			Limit
		STD	CCV	% DIFF	ICAL	CCV	% Drift	
Oil	Ave	500	498		1100493	1096184	-0.4	15

** Quadratic Curve fit may be weighted (1/a or 1/a2).

* = Values outside of QC limits

CONTINUING CALIBRATION CHECK

NWTPH-Dx

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	DUALFID1F	Calibration:	A9D2602
Lab File ID:	1F053117.D	Calibration Date:	04/26/19 09:36
Sequence:	9E31029	Injection Date:	06/01/19
Lab Sample ID:	9E31029-CCV3	Injection Time:	01:56

COMPOUND	Curve Fit	Calculated Concentration (ug/mL) [L/Q Fits]			Response Factors [Ave RF]			Limit
		STD	CCV	% DIFF	ICAL	CCV	% Drift	
Diesel	Ave	1000	967		1274651	1231976	-3.3	15

** Quadratic Curve fit may be weighted (1/a or 1/a2).

* = Values outside of QC limits

CONTINUING CALIBRATION CHECK

NWTPH-Dx

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	DUALFID1F	Calibration:	A9D2602
Lab File ID:	1F053118.D	Calibration Date:	04/26/19 09:36
Sequence:	9E31029	Injection Date:	06/01/19
Lab Sample ID:	9E31029-CCV4	Injection Time:	02:19

COMPOUND	Curve Fit	Calculated Concentration (ug/mL) [L/Q Fits]			Response Factors [Ave RF]			Limit
		STD	CCV	% DIFF	ICAL	CCV	% Drift	
Oil	Ave	500	512		1100493	1126573	2.4	15

** Quadratic Curve fit may be weighted (1/a or 1/a2).

* = Values outside of QC limits

SURROGATE STANDARD RECOVERY AND RT SUMMARY

NWTPH-Dx

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E31029	Instrument:	DUALFID1F
Matrix:	Solid	Calibration:	A9D2602

Surrogate Compound	Spike Level ug/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Calibration Check (9E31029-CCV1)			Lab File ID: 1F053103.D		Analyzed: 05/31/19 18:11			
o-Terphenyl (Surr)	50.0	104	80 - 120	6.8	6.794	0.0060	+/-1.0	
Calibration Check (9E31029-CCV2)			Lab File ID: 1F053104.D		Analyzed: 05/31/19 18:34			
o-Terphenyl (Surr)	50.0	99	80 - 120	6.8	6.794	0.0060	+/-1.0	
Calibration Blank (9E31029-CCB1)			Lab File ID: 1F053105.D		Analyzed: 05/31/19 21:24			
o-Terphenyl (Surr)			50 - 150	0	6.794	-6.7940	+/-1.0	
Blank (9051469-BLK1)			Lab File ID: 1F053112.D		Analyzed: 06/01/19 00:03			
o-Terphenyl (Surr)	22.7	91	50 - 150	6.8	6.794	0.0060	+/-1.0	
LCS (9051469-BS1)			Lab File ID: 1F053113.D		Analyzed: 06/01/19 00:25			
o-Terphenyl (Surr)	25.0	101	50 - 150	6.8	6.794	0.0060	+/-1.0	
2708-190524-014 (A9E0902-01)			Lab File ID: 1F053114.D		Analyzed: 06/01/19 00:48			
o-Terphenyl (Surr)	24.9		50 - 150	6.79	6.794	-0.0040	+/-1.0	*
Duplicate (9051469-DUP1)			Lab File ID: 1F053115.D		Analyzed: 06/01/19 01:11			
o-Terphenyl (Surr)	24.9		50 - 150	6.79	6.794	-0.0040	+/-1.0	*
Calibration Check (9E31029-CCV3)			Lab File ID: 1F053117.D		Analyzed: 06/01/19 01:56			
o-Terphenyl (Surr)	50.0	105	80 - 120	6.8	6.794	0.0060	+/-1.0	
Calibration Check (9E31029-CCV4)			Lab File ID: 1F053118.D		Analyzed: 06/01/19 02:19			
o-Terphenyl (Surr)	50.0	102	80 - 120	6.8	6.794	0.0060	+/-1.0	

HOLDING TIME SUMMARY

NWTPH-Dx

Laboratory: Apex Laboratories SDG: A9E0902

Client: Hahn and Associates Project: Mult 802 Decommissioning

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
2708-190524-014	05/24/19 12:50	05/28/19 15:41	05/31/19 13:21	7.02	14.00	06/01/19 00:48	0.48	40.00	

Apex Laboratories

SDG: A9E0902

CLASS: GCMS

METHOD: NWTPH-Gx (MS)

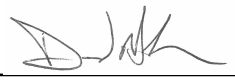
ANALYSES DATA PACKAGE COVER PAGE

NWTPH-Gx (MS)

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning

Client Sample Id:	Lab Sample Id:	Matrix
2708-190524-014	A9E0902-01	Solid

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been autorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

Signature: 
Name: David G. Jack

Forms Created: 10/1/2019 11:52AM
Title: Technical Manager

METHOD DETECTION AND REPORTING LIMITS

NWTPH-Gx (MS)

Laboratory: Apex Laboratories **SDG:** A9E0902

Client: Hahn and Associates **Project:** Mult 802 Decommissioning

Batch Matrix: Soil

Analyte	MDL	MRL	Units
Gasoline Range Organics	2.50	5.00	mg/kg

Note: MDLs are listed only if the corresponding analyte was evalutated to the MDL in this report .

ORGANIC ANALYSIS DATA SHEET

NWTPH-Gx (MS)

2708-190524-014

Laboratory:	Apex Laboratories			SDG:	A9E0902
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	A9E0902-01	File ID:	VC19053124.D
Sampled:	05/24/19 12:50	Prepared:	05/29/19 17:00	Analyzed:	05/31/19 23:36
		Preparation:	EPA 5035A	Initial/Final:	5.73 g / 5 mL

Batch: 9051463 Sequence: 9E31027 Calibration: A9E3104 Instrument: VOA-GCMS3

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg wet)	Q
8006-61-9	Gasoline Range Organics	10000	1870	D

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
4-Bromofluorobenzene (Sur)	50.0	49.9	100	50 - 150	
1,4-Difluorobenzene (Sur)	50.0	45.6	91	50 - 150	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene (IS)	270110	6.029	258660	6.035	

* Values outside of QC limits

PREPARATION BATCH SUMMARY

NWTPH-Gx (MS)

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Batch: 9051463 Batch Matrix: Soil Preparation: EPA 5035A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9051463-BLK1	VC19053106.D	05/31/19 13:00	
LCS	9051463-BS3	VC19053105.D	05/31/19 13:00	
2708-190524-014	A9E0902-01	VC19053124.D	05/29/19 17:00	

Note: Client samples are listed only if they are included in this report.
Duplicates and Matrix Spike/Duplicates QC Samples are only listed if sourced from a sample included in this report.

METHOD BLANK DATA SHEET
NWTPH-Gx (MS)

Laboratory:	Apex Laboratories			SDG:	A9E0902
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Soil	Laboratory ID:	9051463-BLK1	File ID:	VC19053106.D
Prepared:	05/31/19 13:00	Preparation:	EPA 5035A	Initial/Final:	7.5 g / 5 mL
Analyzed:	05/31/19 15:19	Instrument:	VOA-GCMS3		
Batch:	9051463	Sequence:	9E31027	Calibration:	A9E3104

CAS NO.	COMPOUND	CONC. (mg/kg wet)	Q
8006-61-9	Gasoline Range Organics	1.67	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
4-Bromofluorobenzene (Sur)	50.0	50.6	101	50 - 150	
1,4-Difluorobenzene (Sur)	50.0	46.5	93	50 - 150	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene (IS)	262804	6.028	258660	6.035	

LCS / LCS DUPLICATE RECOVERY

NWTPH-Gx (MS)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Soil		
Batch:	9051463	Laboratory ID:	9051463-BS3
Preparation:	EPA 5035A	Initial/Final:	5 g / 5 mL

COMPOUND	SPIKE ADDED (mg/kg wet)	LCS CONCENTRATION (mg/kg wet)	LCS % REC. (*=Out)	QC LIMITS REC.
Gasoline Range Organics	25.0	25.1	100	80 - 120

* = Values outside of QC limits

ANALYSIS BATCH (SEQUENCE) SUMMARY
NWTPH-Gx (MS)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E29058	Instrument:	VOA-GCMS3
Matrix:	Soil	Calibration:	A9E3104

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9E29058-TUN2	VC19052921.D	05/29/19 23:27
Initial Cal Blank	9E29058-ICB2	VC19052923.D	05/30/19 00:22
Cal Standard	9E29058-CALC	VC19052924.D	05/30/19 00:49
Cal Standard	9E29058-CALD	VC19052925.D	05/30/19 01:17
Cal Standard	9E29058-CALE	VC19052926.D	05/30/19 01:44
Cal Standard	9E29058-CALF	VC19052927.D	05/30/19 02:12
Cal Standard	9E29058-CALG	VC19052928.D	05/30/19 02:39
Cal Standard	9E29058-CALH	VC19052929.D	05/30/19 03:07
Cal Standard	9E29058-CALI	VC19052930.D	05/30/19 03:34
Cal Standard	9E29058-CALJ	VC19052931.D	05/30/19 04:02
Initial Cal Check	9E29058-ICV2	VC19052934.D	05/30/19 05:25

Note: Client samples are listed only if they are included in this report.
Duplicates and Matrix Spike/Duplicates QC Samples are only listed if sourced from a sample included in this report.

ANALYSIS BATCH (SEQUENCE) SUMMARY
NWTPH-Gx (MS)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E31027	Instrument:	VOA-GCMS3
Matrix:	Soil	Calibration:	A9E3104

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9E31027-TUN1	VC19053102.D	05/31/19 13:28
Calibration Check	9E31027-CCV3	VC19053105.D	05/31/19 14:51
Blank	9051463-BLK1	VC19053106.D	05/31/19 15:19
2708-190524-014	A9E0902-01	VC19053124.D	05/31/19 23:36

Note: Client samples are listed only if they are included in this report.
Duplicates and Matrix Spike/Duplicates QC Samples are only listed if sourced from a sample included in this report.

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

NWTPH-Gx (MS)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Lab File ID:	VC19052921.D	Injection Date:	05/29/19
Instrument ID:	VOA-GCMS3	Injection Time:	23:27
Sequence:	9E29058	Lab Sample ID:	9E29058-TUN2

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 50			
m/z 75			
m/z 95		114.26	
m/z 96	5 - 9% of m/z 95	7.21	PASS
m/z 173		0.00	
m/z 174	50 - 200% of m/z 95	87.52	PASS
m/z 175	5 - 9% of m/z 174	7.23	PASS
m/z 176	95 - 101% of m/z 174	96.08	PASS
m/z 177	5 - 9% of m/z 176	7.01	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

NWTPH-Gx (MS)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Lab File ID:	VC19053102.D	Injection Date:	05/31/19
Instrument ID:	VOA-GCMS3	Injection Time:	13:28
Sequence:	9E31027	Lab Sample ID:	9E31027-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 50			
m/z 75			
m/z 95		113.95	
m/z 96	5 - 9% of m/z 95	7.08	PASS
m/z 173		0.18	
m/z 174	50 - 200% of m/z 95	87.76	PASS
m/z 175	5 - 9% of m/z 174	7.40	PASS
m/z 176	95 - 101% of m/z 174	97.70	PASS
m/z 177	5 - 9% of m/z 176	6.42	PASS

INITIAL CALIBRATION DATA (Summary)

NWTPH-Gx (MS)

Laboratory: Apex Laboratories SDG: A9E0902

Client: Hahn and Associates Project: Mult 802 Decommissioning

Calibration: A9E3104 Date: 05/31/19 12:17 Instrument: VOA-GCMS3

Compound	Mean RF	FIT	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Gasoline Range Organics	1.374597	XXX	8.338264	9.906	1.149889E-02				
4-Bromofluorobenzene (Sur)	3.480957	Ave	0.6535971	10.83525	9.272349E-03			15	
1,4-Difluorobenzene (Sur)	4.659738	Ave	7.911124	6.58675	3.046126E-02			15	

Note: ** Quad COD may be incorrect if weighting (1/a) or (1/a2) used. Weighting not shown here. Please see instrument calibration printouts for validation.

INITIAL CALIBRATION DATA (Continued)

NWTPH-Gx (MS)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Calibration:	A9E3104	Instrument:	VOA-GCMS3
Matrix:		Calibration Date:	05/31/19 12:17

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Gasoline Range Organics											50	1.311896
4-Bromofluorobenzene (Sur)											50	3.475581
1,4-Difluorobenzene (Sur)											50	4.431216

INITIAL CALIBRATION DATA (Continued)

NWTPH-Gx (MS)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Calibration:	A9E3104	Instrument:	VOA-GCMS3
Matrix:		Calibration Date:	05/31/19 12:17

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Gasoline Range Organics	100	1.169169	250	1.30285	500	1.41732	1000	1.416265	2500	1.368701	5000	1.543528
4-Bromofluorobenzene (Sur)	50	3.514514	50	3.488068	50	3.444069	50	3.505176	50	3.487275	50	3.468905
1,4-Difluorobenzene (Sur)	50	4.450786	50	4.464929	50	4.50656	50	4.484652	50	4.511816	50	4.961909

SECOND-SOURCE CALIBRATION VERIFICATION

NWTPH-Gx (MS)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	VOA-GCMS3	Calibration:	A9E3104
Lab File ID:	VC19052934.D		
Sequence:	9E29058	Inject Date:	05/30/19
Lab Sample ID:	9E29058-ICV2	Inject Time:	05:25

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Gasoline Range Organics	500	534	6.7	70 - 130
4-Bromofluorobenzene (Sur)	50.0	49.4	-1.3	0 - 200
1,4-Difluorobenzene (Sur)	50.0	46.6	-6.8	0 - 200
Pentafluorobenzene (IS)	50.0	50.0	0.0	50 - 200

SURROGATE STANDARD RECOVERY AND RT SUMMARY

NWTPH-Gx (MS)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E29058	Instrument:	VOA-GCMS3
Matrix:	Soil	Calibration:	A9E3104

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Initial Cal Check (9E29058-ICV2)				Lab File ID: VC19052934.D		Analyzed: 05/30/19 05:25		
4-Bromofluorobenzene (Sur)	50.0	99	0 - 200	10.831	10.83525	-0.0043	+/-1.0	
1,4-Difluorobenzene (Sur)	50.0	93	0 - 200	6.585	6.58675	-0.0018	+/-1.0	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

NWTPH-Gx (MS)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E31027	Instrument:	VOA-GCMS3
Matrix:	Soil	Calibration:	A9E3104

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
LCS (9051463-BS3)			Lab File ID: VC19053105.D		Analyzed: 05/31/19 14:51			
4-Bromofluorobenzene (Sur)	50.0	100	50 - 150	10.835	10.83525	-0.0002	+/-1.0	
1,4-Difluorobenzene (Sur)	50.0	94	50 - 150	6.589	6.58675	0.0023	+/-1.0	
Blank (9051463-BLK1)			Lab File ID: VC19053106.D		Analyzed: 05/31/19 15:19			
4-Bromofluorobenzene (Sur)	50.0	101	50 - 150	10.834	10.83525	-0.0013	+/-1.0	
1,4-Difluorobenzene (Sur)	50.0	93	50 - 150	6.588	6.58675	0.0012	+/-1.0	
2708-190524-014 (A9E0902-01)			Lab File ID: VC19053124.D		Analyzed: 05/31/19 23:36			
4-Bromofluorobenzene (Sur)	50.0	100	50 - 150	10.835	10.83525	-0.0002	+/-1.0	
1,4-Difluorobenzene (Sur)	50.0	91	50 - 150	6.589	6.58675	0.0023	+/-1.0	

INTERNAL STANDARD AREA AND RT SUMMARY
NWTPH-Gx (MS)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E31027	Instrument:	VOA-GCMS3
Matrix:	Soil	Calibration:	A9E3104

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (9051463-BS3)			Lab File ID: VC19053105.D			Analyzed: 05/31/19 14:51			
Pentafluorobenzene (IS)	258660	6.035	258660	6.035	100	50 - 200	0.0000	+/-0.50	
Calibration Check (9E31027-CCV3)			Lab File ID: VC19053105.D			Analyzed: 05/31/19 14:51			
Pentafluorobenzene (IS)	258660	6.035				50 - 200	6.0350	+/-0.50	*
Blank (9051463-BLK1)			Lab File ID: VC19053106.D			Analyzed: 05/31/19 15:19			
Pentafluorobenzene (IS)	262804	6.028	258660	6.035	102	50 - 200	-0.0070	+/-0.50	
Duplicate (9051463-DUP1)			Lab File ID: VC19053110.D			Analyzed: 05/31/19 17:10			
Pentafluorobenzene (IS)	254964	6.035	258660	6.035	99	50 - 200	0.0000	+/-0.50	
2708-190524-014 (A9E0902-01)			Lab File ID: VC19053124.D			Analyzed: 05/31/19 23:36			
Pentafluorobenzene (IS)	270110	6.029	258660	6.035	104	50 - 200	-0.0060	+/-0.50	

HOLDING TIME SUMMARY

NWTPH-Gx (MS)

Laboratory: Apex Laboratories SDG: A9E0902

Client: Hahn and Associates Project: Mult 802 Decommissioning

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
2708-190524-014	05/24/19 12:50	05/28/19 15:41	05/29/19 17:00	5.17	2.00	05/31/19 23:36	2.28	14.00	*

Apex Laboratories

SDG: A9E0902

CLASS: GCMS

METHOD: 5035A/8260C

ANALYSES DATA PACKAGE COVER PAGE

5035A/8260C

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning

Client Sample Id:	Lab Sample Id:	Matrix
2708-190524-014	A9E0902-01	Solid

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been autorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

Signature: 
Name: David G. Jack

Forms Created: 10/1/2019 11:52AM
Title: Technical Manager

METHOD DETECTION AND REPORTING LIMITS

5035A/8260C

Laboratory: Apex Laboratories **SDG:** A9E0902

Client: Hahn and Associates **Project:** Mult 802 Decommissioning

Batch Matrix: Soil

Analyte	MDL	MRL	Units
Acetone	500	1000	ug/kg
Acrylonitrile	50.0	100	ug/kg
Benzene	5.00	10.0	ug/kg
Bromobenzene	12.5	25.0	ug/kg
Bromochloromethane	25.0	50.0	ug/kg
Bromodichloromethane	25.0	50.0	ug/kg
Bromoform	50.0	100	ug/kg
Bromomethane	500	500	ug/kg
2-Butanone (MEK)	250	500	ug/kg
n-Butylbenzene	25.0	50.0	ug/kg
sec-Butylbenzene	25.0	50.0	ug/kg
tert-Butylbenzene	25.0	50.0	ug/kg
Carbon disulfide	250	500	ug/kg
Carbon tetrachloride	25.0	50.0	ug/kg
Chlorobenzene	12.5	25.0	ug/kg
Chloroethane	250	500	ug/kg
Chloroform	25.0	50.0	ug/kg
Chloromethane	125	250	ug/kg
2-Chlorotoluene	25.0	50.0	ug/kg
4-Chlorotoluene	25.0	50.0	ug/kg
Dibromochloromethane	50.0	100	ug/kg
1,2-Dibromo-3-chloropropane	125	250	ug/kg
1,2-Dibromoethane (EDB)	25.0	50.0	ug/kg
Dibromomethane	25.0	50.0	ug/kg
1,2-Dichlorobenzene	12.5	25.0	ug/kg
1,3-Dichlorobenzene	12.5	25.0	ug/kg
1,4-Dichlorobenzene	12.5	25.0	ug/kg
Dichlorodifluoromethane	50.0	100	ug/kg
1,1-Dichloroethane	12.5	25.0	ug/kg
1,2-Dichloroethane (EDC)	12.5	25.0	ug/kg
1,1-Dichloroethene	12.5	25.0	ug/kg
cis-1,2-Dichloroethene	12.5	25.0	ug/kg
trans-1,2-Dichloroethene	12.5	25.0	ug/kg
1,2-Dichloropropane	12.5	25.0	ug/kg
1,3-Dichloropropane	25.0	50.0	ug/kg
2,2-Dichloropropane	25.0	50.0	ug/kg
1,1-Dichloropropene	25.0	50.0	ug/kg

METHOD DETECTION AND REPORTING LIMITS

5035A/8260C

Laboratory: Apex Laboratories **SDG:** A9E0902

Client: Hahn and Associates **Project:** Mult 802 Decommissioning

Batch Matrix: Soil

Analyte	MDL	MRL	Units
cis-1,3-Dichloropropene	25.0	50.0	ug/kg
trans-1,3-Dichloropropene	25.0	50.0	ug/kg
Ethylbenzene	12.5	25.0	ug/kg
Hexachlorobutadiene	50.0	100	ug/kg
2-Hexanone	250	500	ug/kg
Isopropylbenzene	25.0	50.0	ug/kg
4-Isopropyltoluene	25.0	50.0	ug/kg
Methylene chloride	125	250	ug/kg
4-Methyl-2-pentanone (MiBK)	250	500	ug/kg
Methyl tert-butyl ether (MTBE)	25.0	50.0	ug/kg
Naphthalene	50.0	100	ug/kg
n-Propylbenzene	12.5	25.0	ug/kg
Styrene	25.0	50.0	ug/kg
1,1,1,2-Tetrachloroethane	12.5	25.0	ug/kg
1,1,2,2-Tetrachloroethane	25.0	50.0	ug/kg
Tetrachloroethene (PCE)	12.5	25.0	ug/kg
Toluene	25.0	50.0	ug/kg
1,2,3-Trichlorobenzene	125	250	ug/kg
1,2,4-Trichlorobenzene	125	250	ug/kg
1,1,1-Trichloroethane	12.5	25.0	ug/kg
1,1,2-Trichloroethane	12.5	25.0	ug/kg
Trichloroethene (TCE)	12.5	25.0	ug/kg
Trichlorofluoromethane	50.0	100	ug/kg
1,2,3-Trichloropropane	25.0	50.0	ug/kg
1,2,4-Trimethylbenzene	25.0	50.0	ug/kg
1,3,5-Trimethylbenzene	25.0	50.0	ug/kg
Vinyl chloride	12.5	25.0	ug/kg
m,p-Xylene	25.0	50.0	ug/kg
o-Xylene	12.5	25.0	ug/kg

Note: MDLs are listed only if the corresponding analyte was evalutated to the MDL in this report .

ORGANIC ANALYSIS DATA SHEET

5035A/8260C

2708-190524-014

Laboratory:	Apex Laboratories			SDG:	A9E0902
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	A9E0902-01	File ID:	VC19053124.D
Sampled:	05/24/19 12:50	Prepared:	05/29/19 17:00	Analyzed:	05/31/19 23:36
		Preparation:	EPA 5035A	Initial/Final:	5.73 g / 5 mL

Batch: 9051463 Sequence: 9E31027 Calibration: A9E3104 Instrument: VOA-GCMS3

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg wet)	Q
67-64-1	Acetone	10000	87300	U
107-13-1	Acrylonitrile	10000	8730	U
71-43-2	Benzene	10000	8120	D
108-86-1	Bromobenzene	10000	2180	U
74-97-5	Bromochloromethane	10000	4360	U
75-27-4	Bromodichloromethane	10000	4360	U
75-25-2	Bromoform	10000	8730	U
74-83-9	Bromomethane	10000	87300	U
78-93-3	2-Butanone (MEK)	10000	43600	U
104-51-8	n-Butylbenzene	10000	4360	U
135-98-8	sec-Butylbenzene	10000	4360	U
98-06-6	tert-Butylbenzene	10000	4360	U
75-15-0	Carbon disulfide	10000	43600	U
56-23-5	Carbon tetrachloride	10000	4360	U
108-90-7	Chlorobenzene	10000	2180	U
75-00-3	Chloroethane	10000	43600	U
67-66-3	Chloroform	10000	4360	U
74-87-3	Chloromethane	10000	21800	U
95-49-8	2-Chlorotoluene	10000	4360	U
106-43-4	4-Chlorotoluene	10000	4360	U
124-48-1	Dibromochloromethane	10000	8730	U
96-12-8	1,2-Dibromo-3-chloropropane	10000	21800	U
106-93-4	1,2-Dibromoethane (EDB)	10000	4360	U
74-95-3	Dibromomethane	10000	4360	U
95-50-1	1,2-Dichlorobenzene	10000	2180	U
541-73-1	1,3-Dichlorobenzene	10000	2180	U
106-46-7	1,4-Dichlorobenzene	10000	2180	U
75-71-8	Dichlorodifluoromethane	10000	8730	U
75-34-3	1,1-Dichloroethane	10000	2180	U
107-06-2	1,2-Dichloroethane (EDC)	10000	2180	U
75-35-4	1,1-Dichloroethene	10000	2180	U
156-59-2	cis-1,2-Dichloroethene	10000	2180	U
156-60-5	trans-1,2-Dichloroethene	10000	2180	U
78-87-5	1,2-Dichloropropane	10000	2180	U
142-28-9	1,3-Dichloropropane	10000	4360	U
594-20-7	2,2-Dichloropropane	10000	4360	U
563-58-6	1,1-Dichloropropene	10000	4360	U
10061-01-5	cis-1,3-Dichloropropene	10000	4360	U
10061-02-6	trans-1,3-Dichloropropene	10000	4360	U
100-41-4	Ethylbenzene	10000	6370	D

ORGANIC ANALYSIS DATA SHEET

5035A/8260C

2708-190524-014

Laboratory:	Apex Laboratories			SDG:	A9E0902
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	A9E0902-01	File ID:	VC19053124.D
Sampled:	05/24/19 12:50	Prepared:	05/29/19 17:00	Analyzed:	05/31/19 23:36
		Preparation:	EPA 5035A	Initial/Final:	5.73 g / 5 mL

Batch: 9051463 Sequence: 9E31027 Calibration: A9E3104 Instrument: VOA-GCMS3

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg wet)	Q
87-68-3	Hexachlorobutadiene	10000	8730	U
591-78-6	2-Hexanone	10000	43600	U
98-82-8	Isopropylbenzene	10000	4360	U
99-87-6	4-Isopropyltoluene	10000	4360	U
75-09-2	Methylene chloride	10000	21800	U
108-10-1	4-Methyl-2-pentanone (MiBK)	10000	43600	U
1634-04-4	Methyl tert-butyl ether (MTBE)	10000	4360	U
91-20-3	Naphthalene	10000	677000	D
103-65-1	n-Propylbenzene	10000	2180	U
100-42-5	Styrene	10000	4360	U
630-20-6	1,1,1,2-Tetrachloroethane	10000	2180	U
79-34-5	1,1,2,2-Tetrachloroethane	10000	4360	U
127-18-4	Tetrachloroethene (PCE)	10000	2180	U
87-61-6	1,2,3-Trichlorobenzene	10000	21800	U
120-82-1	1,2,4-Trichlorobenzene	10000	21800	U
71-55-6	1,1,1-Trichloroethane	10000	2180	U
79-00-5	1,1,2-Trichloroethane	10000	2180	U
79-01-6	Trichloroethene (TCE)	10000	2180	U
75-69-4	Trichlorofluoromethane	10000	17500	U
96-18-4	1,2,3-Trichloropropane	10000	4360	U
95-63-6	1,2,4-Trimethylbenzene	10000	4620	JD
108-67-8	1,3,5-Trimethylbenzene	10000	4360	U
108-88-3	Toluene	10000	10100	D
75-01-4	Vinyl chloride	10000	2180	U
179601-23-1	m,p-Xylene	10000	10300	D
95-47-6	o-Xylene	10000	4010	JD

SYSTEM MONITORING COMPOUND	ADDED (ng/mL)	CONC (ng/mL)	% REC	QC LIMITS	Q
1,4-Difluorobenzene (Surr)	50.0	48.6	97	80 - 120	
Toluene-d8 (Surr)	50.0	48.8	98	80 - 120	
4-Bromofluorobenzene (Surr)	50.0	52.0	104	80 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene (ISTD)	270110	6.029	265297	6.029	
Chlorobenzene-d5 (ISTD)	462250	9.752	463832	9.752	
1,4-Dichlorobenzene-d4 (ISTD)	189210	11.729	195645	11.723	

* Values outside of QC limits

PREPARATION BATCH SUMMARY

5035A/8260C

Laboratory: Apex Laboratories SDG: A9E0902

Client: Hahn and Associates Project: Mult 802 Decommissioning

Batch: 9051463 Batch Matrix: Soil Preparation: EPA 5035A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9051463-BLK1	VC19053106.D	05/31/19 13:00	
LCS	9051463-BS2	VC19053104.D	05/31/19 13:00	
2708-190524-014	A9E0902-01	VC19053124.D	05/29/19 17:00	

Note: Client samples are listed only if they are included in this report.
Duplicates and Matrix Spike/Duplicates QC Samples are only listed if sourced from a sample included in this report.

METHOD BLANK DATA SHEET
5035A/8260C

Laboratory:	Apex Laboratories			SDG:	A9E0902
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Soil	Laboratory ID:	9051463-BLK1	File ID:	VC19053106.D
Prepared:	05/31/19 13:00	Preparation:	EPA 5035A	Initial/Final:	7.5 g / 5 mL
Analyzed:	05/31/19 15:19	Instrument:	VOA-GCMS3		
Batch:	9051463	Sequence:	9E31027	Calibration:	A9E3104

CAS NO.	COMPOUND	CONC. (ug/kg wet)	Q
67-64-1	Acetone	333	U
107-13-1	Acrylonitrile	33.3	U
71-43-2	Benzene	3.33	U
108-86-1	Bromobenzene	8.33	U
74-97-5	Bromochloromethane	16.7	U
75-27-4	Bromodichloromethane	16.7	U
75-25-2	Bromoform	33.3	U
74-83-9	Bromomethane	333	U
78-93-3	2-Butanone (MEK)	167	U
104-51-8	n-Butylbenzene	16.7	U
135-98-8	sec-Butylbenzene	16.7	U
98-06-6	tert-Butylbenzene	16.7	U
75-15-0	Carbon disulfide	167	U
56-23-5	Carbon tetrachloride	16.7	U
108-90-7	Chlorobenzene	8.33	U
75-00-3	Chloroethane	167	U
67-66-3	Chloroform	16.7	U
74-87-3	Chloromethane	83.3	U
95-49-8	2-Chlorotoluene	16.7	U
106-43-4	4-Chlorotoluene	16.7	U
124-48-1	Dibromochloromethane	33.3	U
96-12-8	1,2-Dibromo-3-chloropropane	83.3	U
106-93-4	1,2-Dibromoethane (EDB)	16.7	U
74-95-3	Dibromomethane	16.7	U
95-50-1	1,2-Dichlorobenzene	8.33	U
541-73-1	1,3-Dichlorobenzene	8.33	U
106-46-7	1,4-Dichlorobenzene	8.33	U
75-71-8	Dichlorodifluoromethane	33.3	U
75-34-3	1,1-Dichloroethane	8.33	U
107-06-2	1,2-Dichloroethane (EDC)	8.33	U
75-35-4	1,1-Dichloroethene	8.33	U
156-59-2	cis-1,2-Dichloroethene	8.33	U
156-60-5	trans-1,2-Dichloroethene	8.33	U
78-87-5	1,2-Dichloropropane	8.33	U
142-28-9	1,3-Dichloropropane	16.7	U

METHOD BLANK DATA SHEET

5035A/8260C

Laboratory:	Apex Laboratories			SDG:	A9E0902
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Soil	Laboratory ID:	9051463-BLK1	File ID:	VC19053106.D
Prepared:	05/31/19 13:00	Preparation:	EPA 5035A	Initial/Final:	7.5 g / 5 mL
Analyzed:	05/31/19 15:19	Instrument:	VOA-GCMS3		
Batch:	9051463	Sequence:	9E31027	Calibration:	A9E3104

CAS NO.	COMPOUND	CONC. (ug/kg wet)	Q
594-20-7	2,2-Dichloropropane	16.7	U
563-58-6	1,1-Dichloropropene	16.7	U
10061-01-5	cis-1,3-Dichloropropene	16.7	U
10061-02-6	trans-1,3-Dichloropropene	16.7	U
100-41-4	Ethylbenzene	8.33	U
87-68-3	Hexachlorobutadiene	33.3	U
591-78-6	2-Hexanone	167	U
98-82-8	Isopropylbenzene	16.7	U
99-87-6	4-Isopropyltoluene	16.7	U
75-09-2	Methylene chloride	83.3	U
108-10-1	4-Methyl-2-pentanone (MiBK)	167	U
1634-04-4	Methyl tert-butyl ether (MTBE)	16.7	U
91-20-3	Naphthalene	33.3	U
103-65-1	n-Propylbenzene	8.33	U
100-42-5	Styrene	16.7	U
630-20-6	1,1,1,2-Tetrachloroethane	8.33	U
79-34-5	1,1,2,2-Tetrachloroethane	16.7	U
127-18-4	Tetrachloroethene (PCE)	8.33	U
87-61-6	1,2,3-Trichlorobenzene	83.3	U
120-82-1	1,2,4-Trichlorobenzene	83.3	U
71-55-6	1,1,1-Trichloroethane	8.33	U
79-00-5	1,1,2-Trichloroethane	8.33	U
79-01-6	Trichloroethene (TCE)	8.33	U
75-69-4	Trichlorofluoromethane	66.7	U
96-18-4	1,2,3-Trichloropropane	16.7	U
95-63-6	1,2,4-Trimethylbenzene	16.7	U
108-67-8	1,3,5-Trimethylbenzene	16.7	U
108-88-3	Toluene	16.7	U
75-01-4	Vinyl chloride	8.33	U
179601-23-1	m,p-Xylene	16.7	U
95-47-6	o-Xylene	8.33	U

SYSTEM MONITORING COMPOUND	ADDED (ng/mL)	CONC (ng/mL)	% REC	QC LIMITS	Q
1,4-Difluorobenzene (Surr)	50.0	49.8	100	80 - 120	
Toluene-d8 (Surr)	50.0	49.5	99	80 - 120	

METHOD BLANK DATA SHEET

5035A/8260C

Laboratory:	Apex Laboratories			SDG:	A9E0902
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Soil	Laboratory ID:	9051463-BLK1	File ID:	VC19053106.D
Prepared:	05/31/19 13:00	Preparation:	EPA 5035A	Initial/Final:	7.5 g / 5 mL
Analyzed:	05/31/19 15:19	Instrument:	VOA-GCMS3		
Batch:	9051463	Sequence:	9E31027	Calibration:	A9E3104

SYSTEM MONITORING COMPOUND	ADDED (ng/mL)	CONC (ng/mL)	% REC	QC LIMITS	Q
4-Bromofluorobenzene (Surr)	50.0	51.0	102	80 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene (ISTD)	262804	6.028	265297	6.029	
Chlorobenzene-d5 (ISTD)	457452	9.752	463832	9.752	
1,4-Dichlorobenzene-d4 (ISTD)	191483	11.729	195645	11.723	

LCS / LCS DUPLICATE RECOVERY

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Soil		
Batch:	9051463	Laboratory ID:	9051463-BS2
Preparation:	EPA 5035A	Initial/Final:	5 g / 5 mL

COMPOUND	SPIKE ADDED (ug/kg wet)	LCS CONCENTRATION (ug/kg wet)	LCS % REC. (*=Out)	QC LIMITS REC.
Acetone	2000	2160	108	80 - 120
Acrylonitrile	1000	1070	107	80 - 120
Benzene	1000	988	99	80 - 120
Bromobenzene	1000	1050	105	80 - 120
Bromochloromethane	1000	1060	106	80 - 120
Bromodichloromethane	1000	1020	102	80 - 120
Bromoform	1000	846	85	80 - 120
Bromomethane	1000	1010	101	80 - 120
2-Butanone (MEK)	2000	2090	105	80 - 120
n-Butylbenzene	1000	995	100	80 - 120
sec-Butylbenzene	1000	989	99	80 - 120
tert-Butylbenzene	1000	978	98	80 - 120
Carbon disulfide	1000	966	97	80 - 120
Carbon tetrachloride	1000	994	99	80 - 120
Chlorobenzene	1000	972	97	80 - 120
Chloroethane	1000	806	81	80 - 120
Chloroform	1000	973	97	80 - 120
Chloromethane	1000	898	90	80 - 120
2-Chlorotoluene	1000	1010	101	80 - 120
4-Chlorotoluene	1000	993	99	80 - 120
Dibromochloromethane	1000	890	89	80 - 120
1,2-Dibromo-3-chloropropane	1000	918	92	80 - 120
1,2-Dibromoethane (EDB)	1000	1080	108	80 - 120
Dibromomethane	1000	1030	103	80 - 120
1,2-Dichlorobenzene	1000	962	96	80 - 120
1,3-Dichlorobenzene	1000	970	97	80 - 120
1,4-Dichlorobenzene	1000	944	94	80 - 120
Dichlorodifluoromethane	1000	962	96	80 - 120
1,1-Dichloroethane	1000	1050	105	80 - 120
1,2-Dichloroethane (EDC)	1000	1000	100	80 - 120

LCS / LCS DUPLICATE RECOVERY

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Soil		
Batch:	9051463	Laboratory ID:	9051463-BS2
Preparation:	EPA 5035A	Initial/Final:	5 g / 5 mL

COMPOUND	SPIKE ADDED (ug/kg wet)	LCS CONCENTRATION (ug/kg wet)	LCS % REC. (*=Out)	QC LIMITS REC.
1,1-Dichloroethene	1000	1020	102	80 - 120
cis-1,2-Dichloroethene	1000	1010	101	80 - 120
trans-1,2-Dichloroethene	1000	1020	102	80 - 120
1,2-Dichloropropane	1000	1020	102	80 - 120
1,3-Dichloropropane	1000	1030	103	80 - 120
2,2-Dichloropropane	1000	1100	110	80 - 120
1,1-Dichloropropene	1000	962	96	80 - 120
cis-1,3-Dichloropropene	1000	1060	106	80 - 120
trans-1,3-Dichloropropene	1000	1060	106	80 - 120
Ethylbenzene	1000	980	98	80 - 120
Hexachlorobutadiene	1000	1010	101	80 - 120
2-Hexanone	2000	1960	98	80 - 120
Isopropylbenzene	1000	1000	100	80 - 120
4-Isopropyltoluene	1000	1020	102	80 - 120
Methylene chloride	1000	820	82	80 - 120
4-Methyl-2-pentanone (MiBK)	2000	1880	94	80 - 120
Methyl tert-butyl ether (MTBE)	1000	997	100	80 - 120
Naphthalene	1000	1010	101	80 - 120
n-Propylbenzene	1000	1010	101	80 - 120
Styrene	1000	1050	105	80 - 120
1,1,1,2-Tetrachloroethane	1000	1080	108	80 - 120
1,1,2,2-Tetrachloroethane	1000	1030	103	80 - 120
Tetrachloroethene (PCE)	1000	941	94	80 - 120
1,2,3-Trichlorobenzene	1000	1040	104	80 - 120
1,2,4-Trichlorobenzene	1000	1020	102	80 - 120
1,1,1-Trichloroethane	1000	1010	101	80 - 120
1,1,2-Trichloroethane	1000	1020	102	80 - 120
Trichloroethene (TCE)	1000	946	95	80 - 120
Trichlorofluoromethane	1000	756	76 *	80 - 120
1,2,3-Trichloropropane	1000	1020	102	80 - 120

LCS / LCS DUPLICATE RECOVERY

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Soil		
Batch:	9051463	Laboratory ID:	9051463-BS2
Preparation:	EPA 5035A	Initial/Final:	5 g / 5 mL

COMPOUND	SPIKE ADDED (ug/kg wet)	LCS CONCENTRATION (ug/kg wet)	LCS % REC. (*=Out)	QC LIMITS REC.
1,2,4-Trimethylbenzene	1000	1010	101	80 - 120
1,3,5-Trimethylbenzene	1000	1030	103	80 - 120
Toluene	1000	972	97	80 - 120
Vinyl chloride	1000	908	91	80 - 120
m,p-Xylene	2000	2010	100	80 - 120
o-Xylene	1000	984	98	80 - 120

* = Values outside of QC limits

ANALYSIS BATCH (SEQUENCE) SUMMARY

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E29058	Instrument:	VOA-GCMS3
Matrix:	Soil	Calibration:	A9E3104

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9E29058-TUN1	VC19052902.D	05/29/19 14:45
Initial Cal Blank	9E29058-ICB1	VC19052903.D	05/29/19 15:12
Cal Standard	9E29058-CAL1	VC19052904.D	05/29/19 15:40
Cal Standard	9E29058-CAL2	VC19052905.D	05/29/19 16:07
Cal Standard	9E29058-CAL3	VC19052906.D	05/29/19 16:35
Cal Standard	9E29058-CAL4	VC19052907.D	05/29/19 17:02
Cal Standard	9E29058-CAL5	VC19052908.D	05/29/19 17:30
Cal Standard	9E29058-CAL6	VC19052909.D	05/29/19 17:57
Cal Standard	9E29058-CAL7	VC19052910.D	05/29/19 18:25
Cal Standard	9E29058-CAL8	VC19052911.D	05/29/19 18:52
Cal Standard	9E29058-CAL9	VC19052912.D	05/29/19 19:20
Cal Standard	9E29058-CALA	VC19052914.D	05/29/19 20:15
Cal Standard	9E29058-CALB	VC19052916.D	05/29/19 21:10
Initial Cal Check	9E29058-ICV1	VC19052919.D	05/29/19 22:32

Note: Client samples are listed only if they are included in this report.
Duplicates and Matrix Spike/Duplicates QC Samples are only listed if sourced from a sample included in this report.

ANALYSIS BATCH (SEQUENCE) SUMMARY

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E31027	Instrument:	VOA-GCMS3
Matrix:	Soil	Calibration:	A9E3104

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9E31027-TUN1	VC19053102.D	05/31/19 13:28
Calibration Check	9E31027-CCV2	VC19053104.D	05/31/19 14:24
Blank	9051463-BLK1	VC19053106.D	05/31/19 15:19
2708-190524-014	A9E0902-01	VC19053124.D	05/31/19 23:36

Note: Client samples are listed only if they are included in this report.
Duplicates and Matrix Spike/Duplicates QC Samples are only listed if sourced from a sample included in this report.

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Lab File ID:	VC19052902.D	Injection Date:	05/29/19
Instrument ID:	VOA-GCMS3	Injection Time:	14:45
Sequence:	9E29058	Lab Sample ID:	9E29058-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 50			
m/z 75			
m/z 95		116.13	
m/z 96	5 - 9% of m/z 95	7.28	PASS
m/z 173		0.24	
m/z 174	50 - 200% of m/z 95	86.11	PASS
m/z 175	5 - 9% of m/z 174	7.30	PASS
m/z 176	95 - 101% of m/z 174	96.31	PASS
m/z 177	5 - 9% of m/z 176	7.16	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Lab File ID:	VC19053102.D	Injection Date:	05/31/19
Instrument ID:	VOA-GCMS3	Injection Time:	13:28
Sequence:	9E31027	Lab Sample ID:	9E31027-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 50			
m/z 75			
m/z 95		113.95	
m/z 96	5 - 9% of m/z 95	7.08	PASS
m/z 173		0.18	
m/z 174	50 - 200% of m/z 95	87.76	PASS
m/z 175	5 - 9% of m/z 174	7.40	PASS
m/z 176	95 - 101% of m/z 174	97.70	PASS
m/z 177	5 - 9% of m/z 176	6.42	PASS

INITIAL CALIBRATION DATA (Summary)

5035A/8260C

Laboratory: Apex Laboratories SDG: A9E0902

Client: Hahn and Associates Project: Mult 802 Decommissioning

Calibration: A9E3104 Date: 05/31/19 12:17 Instrument: VOA-GCMS3

Compound	Mean RF	FIT	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Acetone	0.2253755	Ave	12.62378	3.835714	0.198053			20	
Acrylonitrile	0.2924003	Ave	7.645432	4.598	0.1831131			20	
Benzene	2.173291	Ave	6.107014	5.932455	7.470302E-02			20	
Bromobenzene	0.660211	Ave	10.80839	9.925546	33.16625			20	
Bromochloromethane	0.3867513	Ave	7.915163	5.2664	5.715378E-02			20	
Bromodichloromethane	0.4914024	XXX	16.45709	7.1802	4.839797E-02				
Bromoform	0.1079993	XXX	37.80186	10.38778	2.891535E-02				
Bromomethane	0.2874805	Ave	14.8662	2.298	0.2149943			20	
2-Butanone (MEK)	0.4019278	Ave	6.861878	5.692125	0.15901			20	
n-Butylbenzene	1.668652	Ave	12.95508	11.9308	2.610619E-02			20	
sec-Butylbenzene	2.411623	Ave	12.35168	11.49845	0.0256839			20	
tert-Butylbenzene	1.140562	Ave	14.08989	11.35736	2.497059E-02			20	
Carbon disulfide	0.8029804	Ave	14.57182	3.1086	0.203543			20	
Carbon tetrachloride	0.4640012	Ave	14.20593	5.476125	5.910227E-02			20	
Chlorobenzene	0.8022591	Ave	8.073566	9.7663	0.0166771			20	
Chloroethane	0.1914849	Ave	5.762938	2.442429	0.29219			20	
Chloroform	0.8590263	Ave	7.927362	5.349889	9.005742E-02			20	
Chloromethane	0.7372888	Ave	11.41977	1.859333	0.2373304			20	
2-Chlorotoluene	0.6231715	Ave	6.326231	11.07091	4.501259E-02			20	
4-Chlorotoluene	1.801043	Ave	9.996215	11.2071	2.837172E-02			20	
Dibromochloromethane	0.1903591	XXX	28.84565	9.0077	8.099567E-02				
1,2-Dibromo-3-chloropropane	0.1551392	XXX	27.97457	12.673	4.358278E-03				
1,2-Dibromoethane (EDB)	0.2641584	Ave	9.512969	9.244222	5.589469E-02			20	
Dibromomethane	0.2904912	Ave	6.619124	6.997222	4.473185E-02			20	
1,2-Dichlorobenzene	1.064181	Ave	11.05225	12.05955	6.864662E-03			20	
1,3-Dichlorobenzene	1.158628	Ave	13.0256	11.67145	2.983529E-02			20	
1,4-Dichlorobenzene	1.157493	Ave	12.49826	11.7386	2.791165E-02			20	
Dichlorodifluoromethane	0.4488536	Ave	5.631154	1.6614	0.4162911			20	
1,1-Dichloroethane	0.722902	Ave	3.334896	4.5213	0.1431398			20	
1,2-Dichloroethane (EDC)	0.6478979	Ave	3.589848	6.1485	5.931189E-02			20	
1,1-Dichloroethene	0.505879	Ave	6.02585	3.097	0.2089188			20	
cis-1,2-Dichloroethene	0.6546452	Ave	5.35323	5.068	7.688616E-02			20	
trans-1,2-Dichloroethene	0.5865828	Ave	10.37818	3.535455	33.16676			20	

INITIAL CALIBRATION DATA (Summary)

5035A/8260C

Laboratory: Apex Laboratories SDG: A9E0902

Client: Hahn and Associates Project: Mult 802 Decommissioning

Calibration: A9E3104 Date: 05/31/19 12:17 Instrument: VOA-GCMS3

Compound	Mean RF	FIT	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,2-Dichloropropane	0.5555414	Ave	3.684358	7.1085	5.556284E-02			20	
1,3-Dichloropropane	0.499839	Ave	5.06154	9.109182	5.662128E-02			20	
2,2-Dichloropropane	0.5664893	Ave	3.258667	5.173555	9.574314E-02			20	
1,1-Dichloropropene	0.675245	Ave	8.19961	5.6783	0.1226429			20	
cis-1,3-Dichloropropene	0.3936101	Ave	13.49861	7.8884	5.666248E-02			20	
trans-1,3-Dichloropropene	0.3651777	Ave	14.75893	8.643375	2.494301E-02			20	
Ethylbenzene	1.344824	Ave	11.33243	9.7962	3.176435E-02			20	
Hexachlorobutadiene	0.1540623	Ave	7.547805	13.1825	1.280361E-02			20	
2-Hexanone	0.2768391	Ave	6.491161	9.501125	5.085782E-02			20	
Isopropylbenzene	1.170132	Ave	10.65457	10.59509	0.0202351			20	
4-Isopropyltoluene	1.961953	Ave	8.252713	11.6084	2.287279E-02			20	
Methylene chloride	0.7762485	XXX	64.13859	3.725286	0.1605774				
4-Methyl-2-pentanone (MiBK)	0.4083408	Ave	10.15169	8.618091	4.632965E-02			20	
Methyl tert-butyl ether (MTBE)	1.737544	Ave	3.662475	4.034273	0.105963			20	
Naphthalene	2.085939	Ave	8.862537	13.49188	0.0126047			20	
n-Propylbenzene	3.010297	Ave	13.61484	10.94309	2.224009E-02			20	
Styrene	0.713274	Ave	8.047581	10.37089	0.0354697			20	
1,1,1,2-Tetrachloroethane	0.2263147	Ave	13.96301	9.828889	3.446187E-02			20	
1,1,2,2-Tetrachloroethane	0.6550826	Ave	6.228093	11.00836	1.843147E-02			20	
Tetrachloroethene (PCE)	0.3066843	Ave	13.46575	8.5995	4.037679E-02			20	
1,2,3-Trichlorobenzene	0.5869678	Ave	4.011847	13.65389	2.211937E-02			20	
1,2,4-Trichlorobenzene	0.6195526	Ave	9.177609	13.2157	1.448412E-02			20	
1,1,1-Trichloroethane	0.6559841	Ave	4.490047	5.5462	9.514443E-02			20	
1,1,2-Trichloroethane	0.2702075	Ave	4.387567	8.819364	4.631842E-02			20	
Trichloroethene (TCE)	0.6095829	Ave	10.64915	6.550273	7.525326E-02			20	
Trichlorofluoromethane	0.2840989	Ave	5.300846	2.574444	0.2140081			20	
1,2,3-Trichloropropane	0.2701275	Ave	12.91525	11.1163	0.0163219			20	
1,2,4-Trimethylbenzene	2.082496	Ave	9.335725	11.41355	2.000768E-02			20	
1,3,5-Trimethylbenzene	2.035006	Ave	8.015564	11.1041	1.762525E-02			20	
Toluene	1.322662	Ave	11.48784	8.154556	3.821745E-02			20	
Vinyl chloride	0.5096599	Ave	3.257019	1.9491	0.2864279			20	
m,p-Xylene	0.9708556	Ave	12.3665	9.9336	3.419653E-02			20	
o-Xylene	1.020478	Ave	9.818085	10.3223	3.930108E-02			20	

INITIAL CALIBRATION DATA (Summary)

5035A/8260C

Laboratory: Apex Laboratories SDG: A9E0902

Client: Hahn and Associates Project: Mult 802 Decommissioning

Calibration: A9E3104 Date: 05/31/19 12:17 Instrument: VOA-GCMS3

Compound	Mean RF	FIT	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,4-Difluorobenzene (Surr)	1.923181	Ave	0.9315441	6.587182	4.550578E-02			20	
Toluene-d8 (Surr)	1.352618	Ave	0.5818183	8.094909	2.999453E-02			20	
4-Bromofluorobenzene (Surr)	0.863369	Ave	0.7791042	10.83564	1.105545E-02			20	

Note: ** Quad COD may be incorrect if weighting (1/a) or (1/a2) used. Weighting not shown here. Please see instrument calibration printouts for validation.

INITIAL CALIBRATION DATA

5035A/8260C

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Calibration: A9E3104
Instrument: VOA-GCMS3
Calibration Date: 05/31/19 12:17

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF
Acetone	0.2	~~0~~	0.4	~~0~~	0.8	~~0~~	2	~~0.3447223~~	4	0.2842637	10	0.2334824
Acrylonitrile	0.1	~~0~~	0.2	~~0~~	0.4	~~0.1681251~~	1	0.2673481	2	0.2501717	5	0.3014056
Benzene	0.1	2.356957	0.2	2.259901	0.4	2.234785	1	2.283963	2	2.146571	5	2.20196
Bromobenzene	0.1	0.4548258	0.2	0.6704971	0.4	0.6912265	1	0.7046887	2	0.6774417	5	0.6997125
Bromochloromethane	0.1	~~0~~	0.2	0.4410751	0.4	0.3244519	1	0.3789298	2	0.3760424	5	0.4003564
Bromodichloromethane	0.1	~~0~~	0.2	0.4196542	0.4	0.4286697	1	0.4229109	2	0.3953694	5	0.4642172
Bromoform	0.1	~~0~~	0.2	~~0~~	0.4	0.0526578	1	7.182424E-02	2	7.496634E-02	5	9.142575E-02
Bromomethane	0.1	~~2.862981~~	0.2	~~1.755537~~	0.4	~~1.070691~~	1	~~0.5000814~~	2	~~0.4390268~~	5	0.3563957
2-Butanone (MEK)	0.2	~~0~~	0.4	~~0~~	0.8	~~0~~	2	0.4530461	4	0.3614736	10	0.4129755
n-Butylbenzene	0.1	~~2.872854~~	0.2	2.178789	0.4	1.782741	1	1.756012	2	1.570042	5	1.645783
sec-Butylbenzene	0.1	3.073286	0.2	2.706822	0.4	2.500477	1	2.410133	2	2.140161	5	2.408358
tert-Butylbenzene	0.1	1.233426	0.2	1.57887	0.4	1.114048	1	1.136963	2	1.03176	5	1.10145
Carbon disulfide	0.1	~~0~~	0.2	0.8130192	0.4	0.770819	1	0.678042	2	0.6724223	5	0.7029787
Carbon tetrachloride	0.1	~~0~~	0.2	~~0.4050491~~	0.4	~~0.3441156~~	1	0.3931829	2	0.3702541	5	0.4285776
Chlorobenzene	0.1	~~1.259914~~	0.2	0.9050022	0.4	0.8878219	1	0.8470387	2	0.8074661	5	0.7964598
Chloroethane	0.1	~~0~~	0.2	~~0~~	0.4	~~0~~	1	~~0~~	2	0.1965074	5	0.2058695
Chloroform	0.1	~~1.658528~~	0.2	~~1.27941~~	0.4	1.008259	1	0.8948933	2	0.8597076	5	0.8319563
Chloromethane	0.1	~~1.606579~~	0.2	~~1.530618~~	0.4	0.9192803	1	0.788402	2	0.7484548	5	0.7505505
2-Chlorotoluene	0.1	0.6681057	0.2	0.6992513	0.4	0.6037463	1	0.6212244	2	0.5672949	5	0.6378577
4-Chlorotoluene	0.1	~~2.911399~~	0.2	2.19578	0.4	1.929867	1	1.868839	2	1.721526	5	1.793365
Dibromochloromethane	0.1	~~0~~	0.2	9.626492E-02	0.4	0.1554255	1	0.1612855	2	0.1590682	5	0.1671946
1,2-Dibromo-3-chloropropane	0.1	~~0~~	0.2	~~0~~	0.4	~~0~~	1	0.1000484	2	0.1060388	5	0.1267334
1,2-Dibromoethane (EDB)	0.1	~~0.2072008~~	0.2	~~0.1667846~~	0.4	0.2247865	1	0.2477298	2	0.2306571	5	0.2594964
Dibromomethane	0.1	~~0~~	0.2	~~0.1460514~~	0.4	0.2811916	1	0.2589998	2	0.2718532	5	0.2809952
1,2-Dichlorobenzene	0.1	1.369617	0.2	1.088741	0.4	1.161764	1	1.034196	2	0.98118	5	1.054767
1,3-Dichlorobenzene	0.1	1.567479	0.2	1.2116	0.4	1.229363	1	1.100804	2	1.124063	5	1.118797
1,4-Dichlorobenzene	0.1	~~1.77305~~	0.2	1.505678	0.4	1.268464	1	1.187531	2	1.117516	5	1.147072
Dichlorodifluoromethane	0.1	~~0~~	0.2	0.462496	0.4	0.4129387	1	0.4163952	2	0.4476602	5	0.4787006
1,1-Dichloroethane	0.1	~~0~~	0.2	0.7156516	0.4	0.6970799	1	0.7087881	2	0.7337388	5	0.7441919
1,2-Dichloroethane (EDC)	0.1	~~0~~	0.2	0.6669679	0.4	0.6857733	1	0.6389477	2	0.6476013	5	0.6531697
1,1-Dichloroethene	0.1	~~0~~	0.2	0.4439961	0.4	0.5555009	1	0.5033393	2	0.4798391	5	0.5105722

INITIAL CALIBRATION DATA

5035A/8260C

Laboratory: Apex Laboratories

Client: Hahn and Associates

Calibration: A9E3104

SDG: A9E0902

Project: Mult 802 Decommissioning

Instrument: VOA-GCMS3

Calibration Date: 05/31/19 12:17

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF
cis-1,2-Dichloroethene	0.1	0.7022769	0.2	0.5949159	0.4	0.6941304	1	0.6285633	2	0.6303345	5	0.6720885
trans-1,2-Dichloroethene	0.1	0.4713914	0.2	0.714678	0.4	0.5712319	1	0.531642	2	0.5654861	5	0.6142723
1,2-Dichloropropane	0.1	~~0~~	0.2	0.5803107	0.4	0.5250221	1	0.5296058	2	0.5501815	5	0.5663865
1,3-Dichloropropane	0.1	0.4879244	0.2	0.5529636	0.4	0.5282767	1	0.4761982	2	0.4731627	5	0.5008873
2,2-Dichloropropane	0.1	~~0~~	0.2	~~0~~	0.4	0.5741815	1	0.5452842	2	0.5393898	5	0.566151
1,1-Dichloropropene	0.1	~~0~~	0.2	0.8003614	0.4	0.6439878	1	0.7442173	2	0.6352399	5	0.6520707
cis-1,3-Dichloropropene	0.1	~~0~~	0.2	0.3369272	0.4	0.3193441	1	0.3574968	2	0.342553	5	0.3853809
trans-1,3-Dichloropropene	0.1	~~0.2985474~~	0.2	~~0.3218159~~	0.4	~~0.2570607~~	1	0.3099233	2	0.2849717	5	0.3252241
Ethylbenzene	0.1	~~1.887087~~	0.2	1.620273	0.4	1.52651	1	1.400399	2	1.309973	5	1.368286
Hexachlorobutadiene	0.1	~~0.6038647~~	0.2	~~0.3868755~~	0.4	~~0.2485234~~	1	0.1772597	2	0.1597001	5	0.1475815
n-Hexane	0.1	~~1.646984~~	0.2	~~0.8509926~~	0.4	~~0.5520598~~	1	~~0.2813976~~	2	0.1733543	5	0.1373379
2-Hexanone	0.2	~~0.2467472~~	0.4	~~0.2140775~~	0.8	~~0.2603164~~	2	0.2863687	4	0.2356124	10	0.2787811
Isopropylbenzene	0.1	1.476027	0.2	1.245287	0.4	1.162152	1	1.147563	2	1.125326	5	1.191702
4-Isopropyltoluene	0.1	~~2.754651~~	0.2	2.285964	0.4	2.096212	1	1.876179	2	1.880841	5	1.983756
Methylene chloride	0.1	~~9.674105~~	0.2	~~14.20495~~	0.4	~~7.420608~~	1	~~3.209603~~	2	1.81193	5	0.9910783
4-Methyl-2-pentanone (MiBK)	0.2	0.4829115	0.4	0.4740488	0.8	0.4443356	2	0.408145	4	0.3660284	10	0.3823483
Methyl tert-butyl ether (MTBE)	0.1	1.793211	0.2	1.754564	0.4	1.806607	1	1.734199	2	1.720887	5	1.759763
Naphthalene	0.1	~~1.814164~~	0.2	~~1.787992~~	0.4	~~1.845701~~	1	1.870198	2	1.797397	5	2.024392
n-Propylbenzene	0.1	4.018913	0.2	3.24531	0.4	3.147964	1	2.876119	2	2.838015	5	3.062025
Styrene	0.1	~~0.6516799~~	0.2	~~0.5882234~~	0.4	0.6403868	1	0.656513	2	0.6439686	5	0.7153222
1,1,1,2-Tetrachloroethane	0.1	~~0~~	0.2	~~0.1779782~~	0.4	0.1704301	1	0.2100192	2	0.1961084	5	0.2155581
1,1,2,2-Tetrachloroethane	0.1	0.6835235	0.2	0.5737782	0.4	0.6633919	1	0.6176901	2	0.5964363	5	0.6536662
Tetrachloroethene (PCE)	0.1	~~0.3765262~~	0.2	0.3906565	0.4	0.3739836	1	0.3035416	2	0.2684725	5	0.2965384
1,2,3-Trichlorobenzene	0.1	~~0.2698119~~	0.2	~~0.6953303~~	0.4	0.5633198	1	0.5682096	2	0.5533018	5	0.5697431
1,2,4-Trichlorobenzene	0.1	~~0.9199301~~	0.2	0.7567599	0.4	0.5381361	1	0.6214963	2	0.5739704	5	0.6037474
1,1,1-Trichloroethane	0.1	~~0.582986~~	0.2	0.6397049	0.4	0.6793826	1	0.5951702	2	0.6316099	5	0.6553285
1,1,2-Trichloroethane	0.1	0.255102	0.2	0.283198	0.4	0.25791	1	0.2611896	2	0.2514196	5	0.2779612
Trichloroethene (TCE)	0.1	0.6888086	0.2	0.7575197	0.4	0.5181398	1	0.6098306	2	0.6114	5	0.5973945
Trichlorofluoromethane	0.1	~~0~~	0.2	~~0~~	0.4	0.2757841	1	0.2893387	2	0.2901992	5	0.3021121
1,2,3-Trichloropropane	0.1	~~0~~	0.2	0.1882097	0.4	0.3313646	1	0.2672488	2	0.2824279	5	0.2739435
1,1,2-Trichloro-1,2,2-trifluoroethan	0.1	~~0~~	0.2	0.5871264	0.4	0.4596402	1	0.437164	2	0.3834004	5	0.4095803

INITIAL CALIBRATION DATA

5035A/8260C

Laboratory: Apex Laboratories

Client: Hahn and Associates

Calibration: A9E3104

SDG: A9E0902

Project: Mult 802 Decommissioning

Instrument: VOA-GCMS3

Calibration Date: 05/31/19 12:17

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF
1,2,4-Trimethylbenzene	0.1	2.4797	0.2	2.104289	0.4	2.243338	1	2.133369	2	1.97186	5	2.077334
1,3,5-Trimethylbenzene	0.1	~~3.353377~~	0.2	2.321253	0.4	2.080307	1	2.112979	2	1.864152	5	2.109959
Toluene	0.1	~~2.780501~~	0.2	~~1.916903~~	0.4	1.619652	1	1.480113	2	1.319496	5	1.333738
Vinyl chloride	0.1	~~0~~	0.2	0.501443	0.4	0.5201062	1	0.5080225	2	0.5160404	5	0.5288629
m,p-Xylene	0.2	~~1.385238~~	0.4	1.1882	0.8	1.079202	2	1.009485	4	0.9524988	10	0.9872633
o-Xylene	0.1	~~1.4181~~	0.2	1.249205	0.4	1.06448	1	1.050212	2	0.9658698	5	1.026754
Xylenes, total	0.3	~~1.396192~~	0.6	1.208535	1.2	1.074295	3	1.02306	6	0.9569558	15	1.000427
trans-1,4-Dichloro-2-butene	0.1	~~0~~	0.2	~~0~~	0.4	~~0~~	1	4.893671E-02	2	4.108041E-02	5	6.816759E-02
1,4-Difluorobenzene (Surr)	50	1.898995	50	1.915613	50	1.909421	50	1.926075	50	1.947953	50	1.931983
Toluene-d8 (Surr)	50	1.353667	50	1.351054	50	1.350243	50	1.354946	50	1.346094	50	1.358951
4-Bromofluorobenzene (Surr)	50	0.8629099	50	0.8664234	50	0.8659007	50	0.8628413	50	0.8567937	50	0.8677337

INITIAL CALIBRATION DATA (Continued)

5035A/8260C

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Calibration: A9E3104
Instrument: VOA-GCMS3
Matrix:
Calibration Date: 05/31/19 12:17

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF
Acetone	20	0.205634	40	0.2174602	100	0.2228833	200	0.2165903	400	0.1973146		
Acrylonitrile	10	0.3014239	20	0.2984808	50	0.3175696	100	0.3081987	200	0.2946037		
Benzene	10	2.176265	20	2.159652	50	2.18442	100	2.045954	200	1.855768		
Bromobenzene	10	0.6925787	20	0.6728622	50	0.6872456	100	0.686058	200	0.6251844		
Bromochloromethane	10	0.4020048	20	0.3936864	50	0.4024547	100	0.3884155	200	0.3600962		
Bromodichloromethane	10	0.4732223	20	0.5159069	50	0.5913129	100	0.6046422	200	0.5981187		
Bromoform	10	9.945226E-02	20	0.1105229	50	0.1440129	100	0.1588168	200	0.1683146		
Bromomethane	10	0.3223011	20	0.276709	50	0.2670883	100	0.2495434	200	0.2528457		
2-Butanone (MEK)	20	0.401726	40	0.4027888	100	0.4155017	200	0.3917591	400	0.3761518		
n-Butylbenzene	10	1.647722	20	1.635715	50	1.604073	100	1.511956	200	1.353685		
sec-Butylbenzene	10	2.373978	20	2.403922	50	2.360269	100	2.233842	200	1.916607		
tert-Butylbenzene	10	1.105888	20	1.110102	50	1.105151	100	1.078095	200	0.950431		
Carbon disulfide	10	0.7261387	20	0.7893901	50	0.9457745	100	0.9707577	200	0.9604621		
Carbon tetrachloride	10	0.4505323	20	0.4647616	50	0.5280438	100	0.5349357	200	0.5417214		
Chlorobenzene	10	0.78503	20	0.7773639	50	0.7815087	100	0.7497145	200	0.685185		
Chloroethane	10	0.1816193	20	0.187039	50	0.191151	100	0.2027048	200	0.1755033		
Chloroform	10	0.8391702	20	0.8450671	50	0.8681585	100	0.8317265	200	0.7522979		
Chloromethane	10	0.709684	20	0.7097387	50	0.7146212	100	0.6827604	200	0.6121071		
2-Chlorotoluene	10	0.6368426	20	0.6169345	50	0.6182646	100	0.6235586	200	0.5618063		
4-Chlorotoluene	10	1.743775	20	1.781719	50	1.769476	100	1.715445	200	1.49064		
Dibromochloromethane	10	0.1842371	20	0.2021042	50	0.2469028	100	0.2623827	200	0.268725		
1,2-Dibromo-3-chloropropane	10	0.1474785	20	0.1565661	50	0.1851799	100	0.2044808	200	0.2145878		
1,2-Dibromoethane (EDB)	10	0.2736742	20	0.2767431	50	0.2950057	100	0.2894677	200	0.2798647		
Dibromomethane	10	0.2968621	20	0.301005	50	0.3205243	100	0.3100595	200	0.2929304		
1,2-Dichlorobenzene	10	1.025871	20	1.035527	50	1.033287	100	0.9944901	200	0.9265535		
1,3-Dichlorobenzene	10	1.11582	20	1.109945	50	1.116117	100	1.076415	200	0.974506		
1,4-Dichlorobenzene	10	1.122379	20	1.098662	50	1.095987	100	1.058131	200	0.9735116		
Dichlorodifluoromethane	10	0.4534009	20	0.4410211	50	0.4877186	100	0.4626798	200	0.4255249		
1,1-Dichloroethane	10	0.7239673	20	0.7378354	50	0.7491965	100	0.7443219	200	0.6742483		
1,2-Dichloroethane (EDC)	10	0.6477099	20	0.6472689	50	0.6634541	100	0.6286668	200	0.5994196		
1,1-Dichloroethene	10	0.5129845	20	0.506629	50	0.5384312	100	0.5148187	200	0.4926785		

INITIAL CALIBRATION DATA (Continued)

5035A/8260C

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Calibration: A9E3104
Instrument: VOA-GCMS3
Matrix:
Calibration Date: 05/31/19 12:17

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF
cis-1,2-Dichloroethene	10	0.6749418	20	0.659948	50	0.6785387	100	0.6585095	200	0.60685		
trans-1,2-Dichloroethene	10	0.60484	20	0.5961138	50	0.6262431	100	0.5980107	200	0.558502		
1,2-Dichloropropane	10	0.5536232	20	0.5699759	50	0.5811369	100	0.5648897	200	0.5342817		
1,3-Dichloropropane	10	0.501398	20	0.5082841	50	0.5076875	100	0.4963754	200	0.4650708		
2,2-Dichloropropane	10	0.5846401	20	0.5733089	50	0.5934502	100	0.5736428	200	0.5483554		
1,1-Dichloropropene	10	0.6563357	20	0.6584764	50	0.6875105	100	0.650704	200	0.6235462		
cis-1,3-Dichloropropene	10	0.4017509	20	0.4263151	50	0.4584765	100	0.4602436	200	0.4476129		
trans-1,3-Dichloropropene	10	0.3602351	20	0.3820349	50	0.4188487	100	0.4240313	200	0.4161526		
Ethylbenzene	10	1.323475	20	1.322104	50	1.291962	100	1.212519	200	1.072742		
Hexachlorobutadiene	10	0.1432488	20	0.1607463	50	0.154355	100	0.145664	200	0.1439433		
n-Hexane	10	0.1107406	20	9.823642E-02	50	0.1015447	100	9.324765E-02	200	9.235036E-02		
2-Hexanone	20	0.2807902	40	0.2806108	100	0.2940055	200	0.2873308	400	0.2712131		
Isopropylbenzene	10	1.162912	20	1.169528	50	1.145301	100	1.090283	200	0.955372		
4-Isopropyltoluene	10	1.985351	20	1.973365	50	1.980868	100	1.901336	200	1.655659		
Methylene chloride	10	0.7095844	20	0.5684556	50	0.4896765	100	0.4544216	200	0.4085932		
4-Methyl-2-pentanone (MiBK)	20	0.3988805	40	0.3891706	100	0.4027317	200	0.3848399	400	0.3583084		
Methyl tert-butyl ether (MTBE)	10	1.74151	20	1.751542	50	1.78124	100	1.699133	200	1.570331		
Naphthalene	10	2.132642	20	2.2353	50	2.312145	100	2.256912	200	2.058529		
n-Propylbenzene	10	2.971227	20	2.970799	50	2.888409	100	2.760681	200	2.333803		
Styrene	10	0.7369024	20	0.7671685	50	0.7863926	100	0.7760165	200	0.6967954		
1,1,1,2-Tetrachloroethane	10	0.2260622	20	0.23876	50	0.2598391	100	0.2631874	200	0.2568674		
1,1,2,2-Tetrachloroethane	10	0.6795147	20	0.6826771	50	0.6958363	100	0.6862858	200	0.6731083		
Tetrachloroethene (PCE)	10	0.2943118	20	0.2853503	50	0.2932724	100	0.2836355	200	0.2770802		
1,2,3-Trichlorobenzene	10	0.6015859	20	0.6095439	50	0.6149061	100	0.6109089	200	0.5911911		
1,2,4-Trichlorobenzene	10	0.6212354	20	0.6121254	50	0.6489513	100	0.6192864	200	0.599817		
1,1,1-Trichloroethane	10	0.6535069	20	0.6727538	50	0.6994091	100	0.6789123	200	0.654063		
1,1,2-Trichloroethane	10	0.2754618	20	0.2782313	50	0.2849041	100	0.2775706	200	0.269334		
Trichloroethene (TCE)	10	0.5845804	20	0.5904906	50	0.6134314	100	0.5871264	200	0.5466896		
Trichlorofluoromethane	10	0.2723593	20	0.2913762	50	0.2911765	100	0.2927105	200	0.2518337		
1,2,3-Trichloropropane	10	0.2766995	20	0.274659	50	0.2805165	100	0.2680685	200	0.2581367		
1,1,2-Trichloro-1,2,2-trifluoroethan	10	0.4093955	20	0.4069892	50	0.418564	100	0.3986246	200	0.3843963		

INITIAL CALIBRATION DATA (Continued)

5035A/8260C

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Calibration: A9E3104
Instrument: VOA-GCMS3
Matrix:
Calibration Date: 05/31/19 12:17

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF
1,2,4-Trimethylbenzene	10	2.097787	20	2.105911	50	2.049388	100	1.966569	200	1.677913		
1,3,5-Trimethylbenzene	10	2.087052	20	2.072968	50	2.032023	100	1.957503	200	1.711864		
Toluene	10	1.306172	20	1.285126	50	1.262006	100	1.202572	200	1.095086		
Vinyl chloride	10	0.5023865	20	0.5127395	50	0.5267001	100	0.50986	200	0.4704381		
m,p-Xylene	20	0.9757758	40	0.9756587	100	0.9419256	200	0.8659448	400	0.7326016		
o-Xylene	10	1.002086	20	1.013892	50	1.017395	100	0.9633158	200	0.8515745		
Xylenes, total	30	0.9845457	60	0.988403	150	0.9670822	300	0.8984018	600	0.7722593		
trans-1,4-Dichloro-2-butene	10	7.573364E-02	20	8.610613E-02	50	9.770183E-02	100	0.1024732	200	0.1049195		
1,4-Difluorobenzene (Surr)	50	1.903093	50	1.931437	50	1.95111	50	1.905471	50	1.933838		
Toluene-d8 (Surr)	50	1.353117	50	1.356025	50	1.33804	50	1.347553	50	1.36911		
4-Bromofluorobenzene (Surr)	50	0.8656337	50	0.8683943	50	0.8586692	50	0.8733106	50	0.8484489		

SECOND-SOURCE CALIBRATION VERIFICATION

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	VOA-GCMS3	Calibration:	A9E3104
Lab File ID:	VC19052919.D		
Sequence:	9E29058	Inject Date:	05/29/19
Lab Sample ID:	9E29058-ICV1	Inject Time:	22:32

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
Acetone	40.0	40.4	0.9	70 - 130
Acrylonitrile	20.0	20.9	4.6	70 - 130
Benzene	20.0	21.2	6.0	70 - 130
Bromobenzene	20.0	21.4	7.2	70 - 130
Bromochloromethane	20.0	21.7	8.4	70 - 130
Bromodichloromethane	20.0	22.0	9.8	70 - 130
Bromoform	20.0	18.7	-6.6	70 - 130
Bromomethane	20.0	20.9	4.6	70 - 130
2-Butanone (MEK)	40.0	40.5	1.2	70 - 130
n-Butylbenzene	20.0	20.2	1.0	70 - 130
sec-Butylbenzene	20.0	20.2	1.0	70 - 130
tert-Butylbenzene	20.0	19.4	-2.8	70 - 130
Carbon disulfide	20.0	19.6	-2.2	70 - 130
Carbon tetrachloride	20.0	21.7	8.7	70 - 130
Chlorobenzene	20.0	20.1	0.7	70 - 130
Chloroethane	20.0	21.4	7.0	70 - 130
Chloroform	20.0	20.7	3.4	70 - 130
Chloromethane	20.0	18.8	-6.2	70 - 130
2-Chlorotoluene	20.0	20.1	0.6	70 - 130
4-Chlorotoluene	20.0	20.3	1.5	70 - 130
Dibromochloromethane	20.0	18.9	-5.4	70 - 130
1,2-Dibromo-3-chloropropane	20.0	20.0	0.1	70 - 130
1,2-Dibromoethane (EDB)	20.0	21.8	9.2	70 - 130
Dibromomethane	20.0	21.3	6.6	70 - 130
1,2-Dichlorobenzene	20.0	19.7	-1.4	70 - 130
1,3-Dichlorobenzene	20.0	19.6	-1.9	70 - 130
1,4-Dichlorobenzene	20.0	19.5	-2.4	70 - 130
Dichlorodifluoromethane	20.0	16.6	-17.0	70 - 130
1,1-Dichloroethane	20.0	24.1	20.5	70 - 130
1,2-Dichloroethane (EDC)	20.0	21.4	6.9	70 - 130
1,1-Dichloroethene	20.0	25.4	26.8	70 - 130

SECOND-SOURCE CALIBRATION VERIFICATION

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	VOA-GCMS3	Calibration:	A9E3104
Lab File ID:	VC19052919.D		
Sequence:	9E29058	Inject Date:	05/29/19
Lab Sample ID:	9E29058-ICV1	Inject Time:	22:32

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
cis-1,2-Dichloroethene	20.0	21.6	7.8	70 - 130
trans-1,2-Dichloroethene	20.0	24.3	21.6	70 - 130
1,2-Dichloropropane	20.0	21.0	5.2	70 - 130
1,3-Dichloropropane	20.0	20.7	3.4	70 - 130
2,2-Dichloropropane	20.0	19.5	-2.3	70 - 130
1,1-Dichloropropene	20.0	20.6	3.2	70 - 130
cis-1,3-Dichloropropene	20.0	22.0	10.0	70 - 130
trans-1,3-Dichloropropene	20.0	21.8	8.8	70 - 130
Ethylbenzene	20.0	19.8	-0.9	70 - 130
Hexachlorobutadiene	20.0	21.6	7.8	70 - 130
2-Hexanone	40.0	40.7	1.8	70 - 130
Isopropylbenzene	20.0	19.7	-1.4	70 - 130
4-Isopropyltoluene	20.0	21.0	5.1	70 - 130
Methylene chloride	20.0	18.3	-8.6	70 - 130
4-Methyl-2-pentanone (MiBK)	40.0	38.8	-3.0	70 - 130
Methyl tert-butyl ether (MTBE)	20.0	20.3	1.6	70 - 130
Naphthalene	20.0	21.7	8.4	70 - 130
n-Propylbenzene	20.0	19.7	-1.4	70 - 130
Styrene	20.0	21.5	7.4	70 - 130
1,1,1,2-Tetrachloroethane	20.0	22.0	10.0	70 - 130
1,1,2,2-Tetrachloroethane	20.0	21.5	7.7	70 - 130
Tetrachloroethene (PCE)	20.0	19.4	-3.2	70 - 130
1,2,3-Trichlorobenzene	20.0	20.9	4.6	70 - 130
1,2,4-Trichlorobenzene	20.0	20.9	4.6	70 - 130
1,1,1-Trichloroethane	20.0	22.5	12.6	70 - 130
1,1,2-Trichloroethane	20.0	21.4	7.2	70 - 130
Trichloroethene (TCE)	20.0	20.4	2.2	70 - 130
Trichlorofluoromethane	20.0	18.0	-10.0	70 - 130
1,2,3-Trichloropropane	20.0	20.3	1.7	70 - 130
1,2,4-Trimethylbenzene	20.0	20.2	1.1	70 - 130
1,3,5-Trimethylbenzene	20.0	20.8	3.8	70 - 130

SECOND-SOURCE CALIBRATION VERIFICATION

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	VOA-GCMS3	Calibration:	A9E3104
Lab File ID:	VC19052919.D		
Sequence:	9E29058	Inject Date:	05/29/19
Lab Sample ID:	9E29058-ICV1	Inject Time:	22:32

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
Toluene	20.0	19.9	-0.6	70 - 130
Vinyl chloride	20.0	19.4	-3.0	70 - 130
m,p-Xylene	40.0	40.5	1.4	70 - 130
o-Xylene	20.0	20.1	0.3	70 - 130
1,4-Difluorobenzene (Surr)	50.0	50.3	0.6	70 - 130
Toluene-d8 (Surr)	50.0	49.5	-1.0	70 - 130
4-Bromofluorobenzene (Surr)	50.0	50.1	0.1	70 - 130

SURROGATE STANDARD RECOVERY AND RT SUMMARY

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E29058	Instrument:	VOA-GCMS3
Matrix:	Soil	Calibration:	A9E3104

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Initial Cal Check (9E29058-ICV1)				Lab File ID: VC19052919.D		Analyzed: 05/29/19 22:32		
1,4-Difluorobenzene (Surr)	50.0	101	70 - 130	6.59	6.587182	0.0028	+/-1.0	
Toluene-d8 (Surr)	50.0	99	70 - 130	8.093	8.094909	-0.0019	+/-1.0	
4-Bromofluorobenzene (Surr)	50.0	100	70 - 130	10.836	10.83564	0.0004	+/-1.0	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E31027	Instrument:	VOA-GCMS3
Matrix:	Soil	Calibration:	A9E3104

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
LCS (9051463-BS2)			Lab File ID: VC19053104.D		Analyzed: 05/31/19 14:24			
1,4-Difluorobenzene (Surr)	50.0	100	80 - 120	6.589	6.587182	0.0018	+/-1.0	
Toluene-d8 (Surr)	50.0	98	80 - 120	8.092	8.094909	-0.0029	+/-1.0	
4-Bromofluorobenzene (Surr)	50.0	102	80 - 120	10.835	10.83564	-0.0006	+/-1.0	
Blank (9051463-BLK1)			Lab File ID: VC19053106.D		Analyzed: 05/31/19 15:19			
1,4-Difluorobenzene (Surr)	50.0	100	80 - 120	6.588	6.587182	0.0008	+/-1.0	
Toluene-d8 (Surr)	50.0	99	80 - 120	8.097	8.094909	0.0021	+/-1.0	
4-Bromofluorobenzene (Surr)	50.0	102	80 - 120	10.834	10.83564	-0.0016	+/-1.0	
2708-190524-014 (A9E0902-01)			Lab File ID: VC19053124.D		Analyzed: 05/31/19 23:36			
1,4-Difluorobenzene (Surr)	50.0	97	80 - 120	6.589	6.587182	0.0018	+/-1.0	
Toluene-d8 (Surr)	50.0	98	80 - 120	8.097	8.094909	0.0021	+/-1.0	
4-Bromofluorobenzene (Surr)	50.0	104	80 - 120	10.835	10.83564	-0.0006	+/-1.0	

INTERNAL STANDARD AREA AND RT SUMMARY
5035A/8260C

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E31027	Instrument:	VOA-GCMS3
Matrix:	Soil	Calibration:	A9E3104

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (9051463-BS2)			Lab File ID: VC19053104.D			Analyzed: 05/31/19 14:24			
Pentafluorobenzene (ISTD)	265297	6.029	265297	6.029	100	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5 (ISTD)	463832	9.752	463832	9.752	100	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4 (ISTD)	195645	11.723	195645	11.723	100	50 - 200	0.0000	+/-0.50	
Calibration Check (9E31027-CCV2)			Lab File ID: VC19053104.D			Analyzed: 05/31/19 14:24			
Pentafluorobenzene (ISTD)	265297	6.029	256524	6.031	103	50 - 200	-0.0020	+/-0.50	
Chlorobenzene-d5 (ISTD)	463832	9.752	450201	9.748	103	50 - 200	0.0040	+/-0.50	
1,4-Dichlorobenzene-d4 (ISTD)	195645	11.723	190782	11.725	103	50 - 200	-0.0020	+/-0.50	
Blank (9051463-BLK1)			Lab File ID: VC19053106.D			Analyzed: 05/31/19 15:19			
Pentafluorobenzene (ISTD)	262804	6.028	265297	6.029	99	50 - 200	-0.0010	+/-0.50	
Chlorobenzene-d5 (ISTD)	457452	9.752	463832	9.752	99	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4 (ISTD)	191483	11.729	195645	11.723	98	50 - 200	0.0060	+/-0.50	
Duplicate (9051463-DUP1)			Lab File ID: VC19053110.D			Analyzed: 05/31/19 17:10			
Pentafluorobenzene (ISTD)	254964	6.035	265297	6.029	96	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5 (ISTD)	451180	9.752	463832	9.752	97	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4 (ISTD)	195223	11.729	195645	11.723	100	50 - 200	0.0060	+/-0.50	
Matrix Spike (9051463-MS1)			Lab File ID: VC19053118.D			Analyzed: 05/31/19 20:51			
Pentafluorobenzene (ISTD)	262813	6.035	265297	6.029	99	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5 (ISTD)	458747	9.746	463832	9.752	99	50 - 200	-0.0060	+/-0.50	
1,4-Dichlorobenzene-d4 (ISTD)	203591	11.724	195645	11.723	104	50 - 200	0.0010	+/-0.50	
2708-190524-014 (A9E0902-01)			Lab File ID: VC19053124.D			Analyzed: 05/31/19 23:36			
Pentafluorobenzene (ISTD)	270110	6.029	265297	6.029	102	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5 (ISTD)	462250	9.752	463832	9.752	100	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4 (ISTD)	189210	11.729	195645	11.723	97	50 - 200	0.0060	+/-0.50	

HOLDING TIME SUMMARY

5035A/8260C

Laboratory: Apex Laboratories SDG: A9E0902

Client: Hahn and Associates Project: Mult 802 Decommissioning

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
2708-190524-014	05/24/19 12:50	05/28/19 15:41	05/29/19 17:00	5.17	2.00	05/31/19 23:36	2.28	14.00	*

Apex Laboratories

SDG: A9E0902

CLASS: GCMS

METHOD: EPA 8270D (SIM)

ANALYSES DATA PACKAGE COVER PAGE

EPA 8270D (SIM)

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning

Client Sample Id:	Lab Sample Id:	Matrix
2708-190524-014	A9E0902-01	Solid

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been autorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

Signature: 
Name: David G. Jack

Forms Created: 10/1/2019 11:52AM
Title: Technical Manager

METHOD DETECTION AND REPORTING LIMITS

EPA 8270D (SIM)

Laboratory: Apex Laboratories **SDG:** A9E0902

Client: Hahn and Associates **Project:** Mult 802 Decommissioning

Batch Matrix: Solid

Analyte	MDL	MRL	Units
Acenaphthene	5.00	10.0	ug/kg
Acenaphthylene	5.00	10.0	ug/kg
Anthracene	5.00	10.0	ug/kg
Benz(a)anthracene	5.00	10.0	ug/kg
Benzo(a)pyrene	5.00	10.0	ug/kg
Benzo(b)fluoranthene	5.00	10.0	ug/kg
Benzo(k)fluoranthene	5.00	10.0	ug/kg
Benzo(g,h,i)perylene	5.00	10.0	ug/kg
Chrysene	5.00	10.0	ug/kg
Dibenz(a,h)anthracene	5.00	10.0	ug/kg
Dibenzofuran	5.00	10.0	ug/kg
Fluoranthene	5.00	10.0	ug/kg
Fluorene	5.00	10.0	ug/kg
Indeno(1,2,3-cd)pyrene	5.00	10.0	ug/kg
1-Methylnaphthalene	5.00	10.0	ug/kg
2-Methylnaphthalene	5.00	10.0	ug/kg
Naphthalene	5.00	10.0	ug/kg
Phenanthrene	5.00	10.0	ug/kg
Pyrene	5.00	10.0	ug/kg

Note: MDLs are listed only if the corresponding analyte was evalutated to the MDL in this report .

ORGANIC ANALYSIS DATA SHEET

EPA 8270D (SIM)

2708-190524-014

Laboratory:	Apex Laboratories			SDG:	A9E0902
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	A9E0902-01	File ID:	D9053114.D
Sampled:	05/24/19 12:50	Prepared:	05/31/19 13:13	Analyzed:	05/31/19 21:41
		Preparation:	EPA 3546	Initial/Final:	10.06 g / 5 mL

Batch: 9051465 Sequence: 9E31014 Calibration: A9E0902 Instrument: SV-GCMS4

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg)	Q
83-32-9	Acenaphthene	100	349000	D
208-96-8	Acenaphthylene	100	8360	D
120-12-7	Anthracene	100	206000	D
56-55-3	Benz(a)anthracene	100	157000	D
50-32-8	Benzo(a)pyrene	100	185000	D
205-99-2	Benzo(b)fluoranthene	100	175000	D
207-08-9	Benzo(k)fluoranthene	100	67300	D
191-24-2	Benzo(g,h,i)perylene	100	101000	D
218-01-9	Chrysene	100	142000	D
53-70-3	Dibenz(a,h)anthracene	100	15900	D
132-64-9	Dibenzofuran	100	217000	D
86-73-7	Fluorene	100	207000	D
193-39-5	Indeno(1,2,3-cd)pyrene	100	106000	D
90-12-0	1-Methylnaphthalene	100	113000	D
91-57-6	2-Methylnaphthalene	100	226000	D

SYSTEM MONITORING COMPOUND	ADDED (ug/kg)	CONC (ug/kg)	% REC	QC LIMITS	Q
2-Fluorobiphenyl (Surr)	497	388	78	44 - 120	D
p-Terphenyl-d14 (Surr)	497	600	121	54 - 127	D

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Naphthalene-d8 (ISTD)	365587	5.632	354596	5.626	
Acenaphthene-d10 (ISTD)	184400	7.325	177433	7.324	
Phenanthrene-d10 (ISTD)	308513	8.777	281907	8.772	
Chrysene-d12 (ISTD)	223310	11.525	198334	11.525	
Perylene-d12 (ISTD)	203537	14.021	172087	14.021	
Dibenz(a,h)anthracene-d14 (ISTD)	194806	16.365	147444	16.36	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8270D (SIM)

2708-190524-014

Laboratory:	Apex Laboratories			SDG:	A9E0902
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	A9E0902-01RE1	File ID:	D9060304.D
Sampled:	05/24/19 12:50	Prepared:	05/31/19 13:13	Analyzed:	06/03/19 11:04
		Preparation:	EPA 3546	Initial/Final:	10.06 g / 5 mL

Batch: 9051465 Sequence: 9F03035 Calibration: A9E0902 Instrument: SV-GCMS4

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg)	Q
206-44-0	Fluoranthene	1000	1180000	D
91-20-3	Naphthalene	1000	1190000	D
85-01-8	Phenanthrene	1000	1470000	D
129-00-0	Pyrene	1000	1070000	D

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Naphthalene-d8 (ISTD)	306678	5.632	337263	5.632	
Acenaphthene-d10 (ISTD)	149035	7.325	169782	7.324	
Phenanthrene-d10 (ISTD)	236411	8.772	262506	8.771	

* Values outside of QC limits

PREPARATION BATCH SUMMARY

EPA 8270D (SIM)

Laboratory: Apex Laboratories SDG: A9E0902

Client: Hahn and Associates Project: Mult 802 Decommissioning

Batch: 9051465 Batch Matrix: Solid Preparation: EPA 3546

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9051465-BLK1	D9053112.D	05/31/19 13:13	
LCS	9051465-BS1	D9053113.D	05/31/19 13:13	
2708-190524-014 (Dup)	9051465-DUP1	D9053115.D	05/31/19 13:13	
2708-190524-014 (Dup)	9051465-DUP2	D9060305.D	05/31/19 13:13	
2708-190524-014	A9E0902-01	D9053114.D	05/31/19 13:13	
2708-190524-014	A9E0902-01RE1	D9060304.D	05/31/19 13:13	

Note: Client samples are listed only if they are included in this report.
Duplicates and Matrix Spike/Duplicates QC Samples are only listed if sourced from a sample included in this report.

METHOD BLANK DATA SHEET
EPA 8270D (SIM)

Laboratory:	Apex Laboratories			SDG:	A9E0902
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	9051465-BLK1	File ID:	D9053112.D
Prepared:	05/31/19 13:13	Preparation:	EPA 3546	Initial/Final:	11 g / 5 mL
Analyzed:	05/31/19 20:48	Instrument:	SV-GCMS4		
Batch:	9051465	Sequence:	9E31014	Calibration:	A9E0902

CAS NO.	COMPOUND	CONC. (ug/kg)	Q
83-32-9	Acenaphthene	4.55	U
208-96-8	Acenaphthylene	4.55	U
120-12-7	Anthracene	4.55	U
56-55-3	Benz(a)anthracene	4.55	U
50-32-8	Benzo(a)pyrene	4.55	U
205-99-2	Benzo(b)fluoranthene	4.55	U
207-08-9	Benzo(k)fluoranthene	4.55	U
191-24-2	Benzo(g,h,i)perylene	4.55	U
218-01-9	Chrysene	4.55	U
53-70-3	Dibenz(a,h)anthracene	4.55	U
132-64-9	Dibenzofuran	4.55	U
206-44-0	Fluoranthene	4.55	U
86-73-7	Fluorene	4.55	U
193-39-5	Indeno(1,2,3-cd)pyrene	4.55	U
90-12-0	1-Methylnaphthalene	4.55	U
91-57-6	2-Methylnaphthalene	4.55	U
91-20-3	Naphthalene	4.55	U
85-01-8	Phenanthrene	4.55	U
129-00-0	Pyrene	4.55	U

SYSTEM MONITORING COMPOUND	ADDED (ug/kg)	CONC (ug/kg)	% REC	QC LIMITS	Q
2-Fluorobiphenyl (Surr)	455	371	82	44 - 120	
p-Terphenyl-d14 (Surr)	455	338	74	54 - 127	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Naphthalene-d8 (ISTD)	348066	5.633	354596	5.626	
Acenaphthene-d10 (ISTD)	173643	7.325	177433	7.324	
Phenanthrene-d10 (ISTD)	284191	8.772	281907	8.772	
Chrysene-d12 (ISTD)	187403	11.518	198334	11.525	
Perylene-d12 (ISTD)	155893	14.016	172087	14.021	
Dibenz(a,h)anthracene-d14 (ISTD)	128232	16.349	147444	16.36	

LCS / LCS DUPLICATE RECOVERY

EPA 8270D (SIM)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Solid		
Batch:	9051465	Laboratory ID:	9051465-BS1
Preparation:	EPA 3546	Initial/Final:	10 g / 5 mL

COMPOUND	SPIKE ADDED (ug/kg)	LCS CONCENTRATION (ug/kg)	LCS % REC. (*=Out)	QC LIMITS REC.
Acenaphthene	800	763	95	40 - 122
Acenaphthylene	800	781	98	32 - 132
Anthracene	800	769	96	47 - 123
Benz(a)anthracene	800	720	90	49 - 126
Benzo(a)pyrene	800	790	99	45 - 129
Benzo(b)fluoranthene	800	715	89	45 - 132
Benzo(k)fluoranthene	800	738	92	47 - 132
Benzo(g,h,i)perylene	800	634	79	43 - 134
Chrysene	800	742	93	50 - 124
Dibenz(a,h)anthracene	800	741	93	45 - 134
Dibenzofuran	800	788	98	44 - 120
Fluoranthene	800	815	102	50 - 127
Fluorene	800	806	101	43 - 125
Indeno(1,2,3-cd)pyrene	800	671	84	45 - 133
1-Methylnaphthalene	800	731	91	40 - 120
2-Methylnaphthalene	800	736	92	38 - 122
Naphthalene	800	727	91	35 - 123
Phenanthrene	800	738	92	50 - 121
Pyrene	800	822	103	47 - 127

* = Values outside of QC limits

DUPLICATES

EPA 8270D (SIM)

2708-190524-014

Laboratory: Apex Laboratories
Client: Hahn and Associates
Matrix: Solid
Batch: 9051465
Preparation: EPA 3546
Source Sample Name: 2708-190524-014

SDG: A9E0902
Project: Mult 802 Decommissioning
Laboratory ID: 9051465-DUP1
Lab Source ID: A9E0902-01
Initial/Final: 10.13 g / 5 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/kg)	C	DUPLICATE CONCENTRATION (ug/kg)	C	RPD %	Q	METHOD
Acenaphthene	30	349000		263000		28		EPA 8270D (SIM)
Acenaphthylene	30	8360		6450		26		EPA 8270D (SIM)
Anthracene	30	206000		161000		24		EPA 8270D (SIM)
Benz(a)anthracene	30	157000		126000		21		EPA 8270D (SIM)
Benzo(a)pyrene	30	185000		146000		24		EPA 8270D (SIM)
Benzo(b)fluoranthene	30	175000		143000		20		EPA 8270D (SIM)
Benzo(k)fluoranthene	30	67300		51400		27		EPA 8270D (SIM)
Benzo(g,h,i)perylene	30	101000		86000		16		EPA 8270D (SIM)
Chrysene	30	142000		115000		21		EPA 8270D (SIM)
Dibenz(a,h)anthracene	30	15900		13300		18		EPA 8270D (SIM)
Dibenzofuran	30	217000		167000		26		EPA 8270D (SIM)
Fluorene	30	207000		157000		28		EPA 8270D (SIM)
Indeno(1,2,3-cd)pyrene	30	106000		89000		17		EPA 8270D (SIM)
1-Methylnaphthalene	30	113000		86500		27		EPA 8270D (SIM)
2-Methylnaphthalene	30	226000		177000		24		EPA 8270D (SIM)

* Values outside of QC limits

DUPLICATES

EPA 8270D (SIM)

2708-190524-014

Laboratory: Apex Laboratories
Client: Hahn and Associates
Matrix: Solid
Batch: 9051465
Preparation: EPA 3546
Source Sample Name: 2708-190524-014

SDG: A9E0902
Project: Mult 802 Decommissioning
Laboratory ID: 9051465-DUP2
Lab Source ID: A9E0902-01RE1
Initial/Final: 10.13 g / 5 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/kg)	C	DUPLICATE CONCENTRATION (ug/kg)	C	RPD %	Q	METHOD
Fluoranthene	30	1180000		909000		26		EPA 8270D (SIM)
Naphthalene	30	1190000		916000		26		EPA 8270D (SIM)
Phenanthrene	30	1470000		1110000		27		EPA 8270D (SIM)
Pyrene	30	1070000		830000		25		EPA 8270D (SIM)

* Values outside of QC limits

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8270D (SIM)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E08049	Instrument:	SV-GCMS4
Matrix:	Solid	Calibration:	A9E0902

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9E08049-TUN1	D9050801.D	05/08/19 14:14
Initial Cal Blank	9E08049-ICB1	D9050802.D	05/08/19 14:39
Cal Standard	9E08049-CAL1	D9050803.D	05/08/19 15:06
Cal Standard	9E08049-CAL2	D9050804.D	05/08/19 15:33
Cal Standard	9E08049-CAL3	D9050805.D	05/08/19 16:00
Cal Standard	9E08049-CAL4	D9050806.D	05/08/19 16:27
Cal Standard	9E08049-CAL5	D9050807.D	05/08/19 16:53
Cal Standard	9E08049-CAL6	D9050808.D	05/08/19 17:20
Cal Standard	9E08049-CAL7	D9050809.D	05/08/19 17:47
Cal Standard	9E08049-CAL8	D9050810.D	05/08/19 18:14
Cal Standard	9E08049-CAL9	D9050811.D	05/08/19 18:40
Cal Standard	9E08049-CALA	D9050812.D	05/08/19 19:07
Initial Cal Check	9E08049-ICV1	D9050814.D	05/08/19 20:01

Note: Client samples are listed only if they are included in this report.
Duplicates and Matrix Spike/Duplicates QC Samples are only listed if sourced from a sample included in this report.

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8270D (SIM)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E31014	Instrument:	SV-GCMS4
Matrix:	Solid	Calibration:	A9E0902

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9E31014-TUN3	D9053105.D	05/31/19 17:44
Calibration Check	9E31014-CCV3	D9053106.D	05/31/19 18:08
Calibration Blank	9E31014-CCB1	D9053107.D	05/31/19 18:35
Blank	9051465-BLK1	D9053112.D	05/31/19 20:48
LCS	9051465-BS1	D9053113.D	05/31/19 21:14
2708-190524-014	A9E0902-01	D9053114.D	05/31/19 21:41
2708-190524-014 (Dup)	9051465-DUP1	D9053115.D	05/31/19 22:07

Note: Client samples are listed only if they are included in this report.
Duplicates and Matrix Spike/Duplicates QC Samples are only listed if sourced from a sample included in this report.

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8270D (SIM)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9F03035	Instrument:	SV-GCMS4
Matrix:	Solid	Calibration:	A9E0902

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9F03035-TUN1	D9060301.D	06/03/19 09:46
Calibration Check	9F03035-CCV1	D9060302.D	06/03/19 10:10
2708-190524-014	A9E0902-01RE1	D9060304.D	06/03/19 11:04
2708-190524-014 (Dup)	9051465-DUP2	D9060305.D	06/03/19 11:31

Note: Client samples are listed only if they are included in this report.
Duplicates and Matrix Spike/Duplicates QC Samples are only listed if sourced from a sample included in this report.

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8270D (SIM)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Lab File ID:	D9050801.D	Injection Date:	05/08/19
Instrument ID:	SV-GCMS4	Injection Time:	14:14
Sequence:	9E08049	Lab Sample ID:	9E08049-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 127			
m/z 275			
m/z 51			
m/z 68	Less than 2% of m/z 69	0.00	PASS
m/z 69	Base peak, 100% relative abundance	100.00	PASS
m/z 70	Less than 2% of m/z 69	0.12	PASS
m/z 197	Less than 2% of m/z 198	0.00	PASS
m/z 198	Base peak, 100% relative abundance	100.00	PASS
m/z 199	5 - 9% of m/z 198	6.56	PASS
m/z 365	1 - 100% of m/z 198	1.60	PASS
m/z 441	Less than 24% of m/z 443	73.96	FAIL
m/z 442	50 - 200% of m/z 198	70.78	PASS
m/z 443	15 - 24% of m/z 442	19.39	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8270D (SIM)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Lab File ID:	D9053105.D	Injection Date:	05/31/19
Instrument ID:	SV-GCMS4	Injection Time:	17:44
Sequence:	9E31014	Lab Sample ID:	9E31014-TUN3

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 127			
m/z 275			
m/z 51			
m/z 68	Less than 2% of m/z 69	0.00	PASS
m/z 69	Base peak, 100% relative abundance	100.00	PASS
m/z 70	Less than 2% of m/z 69	0.00	PASS
m/z 197	Less than 2% of m/z 198	0.00	PASS
m/z 198	Base peak, 100% relative abundance	100.00	PASS
m/z 199	5 - 9% of m/z 198	6.68	PASS
m/z 365	1 - 100% of m/z 198	1.73	PASS
m/z 441	Less than 24% of m/z 443	74.56	FAIL
m/z 442	50 - 200% of m/z 198	68.56	PASS
m/z 443	15 - 24% of m/z 442	19.36	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8270D (SIM)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Lab File ID:	D9060301.D	Injection Date:	06/03/19
Instrument ID:	SV-GCMS4	Injection Time:	09:46
Sequence:	9F03035	Lab Sample ID:	9F03035-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 127			
m/z 275			
m/z 51			
m/z 68	Less than 2% of m/z 69	0.00	PASS
m/z 69	Base peak, 100% relative abundance	100.00	PASS
m/z 70	Less than 2% of m/z 69	0.10	PASS
m/z 197	Less than 2% of m/z 198	0.00	PASS
m/z 198	Base peak, 100% relative abundance	100.00	PASS
m/z 199	5 - 9% of m/z 198	6.91	PASS
m/z 365	1 - 100% of m/z 198	1.41	PASS
m/z 441	Less than 24% of m/z 443	74.42	FAIL
m/z 442	50 - 200% of m/z 198	59.46	PASS
m/z 443	15 - 24% of m/z 442	19.32	PASS

INITIAL CALIBRATION DATA (Summary)

EPA 8270D (SIM)

Laboratory: Apex Laboratories SDG: A9E0902

Client: Hahn and Associates Project: Mult 802 Decommissioning

Calibration: A9E0902 Date: 05/09/19 09:01 Instrument: SV-GCMS4

Compound	Mean RF	FIT	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Acenaphthene	1.20944	Ave	2.13227	7.4823	0.0118039			15	
Acenaphthylene	1.806194	Ave	2.549192	7.3116	3.623897E-02			15	
Anthracene	1.162869	Ave	2.957076	8.9795	0.0209133			15	
Benz(a)anthracene	1.206757	Ave	5.97315	11.6945	0.0276152			15	
Benzo(a)pyrene	1.109791	Ave	7.706717	14.1861	4.402349E-02			15	
Benzo(b)fluoranthene	1.291257	Ave	5.192294	13.5306	4.517746E-02			15	
Benzo(k)fluoranthene	1.279647	Ave	5.729701	13.5835	0.038912			15	
Benzo(g,h,i)perylene	1.352298	Ave	2.403502	17.2805	2.896809E-02			15	
Chrysene	1.176863	Ave	1.874504	11.7484	2.480633E-02			15	
Dibenz(a,h)anthracene	1.148022	Ave	6.34413	16.7894	0.0274937			15	
Dibenzofuran	1.61271	Ave	3.21316	7.6521	3.637474E-02			15	
Fluoranthene	0.9812934	Ave	2.68659	10.0976	1.693358E-02			15	
Fluorene	1.254987	Ave	3.649215	7.9858	3.591851E-02			15	
Indeno(1,2,3-cd)pyrene	1.257365	Ave	1.650651	16.7267	0.041807			15	
1-Methylnaphthalene	0.649979	Ave	3.081471	6.5313	9.495708E-03			15	
2-Methylnaphthalene	0.6702411	Ave	2.561479	6.4338	2.102881E-03			15	
Naphthalene	1.036658	Ave	1.613869	5.7688	1.557018E-02			15	
Phenanthrene	1.151556	Ave	1.250568	8.9295	2.939548E-02			15	
Pyrene	0.9765101	Ave	2.686084	10.3215	3.218598E-02			15	
2-Fluorobiphenyl (Surr)	1.482329	Ave	3.393744	6.7866	0.0304601			15	
p-Terphenyl-d14 (Surr)	1.058331	Ave	2.112583	10.4646	8.608343E-03			15	

Note: ** Quad COD may be incorrect if weighting (1/a) or (1/a2) used. Weighting not shown here. Please see instrument calibration printouts for validation.

INITIAL CALIBRATION DATA

EPA 8270D (SIM)

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Calibration: A9E0902
Instrument: SV-GCMS4
Calibration Date: 05/09/19 09:01

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF
Acenaphthene	20	1.14962	50	1.177436	100	1.224541	200	1.216566	500	1.233994	1000	1.219358
Acenaphthylene	20	1.720959	50	1.762277	100	1.799359	200	1.765521	500	1.858301	1000	1.799034
Anthracene	20	1.127439	50	1.118197	100	1.144011	200	1.141966	500	1.184349	1000	1.135995
Benz(a)anthracene	20	1.401601	50	1.228024	100	1.21182	200	1.180644	500	1.204653	1000	1.160444
Benzo(a)pyrene	20	0.9901074	50	1.000086	100	1.036487	200	1.065882	500	1.09628	1000	1.13367
Benzo(b)fluoranthene	20	1.192032	50	1.210369	100	1.239898	200	1.282788	500	1.301364	1000	1.290668
Benzo(k)fluoranthene	20	1.170821	50	1.200027	100	1.220812	200	1.234408	500	1.284677	1000	1.288247
Benzo(b+k)fluoranthene(s)	40	1.204334	100	1.21439	200	1.234224	400	1.26391	1000	1.295807	2000	1.291836
Benzo(g,h,i)perylene	20	1.308389	50	1.316757	100	1.352786	200	1.333817	500	1.411267	1000	1.371593
Carbazole	20	0.9068106	50	0.9051756	100	0.9242121	200	0.9435813	500	0.9713695	1000	0.9166436
Chrysene	20	1.153793	50	1.160291	100	1.204305	200	1.192247	500	1.211224	1000	1.170632
Dibenz(a,h)anthracene	20	1.014396	50	1.057526	100	1.119352	200	1.131707	500	1.165592	1000	1.153826
Dibenzofuran	20	1.483226	50	1.571658	100	1.631537	200	1.622476	500	1.667604	1000	1.611357
Fluoranthene	20	0.944567	50	0.9484435	100	0.9842344	200	0.9771181	500	1.006529	1000	0.9542636
Fluorene	20	1.155259	50	1.207192	100	1.254626	200	1.262059	500	1.295265	1000	1.246152
Indeno(1,2,3-cd)pyrene	20	1.268299	50	1.236069	100	1.270776	200	1.259115	500	1.302571	1000	1.264633
1-Methylnaphthalene	20	0.6014754	50	0.6320879	100	0.6520494	200	0.6627537	500	0.6587475	1000	0.6501242
2-Methylnaphthalene	20	0.6291467	50	0.65969	100	0.6683348	200	0.6747687	500	0.6740555	1000	0.6690765
Naphthalene	20	1.00582	50	1.024124	100	1.059564	200	1.059087	500	1.047925	1000	1.021718
Phenanthrene	20	1.178328	50	1.158811	100	1.153145	200	1.149678	500	1.166613	1000	1.132768
Pyrene	20	0.9435821	50	0.9594595	100	0.9719037	200	0.9801025	500	0.9910657	1000	0.9378883
2-Fluorobiphenyl (Surr)	20	1.387352	50	1.445961	100	1.535069	200	1.459327	500	1.519915	1000	1.47769
p-Terphenyl-d14 (Surr)	20	1.034845	50	1.077189	100	1.070374	200	1.027269	500	1.080729	1000	1.061559

INITIAL CALIBRATION DATA (Continued)

EPA 8270D (SIM)

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Calibration: A9E0902
Instrument: SV-GCMS4
Matrix:
Calibration Date: 05/09/19 09:01

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF	ng/mL	RF
Acenaphthene	2000	1.216207	4000	1.211287	6000	1.221677	8000	1.223715				
Acenaphthylene	2000	1.837492	4000	1.846931	6000	1.813679	8000	1.858385				
Anthracene	2000	1.163047	4000	1.212048	6000	1.193203	8000	1.208435				
Benz(a)anthracene	2000	1.16324	4000	1.171968	6000	1.167635	8000	1.17754				
Benzo(a)pyrene	2000	1.149856	4000	1.201799	6000	1.195878	8000	1.227862				
Benzo(b)fluoranthene	2000	1.273966	4000	1.381316	6000	1.355616	8000	1.384553				
Benzo(k)fluoranthene	2000	1.289374	4000	1.355655	6000	1.370476	8000	1.381974				
Benzo(b+k)fluoranthene(s)	4000	1.28342	8000	1.370036	12000	1.364516	16000	1.384568				
Benzo(g,h,i)perylene	2000	1.355634	4000	1.368542	6000	1.382511	8000	1.321681				
Carbazole	2000	0.8869042	4000	0.7390442	6000	~~0.5274994~~	8000	~~0.3751793~~				
Chrysene	2000	1.166406	4000	1.191437	6000	1.144755	8000	1.173537				
Dibenz(a,h)anthracene	2000	1.157637	4000	1.195061	6000	1.236048	8000	1.249071				
Dibenzofuran	2000	1.633982	4000	1.645541	6000	1.621759	8000	1.637963				
Fluoranthene	2000	0.9774877	4000	1.006283	6000	0.9916297	8000	1.022378				
Fluorene	2000	1.24489	4000	1.289942	6000	1.297849	8000	1.296639				
Indeno(1,2,3-cd)pyrene	2000	1.237984	4000	1.255261	6000	1.240859	8000	1.23808				
1-Methylnaphthalene	2000	0.6565403	4000	0.6710152	6000	0.650617	8000	0.6643791				
2-Methylnaphthalene	2000	0.673158	4000	0.6868806	6000	0.6744961	8000	0.6928042				
Naphthalene	2000	1.036377	4000	1.041304	6000	1.033339	8000	1.037319				
Phenanthrene	2000	1.131866	4000	1.154791	6000	1.141502	8000	1.148054				
Pyrene	2000	0.9608802	4000	1.005692	6000	1.00048	8000	1.014047				
2-Fluorobiphenyl (Surr)	2000	1.492364	4000	1.548697	6000	1.43875	8000	1.518165				
p-Terphenyl-d14 (Surr)	2000	1.055308	4000	1.09456	6000	1.044533	8000	1.03694				

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8270D (SIM)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	SV-GCMS4	Calibration:	A9E0902
Lab File ID:	D9050814.D		
Sequence:	9E08049	Inject Date:	05/08/19
Lab Sample ID:	9E08049-ICV1	Inject Time:	20:01

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
Acenaphthene	1000	1000	0.02	70 - 130
Acenaphthylene	1000	1020	1.9	70 - 130
Anthracene	1000	997	-0.3	70 - 130
Benz(a)anthracene	1000	975	-2.5	70 - 130
Benzo(a)pyrene	1000	1000	-0.009	70 - 130
Benzo(b)fluoranthene	1000	1010	0.7	70 - 130
Benzo(k)fluoranthene	1000	1010	1.2	70 - 130
Benzo(g,h,i)perylene	1000	988	-1.2	70 - 130
Chrysene	1000	995	-0.5	70 - 130
Dibenz(a,h)anthracene	1000	987	-1.3	70 - 130
Dibenzofuran	1000	1010	1.0	70 - 130
Fluoranthene	1000	999	-0.06	70 - 130
Fluorene	1000	1020	1.6	70 - 130
Indeno(1,2,3-cd)pyrene	1000	989	-1.1	70 - 130
1-Methylnaphthalene	1000	977	-2.3	70 - 130
2-Methylnaphthalene	1000	989	-1.1	70 - 130
Naphthalene	1000	985	-1.5	70 - 130
Phenanthrene	1000	988	-1.2	70 - 130
Pyrene	1000	1000	0.3	70 - 130
2-Fluorobiphenyl (Surr)	1000	1000	0.4	0 - 200
p-Terphenyl-d14 (Surr)	1000	984	-1.6	0 - 200

CONTINUING CALIBRATION CHECK

EPA 8270D (SIM)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	SV-GCMS4	Calibration:	A9E0902
Lab File ID:	D9053106.D	Calibration Date:	05/09/19 09:01
Sequence:	9E31014	Injection Date:	05/31/19
Lab Sample ID:	9E31014-CCV3	Injection Time:	18:08

COMPOUND	Curve Fit	Calculated Concentration (ng/mL) [L/Q Fits]			Response Factors [Ave RF]			Limit
		STD	CCV	% DIFF	ICAL	CCV	% Drift	
Acenaphthene	Ave	1000	1040		1.20944	1.254716	3.7	20
Acenaphthylene	Ave	1000	1050		1.806194	1.902769	5.3	20
Anthracene	Ave	1000	1050		1.162869	1.217331	4.7	20
Benz(a)anthracene	Ave	1000	981		1.206757	1.184416	-1.9	20
Benzo(a)pyrene	Ave	1000	1060		1.109791	1.172256	5.6	20
Benzo(b)fluoranthene	Ave	1000	983		1.291257	1.26966	-1.7	20
Benzo(k)fluoranthene	Ave	1000	993		1.279647	1.270567	-0.7	20
Benzo(g,h,i)perylene	Ave	1000	881		1.352298	1.191354	-11.9	20
Chrysene	Ave	1000	1020		1.176863	1.20413	2.3	20
Dibenz(a,h)anthracene	Ave	1000	1020		1.148022	1.168851	1.8	20
Dibenzofuran	Ave	1000	1080		1.61271	1.742709	8.1	20
Fluoranthene	Ave	1000	1110		0.9812934	1.08489	10.6	20
Fluorene	Ave	1000	1070		1.254987	1.345871	7.2	20
Indeno(1,2,3-cd)pyrene	Ave	1000	939		1.257365	1.180367	-6.1	20
1-Methylnaphthalene	Ave	1000	1020		0.649979	0.6617164	1.8	20
2-Methylnaphthalene	Ave	1000	1030		0.6702411	0.6891843	2.8	20
Naphthalene	Ave	1000	1020		1.036658	1.055144	1.8	20
Phenanthrene	Ave	1000	1010		1.151556	1.158176	0.6	20
Pyrene	Ave	1000	1120		0.9765101	1.09678	12.3	20

** Quadratic Curve fit may be weighted (1/a or 1/a2).

* = Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 8270D (SIM)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Instrument ID:	SV-GCMS4	Calibration:	A9E0902
Lab File ID:	D9060302.D	Calibration Date:	05/09/19 09:01
Sequence:	9F03035	Injection Date:	06/03/19
Lab Sample ID:	9F03035-CCV1	Injection Time:	10:10

COMPOUND	Curve Fit	Calculated Concentration (ng/mL) [L/Q Fits]			Response Factors [Ave RF]			Limit
		STD	CCV	% DIFF	ICAL	CCV	% Drift	
Acenaphthene	Ave	1000	1050		1.20944	1.26567	4.6	20
Acenaphthylene	Ave	1000	1060		1.806194	1.915445	6.0	20
Anthracene	Ave	1000	1070		1.162869	1.241823	6.8	20
Benz(a)anthracene	Ave	1000	1010		1.206757	1.219056	1.0	20
Benzo(a)pyrene	Ave	1000	1060		1.109791	1.180403	6.4	20
Benzo(b)fluoranthene	Ave	1000	964		1.291257	1.24498	-3.6	20
Benzo(k)fluoranthene	Ave	1000	1020		1.279647	1.307308	2.2	20
Benzo(g,h,i)perylene	Ave	1000	934		1.352298	1.263387	-6.6	20
Chrysene	Ave	1000	1050		1.176863	1.232678	4.7	20
Dibenz(a,h)anthracene	Ave	1000	1060		1.148022	1.221002	6.4	20
Dibenzofuran	Ave	1000	1090		1.61271	1.752329	8.7	20
Fluoranthene	Ave	1000	1110		0.9812934	1.09372	11.5	20
Fluorene	Ave	1000	1080		1.254987	1.353771	7.9	20
Indeno(1,2,3-cd)pyrene	Ave	1000	1000		1.257365	1.258825	0.1	20
1-Methylnaphthalene	Ave	1000	1050		0.649979	0.6842375	5.3	20
2-Methylnaphthalene	Ave	1000	1050		0.6702411	0.7031189	4.9	20
Naphthalene	Ave	1000	1040		1.036658	1.074995	3.7	20
Phenanthrene	Ave	1000	1030		1.151556	1.182213	2.7	20
Pyrene	Ave	1000	1130		0.9765101	1.105727	13.2	20

** Quadratic Curve fit may be weighted (1/a or 1/a2).

* = Values outside of QC limits

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8270D (SIM)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E08049	Instrument:	SV-GCMS4
Matrix:	Solid	Calibration:	A9E0902

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Initial Cal Check (9E08049-ICV1)				Lab File ID: D9050814.D		Analyzed: 05/08/19 20:01		
2-Fluorobiphenyl (Surr)	1000	100	0 - 200	6.786	6.7866	-0.0006	+/-1.0	
p-Terphenyl-d14 (Surr)	1000	98	0 - 200	10.464	10.4646	-0.0006	+/-1.0	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8270D (SIM)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E31014	Instrument:	SV-GCMS4
Matrix:	Solid	Calibration:	A9E0902

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Calibration Check (9E31014-CCV3)			Lab File ID: D9053106.D		Analyzed: 05/31/19 18:08			
2-Fluorobiphenyl (Surr)	1000	105	0 - 200	6.66	6.7866	-0.1266	+/-1.0	
p-Terphenyl-d14 (Surr)	1000	88	0 - 200	10.326	10.4646	-0.1386	+/-1.0	
Calibration Blank (9E31014-CCB1)			Lab File ID: D9053107.D		Analyzed: 05/31/19 18:35			
2-Fluorobiphenyl (Surr)			44 - 120	0	6.7866	-6.7866	+/-1.0	
p-Terphenyl-d14 (Surr)			50 - 133	0	10.4646	-10.4646	+/-1.0	
Blank (9051465-BLK1)			Lab File ID: D9053112.D		Analyzed: 05/31/19 20:48			
2-Fluorobiphenyl (Surr)	455	82	44 - 120	6.662	6.7866	-0.1246	+/-1.0	
p-Terphenyl-d14 (Surr)	455	74	54 - 127	10.326	10.4646	-0.1386	+/-1.0	
LCS (9051465-BS1)			Lab File ID: D9053113.D		Analyzed: 05/31/19 21:14			
2-Fluorobiphenyl (Surr)	500	83	44 - 120	6.661	6.7866	-0.1256	+/-1.0	
p-Terphenyl-d14 (Surr)	500	73	54 - 127	10.325	10.4646	-0.1396	+/-1.0	
2708-190524-014 (A9E0902-01)			Lab File ID: D9053114.D		Analyzed: 05/31/19 21:41			
2-Fluorobiphenyl (Surr)	497	78	44 - 120	6.661	6.7866	-0.1256	+/-1.0	
p-Terphenyl-d14 (Surr)	497	121	54 - 127	10.326	10.4646	-0.1386	+/-1.0	
Duplicate (9051465-DUP1)			Lab File ID: D9053115.D		Analyzed: 05/31/19 22:07			
2-Fluorobiphenyl (Surr)	494	80	44 - 120	6.661	6.7866	-0.1256	+/-1.0	
p-Terphenyl-d14 (Surr)	494	104	54 - 127	10.325	10.4646	-0.1396	+/-1.0	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8270D (SIM)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9F03035	Instrument:	SV-GCMS4
Matrix:	Solid	Calibration:	A9E0902

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Calibration Check (9F03035-CCV1)			Lab File ID: D9060302.D		Analyzed: 06/03/19 10:10			
2-Fluorobiphenyl (Surr)	1000	105	80 - 120	6.661	6.7866	-0.1256	+/-1.0	
p-Terphenyl-d14 (Surr)	1000	85	80 - 120	10.325	10.4646	-0.1396	+/-1.0	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8270D (SIM)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E31014	Instrument:	SV-GCMS4
Matrix:	Solid	Calibration:	A9E0902

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (9E31014-CCV3)			Lab File ID: D9053106.D			Analyzed: 05/31/19 18:08			
Naphthalene-d8 (ISTD)	354596	5.626	510967	5.748	69	50 - 200	-0.1220	+/-0.50	
Acenaphthene-d10 (ISTD)	177433	7.324	250878	7.452	71	50 - 200	-0.1280	+/-0.50	
Phenanthrene-d10 (ISTD)	281907	8.772	350771	8.905	80	50 - 200	-0.1330	+/-0.50	
Chrysene-d12 (ISTD)	198334	11.525	167448	11.713	118	50 - 200	-0.1880	+/-0.50	
Perylene-d12 (ISTD)	172087	14.021	116473	14.307	148	50 - 200	-0.2860	+/-0.50	
Dibenz(a,h)anthracene-d14 (ISTD)	147444	16.36	78010	16.716	189	50 - 200	-0.3560	+/-0.50	
Calibration Blank (9E31014-CCB1)			Lab File ID: D9053107.D			Analyzed: 05/31/19 18:35			
Naphthalene-d8 (ISTD)	326172	5.632	354596	5.626	92	50 - 200	0.0060	+/-0.50	
Acenaphthene-d10 (ISTD)	162858	7.325	177433	7.324	92	50 - 200	0.0010	+/-0.50	
Phenanthrene-d10 (ISTD)	262970	8.772	281907	8.772	93	50 - 200	0.0000	+/-0.50	
Chrysene-d12 (ISTD)	176271	11.519	198334	11.525	89	50 - 200	-0.0060	+/-0.50	
Perylene-d12 (ISTD)	147636	14.015	172087	14.021	86	50 - 200	-0.0060	+/-0.50	
Dibenz(a,h)anthracene-d14 (ISTD)	122911	16.355	147444	16.36	83	50 - 200	-0.0050	+/-0.50	
Blank (9051465-BLK1)			Lab File ID: D9053112.D			Analyzed: 05/31/19 20:48			
Naphthalene-d8 (ISTD)	348066	5.633	354596	5.626	98	50 - 200	0.0070	+/-0.50	
Acenaphthene-d10 (ISTD)	173643	7.325	177433	7.324	98	50 - 200	0.0010	+/-0.50	
Phenanthrene-d10 (ISTD)	284191	8.772	281907	8.772	101	50 - 200	0.0000	+/-0.50	
Chrysene-d12 (ISTD)	187403	11.518	198334	11.525	94	50 - 200	-0.0070	+/-0.50	
Perylene-d12 (ISTD)	155893	14.016	172087	14.021	91	50 - 200	-0.0050	+/-0.50	
Dibenz(a,h)anthracene-d14 (ISTD)	128232	16.349	147444	16.36	87	50 - 200	-0.0110	+/-0.50	
LCS (9051465-BS1)			Lab File ID: D9053113.D			Analyzed: 05/31/19 21:14			
Naphthalene-d8 (ISTD)	379690	5.632	354596	5.626	107	50 - 200	0.0060	+/-0.50	
Acenaphthene-d10 (ISTD)	188165	7.325	177433	7.324	106	50 - 200	0.0010	+/-0.50	
Phenanthrene-d10 (ISTD)	301790	8.771	281907	8.772	107	50 - 200	-0.0010	+/-0.50	
Chrysene-d12 (ISTD)	211094	11.525	198334	11.525	106	50 - 200	0.0000	+/-0.50	
Perylene-d12 (ISTD)	178578	14.015	172087	14.021	104	50 - 200	-0.0060	+/-0.50	
Dibenz(a,h)anthracene-d14 (ISTD)	151365	16.354	147444	16.36	103	50 - 200	-0.0060	+/-0.50	
2708-190524-014 (A9E0902-01)			Lab File ID: D9053114.D			Analyzed: 05/31/19 21:41			
Naphthalene-d8 (ISTD)	365587	5.632	354596	5.626	103	50 - 200	0.0060	+/-0.50	
Acenaphthene-d10 (ISTD)	184400	7.325	177433	7.324	104	50 - 200	0.0010	+/-0.50	
Phenanthrene-d10 (ISTD)	308513	8.777	281907	8.772	109	50 - 200	0.0050	+/-0.50	
Chrysene-d12 (ISTD)	223310	11.525	198334	11.525	113	50 - 200	0.0000	+/-0.50	
Perylene-d12 (ISTD)	203537	14.021	172087	14.021	118	50 - 200	0.0000	+/-0.50	
Dibenz(a,h)anthracene-d14 (ISTD)	194806	16.365	147444	16.36	132	50 - 200	0.0050	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8270D (SIM)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E31014	Instrument:	SV-GCMS4
Matrix:	Solid	Calibration:	A9E0902

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Duplicate (9051465-DUP1)			Lab File ID: D9053115.D			Analyzed: 05/31/19 22:07			
Naphthalene-d8 (ISTD)	366077	5.632	354596	5.626	103	50 - 200	0.0060	+/-0.50	
Acenaphthene-d10 (ISTD)	187029	7.324	177433	7.324	105	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10 (ISTD)	311667	8.776	281907	8.772	111	50 - 200	0.0040	+/-0.50	
Chrysene-d12 (ISTD)	228123	11.525	198334	11.525	115	50 - 200	0.0000	+/-0.50	
Perylene-d12 (ISTD)	212467	14.02	172087	14.021	123	50 - 200	-0.0010	+/-0.50	
Dibenz(a,h)anthracene-d14 (ISTD)	193217	16.361	147444	16.36	131	50 - 200	0.0010	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8270D (SIM)

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9F03035	Instrument:	SV-GCMS4
Matrix:	Solid	Calibration:	A9E0902

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (9F03035-CCV1)			Lab File ID: D9060302.D			Analyzed: 06/03/19 10:10			
Naphthalene-d8 (ISTD)	337263	5.632	510967	5.748	66	50 - 200	-0.1160	+/-0.50	
Acenaphthene-d10 (ISTD)	169782	7.324	250878	7.452	68	50 - 200	-0.1280	+/-0.50	
Phenanthrene-d10 (ISTD)	262506	8.771	350771	8.905	75	50 - 200	-0.1340	+/-0.50	
2708-190524-014 (A9E0902-01RE1)			Lab File ID: D9060304.D			Analyzed: 06/03/19 11:04			
Naphthalene-d8 (ISTD)	306678	5.632	337263	5.632	91	50 - 200	0.0000	+/-0.50	
Acenaphthene-d10 (ISTD)	149035	7.325	169782	7.324	88	50 - 200	0.0010	+/-0.50	
Phenanthrene-d10 (ISTD)	236411	8.772	262506	8.771	90	50 - 200	0.0010	+/-0.50	
Duplicate (9051465-DUP2)			Lab File ID: D9060305.D			Analyzed: 06/03/19 11:31			
Naphthalene-d8 (ISTD)	333820	5.632	337263	5.632	99	50 - 200	0.0000	+/-0.50	
Acenaphthene-d10 (ISTD)	162318	7.325	169782	7.324	96	50 - 200	0.0010	+/-0.50	
Phenanthrene-d10 (ISTD)	256800	8.772	262506	8.771	98	50 - 200	0.0010	+/-0.50	

HOLDING TIME SUMMARY

EPA 8270D (SIM)

Laboratory: Apex Laboratories SDG: A9E0902

Client: Hahn and Associates Project: Mult 802 Decommissioning

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
2708-190524-014	05/24/19 12:50	05/28/19 15:41	05/31/19 13:13	7.02	14.00	05/31/19 21:41	0.35	40.00	
2708-190524-014	05/24/19 12:50	05/28/19 15:41	05/31/19 13:13	7.02	14.00	06/03/19 11:04	2.91	40.00	

Apex Laboratories

SDG: A9E0902

CLASS: METALS

METHOD: EPA 6020A

ANALYSES DATA PACKAGE COVER PAGE

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning

Client Sample Id:	Lab Sample Id:	Matrix
2708-190524-014	A9E0902-01	Solid

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been autorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

Signature: 
Name: David G. Jack

Forms Created: 10/1/2019 11:52AM
Title: Technical Manager

METHOD DETECTION AND REPORTING LIMITS

EPA 6020A

Laboratory: Apex Laboratories **SDG:** A9E0902

Client: Hahn and Associates **Project:** Mult 802 Decommissioning

Batch Matrix: Solid

Analyte	MDL	MRL	Units
Aluminum	25.0	50.0	mg/kg
Antimony	0.500	1.00	mg/kg
Arsenic	0.500	1.00	mg/kg
Barium	0.500	1.00	mg/kg
Beryllium	0.100	0.200	mg/kg
Cadmium	0.100	0.200	mg/kg
Calcium	50.0	100	mg/kg
Chromium	0.500	1.00	mg/kg
Copper	0.500	1.00	mg/kg
Iron	25.0	50.0	mg/kg
Lead	0.100	0.200	mg/kg
Magnesium	25.0	50.0	mg/kg
Manganese	0.500	1.00	mg/kg
Mercury	0.0400	0.0800	mg/kg
Nickel	0.500	1.00	mg/kg
Potassium	50.0	100	mg/kg
Selenium	0.500	1.00	mg/kg
Silver	0.100	0.200	mg/kg
Sodium	50.0	100	mg/kg
Thallium	0.100	0.200	mg/kg
Vanadium	0.500	1.00	mg/kg
Zinc	2.00	4.00	mg/kg

Note: MDLs are listed only if the corresponding analyte was evalutated to the MDL in this report .

INORGANIC ANALYSIS DATA SHEET

EPA 6020A

2708-190524-014

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Matrix: Solid
Laboratory ID: A9E0902-01
File ID: 9E31026-024
Sampled: 05/24/19 12:50
Prepared: 05/30/19 14:33
Analyzed: 05/31/19 16:21
Solids: N/A
Preparation: EPA 3051A
Initial/Final: 0.507 g / 50 mL
Batch: 9051429
Sequence: 9E31026
Instrument: ICPMS5

CAS NO.	Analyte	Concentration (mg/kg)	Dilution Factor	Q	Method
7429-90-5	Aluminum	7540	10		EPA 6020A
7440-36-0	Antimony	0.493	10	U	EPA 6020A
7440-38-2	Arsenic	2.63	10		EPA 6020A
7440-39-3	Barium	94.6	10		EPA 6020A
7440-41-7	Beryllium	0.512	10		EPA 6020A
7440-43-9	Cadmium	0.546	10		EPA 6020A
7440-70-2	Calcium	3840	10		EPA 6020A
7440-47-3	Chromium	2.14	10		EPA 6020A
7440-50-8	Copper	9.88	10		EPA 6020A
7439-89-6	Iron	43800	10		EPA 6020A
7439-92-1	Lead	6.19	10		EPA 6020A
7439-95-4	Magnesium	1400	10		EPA 6020A
7439-96-5	Manganese	323	10		EPA 6020A
7439-97-6	Mercury	0.0394	10	U	EPA 6020A
7440-02-0	Nickel	4.06	10		EPA 6020A
7440-09-7	Potassium	466	10		EPA 6020A
7782-49-2	Selenium	0.493	10	U	EPA 6020A
7440-22-4	Silver	0.0986	10	U	EPA 6020A
7440-23-5	Sodium	231	10		EPA 6020A
7440-28-0	Thallium	0.101	10	J	EPA 6020A
7440-62-2	Vanadium	83.2	10		EPA 6020A
7440-66-6	Zinc	40.1	10		EPA 6020A

PREPARATION BATCH SUMMARY

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Batch: 9051429 Batch Matrix: Solid Preparation: EPA 3051A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9051429-BLK1	9E31026-022	05/30/19 14:33	
LCS	9051429-BS1	9E31026-023	05/30/19 14:33	
2708-190524-014 (Dup)	9051429-DUP1	9E31026-025	05/30/19 14:33	
2708-190524-014 (MS)	9051429-MS1	9E31026-026	05/30/19 14:33	
2708-190524-014	A9E0902-01	9E31026-024	05/30/19 14:33	

Note: Client samples are listed only if they are included in this report.
Duplicates and Matrix Spike/Duplicates QC Samples are only listed if sourced from a sample included in this report.

METHOD BLANK DATA SHEET

EPA 6020A

Laboratory:	Apex Laboratories			SDG:	A9E0902
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	9051429-BLK1	File ID:	9E31026-022
Prepared:	05/30/19 14:33	Preparation:	EPA 3051A	Initial/Final:	0.52 g / 50 mL
Analyzed:	05/31/19 16:12	Instrument:	ICPMS5		
Batch:	9051429	Sequence:	9E31026	Calibration:	UNASSIGNED

CAS NO.	COMPOUND	CONC. (mg/kg)	Q
7429-90-5	Aluminum	24.0	U
7440-36-0	Antimony	0.481	U
7440-38-2	Arsenic	0.481	U
7440-39-3	Barium	0.481	U
7440-41-7	Beryllium	0.0962	U
7440-43-9	Cadmium	0.0962	U
7440-70-2	Calcium	48.1	U
7440-47-3	Chromium	0.481	U
7440-50-8	Copper	0.481	U
7439-89-6	Iron	24.0	U
7439-92-1	Lead	0.0962	U
7439-95-4	Magnesium	24.0	U
7439-96-5	Manganese	0.481	U
7439-97-6	Mercury	0.0385	U
7440-02-0	Nickel	0.481	U
7440-09-7	Potassium	48.1	U
7782-49-2	Selenium	0.481	U
7440-22-4	Silver	0.0962	U
7440-23-5	Sodium	48.1	U
7440-28-0	Thallium	0.0962	U
7440-62-2	Vanadium	0.481	U
7440-66-6	Zinc	1.92	U

LCS / LCS DUPLICATE RECOVERY

EPA 6020A

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Solid		
Batch:	9051429	Laboratory ID:	9051429-BS1
Preparation:	EPA 3051A	Initial/Final:	0.5 g / 50 mL

COMPOUND	SPIKE ADDED (mg/kg)	LCS CONCENTRATION (mg/kg)	LCS % REC. (*=Out)	QC LIMITS REC.
Aluminum	2500	2470	99	80 - 120
Antimony	25.0	23.4	94	80 - 120
Arsenic	50.0	48.8	98	80 - 120
Barium	50.0	50.7	101	80 - 120
Beryllium	25.0	25.3	101	80 - 120
Cadmium	50.0	48.9	98	80 - 120
Calcium	2500	2440	98	80 - 120
Chromium	50.0	47.7	95	80 - 120
Copper	50.0	52.3	105	80 - 120
Iron	2500	2420	97	80 - 120
Lead	50.0	51.9	104	80 - 120
Magnesium	2500	2460	98	80 - 120
Manganese	50.0	49.9	100	80 - 120
Mercury	1.00	0.985	99	80 - 120
Nickel	50.0	51.4	103	80 - 120
Potassium	2500	2490	100	80 - 120
Selenium	25.0	22.7	91	80 - 120
Silver	25.0	24.3	97	80 - 120
Sodium	2500	2540	101	80 - 120
Thallium	25.0	24.6	98	80 - 120
Vanadium	50.0	49.7	99	80 - 120
Zinc	50.0	51.2	102	80 - 120

* = Values outside of QC limits

DUPLICATES

EPA 6020A

2708-190524-014

Laboratory: Apex Laboratories
Client: Hahn and Associates
Matrix: Solid
Batch: 9051429
Preparation: EPA 3051A
Source Sample Name: 2708-190524-014

SDG: A9E0902
Project: Mult 802 Decommissioning
Laboratory ID: 9051429-DUP1
Lab Source ID: A9E0902-01
Initial/Final: 0.489 g / 50 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/kg)	C	DUPLICATE CONCENTRATION (mg/kg)	C	RPD %	Q	METHOD
Aluminum	40	7540		4940		42	*	EPA 6020A
Antimony	40	0.127		ND				EPA 6020A
Arsenic	40	2.63		ND				EPA 6020A
Barium	40	94.6		50.9		60	*	EPA 6020A
Beryllium	40	0.512		0.276		60	*	EPA 6020A
Cadmium	40	0.546		0.332		49	*	EPA 6020A
Calcium	40	3840		2810		31		EPA 6020A
Chromium	40	2.14		1.24		53	*	EPA 6020A
Copper	40	9.88		6.79		37		EPA 6020A
Iron	40	43800		21500		68	*	EPA 6020A
Lead	40	6.19		4.40		34		EPA 6020A
Magnesium	40	1400		1090		25		EPA 6020A
Manganese	40	323		214		40		EPA 6020A
Mercury	40	0.0170		ND				EPA 6020A
Nickel	40	4.06		1.44		95	*	EPA 6020A
Potassium	40	466		352		28		EPA 6020A
Selenium	40	0.115		ND				EPA 6020A
Silver	40	0.0306		ND				EPA 6020A
Sodium	40	231		214		8		EPA 6020A
Thallium	40	0.101		ND				EPA 6020A
Vanadium	40	83.2		51.0		48	*	EPA 6020A
Zinc	40	40.1		26.3		42	*	EPA 6020A

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 6020A

2708-190524-014

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Matrix: Solid
Batch: 9051429
Laboratory ID: 9051429-MS1
Preparation: EPA 3051A
Initial/Final: 0.479 g / 50 mL
Source Sample Name: 2708-190524-014

COMPOUND	SPIKE ADDED (mg/kg)	SAMPLE CONCENTRATION (mg/kg)	MS CONCENTRATION (mg/kg)	MS % REC. (*=Out)	QC LIMITS REC.
Aluminum	2610	7540	10200	102	75 - 125
Antimony	26.1	ND	21.9	84	75 - 125
Arsenic	52.2	2.63	49.7	90	75 - 125
Barium	52.2	94.6	128	63 *	75 - 125
Beryllium	26.1	0.512	25.4	95	75 - 125
Cadmium	52.2	0.546	49.5	94	75 - 125
Calcium	2610	3840	5940	80	75 - 125
Chromium	52.2	2.14	51.7	95	75 - 125
Copper	52.2	9.88	64.4	104	75 - 125
Iron	2610	43800	31900	-455 *	75 - 125
Lead	52.2	6.19	58.4	100	75 - 125
Magnesium	2610	1400	3820	93	75 - 125
Manganese	52.2	323	356	63 *	75 - 125
Mercury	1.04	ND	1.05	101	75 - 125
Nickel	52.2	4.06	55.0	98	75 - 125
Potassium	2610	466	2960	96	75 - 125
Selenium	26.1	ND	23.2	89	75 - 125
Silver	26.1	ND	24.8	95	75 - 125
Sodium	2610	231	2780	98	75 - 125
Thallium	26.1	ND	24.7	95	75 - 125
Vanadium	52.2	83.2	130	89	75 - 125
Zinc	52.2	40.1	87.7	91	75 - 125

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6020A

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E31026	Instrument:	ICPMS5
Matrix:	Solid	Calibration:	UNASSIGNED

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Initial Cal Check	9E31026-ICV1	9E31026-014	05/31/19 15:19
Initial Cal Blank	9E31026-ICB1	9E31026-015	05/31/19 15:23
Instrument RL Check	9E31026-CRL1	9E31026-016	05/31/19 15:27
Instrument RL Check	9E31026-CRL2	9E31026-017	05/31/19 15:32
Instrument RL Check	9E31026-CRL3	9E31026-018	05/31/19 15:36
Blank	9051429-BLK1	9E31026-022	05/31/19 16:12
LCS	9051429-BS1	9E31026-023	05/31/19 16:17
2708-190524-014	A9E0902-01	9E31026-024	05/31/19 16:21
2708-190524-014 (Dup)	9051429-DUP1	9E31026-025	05/31/19 16:27
2708-190524-014 (MS)	9051429-MS1	9E31026-026	05/31/19 16:32
Calibration Check	9E31026-CCV1	9E31026-032	05/31/19 16:58
Calibration Blank	9E31026-CCB1	9E31026-033	05/31/19 17:03
Calibration Check	9E31026-CCV2	9E31026-044	05/31/19 17:52
Calibration Blank	9E31026-CCB2	9E31026-045	05/31/19 17:56
Calibration Check	9E31026-CCV3	9E31026-056	05/31/19 18:43
Calibration Blank	9E31026-CCB4	9E31026-058	05/31/19 18:52
Calibration Check	9E31026-CCV5	9E31026-070	05/31/19 19:42
Calibration Blank	9E31026-CCB6	9E31026-072	05/31/19 19:50
Calibration Check	9E31026-CCV6	9E31026-083	05/31/19 20:37
Calibration Blank	9E31026-CCB7	9E31026-084	05/31/19 20:41
Calibration Check	9E31026-CCV7	9E31026-095	05/31/19 21:27
Calibration Blank	9E31026-CCB8	9E31026-096	05/31/19 21:32
Calibration Check	9E31026-CCV8	9E31026-097	05/31/19 21:36
Calibration Blank	9E31026-CCB9	9E31026-098	05/31/19 21:40
Instrument RL Check	9E31026-CRL4	9E31026-099	05/31/19 21:44
Instrument RL Check	9E31026-CRL5	9E31026-100	05/31/19 21:49
Instrument RL Check	9E31026-CRL6	9E31026-101	05/31/19 21:53
Instrument RL Check	9E31026-CRL7	9E31026-102	05/31/19 21:57

Note: Client samples are listed only if they are included in this report.
Duplicates and Matrix Spike/Duplicates QC Samples are only listed if sourced from a sample included in this report.

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Control Limt: +/- 10.00%
Sequence: 9E31026

Lab Sample ID	Analyte	True	Found	%R	Units	Method
9E31026-ICV1	Aluminum	4000	4010	100	ug/L	EPA 6020A
	Antimony	40.0	41.8	105	ug/L	EPA 6020A
	Arsenic	100	98.2	98	ug/L	EPA 6020A
	Barium	100	104	104	ug/L	EPA 6020A
	Beryllium	40.0	40.6	102	ug/L	EPA 6020A
	Cadmium	100	98.5	99	ug/L	EPA 6020A
	Calcium	4000	4030	101	ug/L	EPA 6020A
	Chromium	100	96.5	97	ug/L	EPA 6020A
	Copper	100	107	107	ug/L	EPA 6020A
	Iron	4000	3910	98	ug/L	EPA 6020A
	Lead	100	102	102	ug/L	EPA 6020A
	Magnesium	4000	4100	102	ug/L	EPA 6020A
	Manganese	100	99.0	99	ug/L	EPA 6020A
	Mercury	800	795	99	ng/L	EPA 6020A
	Nickel	100	104	104	ug/L	EPA 6020A
	Potassium	4000	4030	101	ug/L	EPA 6020A
	Selenium	40.0	39.5	99	ug/L	EPA 6020A
	Silver	40.0	40.0	100	ug/L	EPA 6020A
	Sodium	4000	4080	102	ug/L	EPA 6020A
	Thallium	40.0	39.0	98	ug/L	EPA 6020A
	Vanadium	100	101	101	ug/L	EPA 6020A
	Zinc	100	106	106	ug/L	EPA 6020A
9E31026-CCV1	Aluminum	4000	3950	99	ug/L	EPA 6020A
	Antimony	40.0	42.5	106	ug/L	EPA 6020A
	Arsenic	100	97.8	98	ug/L	EPA 6020A
	Barium	100	103	103	ug/L	EPA 6020A
	Beryllium	40.0	40.5	101	ug/L	EPA 6020A
	Cadmium	100	98.0	98	ug/L	EPA 6020A
	Calcium	4000	4010	100	ug/L	EPA 6020A
	Chromium	100	95.7	96	ug/L	EPA 6020A
	Copper	100	106	106	ug/L	EPA 6020A
	Iron	4000	3900	97	ug/L	EPA 6020A
	Lead	100	102	102	ug/L	EPA 6020A
	Magnesium	4000	4050	101	ug/L	EPA 6020A
	Manganese	100	97.8	98	ug/L	EPA 6020A
	Mercury	800	850	106	ng/L	EPA 6020A
	Nickel	100	104	104	ug/L	EPA 6020A
	Potassium	4000	3970	99	ug/L	EPA 6020A
	Selenium	40.0	39.8	100	ug/L	EPA 6020A
	Silver	40.0	39.9	100	ug/L	EPA 6020A
	Sodium	4000	4040	101	ug/L	EPA 6020A
	Thallium	40.0	39.8	100	ug/L	EPA 6020A
	Vanadium	100	101	101	ug/L	EPA 6020A
	Zinc	100	104	104	ug/L	EPA 6020A
9E31026-CCV2	Aluminum	4000	4030	101	ug/L	EPA 6020A
	Antimony	40.0	42.3	106	ug/L	EPA 6020A

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Control Limt: +/- 10.00%
Sequence: 9E31026

Lab Sample ID	Analyte	True	Found	%R	Units	Method
9E31026-CCV2	Arsenic	100	92.6	93	ug/L	EPA 6020A
	Barium	100	102	102	ug/L	EPA 6020A
	Beryllium	40.0	41.3	103	ug/L	EPA 6020A
	Cadmium	100	97.9	98	ug/L	EPA 6020A
	Calcium	4000	3940	98	ug/L	EPA 6020A
	Chromium	100	96.0	96	ug/L	EPA 6020A
	Copper	100	105	105	ug/L	EPA 6020A
	Iron	4000	3930	98	ug/L	EPA 6020A
	Lead	100	104	104	ug/L	EPA 6020A
	Magnesium	4000	4130	103	ug/L	EPA 6020A
	Manganese	100	98.2	98	ug/L	EPA 6020A
	Mercury	800	811	101	ng/L	EPA 6020A
	Nickel	100	102	102	ug/L	EPA 6020A
	Potassium	4000	4000	100	ug/L	EPA 6020A
	Selenium	40.0	39.1	98	ug/L	EPA 6020A
	Silver	40.0	39.9	100	ug/L	EPA 6020A
	Sodium	4000	4070	102	ug/L	EPA 6020A
	Thallium	40.0	40.1	100	ug/L	EPA 6020A
	Vanadium	100	101	101	ug/L	EPA 6020A
	Zinc	100	104	104	ug/L	EPA 6020A
9E31026-CCV3	Aluminum	4000	4110	103	ug/L	EPA 6020A
	Antimony	40.0	42.4	106	ug/L	EPA 6020A
	Arsenic	100	96.6	97	ug/L	EPA 6020A
	Barium	100	103	103	ug/L	EPA 6020A
	Beryllium	40.0	40.5	101	ug/L	EPA 6020A
	Cadmium	100	97.7	98	ug/L	EPA 6020A
	Calcium	4000	3960	99	ug/L	EPA 6020A
	Chromium	100	96.7	97	ug/L	EPA 6020A
	Copper	100	105	105	ug/L	EPA 6020A
	Iron	4000	4020	101	ug/L	EPA 6020A
	Lead	100	103	103	ug/L	EPA 6020A
	Magnesium	4000	4270	107	ug/L	EPA 6020A
	Manganese	100	100	100	ug/L	EPA 6020A
	Mercury	800	844	105	ng/L	EPA 6020A
	Nickel	100	103	103	ug/L	EPA 6020A
	Potassium	4000	4000	100	ug/L	EPA 6020A
	Selenium	40.0	39.7	99	ug/L	EPA 6020A
	Silver	40.0	40.0	100	ug/L	EPA 6020A
	Sodium	4000	4250	106	ug/L	EPA 6020A
	Thallium	40.0	39.3	98	ug/L	EPA 6020A
	Vanadium	100	102	102	ug/L	EPA 6020A
	Zinc	100	103	103	ug/L	EPA 6020A
9E31026-CCV5	Aluminum	4000	4150	104	ug/L	EPA 6020A
	Antimony	40.0	42.7	107	ug/L	EPA 6020A
	Arsenic	100	98.7	99	ug/L	EPA 6020A
	Barium	100	106	106	ug/L	EPA 6020A

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Control Limt: +/- 10.00%
Sequence: 9E31026

Lab Sample ID	Analyte	True	Found	%R	Units	Method
9E31026-CCV5	Beryllium	40.0	40.0	100	ug/L	EPA 6020A
	Cadmium	100	96.1	96	ug/L	EPA 6020A
	Calcium	4000	4000	100	ug/L	EPA 6020A
	Chromium	100	98.7	99	ug/L	EPA 6020A
	Copper	100	106	106	ug/L	EPA 6020A
	Iron	4000	4030	101	ug/L	EPA 6020A
	Lead	100	101	101	ug/L	EPA 6020A
	Magnesium	4000	4430	111 *	ug/L	EPA 6020A
	Manganese	100	102	102	ug/L	EPA 6020A
	Mercury	800	828	104	ng/L	EPA 6020A
	Nickel	100	105	105	ug/L	EPA 6020A
	Potassium	4000	4030	101	ug/L	EPA 6020A
	Selenium	40.0	40.1	100	ug/L	EPA 6020A
	Silver	40.0	40.4	101	ug/L	EPA 6020A
	Sodium	4000	4310	108	ug/L	EPA 6020A
	Thallium	40.0	39.9	100	ug/L	EPA 6020A
	Vanadium	100	103	103	ug/L	EPA 6020A
	Zinc	100	103	103	ug/L	EPA 6020A
9E31026-CCV6	Aluminum	4000	4010	100	ug/L	EPA 6020A
	Antimony	40.0	42.1	105	ug/L	EPA 6020A
	Arsenic	100	98.3	98	ug/L	EPA 6020A
	Barium	100	104	104	ug/L	EPA 6020A
	Beryllium	40.0	41.0	103	ug/L	EPA 6020A
	Cadmium	100	96.8	97	ug/L	EPA 6020A
	Calcium	4000	4010	100	ug/L	EPA 6020A
	Chromium	100	96.0	96	ug/L	EPA 6020A
	Copper	100	107	107	ug/L	EPA 6020A
	Iron	4000	4010	100	ug/L	EPA 6020A
	Lead	100	102	102	ug/L	EPA 6020A
	Magnesium	4000	4110	103	ug/L	EPA 6020A
	Manganese	100	98.7	99	ug/L	EPA 6020A
	Mercury	800	787	98	ng/L	EPA 6020A
	Nickel	100	104	104	ug/L	EPA 6020A
	Potassium	4000	4010	100	ug/L	EPA 6020A
	Selenium	40.0	40.5	101	ug/L	EPA 6020A
	Silver	40.0	39.7	99	ug/L	EPA 6020A
	Sodium	4000	4140	103	ug/L	EPA 6020A
	Thallium	40.0	39.1	98	ug/L	EPA 6020A
	Vanadium	100	101	101	ug/L	EPA 6020A
	Zinc	100	102	102	ug/L	EPA 6020A
9E31026-CCV7	Aluminum	4000	3920	98	ug/L	EPA 6020A
	Antimony	40.0	41.3	103	ug/L	EPA 6020A
	Arsenic	100	98.0	98	ug/L	EPA 6020A
	Barium	100	103	103	ug/L	EPA 6020A
	Beryllium	40.0	40.8	102	ug/L	EPA 6020A
	Cadmium	100	97.2	97	ug/L	EPA 6020A

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Control Limt: +/- 10.00%
Sequence: 9E31026

Lab Sample ID	Analyte	True	Found	%R	Units	Method
9E31026-CCV7	Calcium	4000	3840	96	ug/L	EPA 6020A
	Chromium	100	96.1	96	ug/L	EPA 6020A
	Copper	100	105	105	ug/L	EPA 6020A
	Iron	4000	3820	96	ug/L	EPA 6020A
	Lead	100	102	102	ug/L	EPA 6020A
	Magnesium	4000	4080	102	ug/L	EPA 6020A
	Manganese	100	98.1	98	ug/L	EPA 6020A
	Mercury	800	770	96	ng/L	EPA 6020A
	Nickel	100	104	104	ug/L	EPA 6020A
	Potassium	4000	3970	99	ug/L	EPA 6020A
	Selenium	40.0	38.9	97	ug/L	EPA 6020A
	Silver	40.0	39.3	98	ug/L	EPA 6020A
	Sodium	4000	3930	98	ug/L	EPA 6020A
	Thallium	40.0	39.3	98	ug/L	EPA 6020A
	Vanadium	100	101	101	ug/L	EPA 6020A
	Zinc	100	101	101	ug/L	EPA 6020A
9E31026-CCV8	Aluminum	4000	4040	101	ug/L	EPA 6020A
	Antimony	40.0	43.3	108	ug/L	EPA 6020A
	Arsenic	100	99.4	99	ug/L	EPA 6020A
	Barium	100	105	105	ug/L	EPA 6020A
	Beryllium	40.0	40.6	102	ug/L	EPA 6020A
	Cadmium	100	96.0	96	ug/L	EPA 6020A
	Calcium	4000	4020	100	ug/L	EPA 6020A
	Chromium	100	97.3	97	ug/L	EPA 6020A
	Copper	100	106	106	ug/L	EPA 6020A
	Iron	4000	3980	100	ug/L	EPA 6020A
	Lead	100	101	101	ug/L	EPA 6020A
	Magnesium	4000	4140	103	ug/L	EPA 6020A
	Manganese	100	98.9	99	ug/L	EPA 6020A
	Mercury	800	809	101	ng/L	EPA 6020A
	Nickel	100	104	104	ug/L	EPA 6020A
	Potassium	4000	4070	102	ug/L	EPA 6020A
	Selenium	40.0	40.2	100	ug/L	EPA 6020A
	Silver	40.0	40.3	101	ug/L	EPA 6020A
	Sodium	4000	4100	103	ug/L	EPA 6020A
	Thallium	40.0	39.6	99	ug/L	EPA 6020A
	Vanadium	100	102	102	ug/L	EPA 6020A
	Zinc	100	103	103	ug/L	EPA 6020A

* Values outside of QC limits

INSTRUMENT BLANKS
EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Instrument ID: ICPMS5
Project: Mult 802 Decommissioning
Sequence: 9E31026
Calibration: UNASSIGNED

Lab Sample ID	Analyte	Found	RL	Units	C	Method
9E31026-ICB1	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Thallium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Calcium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
	Vanadium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Copper	ND	0.500 (Inst)	ug/L		EPA 6020A
	Chromium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Beryllium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Barium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Antimony	ND	0.500 (Inst)	ug/L		EPA 6020A
	Sodium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Silver	ND	0.100 (Inst)	ug/L		EPA 6020A
	Potassium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Nickel	ND	0.500 (Inst)	ug/L		EPA 6020A
	Manganese	ND	0.500 (Inst)	ug/L		EPA 6020A
	Magnesium	ND	25.0 (Inst)	ug/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
	Iron	ND	25.0 (Inst)	ug/L		EPA 6020A
	Aluminum	ND	25.0 (Inst)	ug/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Selenium	ND	0.500 (Inst)	ug/L		EPA 6020A
9E31026-CCB1	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Antimony	ND	0.500 (Inst)	ug/L		EPA 6020A
	Thallium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Sodium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Silver	ND	0.100 (Inst)	ug/L		EPA 6020A
	Potassium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Nickel	ND	0.500 (Inst)	ug/L		EPA 6020A
	Beryllium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Magnesium	ND	25.0 (Inst)	ug/L		EPA 6020A

INSTRUMENT BLANKS
EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Instrument ID: ICPMS5
Project: Mult 802 Decommissioning
Sequence: 9E31026
Calibration: UNASSIGNED

Lab Sample ID	Analyte	Found	RL	Units	C	Method
9E31026-CCB1	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Iron	ND	25.0 (Inst)	ug/L		EPA 6020A
	Aluminum	ND	25.0 (Inst)	ug/L		EPA 6020A
	Manganese	ND	0.500 (Inst)	ug/L		EPA 6020A
	Barium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Selenium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Calcium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
	Vanadium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Copper	ND	0.500 (Inst)	ug/L		EPA 6020A
	Chromium	ND	0.500 (Inst)	ug/L		EPA 6020A
9E31026-CCB2	Chromium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Selenium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Calcium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
	Vanadium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Copper	ND	0.500 (Inst)	ug/L		EPA 6020A
	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Magnesium	ND	25.0 (Inst)	ug/L		EPA 6020A
	Beryllium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Barium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Antimony	ND	0.500 (Inst)	ug/L		EPA 6020A
	Thallium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Sodium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Silver	ND	0.100 (Inst)	ug/L		EPA 6020A
	Potassium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Manganese	ND	0.500 (Inst)	ug/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
	Iron	ND	25.0 (Inst)	ug/L		EPA 6020A
	Aluminum	ND	25.0 (Inst)	ug/L		EPA 6020A
	Nickel	ND	0.500 (Inst)	ug/L		EPA 6020A

INSTRUMENT BLANKS
EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Instrument ID: ICPMS5
Project: Mult 802 Decommissioning
Sequence: 9E31026
Calibration: UNASSIGNED

Lab Sample ID	Analyte	Found	RL	Units	C	Method
9E31026-CCB4	Manganese	ND	0.500 (Inst)	ug/L		EPA 6020A
	Beryllium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Barium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Antimony	ND	0.500 (Inst)	ug/L		EPA 6020A
	Thallium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Sodium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Silver	ND	0.100 (Inst)	ug/L		EPA 6020A
	Chromium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Nickel	ND	0.500 (Inst)	ug/L		EPA 6020A
	Copper	ND	0.500 (Inst)	ug/L		EPA 6020A
	Magnesium	ND	25.0 (Inst)	ug/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
	Iron	ND	25.0 (Inst)	ug/L		EPA 6020A
	Aluminum	ND	25.0 (Inst)	ug/L		EPA 6020A
	Potassium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Selenium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Calcium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
	Vanadium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
9E31026-CCB6	Copper	ND	0.500 (Inst)	ug/L		EPA 6020A
	Nickel	ND	0.500 (Inst)	ug/L		EPA 6020A
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Beryllium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Barium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Antimony	ND	0.500 (Inst)	ug/L		EPA 6020A
	Thallium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Sodium	58.7	50.0 (Inst)	ug/L		EPA 6020A
	Potassium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Manganese	ND	0.500 (Inst)	ug/L		EPA 6020A

INSTRUMENT BLANKS
EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Instrument ID: ICPMS5
Project: Mult 802 Decommissioning
Sequence: 9E31026
Calibration: UNASSIGNED

Lab Sample ID	Analyte	Found	RL	Units	C	Method
9E31026-CCB6	Magnesium	ND	25.0 (Inst)	ug/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
	Iron	ND	25.0 (Inst)	ug/L		EPA 6020A
	Aluminum	ND	25.0 (Inst)	ug/L		EPA 6020A
	Silver	ND	0.100 (Inst)	ug/L		EPA 6020A
	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Vanadium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Chromium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Selenium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Calcium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
9E31026-CCB7	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Potassium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Chromium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Beryllium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Barium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Antimony	ND	0.500 (Inst)	ug/L		EPA 6020A
	Thallium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Vanadium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Silver	ND	0.100 (Inst)	ug/L		EPA 6020A
	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
	Nickel	ND	0.500 (Inst)	ug/L		EPA 6020A
	Manganese	ND	0.500 (Inst)	ug/L		EPA 6020A
	Magnesium	ND	25.0 (Inst)	ug/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
	Iron	ND	25.0 (Inst)	ug/L		EPA 6020A
	Aluminum	ND	25.0 (Inst)	ug/L		EPA 6020A
	Sodium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Copper	ND	0.500 (Inst)	ug/L		EPA 6020A
	Selenium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Calcium	ND	50.0 (Inst)	ug/L		EPA 6020A

INSTRUMENT BLANKS
EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Instrument ID: ICPMS5
Project: Mult 802 Decommissioning
Sequence: 9E31026
Calibration: UNASSIGNED

Lab Sample ID	Analyte	Found	RL	Units	C	Method
9E31026-CCB8	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Calcium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A
	Selenium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Silver	ND	0.100 (Inst)	ug/L		EPA 6020A
	Vanadium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Copper	ND	0.500 (Inst)	ug/L		EPA 6020A
	Chromium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Beryllium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Barium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Antimony	ND	0.500 (Inst)	ug/L		EPA 6020A
	Sodium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Potassium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Nickel	ND	0.500 (Inst)	ug/L		EPA 6020A
	Manganese	ND	0.500 (Inst)	ug/L		EPA 6020A
	Magnesium	ND	25.0 (Inst)	ug/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
	Iron	ND	25.0 (Inst)	ug/L		EPA 6020A
	Aluminum	ND	25.0 (Inst)	ug/L		EPA 6020A
	Thallium	ND	0.100 (Inst)	ug/L		EPA 6020A
9E31026-CCB9	Mercury	ND	40.0 (Inst)	ng/L		EPA 6020A
	Sodium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Vanadium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Copper	ND	0.500 (Inst)	ug/L		EPA 6020A
	Chromium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Cadmium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Beryllium	ND	0.100 (Inst)	ug/L		EPA 6020A
	Barium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Arsenic	ND	0.500 (Inst)	ug/L		EPA 6020A
	Calcium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Thallium	ND	0.100 (Inst)	ug/L		EPA 6020A

INSTRUMENT BLANKS
EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Instrument ID: ICPMS5
Project: Mult 802 Decommissioning
Sequence: 9E31026
Calibration: UNASSIGNED

Lab Sample ID	Analyte	Found	RL	Units	C	Method
9E31026-CCB9	Selenium	ND	0.500 (Inst)	ug/L		EPA 6020A
	Silver	ND	0.100 (Inst)	ug/L		EPA 6020A
	Potassium	ND	50.0 (Inst)	ug/L		EPA 6020A
	Nickel	ND	0.500 (Inst)	ug/L		EPA 6020A
	Manganese	ND	0.500 (Inst)	ug/L		EPA 6020A
	Magnesium	ND	25.0 (Inst)	ug/L		EPA 6020A
	Lead	ND	0.100 (Inst)	ug/L		EPA 6020A
	Iron	ND	25.0 (Inst)	ug/L		EPA 6020A
	Aluminum	ND	25.0 (Inst)	ug/L		EPA 6020A
	Antimony	ND	0.500 (Inst)	ug/L		EPA 6020A
	Zinc	ND	2.00 (Inst)	ug/L		EPA 6020A

(Inst) indicates on-Instrument Result and Reporting Level. Used for non-digested Instrument Blanks.

CRDL STANDARD

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Sequence: 9E31026

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
9E31026-CRL1	Aluminum	9.00	9.72	108	ug/L	70 - 130
	Antimony	0.180	0.192	106	ug/L	70 - 130
	Arsenic	0.180	0.210	117	ug/L	70 - 130
	Barium	0.180	0.230	128	ug/L	70 - 130
	Beryllium	0.180	0.174	96	ug/L	70 - 130
	Cadmium	0.180	0.229	127	ug/L	70 - 130
	Calcium	9.00	9.17	102	ug/L	70 - 130
	Chromium	0.180	0.186	104	ug/L	70 - 130
	Copper	0.180	0.228	127	ug/L	70 - 130
	Iron	9.00	9.76	108	ug/L	70 - 130
	Lead	0.180	0.201	112	ug/L	70 - 130
	Magnesium	9.00	9.31	103	ug/L	70 - 130
	Potassium	9.00	7.61	85	ug/L	70 - 130
	Selenium	0.180	0.174	97	ug/L	70 - 130
	Silver	0.180	0.183	102	ug/L	70 - 130
	Sodium	9.00	11.4	126	ug/L	70 - 130
	Thallium	0.180	0.186	103	ug/L	70 - 130
	Vanadium	0.180	0.129	71	ug/L	70 - 130
9E31026-CRL2	Aluminum	45.0	43.6	97	ug/L	70 - 130
	Antimony	0.900	0.830	92	ug/L	70 - 130
	Arsenic	0.900	0.935	104	ug/L	70 - 130
	Barium	0.900	0.968	108	ug/L	70 - 130
	Beryllium	0.900	0.899	100	ug/L	70 - 130
	Cadmium	0.900	0.889	99	ug/L	70 - 130
	Calcium	45.0	48.9	109	ug/L	70 - 130
	Chromium	0.900	0.844	94	ug/L	70 - 130
	Copper	0.900	1.06	118	ug/L	70 - 130
	Iron	45.0	43.8	97	ug/L	70 - 130

CRDL STANDARD

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Sequence: 9E31026

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
9E31026-CRL2	Lead	0.900	0.940	104	ug/L	70 - 130
	Magnesium	45.0	43.8	97	ug/L	70 - 130
	Manganese	0.900	0.936	104	ug/L	70 - 130
	Mercury	36.0	36.6	102	ng/L	70 - 130
	Nickel	0.900	0.942	105	ug/L	70 - 130
	Selenium	0.900	0.813	90	ug/L	70 - 130
	Silver	0.900	0.910	101	ug/L	70 - 130
	Thallium	0.900	0.914	102	ug/L	70 - 130
	Vanadium	0.900	0.793	88	ug/L	70 - 130
9E31026-CRL3	Aluminum	90.0	86.8	96	ug/L	70 - 130
	Antimony	1.80	1.82	101	ug/L	70 - 130
	Arsenic	1.80	1.77	98	ug/L	70 - 130
	Barium	1.80	1.93	107	ug/L	70 - 130
	Beryllium	1.80	1.91	106	ug/L	70 - 130
	Cadmium	1.80	1.81	101	ug/L	70 - 130
	Calcium	90.0	87.7	97	ug/L	70 - 130
	Chromium	1.80	1.76	98	ug/L	70 - 130
	Copper	1.80	1.93	107	ug/L	70 - 130
	Iron	90.0	85.5	95	ug/L	70 - 130
	Lead	1.80	1.86	104	ug/L	70 - 130
	Magnesium	90.0	90.1	100	ug/L	70 - 130
	Manganese	1.80	1.82	101	ug/L	70 - 130
	Mercury	72.0	77.5	108	ng/L	70 - 130
	Nickel	1.80	2.05	114	ug/L	70 - 130
	Potassium	90.0	94.4	105	ug/L	70 - 130
	Selenium	1.80	1.78	99	ug/L	70 - 130
	Silver	1.80	1.83	102	ug/L	70 - 130
	Sodium	90.0	89.8	100	ug/L	70 - 130

CRDL STANDARD

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Sequence: 9E31026

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
9E31026-CRL3	Thallium	1.80	1.83	102	ug/L	70 - 130
	Vanadium	1.80	1.77	98	ug/L	70 - 130
	Zinc	1.80	1.99	110	ug/L	70 - 130
9E31026-CRL4	Aluminum	9.00	10.9	121	ug/L	70 - 130
	Antimony	0.180	0.180	100	ug/L	70 - 130
	Barium	0.180	0.213	118	ug/L	70 - 130
	Beryllium	0.180	0.190	105	ug/L	70 - 130
	Cadmium	0.180	0.185	103	ug/L	70 - 130
	Calcium	9.00	10.1	112	ug/L	70 - 130
	Chromium	0.180	0.161	90	ug/L	70 - 130
	Copper	0.180	0.143	79	ug/L	70 - 130
	Iron	9.00	11.7	130	ug/L	70 - 130
	Lead	0.180	0.190	105	ug/L	70 - 130
	Magnesium	9.00	8.13	90	ug/L	70 - 130
	Manganese	0.180	0.195	108	ug/L	70 - 130
	Nickel	0.180	0.130	72	ug/L	70 - 130
	Selenium	0.180	0.178	99	ug/L	70 - 130
	Silver	0.180	0.207	115	ug/L	70 - 130
	Thallium	0.180	0.190	105	ug/L	70 - 130
9E31026-CRL5	Aluminum	45.0	43.5	97	ug/L	70 - 130
	Antimony	0.900	0.880	98	ug/L	70 - 130
	Arsenic	0.900	0.992	110	ug/L	70 - 130
	Barium	0.900	0.929	103	ug/L	70 - 130
	Beryllium	0.900	0.956	106	ug/L	70 - 130
	Cadmium	0.900	0.880	98	ug/L	70 - 130
	Calcium	45.0	47.3	105	ug/L	70 - 130
	Chromium	0.900	0.853	95	ug/L	70 - 130
	Copper	0.900	1.06	117	ug/L	70 - 130

CRDL STANDARD

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Sequence: 9E31026

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
9E31026-CRL5	Iron	45.0	45.9	102	ug/L	70 - 130
	Lead	0.900	0.918	102	ug/L	70 - 130
	Magnesium	45.0	42.7	95	ug/L	70 - 130
	Manganese	0.900	0.914	102	ug/L	70 - 130
	Mercury	36.0	36.4	101	ng/L	70 - 130
	Nickel	0.900	0.899	100	ug/L	70 - 130
	Selenium	0.900	0.864	96	ug/L	70 - 130
	Silver	0.900	0.882	98	ug/L	70 - 130
	Thallium	0.900	0.901	100	ug/L	70 - 130
	Vanadium	0.900	0.835	93	ug/L	70 - 130
	Zinc	0.900	1.15	128	ug/L	70 - 130
9E31026-CRL6	Aluminum	90.0	89.6	100	ug/L	70 - 130
	Antimony	1.80	1.69	94	ug/L	70 - 130
	Arsenic	1.80	1.88	104	ug/L	70 - 130
	Barium	1.80	1.92	107	ug/L	70 - 130
	Beryllium	1.80	1.91	106	ug/L	70 - 130
	Cadmium	1.80	1.83	102	ug/L	70 - 130
	Calcium	90.0	88.9	99	ug/L	70 - 130
	Chromium	1.80	1.70	95	ug/L	70 - 130
	Copper	1.80	1.80	100	ug/L	70 - 130
	Iron	90.0	88.2	98	ug/L	70 - 130
	Lead	1.80	1.85	103	ug/L	70 - 130
	Magnesium	90.0	87.6	97	ug/L	70 - 130
	Manganese	1.80	1.87	104	ug/L	70 - 130
	Mercury	72.0	77.4	108	ng/L	70 - 130
	Nickel	1.80	1.92	106	ug/L	70 - 130
	Potassium	90.0	94.2	105	ug/L	70 - 130
	Selenium	1.80	1.91	106	ug/L	70 - 130

CRDL STANDARD

EPA 6020A

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: ICPMS5
Calibration: UNASSIGNED
Sequence: 9E31026

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
9E31026-CRL6	Silver	1.80	1.86	103	ug/L	70 - 130
	Sodium	90.0	96.8	108	ug/L	70 - 130
	Thallium	1.80	1.86	103	ug/L	70 - 130
	Vanadium	1.80	1.87	104	ug/L	70 - 130
	Zinc	1.80	1.90	105	ug/L	70 - 130
9E31026-CRL7	Aluminum	180	175	97	ug/L	70 - 130
	Antimony	3.60	3.57	99	ug/L	70 - 130
	Arsenic	3.60	3.74	104	ug/L	70 - 130
	Barium	3.60	3.71	103	ug/L	70 - 130
	Beryllium	3.60	3.55	99	ug/L	70 - 130
	Cadmium	3.60	3.50	97	ug/L	70 - 130
	Calcium	180	175	97	ug/L	70 - 130
	Chromium	3.60	3.46	96	ug/L	70 - 130
	Copper	3.60	3.98	111	ug/L	70 - 130
	Iron	180	171	95	ug/L	70 - 130
	Lead	3.60	3.65	101	ug/L	70 - 130
	Magnesium	180	175	97	ug/L	70 - 130
	Manganese	3.60	3.56	99	ug/L	70 - 130
	Mercury	144	158	110	ng/L	70 - 130
	Nickel	3.60	3.63	101	ug/L	70 - 130
	Potassium	180	184	102	ug/L	70 - 130
	Selenium	3.60	3.67	102	ug/L	70 - 130
	Silver	3.60	3.67	102	ug/L	70 - 130
	Sodium	180	186	103	ug/L	70 - 130
	Thallium	3.60	3.69	103	ug/L	70 - 130
	Vanadium	3.60	3.68	102	ug/L	70 - 130
	Zinc	3.60	3.56	99	ug/L	70 - 130

* Values outside of QC limits

HOLDING TIME SUMMARY

EPA 6020A

Laboratory: Apex Laboratories SDG: A9E0902

Client: Hahn and Associates Project: Mult 802 Decommissioning

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
2708-190524-014	05/24/19 12:50	05/28/19 15:41	05/30/19 14:33	6.07	28.00	05/31/19 16:21	7.15	28.00	
2708-190524-014	05/24/19 12:50	05/28/19 15:41	05/30/19 14:33	6.07	180.00	05/31/19 16:21	7.15	180.00	

Apex Laboratories

SDG: A9E0902

CLASS: WET

METHOD: D7511-12

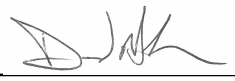
ANALYSES DATA PACKAGE COVER PAGE

D7511-12

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning

Client Sample Id:	Lab Sample Id:	Matrix
2708-190524-014	A9E0902-01	Solid

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been autorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

Signature: 
Name: David G. Jack

Forms Created: 10/1/2019 11:52AM
Title: Technical Manager

METHOD DETECTION AND REPORTING LIMITS

D7511-12

Laboratory: Apex Laboratories **SDG:** A9E0902

Client: Hahn and Associates **Project:** Mult 802 Decommissioning

Batch Matrix: Solid

Analyte	MDL	MRL	Units
Cyanide, Total	0.0500	0.100	mg/kg

Note: MDLs are listed only if the corresponding analyte was evalutated to the MDL in this report .

INORGANIC ANALYSIS DATA SHEET

D7511-12

2708-190524-014

Laboratory: Apex Laboratories | SDG: A9E0902

Client: Hahn and Associates | Project: Mult 802 Decommissioning

Matrix: Solid | Laboratory ID: A9E0902-01 | File ID: 9E30019B-023

Sampled: 05/24/19 12:50 | Prepared: 05/30/19 06:59 | Analyzed: 05/30/19 14:43

Solids: N/A | Preparation: ASTM D7511-12mod (S) | Initial/Final: 2.5654 g / 50 mL

Batch: 9051383 | Sequence: 9E30019 | Calibration: A9E3002 | Instrument: OIA FS3000-2

CAS NO.	Analyte	Concentration (mg/kg)	Dilution Factor	Q	Method
57-12-5	Cyanide, Total	1.28	10	D	D7511-12

PREPARATION BATCH SUMMARY

D7511-12

Laboratory: Apex Laboratories SDG: A9E0902

Client: Hahn and Associates Project: Mult 802 Decommissioning

Batch: 9051383 Batch Matrix: Solid Preparation: ASTM D7511-12mod (S)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9051383-BLK1	9E30019B-021	05/30/19 06:59	
LCS	9051383-BS1	9E30019B-022	05/30/19 06:59	
2708-190524-014 (MS)	9051383-MS1	9E30019B-028	05/30/19 06:59	
2708-190524-014 (MSD)	9051383-MSD1	9E30019B-030	05/30/19 06:59	
2708-190524-014	A9E0902-01	9E30019B-023	05/30/19 06:59	

Note: Client samples are listed only if they are included in this report.
Duplicates and Matrix Spike/Duplicates QC Samples are only listed if sourced from a sample included in this report.

METHOD BLANK DATA SHEET
D7511-12

Laboratory:	Apex Laboratories			SDG:	A9E0902
Client:	Hahn and Associates			Project:	Mult 802 Decommissioning
Matrix:	Solid	Laboratory ID:	9051383-BLK1	File ID:	9E30019B-021
Prepared:	05/30/19 06:59	Preparation:	ASTM D7511-12mod (S)	Initial/Final:	2.5 g / 50 mL
Analyzed:	05/30/19 14:39	Instrument:	OIA FS3000-2		
Batch:	9051383	Sequence:	9E30019	Calibration:	A9E3002

CAS NO.	COMPOUND	CONC. (mg/kg)	Q
57-12-5	Cyanide, Total	0.0500	U

LCS / LCS DUPLICATE RECOVERY

D7511-12

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Solid		
Batch:	9051383	Laboratory ID:	9051383-BS1
Preparation:	ASTM D7511-12mod (S)	Initial/Final:	2.5 g / 50 mL

COMPOUND	SPIKE ADDED (mg/kg)	LCS CONCENTRATION (mg/kg)	LCS % REC. (*=Out)	QC LIMITS REC.
Cyanide, Total	0.400	0.400	100	84 - 116

* = Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

D7511-12

2708-190524-014

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Solid		
Batch:	9051383	Laboratory ID:	9051383-MS1
Preparation:	ASTM D7511-12mod (S)	Initial/Final:	2.5765 g / 50 mL

Source Sample Name: 2708-190524-014

COMPOUND	SPIKE ADDED (mg/kg)	SAMPLE CONCENTRATION (mg/kg)	MS CONCENTRATION (mg/kg)	MS % REC. (*=Out)	QC LIMITS REC.
Cyanide, Total	0.388	1.28	1.58	79	64 - 136

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

D7511-12

2708-190524-014

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Matrix:	Solid		
Batch:	9051383	Laboratory ID:	9051383-MSD1
Preparation:	ASTM D7511-12mod (S)	Initial/Final:	2.5687 g / 50 mL

Source Sample Name: 2708-190524-014

COMPOUND	SPIKE ADDED (mg/kg)	MSD CONCENTRATION (mg/kg)	MSD % RECOVERY	% RPD	QC LIMITS RPD	QC LIMITS REC.
Cyanide, Total	0.389	1.68	104	6	47	64 - 136

ANALYSIS BATCH (SEQUENCE) SUMMARY

D7511-12

Laboratory:	Apex Laboratories	SDG:	A9E0902
Client:	Hahn and Associates	Project:	Mult 802 Decommissioning
Sequence:	9E30019	Instrument:	OIA FS3000-2
Matrix:	Solid	Calibration:	A9E3002

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9E30019-CAL2	9E30019-008	05/30/19 13:09
Cal Standard	9E30019-CAL3	9E30019-009	05/30/19 13:11
Cal Standard	9E30019-CAL4	9E30019-010	05/30/19 13:13
Cal Standard	9E30019-CAL5	9E30019-011	05/30/19 13:15
Cal Standard	9E30019-CAL6	9E30019-012	05/30/19 13:17
Cal Standard	9E30019-CAL7	9E30019-013	05/30/19 13:19
Initial Cal Check	9E30019-ICV2	9E30019B-009	05/30/19 14:15
Initial Cal Blank	9E30019-ICB2	9E30019B-010	05/30/19 14:17
Blank	9051383-BLK1	9E30019B-021	05/30/19 14:39
LCS	9051383-BS1	9E30019B-022	05/30/19 14:41
2708-190524-014	A9E0902-01	9E30019B-023	05/30/19 14:43
Calibration Check	9E30019-CCV1	9E30019B-025	05/30/19 14:47
Calibration Blank	9E30019-CCB1	9E30019B-026	05/30/19 14:49
2708-190524-014 (MS)	9051383-MS1	9E30019B-028	05/30/19 14:53
2708-190524-014 (MSD)	9051383-MSD1	9E30019B-030	05/30/19 14:57
Calibration Check	9E30019-CCV2	9E30019B-032	05/30/19 15:01
Calibration Blank	9E30019-CCB2	9E30019B-033	05/30/19 15:03
Calibration Check	9E30019-CCV3	9E30019B-038	05/30/19 15:26
Calibration Blank	9E30019-CCB3	9E30019B-039	05/30/19 15:28

Note: Client samples are listed only if they are included in this report.
Duplicates and Matrix Spike/Duplicates QC Samples are only listed if sourced from a sample included in this report.

INITIAL CALIBRATION DATA (Summary)

D7511-12

Laboratory: Apex Laboratories SDG: A9E0902

Client: Hahn and Associates Project: Mult 802 Decommissioning

Calibration: A9E3002 Date: 05/30/19 08:47 Instrument: OIA FS3000-2

Compound	Mean RF	FIT	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Cyanide, Total	30730.14	Q **	52.3206				0.9999898		

Note: ** Quad COD may be incorrect if weighting (1/a) or (1/a2) used. Weighting not shown here. Please see instrument calibration printouts for validation.

INITIAL CALIBRATION DATA

D7511-12

Laboratory: Apex Laboratories

Client: Hahn and Associates

Calibration: A9E3002

SDG: A9E0902

Project: Mult 802 Decommissioning

Instrument: OIA FS3000-2

Calibration Date: 05/30/19 08:47

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Cyanide, Total	1	1099	2	24036	5	34715.2	10	39654.9	25	42277.08	50	42598.66

INITIAL AND CONTINUING CALIBRATION CHECK

D7511-12

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Project: Mult 802 Decommissioning
Instrument ID: OIA FS3000-2
Calibration: A9E3002
Control Limt: +/- 10.00%
Sequence: 9E30019

Lab Sample ID	Analyte	True	Found	%R	Units	Method
9E30019-ICV2	Cyanide, Total	25.0	27.4	110	ug/L	D7511-12
9E30019-CCV1	Cyanide, Total	25.0	26.5	106	ug/L	D7511-12
9E30019-CCV2	Cyanide, Total	25.0	26.1	104	ug/L	D7511-12
9E30019-CCV3	Cyanide, Total	25.0	26.2	105	ug/L	D7511-12

* Values outside of QC limits

INSTRUMENT BLANKS
D7511-12

Laboratory: Apex Laboratories
SDG: A9E0902
Client: Hahn and Associates
Instrument ID: OIA FS3000-2
Project: Mult 802 Decommissioning
Sequence: 9E30019
Calibration: A9E3002

Lab Sample ID	Analyte	Found	RL	Units	C	Method
9E30019-ICB2	Cyanide, Total	ND	2.50 (Inst)	ug/L		D7511-12
9E30019-CCB1	Cyanide, Total	ND	2.50 (Inst)	ug/L		D7511-12
9E30019-CCB2	Cyanide, Total	ND	2.50 (Inst)	ug/L		D7511-12
9E30019-CCB3	Cyanide, Total	ND	2.50 (Inst)	ug/L		D7511-12

(Inst) indicates on-Instrument Result and Reporting Level. Used for non-digested Instrument Blanks.

HOLDING TIME SUMMARY

D7511-12

Laboratory: Apex Laboratories SDG: A9E0902

Client: Hahn and Associates Project: Mult 802 Decommissioning

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
2708-190524-014	05/24/19 12:50	05/28/19 15:41	05/30/19 06:59	5.76	14.00	05/30/19 14:43	6.08	14.00	

Raw Data

APEX LABORATORIES, LLC
6700 SW Sandburg St. Tigard OR 97223 phone 503-718-2323

Diesel and /or Oil Hydrocarbons by NWTPH-Dx

Benchsheet & Analysis Sequence Data

Batch 9051469

Sequence 9E31029 (A9E0902-01)

Apex Laboratories

PREPARATION BENCH SHEET

BATCH #: 9051469 (Solid)

Prep Method: EPA 3546 (Fuels)

#	Lab Number		Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surr.	Sample ID	Extraction Comments	pH <2	pH Other	pH >11
	9051469-BLK1		QC	05/31/19 13:21	11	5				100					
	9051469-BS1		QC	05/31/19 13:21	10	5	A19E300		100	100					
	A9E0902-01	A	NWTPH-Dx (Diesel/Oil)	05/31/19 13:21	10.03	5				100	2708-190524-014				
	9051469-DUP1		QC	05/31/19 13:21	10.05	5		A9E0902-01		100					

Standards/Reagents

Reagent(s)

Std ID	Exp. Date	Description
A13L219	11/30/23	Extractions Balance
A18K311	12/31/20	Glass Wool
A19D007	09/30/20	DCM CHEM PROD. 186806
A19D260	10/15/19	Sodium Sulfate Lot # Q098001

Analyte Spike(s)

Std ID	Exp. Date	Description
A19E300	11/20/19	NWTPH-DX Spike in Methanol

Surrogate(s)

Std ID	Exp. Date	Description
A19E238	08/31/19	NWTPH-DX Soil Surrogate in DCM

Method 3546 digestion time and temperature achieved.
Initial:

Witness: _____

Prepared By: _____ Date _____

Reviewed By: KEH 6/3/19 Date

Apex Laboratories

PREPARATION BENCH SHEET

BATCH #: 9051469 (Solid)

Prep Method: EPA 3546 (Fuels)

#	Lab Number		Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surr.	Sample ID	Extraction Comments	pH <2	pH Other	pH >11
6	9051469-BLK1		QC	05/31/19 13:21	~~10~~ 11	5 ✓				100					
7	9051469-BS1		QC	05/31/19 13:21	10	5 ✓	A19E300		100	100					
8	A9E0902-01	A	NWTPH-Dx (Diesel/Oil)	05/31/19 13:21	~~10~~ 10.03	5 ✓				100	2708-190524-014	mud, rocks, odor			
9	9051469-DUP1		QC	05/31/19 13:21	~~10~~ 10.05	5 ✓		A9E0902-01		100					

Standards/Reagents

Reagent(s)

Std ID	Exp. Date	Description
A13L219	11/30/23	Extractions Balance
A18K311	12/31/20	Glass Wool
A19D007	09/30/20	DCM CHEM PROD. 186806
A19D260	10/15/19	Sodium Sulfate Lot # Q098001

Analyte Spike(s) JRA

Std ID	Exp. Date	Description
A19E300	11/20/19	NWTPH-DX Spike in Methanol

Surrogate(s) JRA

Std ID	Exp. Date	Description
A19E238	08/31/19	NWTPH-DX Soil Surrogate in DCM

Method 3546 digestion time and temperature achieved.
Initial: JRA

Witness: CAH 5-31-19

JRA — Prepared By: — 05/31/19 — Date

CAH — Reviewed By: — 05.31.19 — Date

CAH — 05.31.19

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence:	**9E31029**	Instrument:	**DUALFID1F**
Date:	**05/31/19 15:56**	Calibration:	**A9D2602**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9E31029-RES1	Soil	QC	QC				A19E278
2	9E31029-CCV1	Soil	QC	QC				A19E293
3	9E31029-CCV2	Soil	QC	QC				A19E294
4	9E31029-CCB1	Soil	QC	QC				
5	9051466-BLK1	Soil	QC	QC		9051466		
6	9051466-BS1	Soil	QC	QC		9051466		
7	9051466-BS2	Soil	QC	QC		9051466		
8	9051466-BS3	Soil	QC	QC		9051466		
9	9051466-BS4	Soil	QC	QC		9051466		
10	9E31029-IBL1	Soil	QC	QC				
11	9051469-BLK1	Solid	QC	QC		9051469		
12	9051469-BS1	Solid	QC	QC		9051469		
13	A9E0902-01	Solid	NWTPH-Dx (Diesel/Oil)	Hahn and Associates	06/03/19	9051469		
14	9051469-DUP1	Solid	QC	QC		9051469		
15	9E31029-IBL2	Soil	QC	QC				
16	9E31029-CCV3	Soil	QC	QC				A19E293
17	9E31029-CCV4	Soil	QC	QC				A19E294

Data Entered By: KEH 6/3/19

Data Reviewed By: [signature] 6/3/19

Comments:

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053102.D Vial: 94
Acq On : 31 May 2019 17:48 Operator: KEH
Sample : 9E31029-RES1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:55 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mL
		Target Compounds				
1)	H	Mineral Oil	6.00	423550922	332.288	ug/ml
2)	H	Diesel	6.00	423550922	332.288	ug/mL
3)	H	DRO(C12-C24)	6.00	350492472	274.971	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	286887313	306.061	ug/ml
5)	H	TPHd (C10-C25)	6.00	366984467	316.898	ug/ml
7)	H	OIL	10.00	277993653	252.608	ug/mL
8)	H	RRO (C24-C40)	10.00	88513811	80.431	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	116139165	159.674	ug/mL
10)	H	TPHmo (C25-C36)	9.00	73598755	110.905	ug/mL

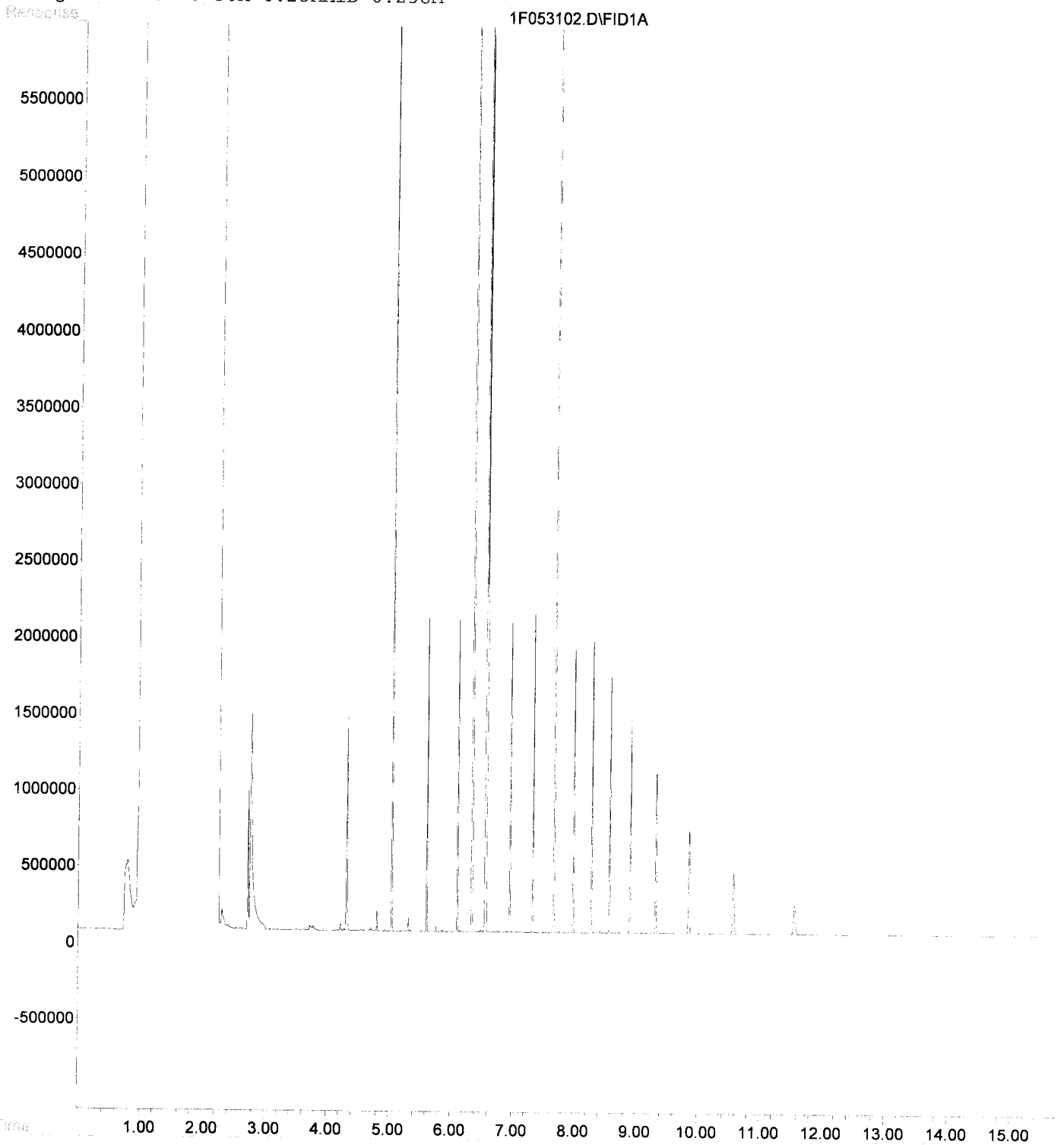
(f)=RT Delta > 1/2 Window (m)=manual int.
1F053102.D 1F90425D.M Mon Jun 03 07:55:44 2019 SV-GCMS3

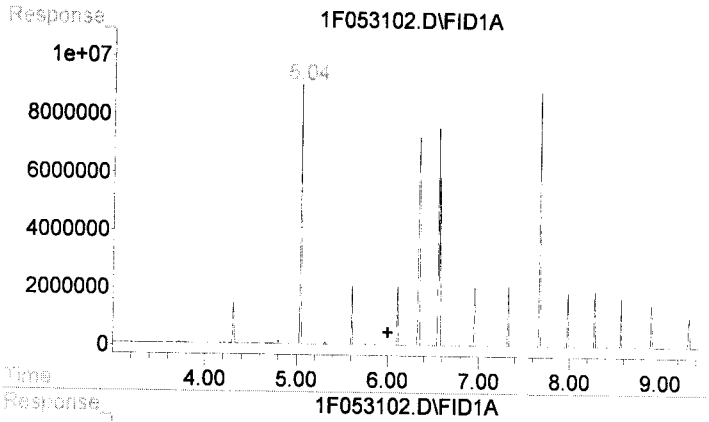
Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053102.D Vial: 94
Acq On : 31 May 2019 17:48 Operator: KEH
Sample : 9E31029-RES1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:55 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

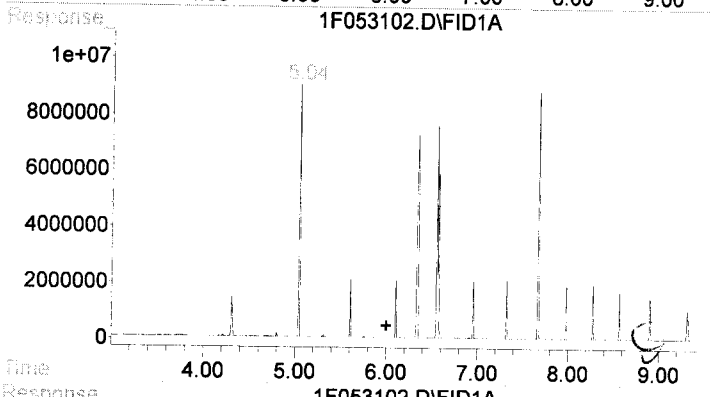
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





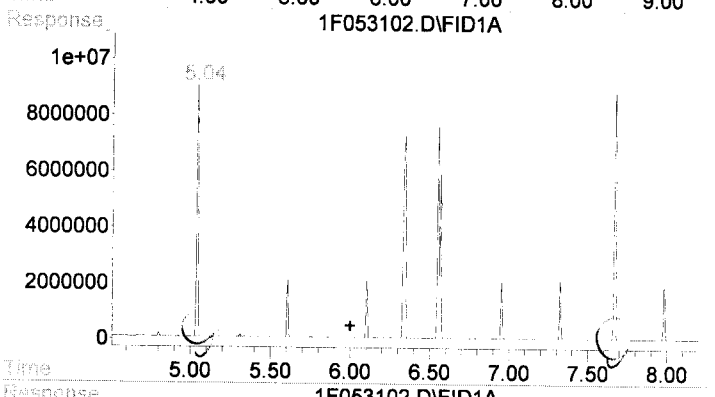
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 423550922
Conc: 332.29 ug/ml m



#2 Diesel

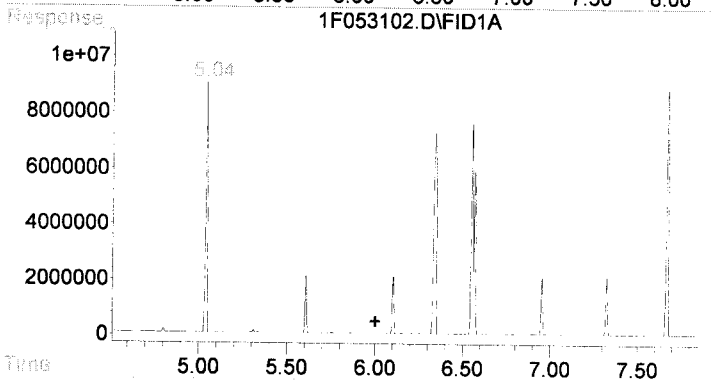
R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 423550922
Conc: 332.29 ug/mL m



#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 350492472
Conc: 274.97 ug/mL m

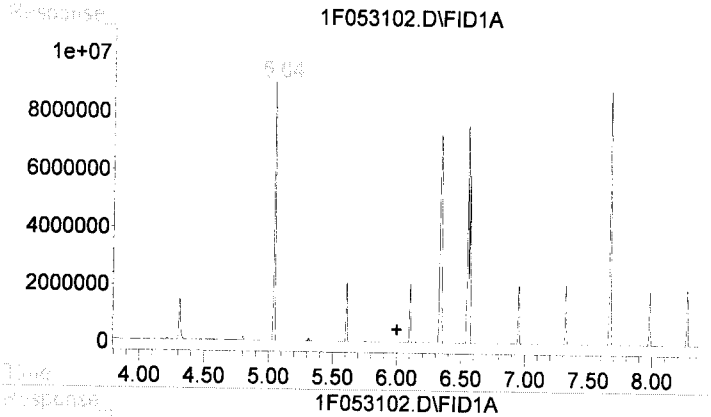
KH 6/3/19



#4 Ca Luft DRO (C12-C22)

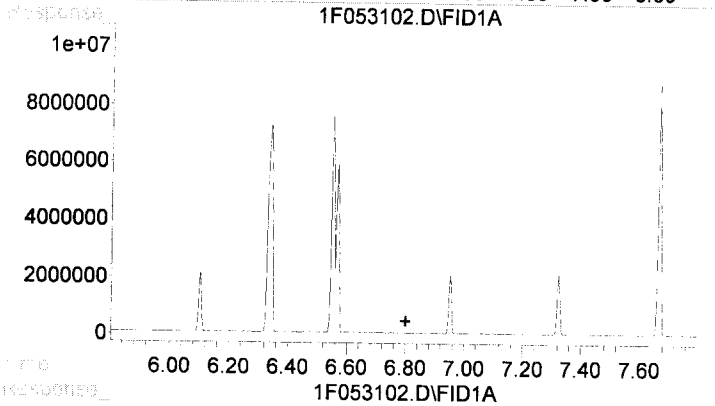
R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 286887313
Conc: 306.06 ug/ml m

✓



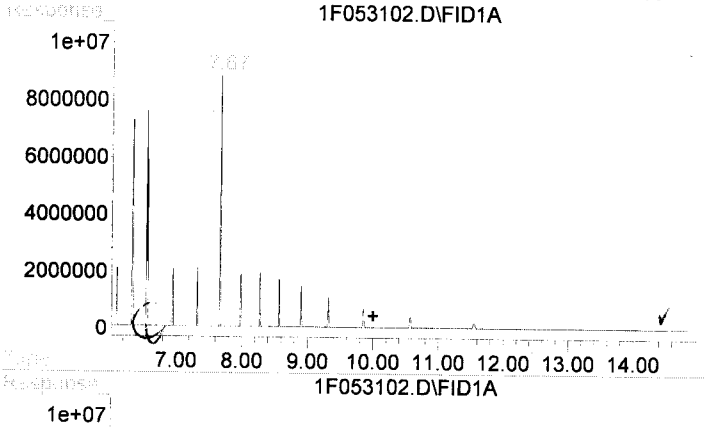
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 366984467
Conc: 316.90 ug/ml m



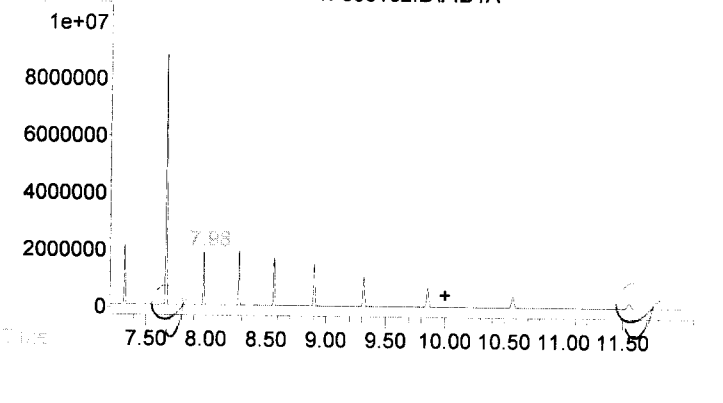
#6 o-Terphenyl

R.T.: 0.000 min
Exp R.T. : 6.800 min
Response: 0
Conc: N.D.



#7 OIL

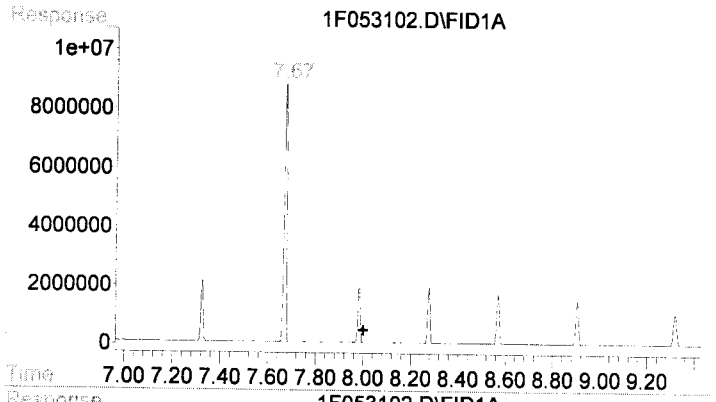
R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 277993653
Conc: 252.61 ug/mL m



#8 RRO (C24-C40)

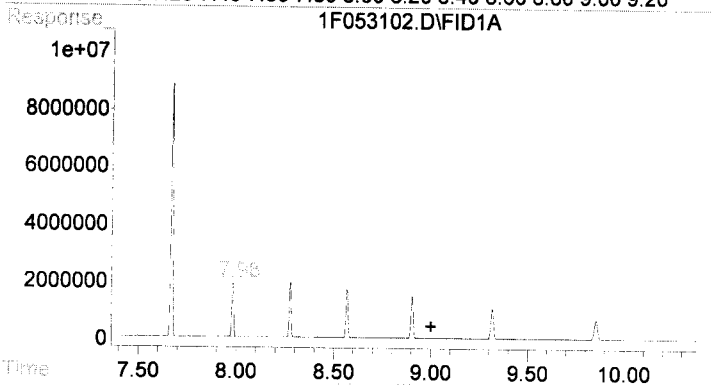
R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 88513811
Conc: 80.43 ug/mL m

Reat 6/3/19



#9 Ca Luft ORO (C23-C32)

R.T.: 8.000 min
Delta R.T.: 0.000 min
Response: 116139165
Conc: 159.67 ug/mL m



#10 TPHmo (C25-C36)

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 73598755
Conc: 110.91 ug/mL m

Evaluate Continuing Calibration Report

Data File : F:\1\DATA\2019-05\9E31029\1F053103.D
Acq On : 31 May 2019 18:11
Sample : 9E31029-CCV1
Misc :
IntFile : SUR.E

Vial: 1
Operator: KEH
Inst : HP G1530A
Multiplr: 1.00

Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	H	Mineral Oil	1000.000	951.756	4.8	97	0.00
2	H	Diesel	1000.000	951.756	4.8	97	0.00
3	H	DRO(C12-C24)	1000.000	762.354	23.8#	78	0.00
4	H	Ca Luft DRO (C12-C22)	1000.000	988.904	1.1	98	0.00
5	H	TPHd (C10-C25)	1000.000	978.470	2.2	97	0.00
6	S	o-Terphenyl	-1.000	51.765	0.0	0	0.00
7	H	OIL	-1.000	301.965	0.0	96	0.00
8	H	RRO (C24-C40)	-1.000	16.621	0.0	5	0.00
9	H	Ca Luft ORO (C23-C32)	-1.000	52.349	0.0	97	0.00
10	H	TPHmo (C25-C36)	-1.000	16.245	0.0	91	0.00

KEH 4/3/19

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053103.D Vial: 1
Acq On : 31 May 2019 18:11 Operator: KEH
Sample : 9E31029-CCV1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:55 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc Units
		System Monitoring Compounds			
6)	S	o-Terphenyl	6.80	72031987	51.765 ug/mL
		Target Compounds			
1)	H	Mineral Oil	6.00	1213156290	951.756 ug/ml
2)	H	Diesel	6.00	1213156290	951.756 ug/mL
3)	H	DRO(C12-C24)	6.00	971735867	762.354 ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	926951433	988.904 ug/ml
5)	H	TPHd (C10-C25)	6.00	1133119470	978.470 ug/ml
7)	H	OIL	10.00	332310816	301.965 ug/mL
8)	H	RRO (C24-C40)	10.00	18291841	16.621 ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	38076409	52.349 ug/mL
10)	H	TPHmo (C25-C36)	9.00	10780301	16.245 ug/mL

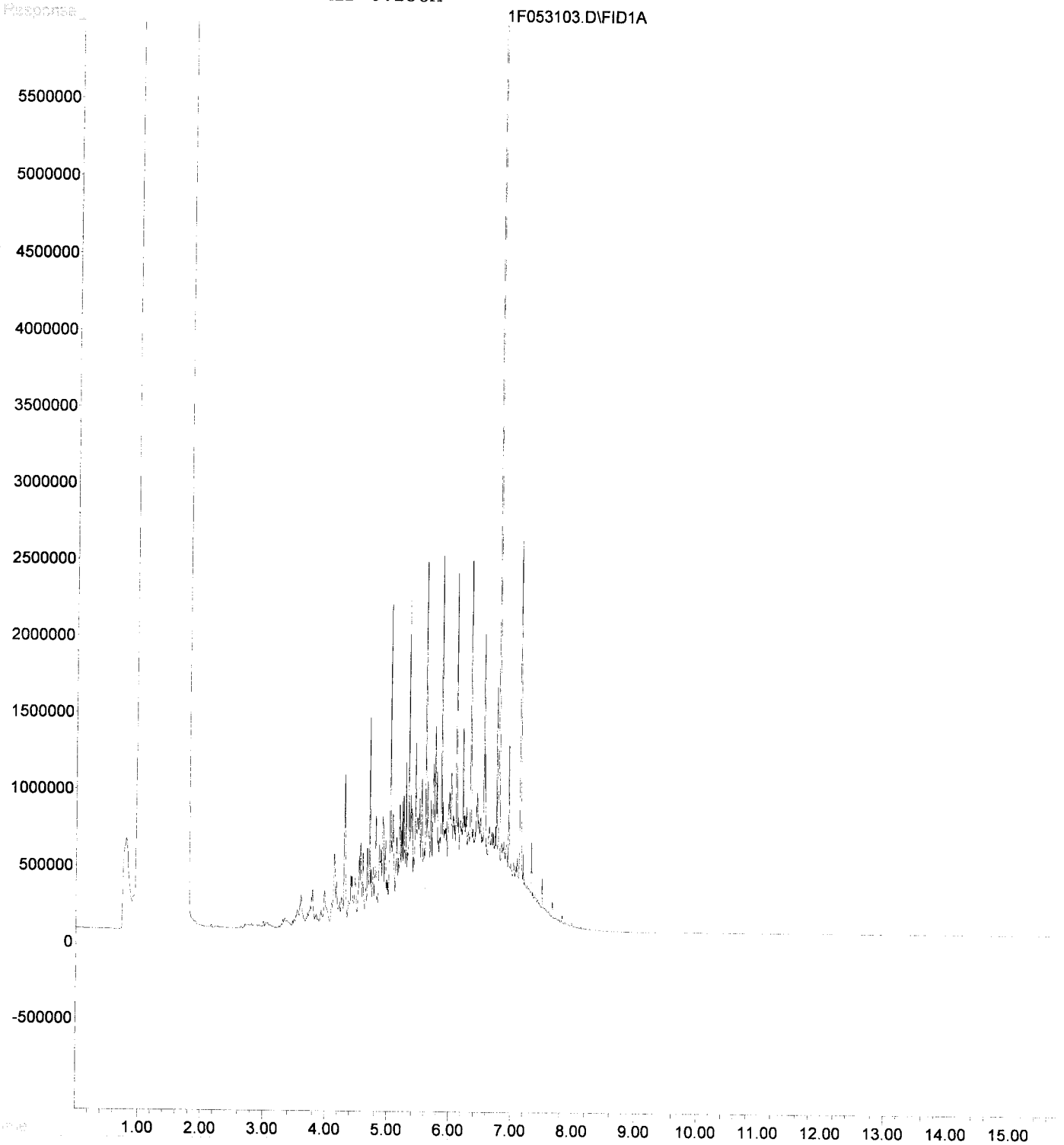
KEH 6/3/19

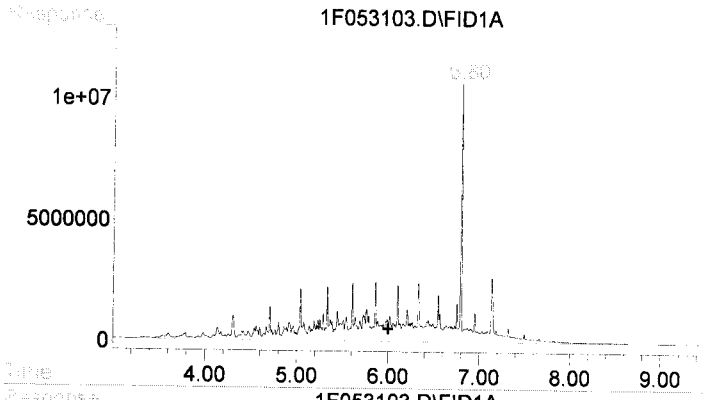
Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053103.D Vial: 1
Acq On : 31 May 2019 18:11 Operator: KEH
Sample : 9E31029-CCV1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:55 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

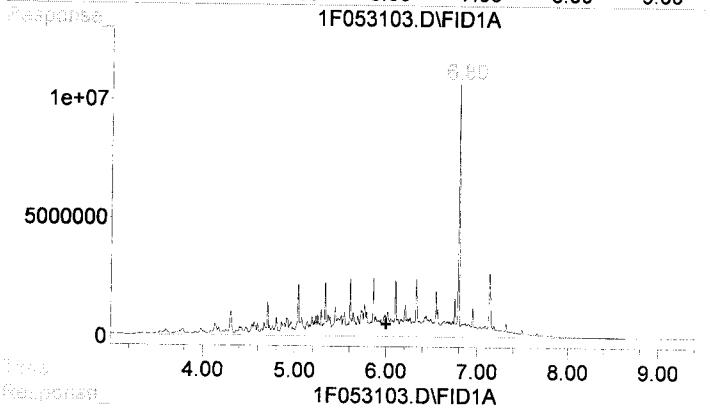
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





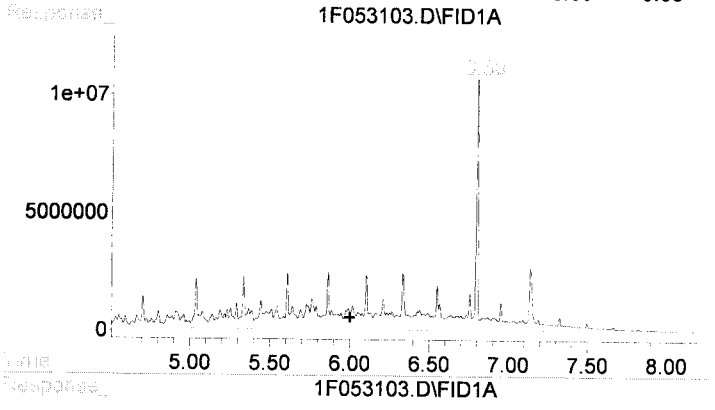
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 1213156290
Conc: 951.76 ug/ml m



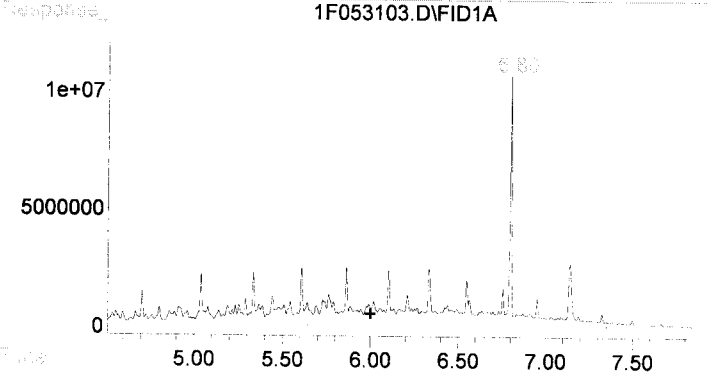
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 1213156290
Conc: 951.76 ug/mL m



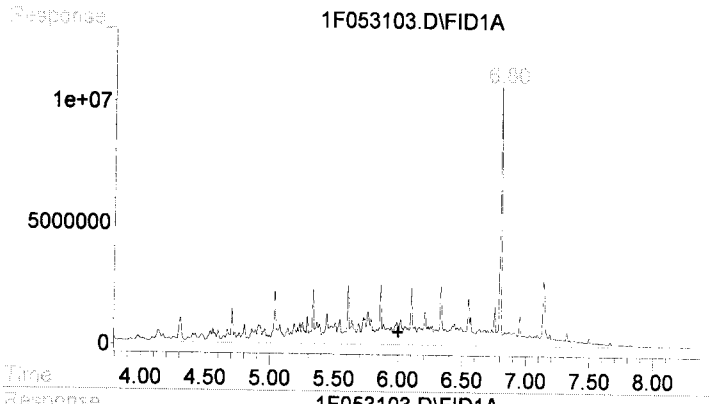
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 971735867
Conc: 762.35 ug/mL m



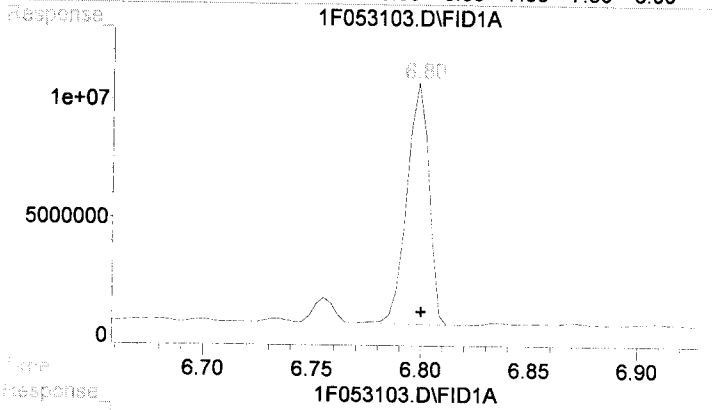
#4 Ca Luft DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 926951433
Conc: 988.90 ug/ml m



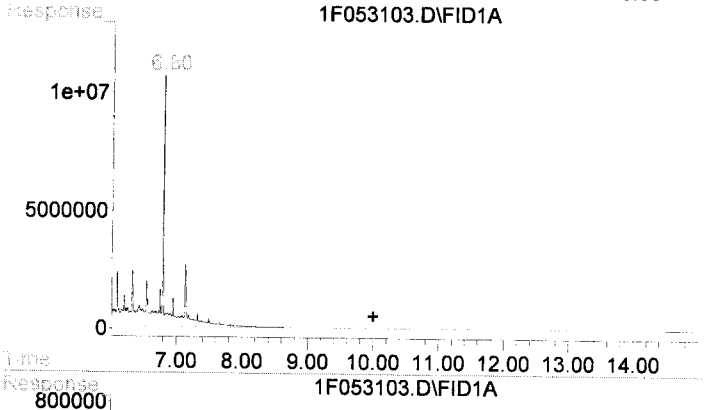
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 1133119470
Conc: 978.47 ug/ml m



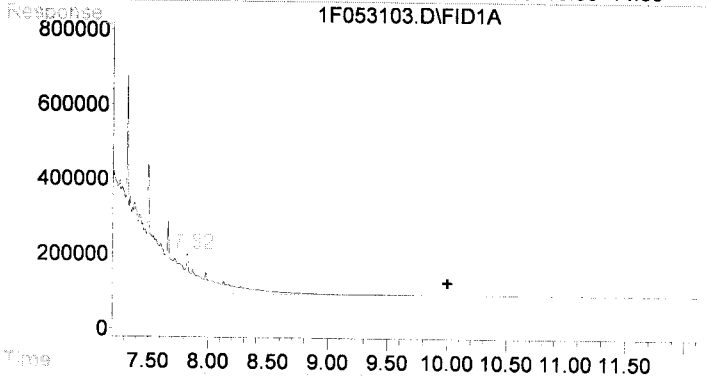
#6 o-Terphenyl

R.T.: 6.799 min
Delta R.T.: 0.000 min
Response: 72031987
Conc: 51.76 ug/mL



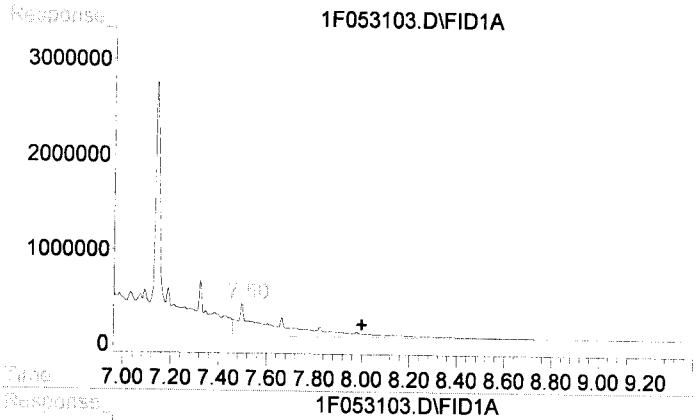
#7 OIL

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 332310816
Conc: 301.97 ug/mL m



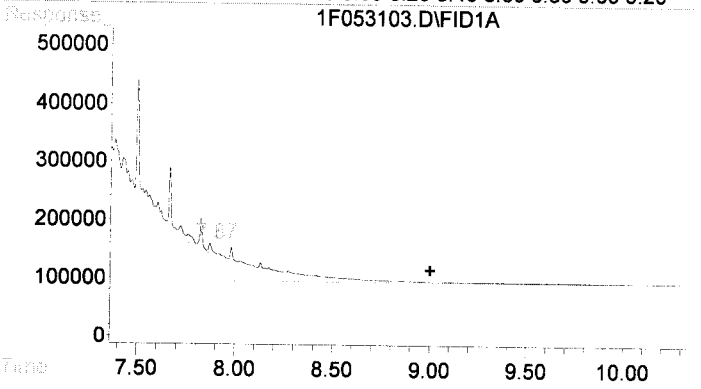
#8 RRO (C24-C40)

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 18291841
Conc: 16.62 ug/mL m



#9 Ca Luft ORO (C23-C32)

R.T.:	8.000 min
Delta R.T.:	0.000 min
Response:	38076409
Conc:	52.35 ug/mL m



#10 TPHmo (C25-C36)

R.T.:	9.000 min
Delta R.T.:	0.000 min
Response:	10780301
Conc:	16.24 ug/mL m

Evaluate Continuing Calibration Report

Data File : F:\1\DATA\2019-05\9E31029\1F053104.D
Acq On : 31 May 2019 18:34
Sample : 9E31029-CCV2
Misc :
IntFile : SUR.E

Vial: 2
Operator: KEH
Inst : HP G1530A
Multiplr: 1.00

Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	H	Mineral Oil	-1.000	330.236	0.0	98	0.00
2	H	Diesel	-1.000	330.236	0.0	98	0.00
3	H	DRO(C12-C24)	-1.000	77.977	0.0	23	0.00
4	H	Ca Luft DRO (C12-C22)	-1.000	35.303	0.0	94	0.00
5	H	TPHd (C10-C25)	-1.000	128.347	0.0	99	0.00
6	S	o-Terphenyl	-1.000	49.357	0.0	0	0.00
7	H	OIL	500.000	498.042	0.4	99	0.00
8	H	RRO (C24-C40)	500.000	384.148	23.2#	77	0.00
9	H	Ca Luft ORO (C23-C32)	500.000	499.606	0.1	98	0.00
10	H	TPHmo (C25-C36)	500.000	502.022	-0.4	99	0.00

KEH 6/30/19

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053104.D Vial: 2
Acq On : 31 May 2019 18:34 Operator: KEH
Sample : 9E31029-CCV2 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:55 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc Units
		System Monitoring Compounds			
6)	S	o-Terphenyl	6.80	68681707	49.357 ug/mL
		Target Compounds			
1)	H	Mineral Oil	6.00	420935987	330.236 ug/ml
2)	H	Diesel	6.00	420935987	330.236 ug/mL
3)	H	DRO(C12-C24)	6.00	99393246	77.977 ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	33091593	35.303 ug/ml
5)	H	TPHd (C10-C25)	6.00	148632426	128.347 ug/ml
7)	H	OIL	10.00	548091959	498.042 ug/mL ✓
8)	H	RRO (C24-C40)	10.00	422752476	384.148 ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	363389138	499.606 ug/mL
10)	H	TPHmo (C25-C36)	9.00	333151555	502.022 ug/mL

Ref 4 6/3/19

✓

(f)=RT Delta > 1/2 Window (m)=manual int.

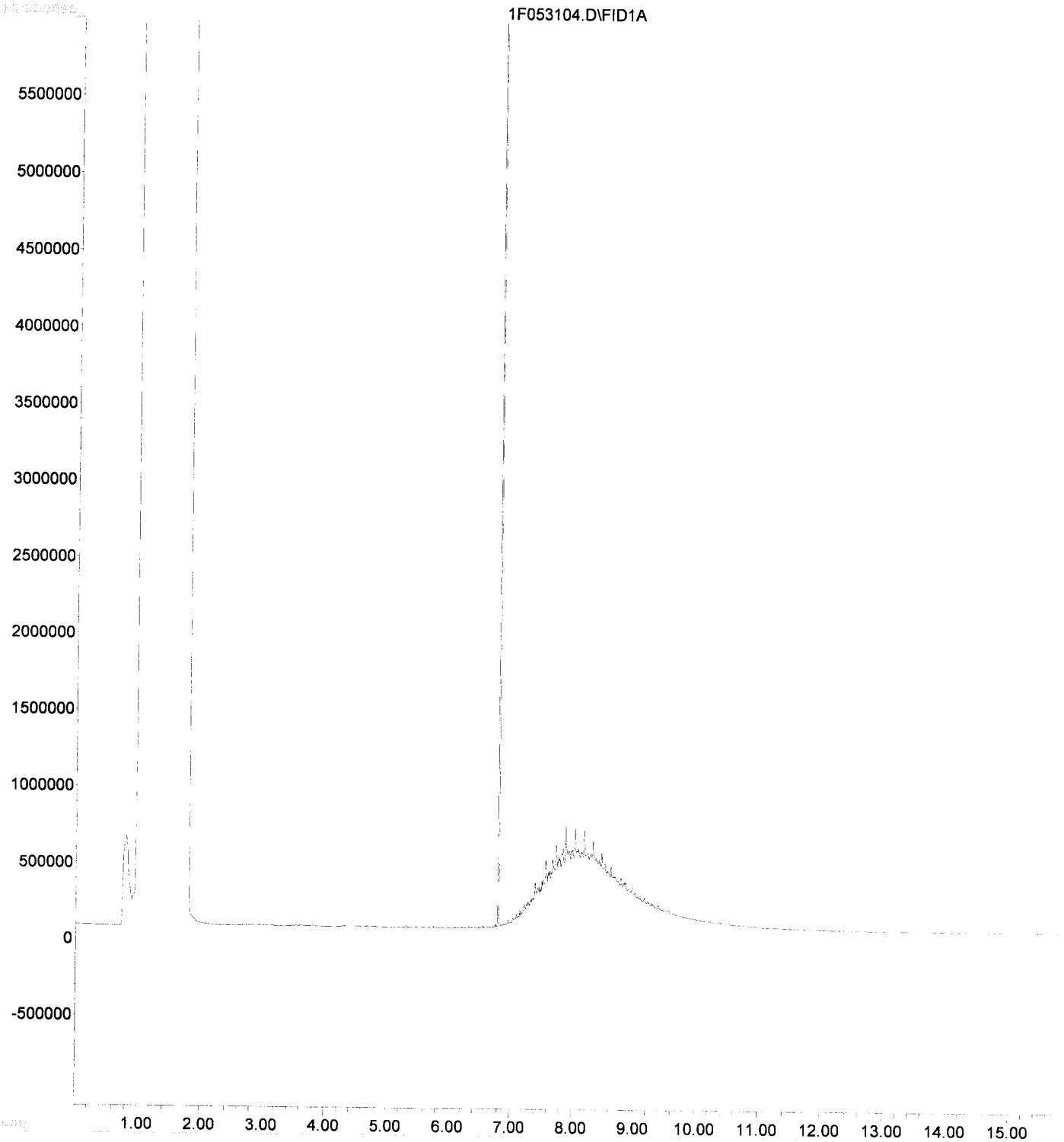
1F053104.D 1F90425D.M Mon Jun 03 07:55:50 2019 SV-GCMS3

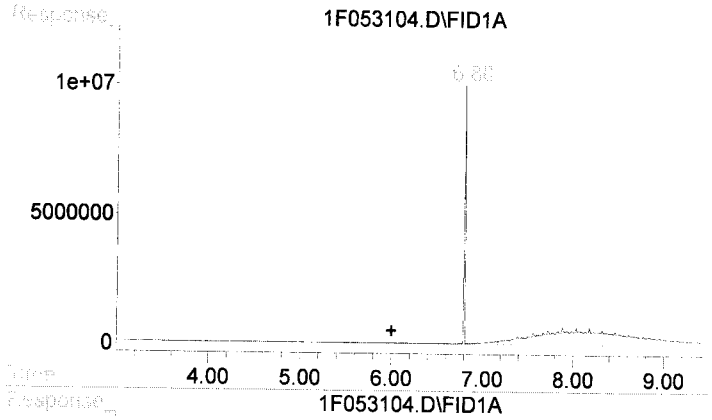
Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053104.D Vial: 2
Acq On : 31 May 2019 18:34 Operator: KEH
Sample : 9E31029-CCV2 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:55 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

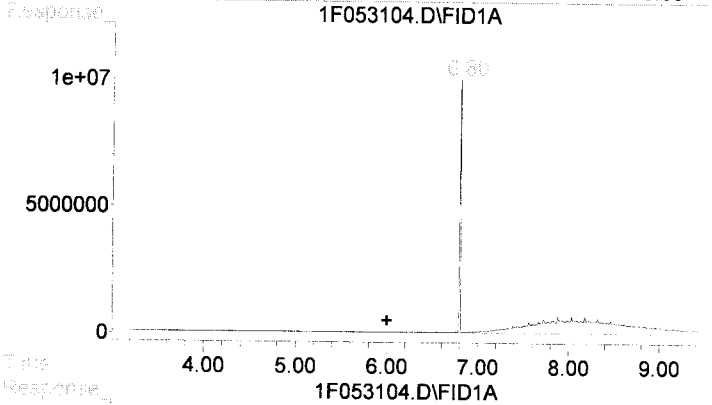
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





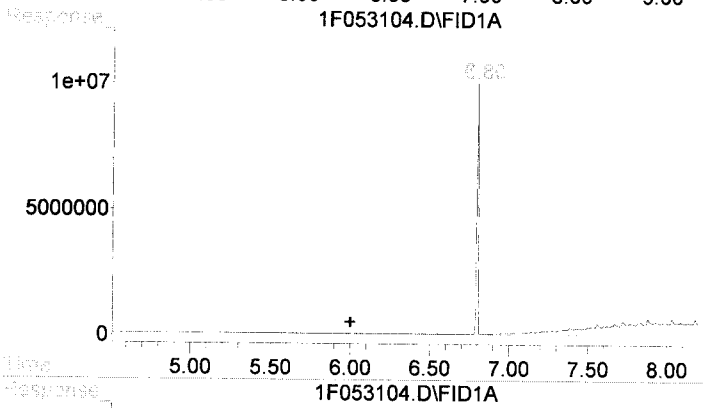
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 420935987
Conc: 330.24 ug/ml m



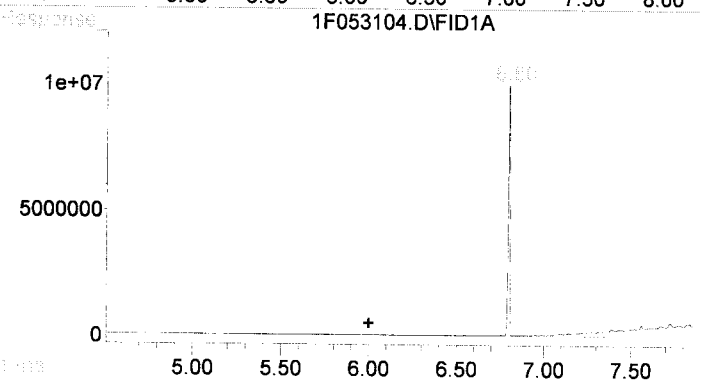
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 420935987
Conc: 330.24 ug/mL m



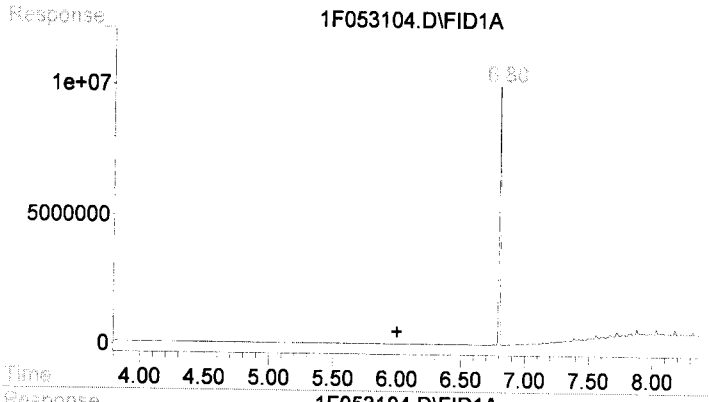
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 99393246
Conc: 77.98 ug/mL m



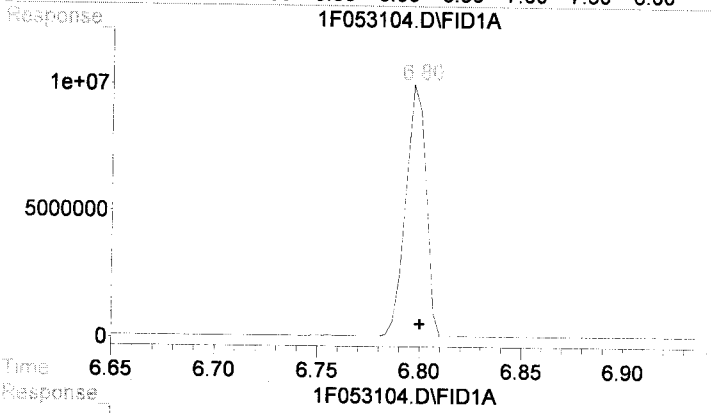
#4 Ca Luft DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 33091593
Conc: 35.30 ug/ml m



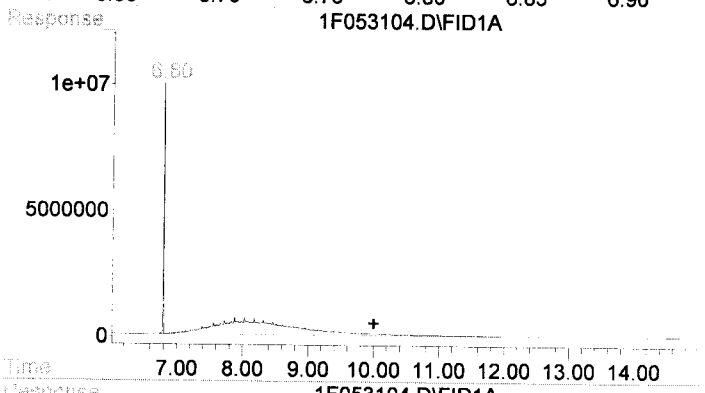
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 148632426
Conc: 128.35 ug/ml m



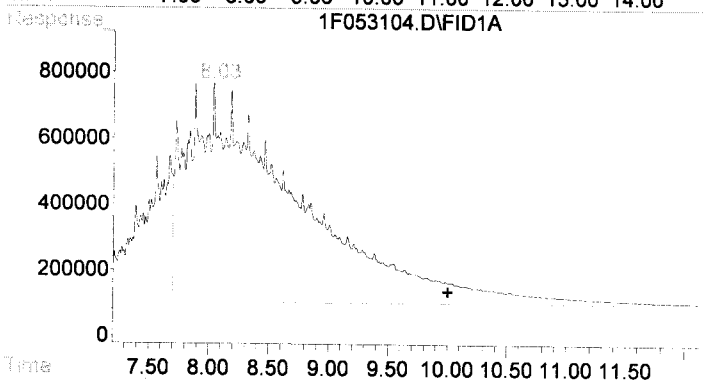
#6 o-Terphenyl

R.T.: 6.799 min
Delta R.T.: -0.001 min
Response: 68681707
Conc: 49.36 ug/mL



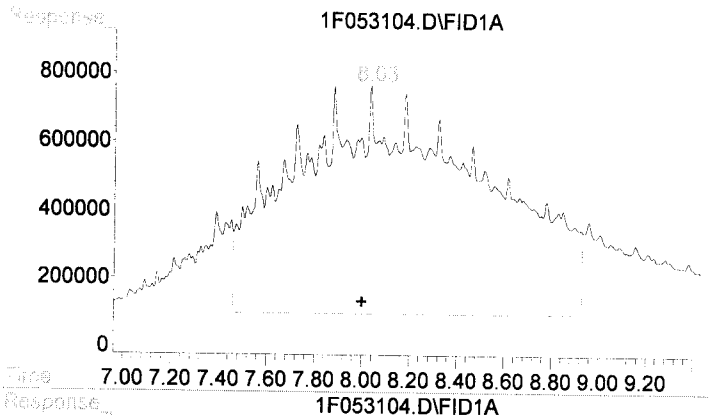
#7 OIL

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 548091959
Conc: 498.04 ug/mL m



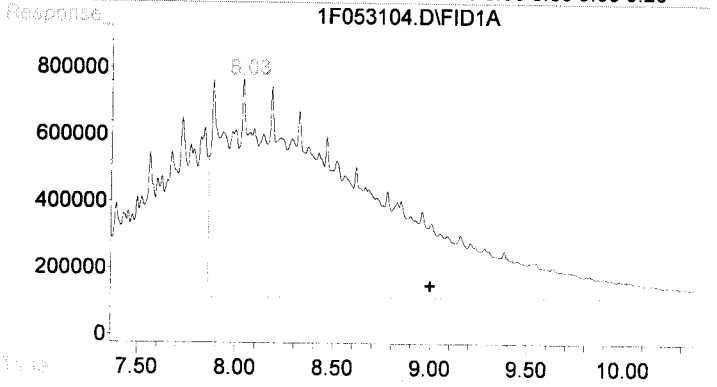
#8 RRO (C24-C40)

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 422752476
Conc: 384.15 ug/mL m



#9 Ca Luft ORO (C23-C32)

R.T.: 8.000 min
Delta R.T.: 0.000 min
Response: 363389138
Conc: 499.61 ug/mL m



#10 TPHmo (C25-C36)

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 333151555
Conc: 502.02 ug/mL m

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053105.D Vial: 99
Acq On : 31 May 2019 21:24 Operator: KEH
Sample : 9E31029-CCB1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:55 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mL
		Target Compounds				
1)	H	Mineral Oil	6.00	9502920	7.455	ug/ml
2)	H	Diesel	6.00	9502920	7.455	ug/mL
3)	H	DRO(C12-C24)	6.00	2443436	1.917	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	2107187	2.248	ug/ml
5)	H	TPHd (C10-C25)	6.00	4464411	3.855	ug/ml
7)	H	OIL	10.00	20730379	18.837	ug/mL
8)	H	RRO (C24-C40)	10.00	10595023	9.628	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	2540796	3.493	ug/mL
10)	H	TPHmo (C25-C36)	9.00	4793086	7.223	ug/mL

< 1/2 MRL

KEH 6/3/19

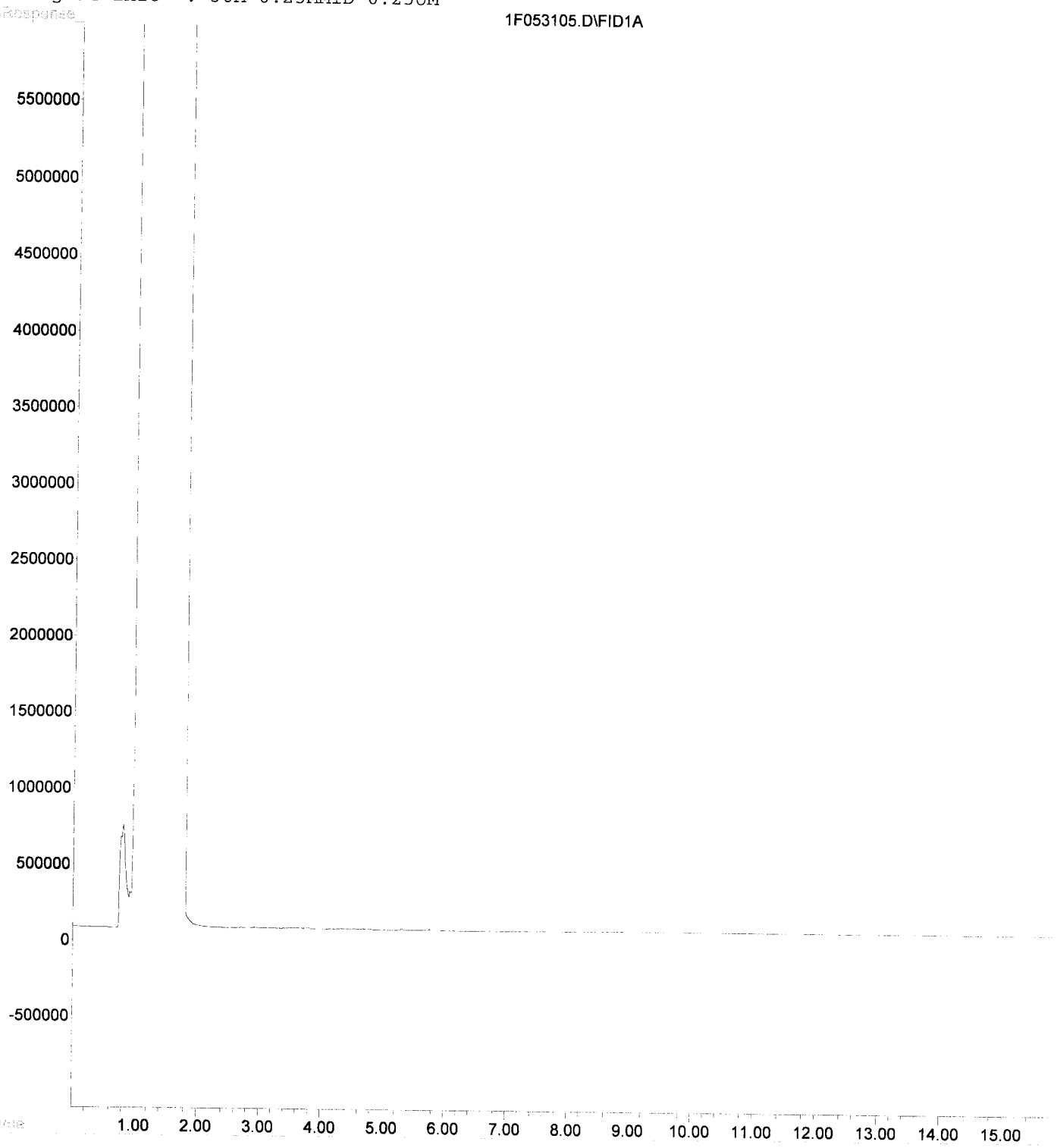
✓

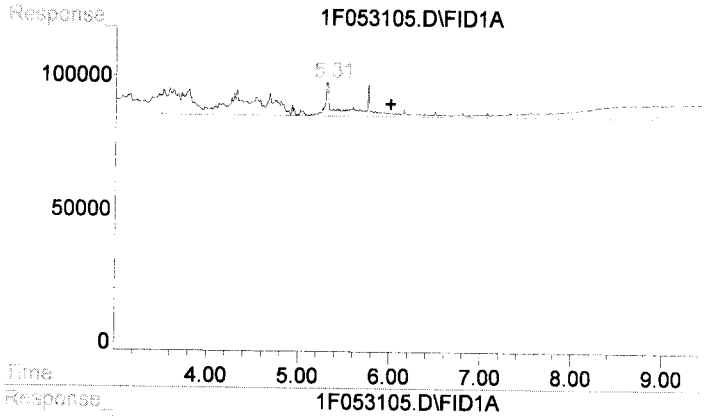
Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053105.D Vial: 99
Acq On : 31 May 2019 21:24 Operator: KEH
Sample : 9E31029-CCB1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:55 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

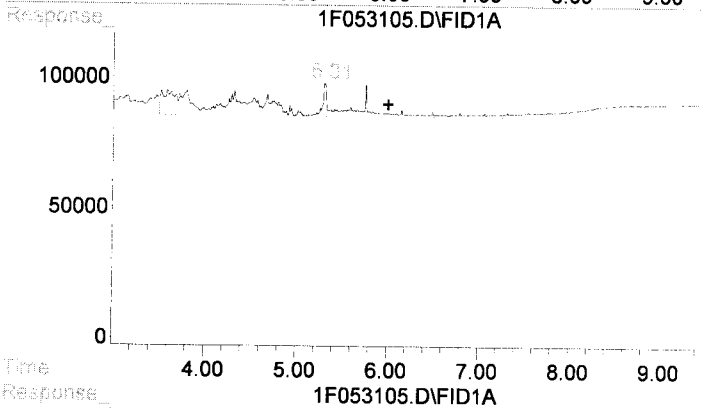
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





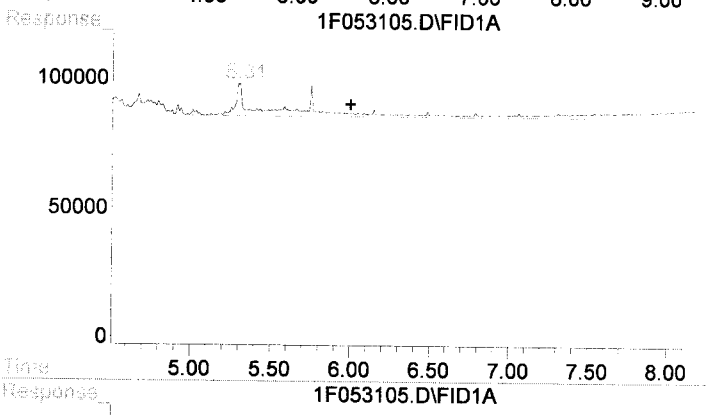
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 9502920
Conc: 7.46 ug/ml m



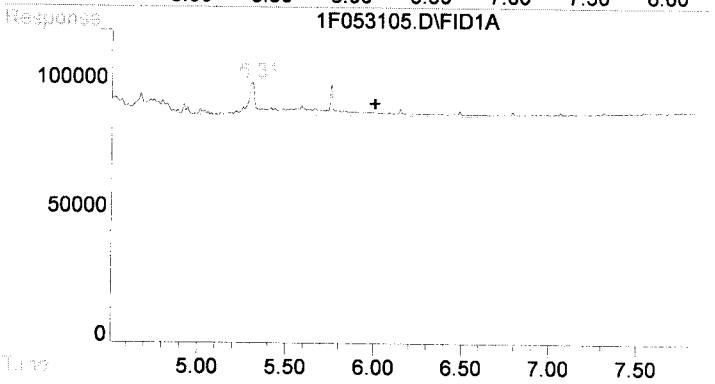
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 9502920
Conc: 7.46 ug/mL m



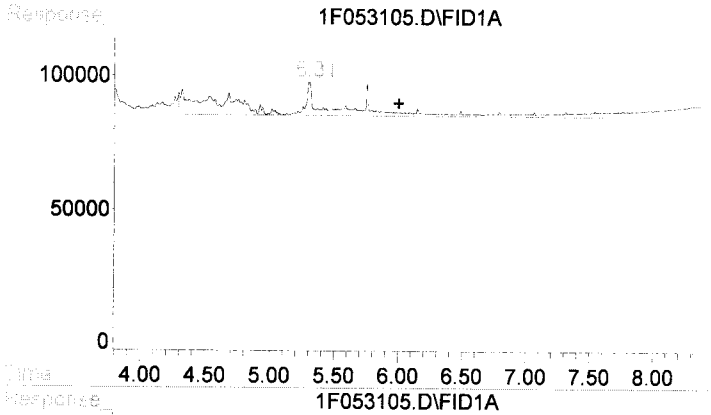
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 2443436
Conc: 1.92 ug/mL m



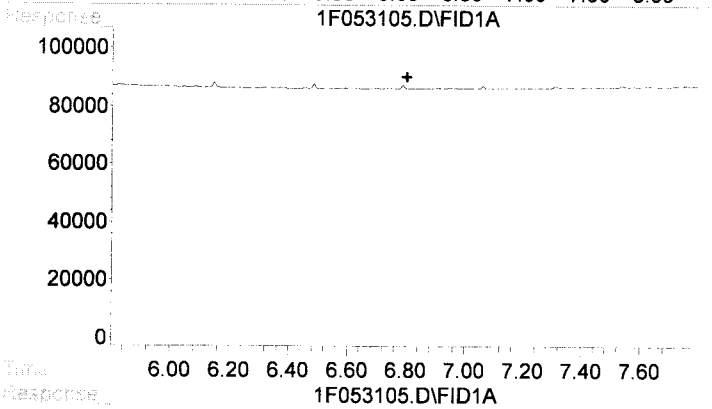
#4 Ca Luft DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 2107187
Conc: 2.25 ug/ml m



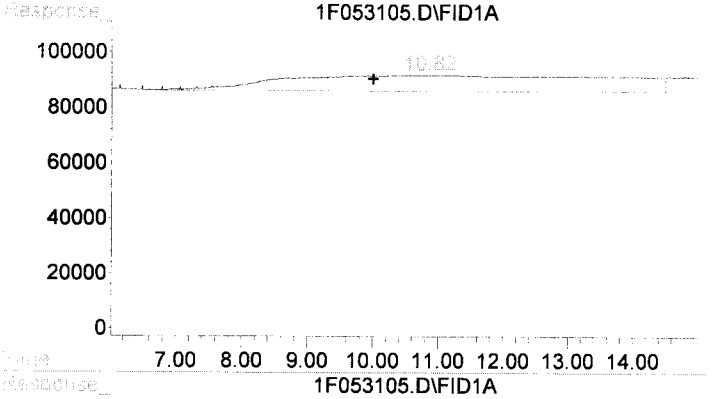
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 4464411
Conc: 3.86 ug/ml m



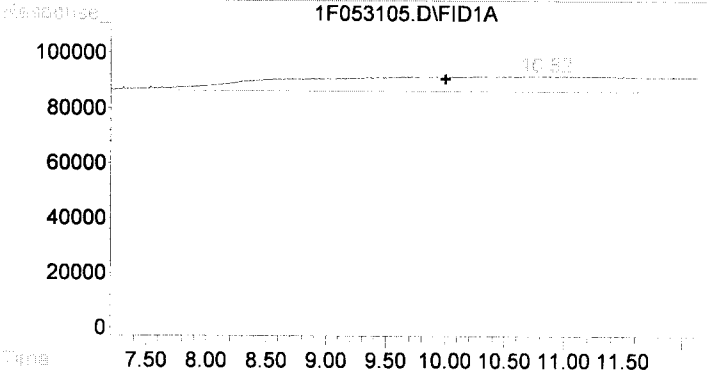
#6 o-Terphenyl

R.T.: 0.000 min
Exp R.T. : 6.800 min
Response: 0
Conc: N.D.



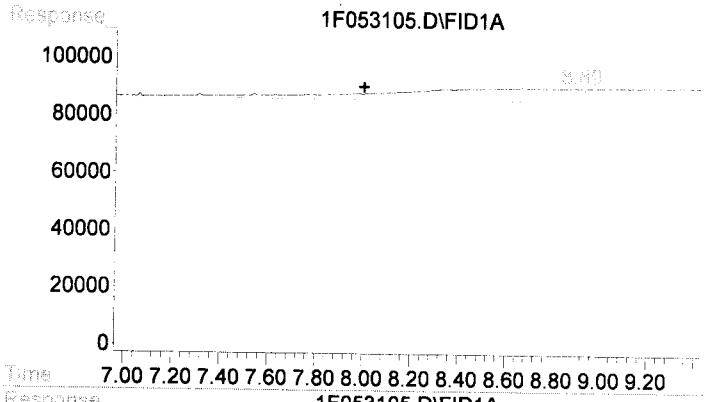
#7 OIL

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 20730379
Conc: 18.84 ug/mL m



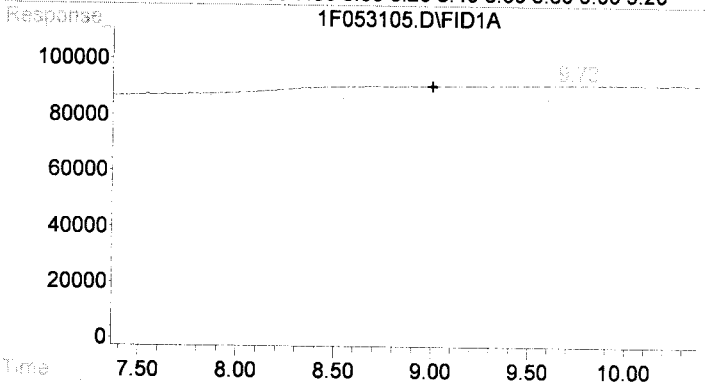
#8 RRO (C24-C40)

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 10595023
Conc: 9.63 ug/mL m



#9 Ca Luft ORO (C23-C32)

R.T.:	8.000 min
Delta R.T.:	0.000 min
Response:	2540796
Conc:	3.49 ug/mL m



#10 TPHmo (C25-C36)

R.T.:	9.000 min
Delta R.T.:	0.000 min
Response:	4793086
Conc:	7.22 ug/mL m

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053106.D Vial: 3
Acq On : 31 May 2019 21:47 Operator: KEH
Sample : 9051466-BLK1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:55 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc Units
		System Monitoring Compounds			
6)	S	o-Terphenyl	6.80	68374729	49.136 ug/mL
		Target Compounds			
1)	H	Mineral Oil	6.00	11466099	8.995 ug/ml
2)	H	Diesel	6.00	11466099	8.995 ug/mL
3)	H	DRO(C12-C24)	6.00	2788309	2.188 ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	2422298	2.584 ug/ml
5)	H	TPHd (C10-C25)	6.00	5144702	4.443 ug/ml
7)	H	OIL	10.00	18675088	16.970 ug/mL
8)	H	RRO (C24-C40)	10.00	10029253	9.113 ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	3735199	5.135 ug/mL
10)	H	TPHmo (C25-C36)	9.00	5204050	7.842 ug/mL

< 1/2 MRL

KEH 6/3/19

(f)=RT Delta > 1/2 window (m)=manual int.

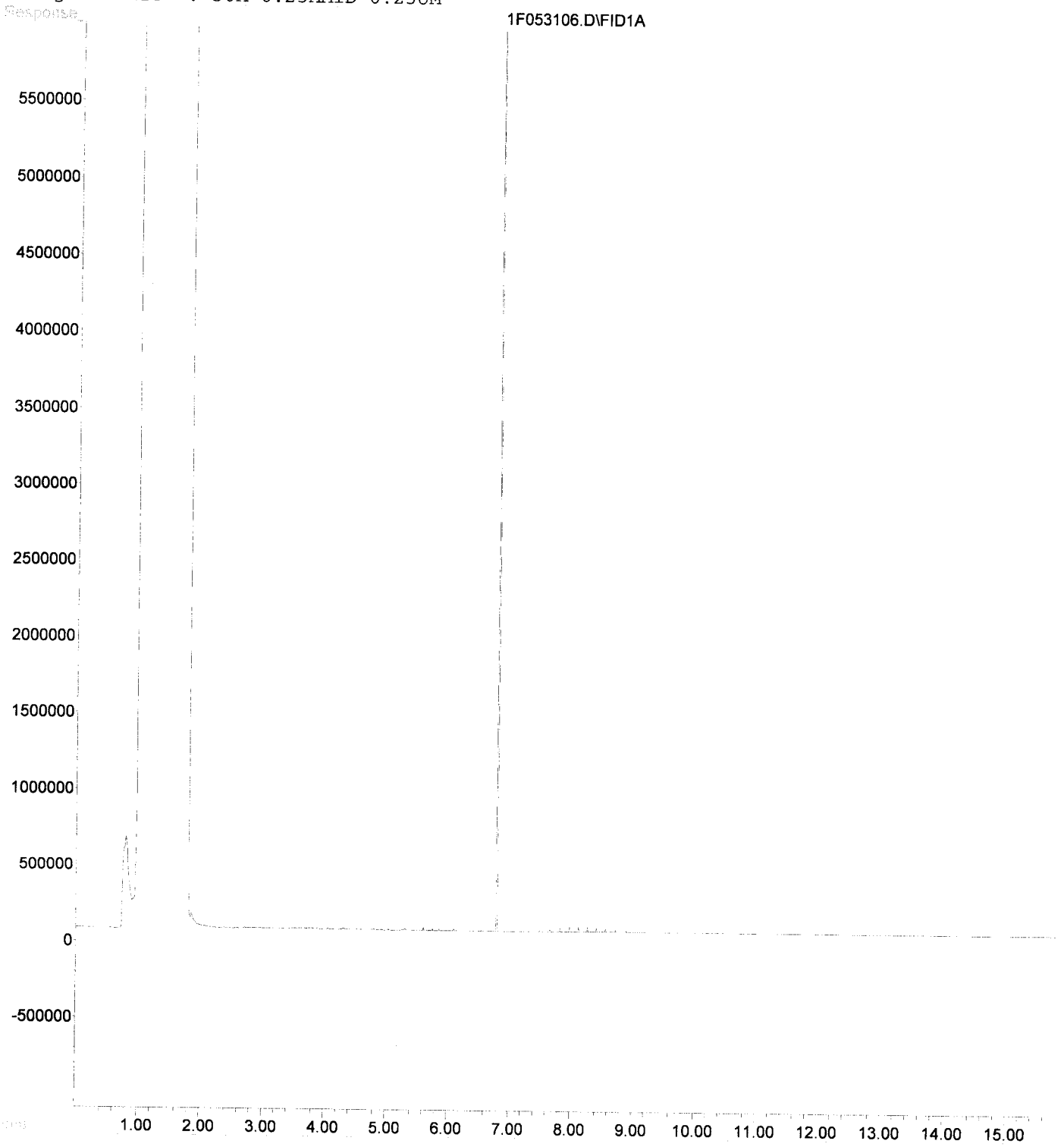
1F053106.D 1F90425D.M Mon Jun 03 07:55:56 2019 SV-GCMS3

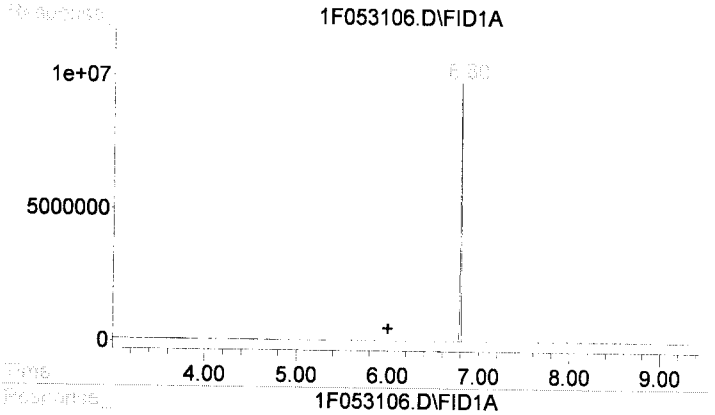
Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053106.D Vial: 3
Acq On : 31 May 2019 21:47 Operator: KEH
Sample : 9051466-BLK1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:55 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

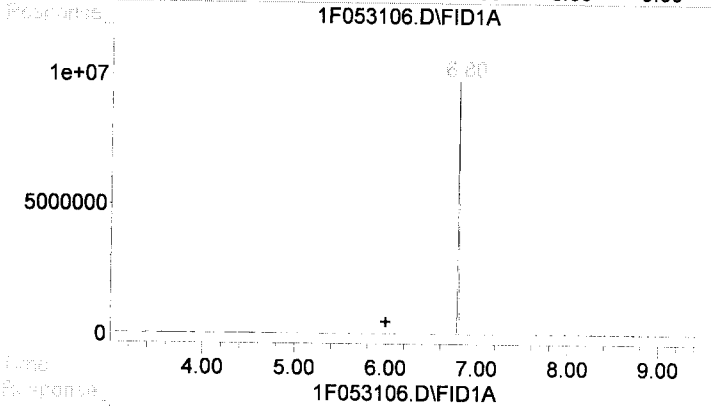
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





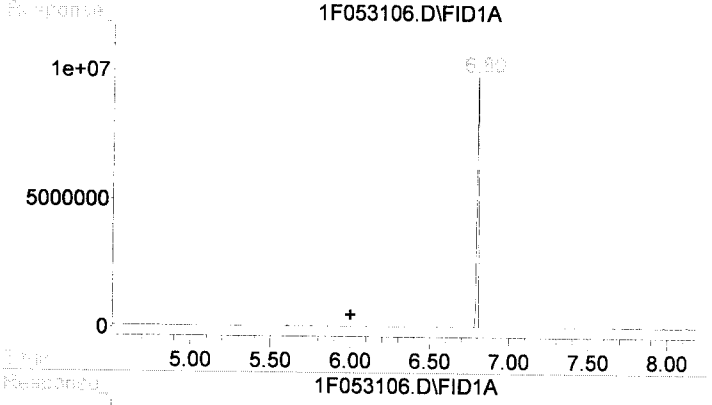
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 11466099
Conc: 9.00 ug/ml m



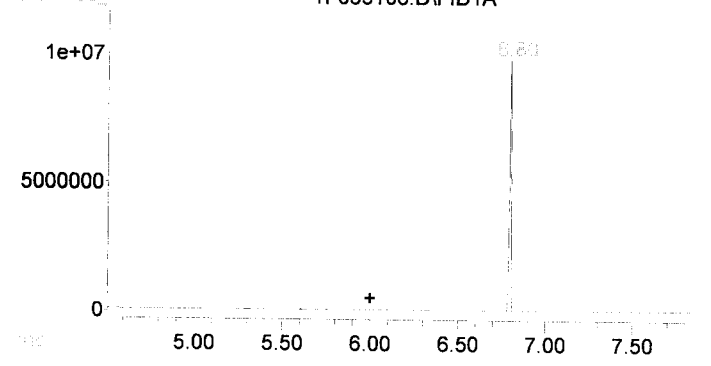
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 11466099
Conc: 9.00 ug/mL m



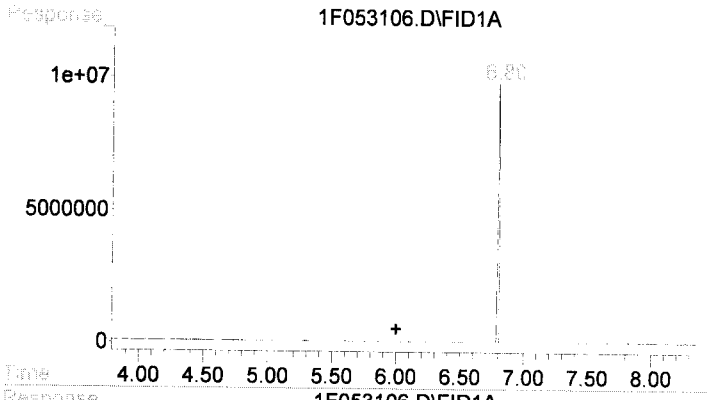
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 2788309
Conc: 2.19 ug/mL m



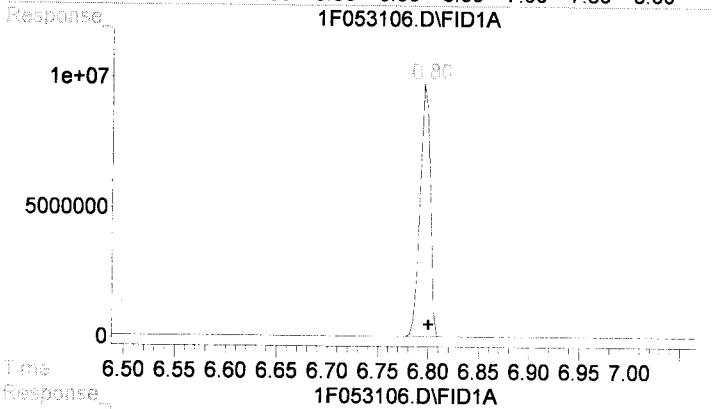
#4 Ca Luft DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 2422298
Conc: 2.58 ug/ml m



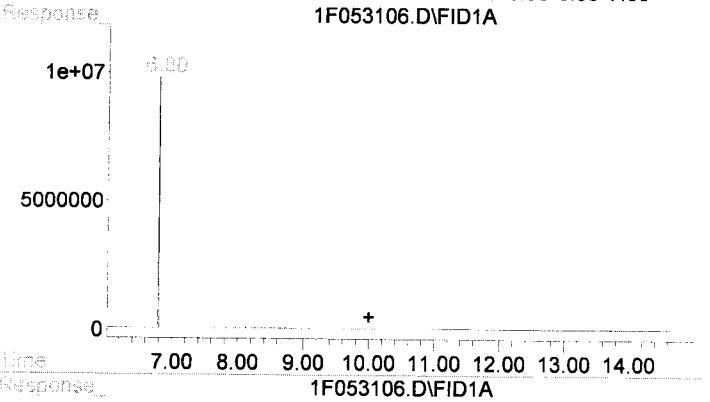
#5 TPHd (C10-C25)

R.T.:	6.000 min
Delta R.T.:	0.000 min
Response:	5144702
Conc:	4.44 ug/ml m



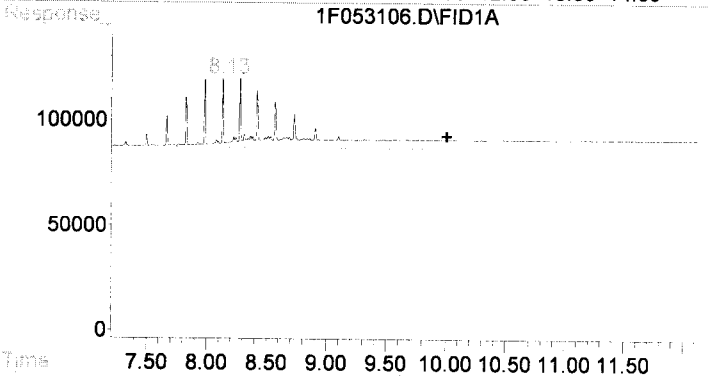
#6 o-Terphenyl

R.T.:	6.797 min
Delta R.T.:	-0.003 min
Response:	68374729
Conc:	49.14 ug/mL



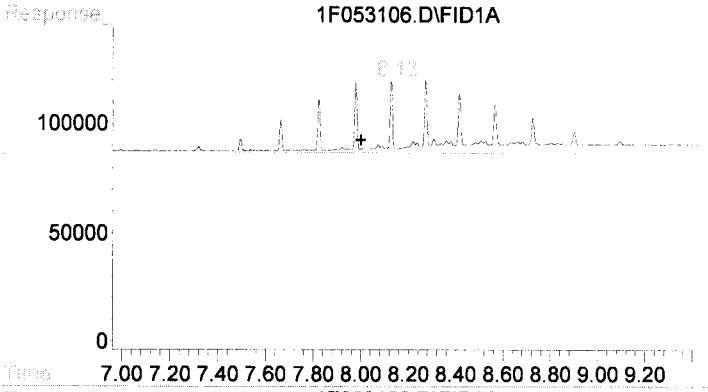
#7 OIL

R.T.:	10.000 min
Delta R.T.:	0.000 min
Response:	18675088
Conc:	16.97 ug/mL m



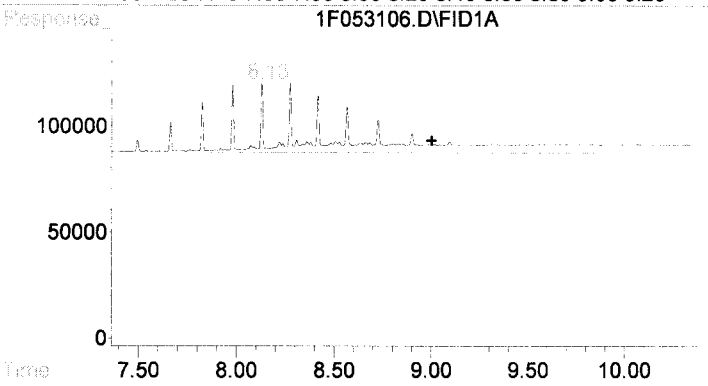
#8 RRO (C24-C40)

R.T.:	10.000 min
Delta R.T.:	0.000 min
Response:	10029253
Conc:	9.11 ug/mL m



#9 Ca Luft ORO (C23-C32)

R.T.:	8.000 min
Delta R.T.:	0.000 min
Response:	3735199
Conc:	5.14 ug/mL m



#10 TPHmo (C25-C36)

R.T.:	9.000 min
Delta R.T.:	0.000 min
Response:	5204050
Conc:	7.84 ug/mL m

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053107.D Vial: 4
Acq On : 31 May 2019 22:09 Operator: KEH
Sample : 9051466-BS1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:55 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc Units
		System Monitoring Compounds			
6)	S	o-Terphenyl	6.80	72126824	51.833 ug/mL
		Target Compounds			
1)	H	Mineral Oil	6.00	276680889	217.064 ug/ml
2)	H	Diesel	6.00	276680889	217.064 ug/mL
3)	H	DRO(C12-C24)	6.00	220469588	172.965 ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	210576756	224.651 ug/ml
5)	H	TPHd (C10-C25)	6.00	256061535	221.114 ug/ml
7)	H	OIL	10.00	74579462	67.769 ug/mL
8)	H	RRO (C24-C40)	10.00	6301543	5.726 ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	10330800	14.203 ug/mL
10)	H	TPHmo (C25-C36)	9.00	4225098	6.367 ug/mL

KEH 6/3/19

✓

✓

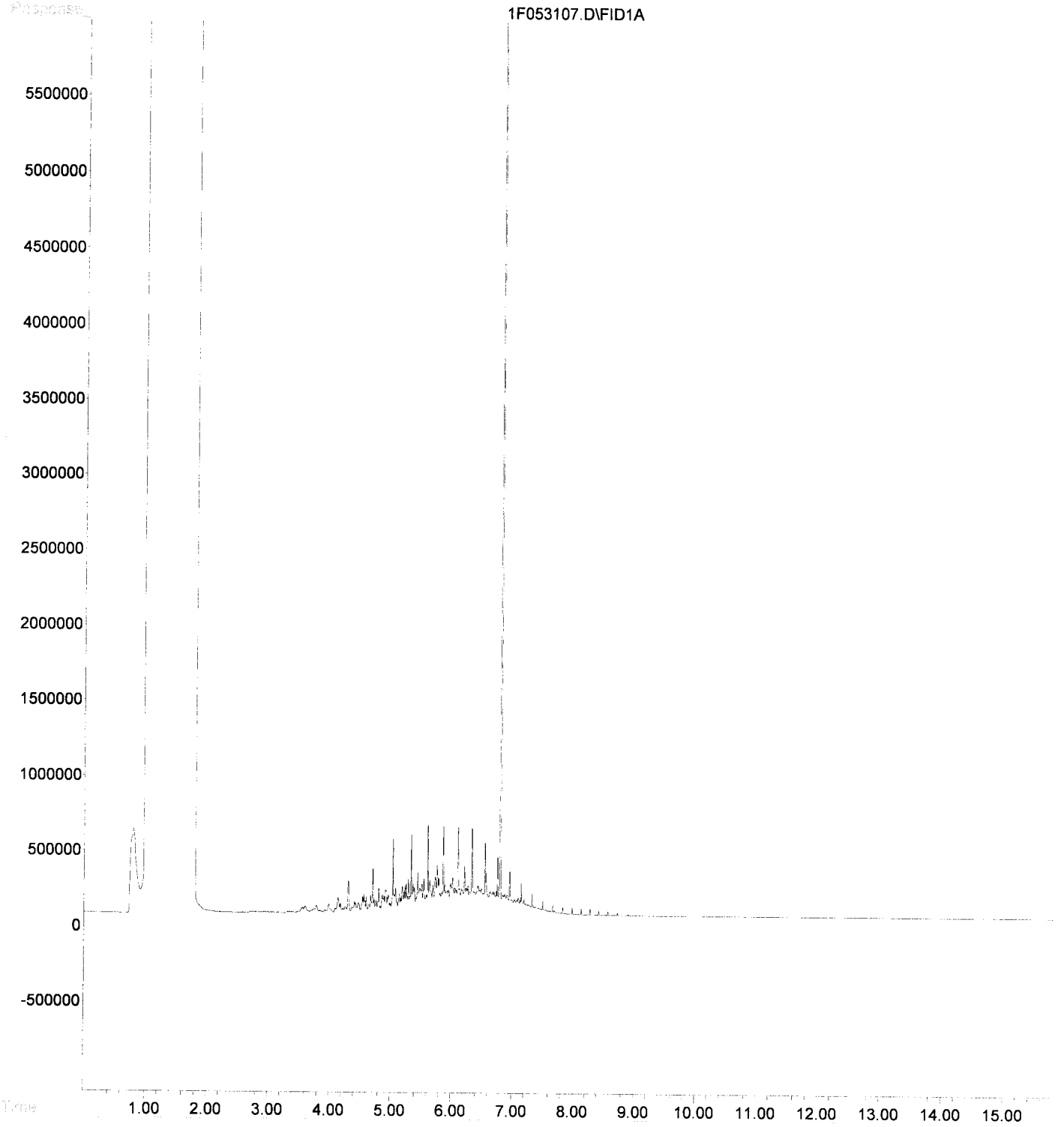
(f)=RT Delta > 1/2 Window (m)=manual inc.
1F053107.D 1F90425D.M Mon Jun 03 07:55:59 2019 SV-GCMS3

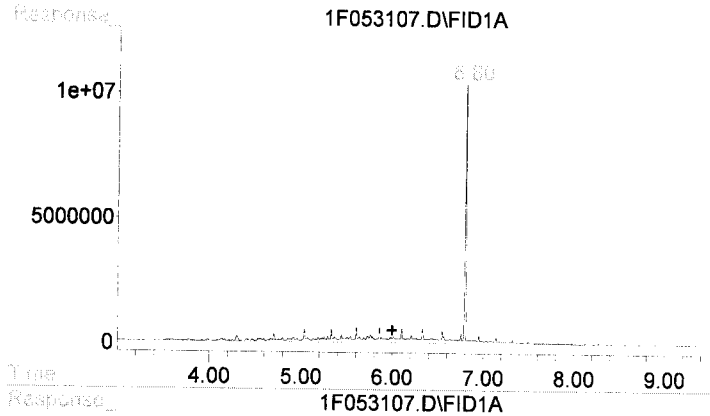
Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053107.D Vial: 4
Acq On : 31 May 2019 22:09 Operator: KEH
Sample : 9051466-BS1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:55 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

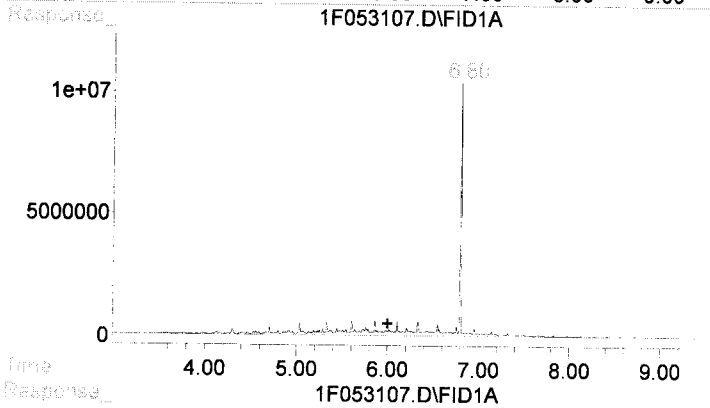
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





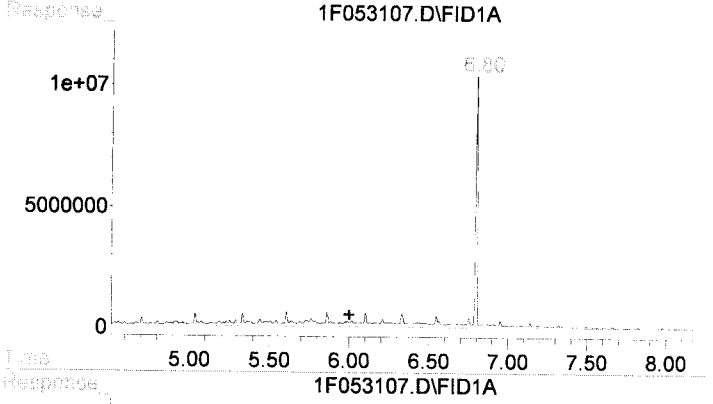
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 276680889
Conc: 217.06 ug/ml m



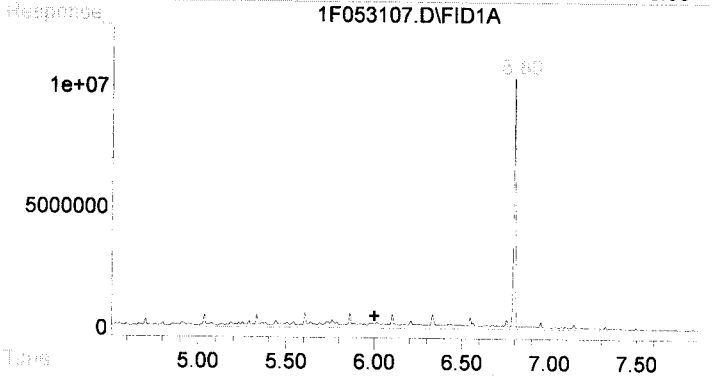
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 276680889
Conc: 217.06 ug/mL m



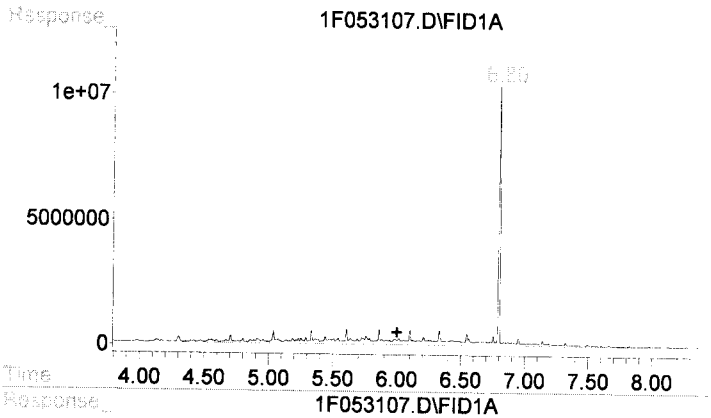
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 220469588
Conc: 172.96 ug/mL m



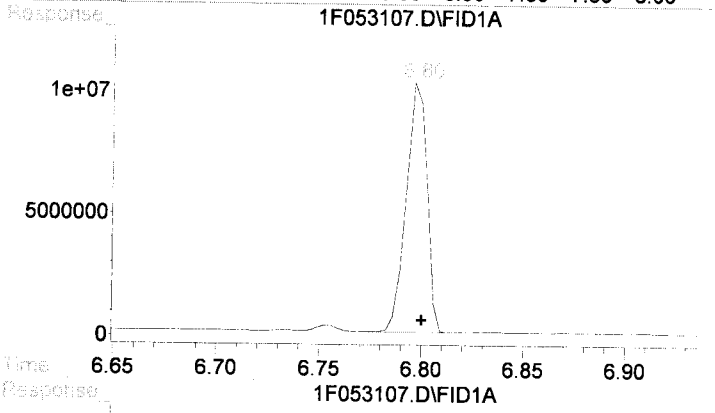
#4 Ca Luft DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 210576756
Conc: 224.65 ug/ml m



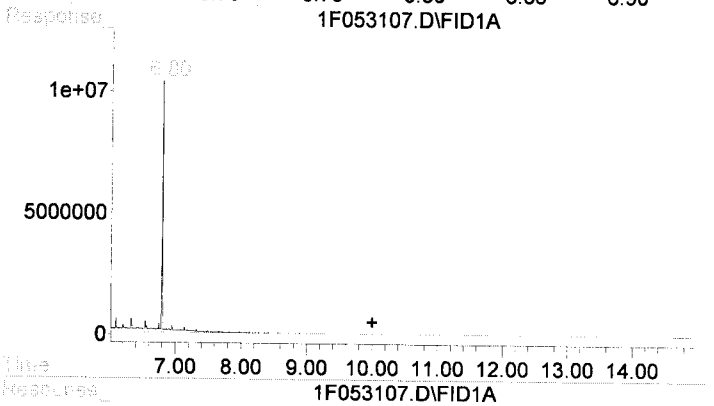
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 256061535
Conc: 221.11 ug/ml m



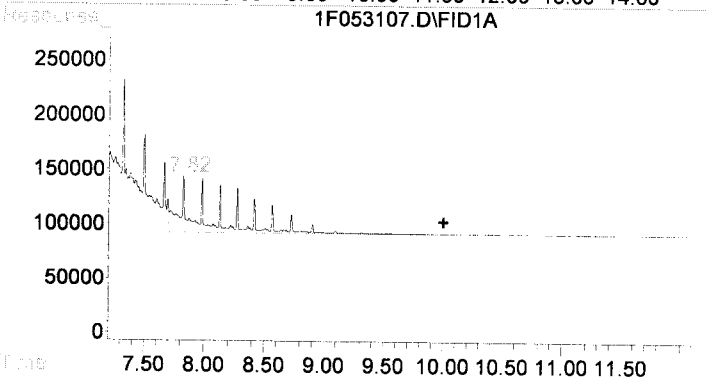
#6 o-Terphenyl

R.T.: 6.798 min
Delta R.T.: -0.002 min
Response: 72126824
Conc: 51.83 ug/mL



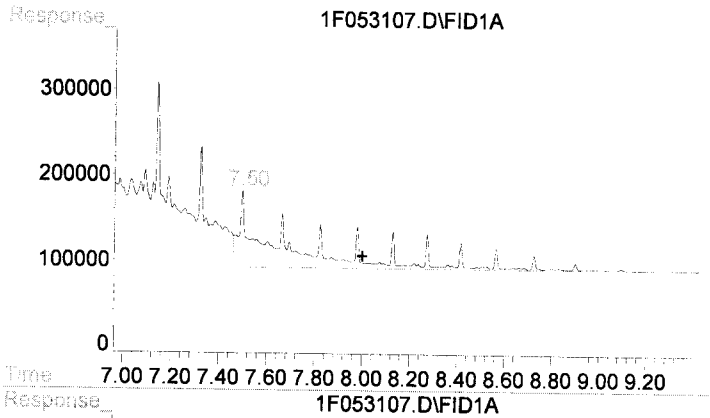
#7 OIL

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 74579462
Conc: 67.77 ug/mL m



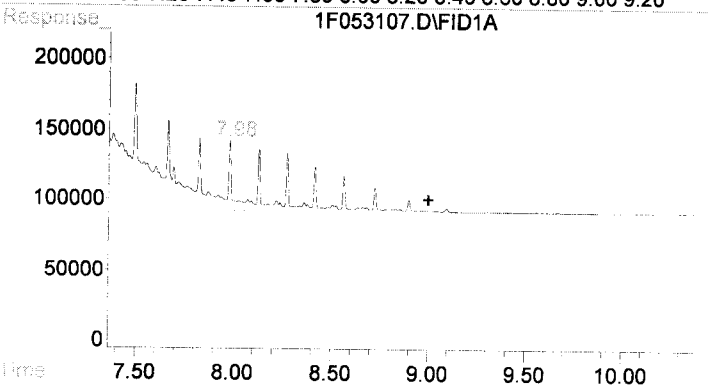
#8 RRO (C24-C40)

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 6301543
Conc: 5.73 ug/mL m



#9 Ca Luft ORO (C23-C32)

R.T.:	8.000 min
Delta R.T.:	0.000 min
Response:	10330800
Conc:	14.20 ug/mL m



#10 TPHmo (C25-C36)

R.T.:	9.000 min
Delta R.T.:	0.000 min
Response:	4225098
Conc:	6.37 ug/mL m

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053108.D Vial: 5
Acq On : 31 May 2019 22:32 Operator: KEH
Sample : 9051466-BS2 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:55 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc Units
		System Monitoring Compounds			
6)	S	o-Terphenyl	6.80	71254186	51.206 ug/mL
		Target Compounds			
1)	H	Mineral Oil	6.00	262760375	206.143 ug/ml
2)	H	Diesel	6.00	262760375	206.143 ug/mL ✓
3)	H	DRO(C12-C24)	6.00	210452058	165.106 ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	200760982	214.179 ug/ml
5)	H	TPHd (C10-C25)	6.00	243073122	209.898 ug/ml
7)	H	OIL	10.00	74664197	67.846 ug/mL
8)	H	RRO (C24-C40)	10.00	7942236	7.217 ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	11732686	16.131 ug/mL
10)	H	TPHmo (C25-C36)	9.00	5739196	8.648 ug/mL

KEH 6/3/19

✓

(f)=RT Delta > 1/2 Window (m)=manual int.

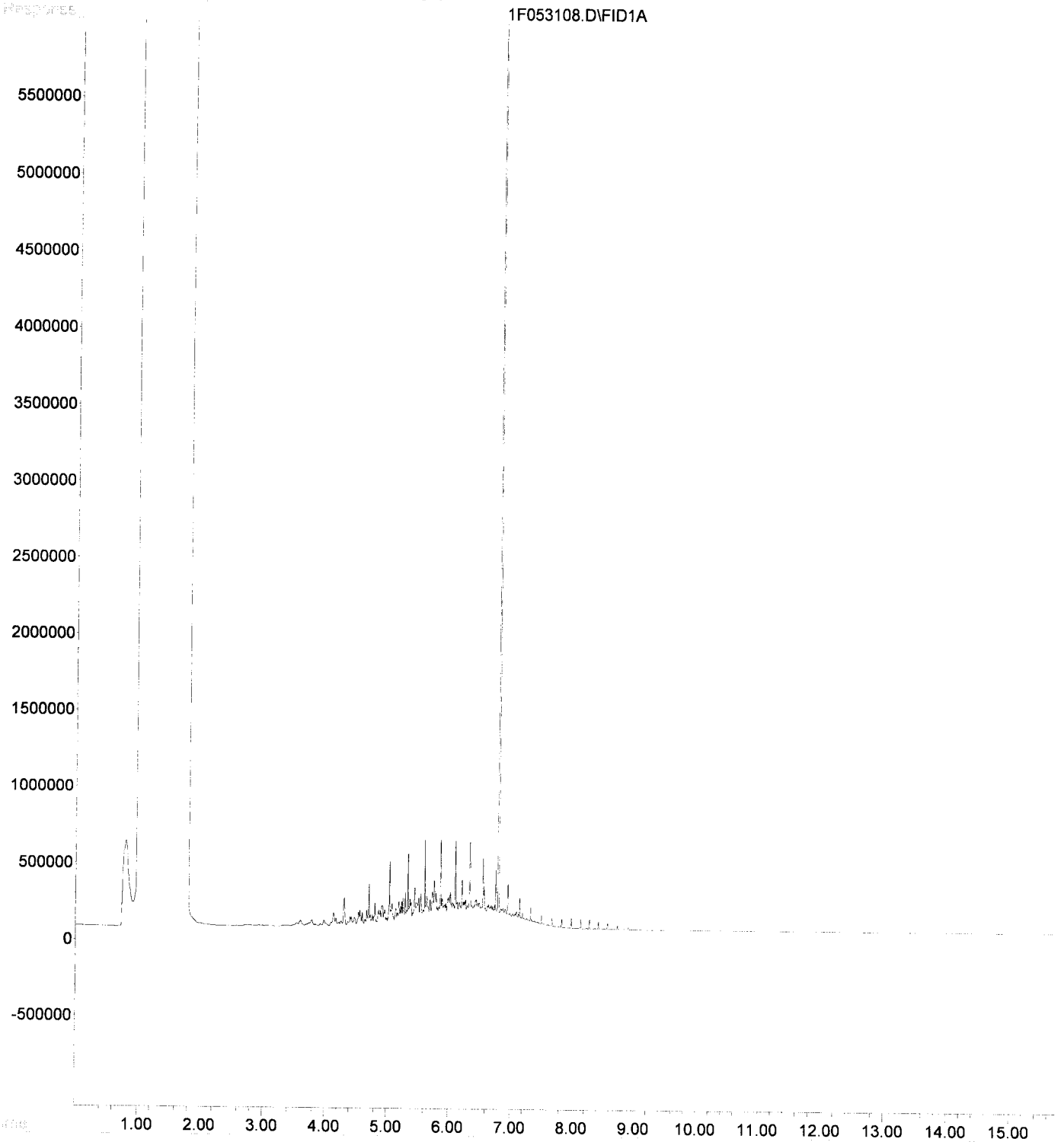
1F053108.D 1F90425D.M Mon Jun 03 07:56:01 2019 SV-GCMS3

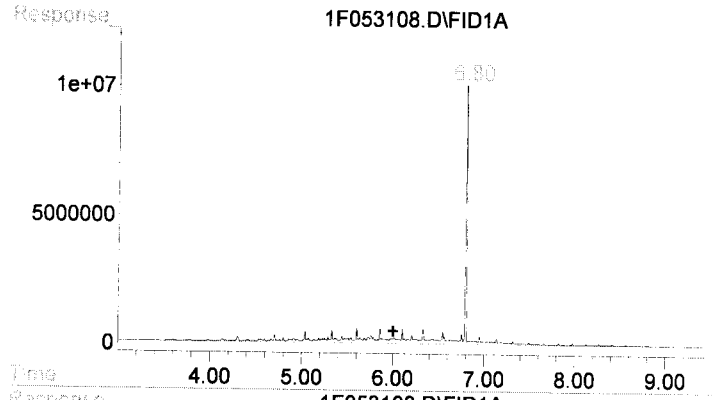
Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053108.D Vial: 5
Acq On : 31 May 2019 22:32 Operator: KEH
Sample : 9051466-BS2 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:55 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

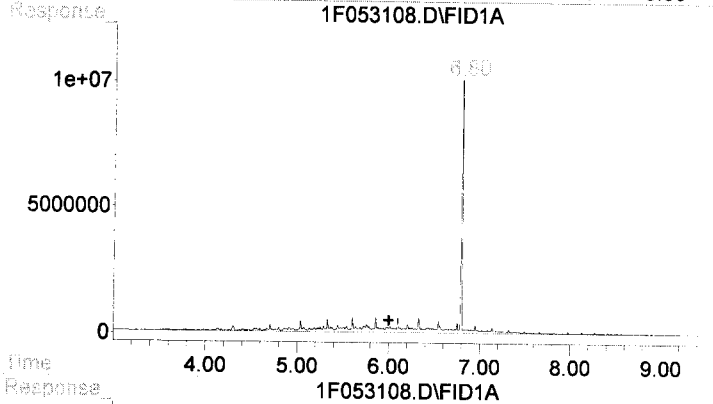
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





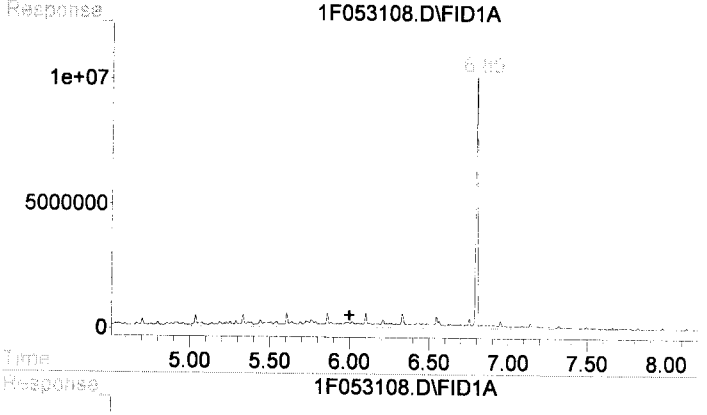
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 262760375
Conc: 206.14 ug/ml m



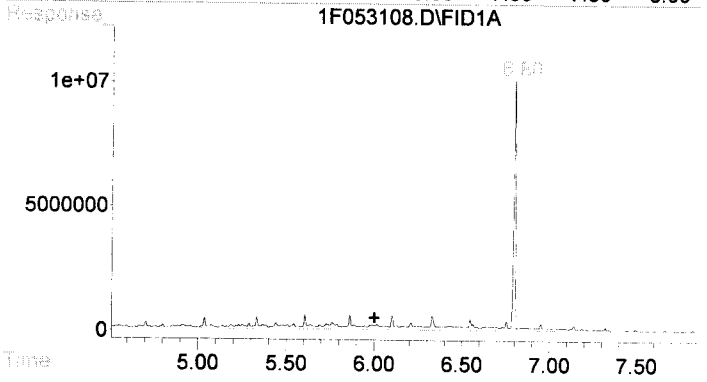
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 262760375
Conc: 206.14 ug/mL m



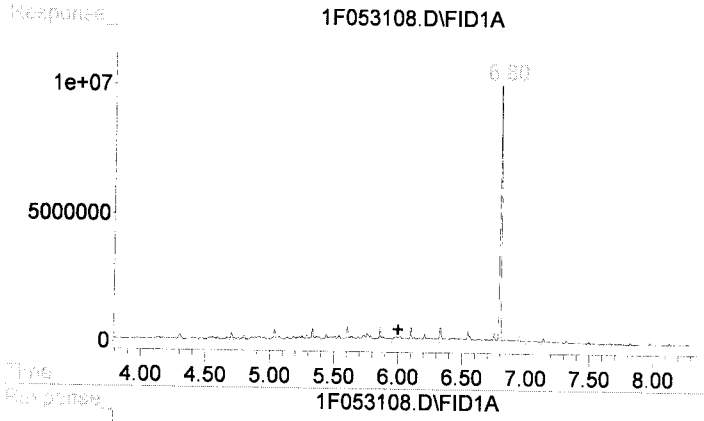
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 210452058
Conc: 165.11 ug/mL m



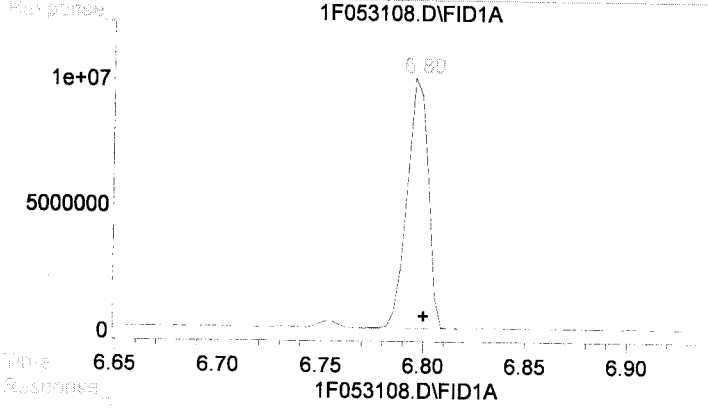
#4 Ca Luft DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 200760982
Conc: 214.18 ug/ml m



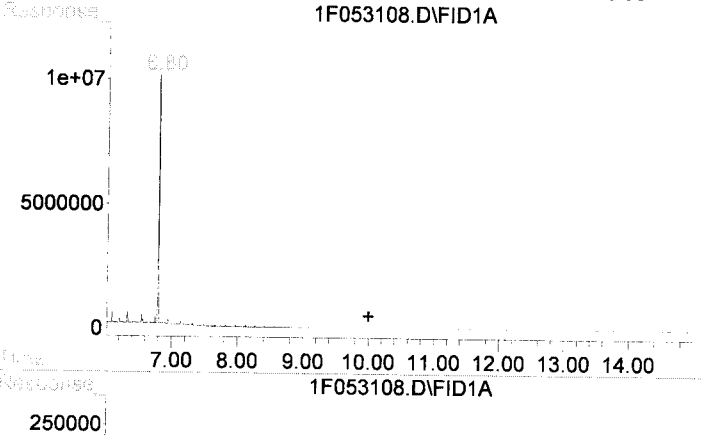
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 243073122
Conc: 209.90 ug/ml m



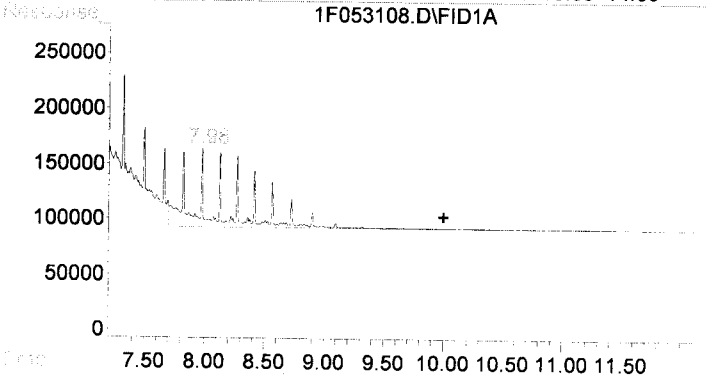
#6 o-Terphenyl

R.T.: 6.798 min
Delta R.T.: -0.002 min
Response: 71254186
Conc: 51.21 ug/mL



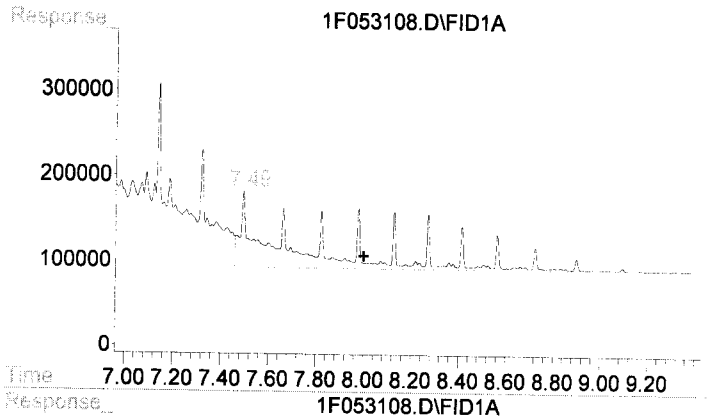
#7 OIL

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 74664197
Conc: 67.85 ug/mL m



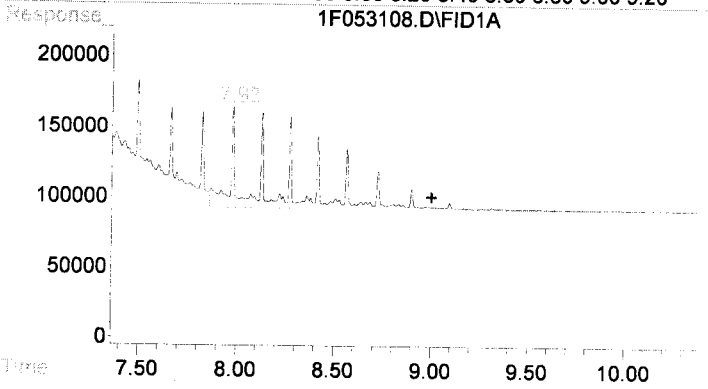
#8 RRO (C24-C40)

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 7942236
Conc: 7.22 ug/mL m



#9 Ca Luft ORO (C23-C32)

R.T.:	8.000 min
Delta R.T.:	0.000 min
Response:	11732686
Conc:	16.13 ug/mL m



#10 TPHmo (C25-C36)

R.T.:	9.000 min
Delta R.T.:	0.000 min
Response:	5739196
Conc:	8.65 ug/mL m

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053109.D
Acq On : 31 May 2019 22:55
Sample : 9051466-BS3
Misc :
IntFile : SUR.E
Quant Time: Jun 3 7:55 2019 Quant Results File: 1F90425D.RES

Vial: 6
Operator: KEH
Inst : HP G1530A
Multiplr: 1.00

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc Units
		System Monitoring Compounds			
6)	S	o-Terphenyl	6.80	74956099	53.866 ug/mL
		Target Compounds			
1)	H	Mineral Oil	6.00	277175233	217.452 ug/ml
2)	H	Diesel	6.00	277175233	217.452 ug/mL ✓
3)	H	DRO(C12-C24)	6.00	220850751	173.264 ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	210582820	224.657 ug/ml
5)	H	TPHd (C10-C25)	6.00	257476959	222.336 ug/ml
7)	H	OIL	10.00	74753283	67.927 ug/mL
8)	H	RRO (C24-C40)	10.00	6469004	5.878 ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	10527076	14.473 ug/mL
10)	H	TPHmo (C25-C36)	9.00	4464815	6.728 ug/mL

Kelli 6/3/19

J

(f)=RT Delta > 1/2 window (m)=manual int.

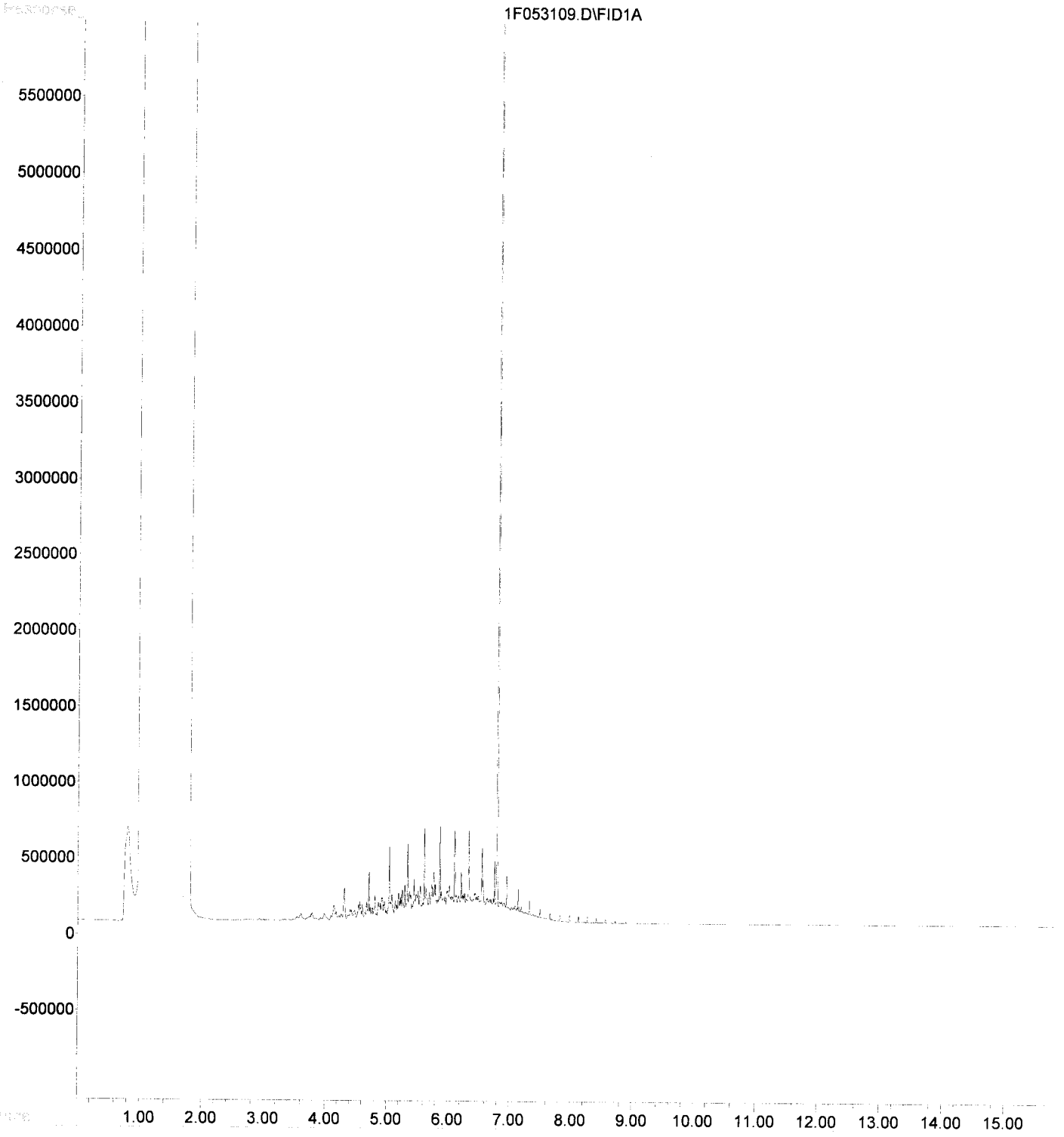
1F053109.D 1F90425D.M Mon Jun 03 07:56:05 2019 SV-GCMS3

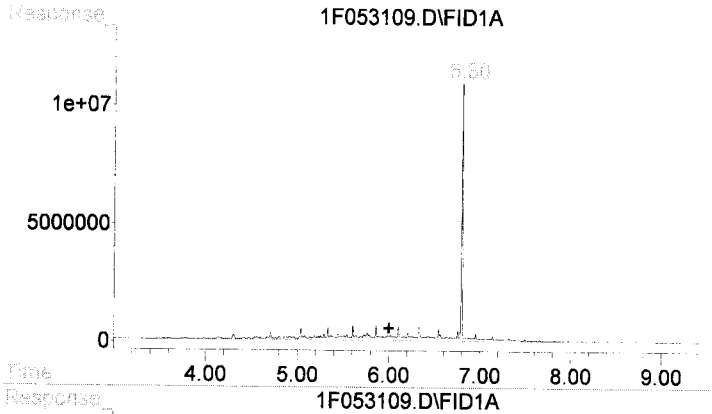
Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053109.D Vial: 6
Acq On : 31 May 2019 22:55 Operator: KEH
Sample : 9051466-BS3 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:55 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

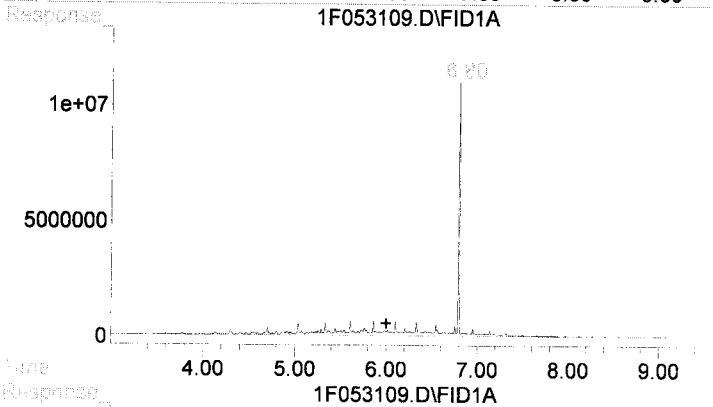
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





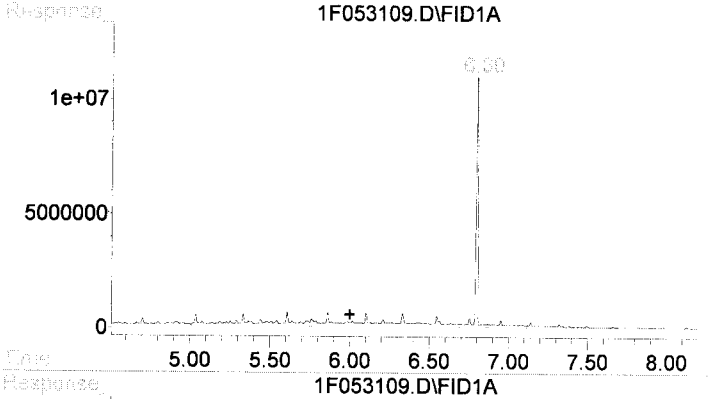
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 277175233
Conc: 217.45 ug/ml m



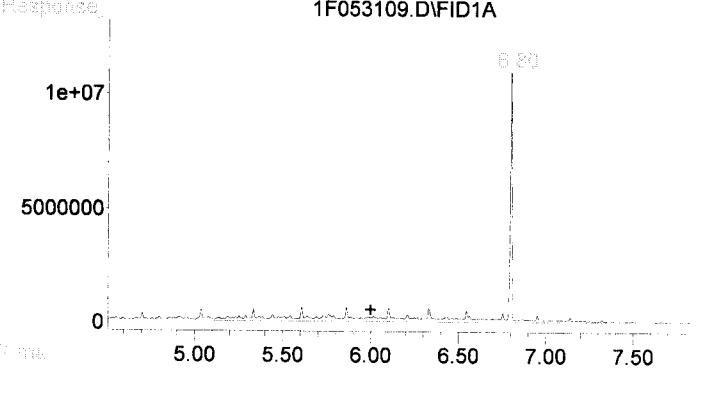
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 277175233
Conc: 217.45 ug/mL m



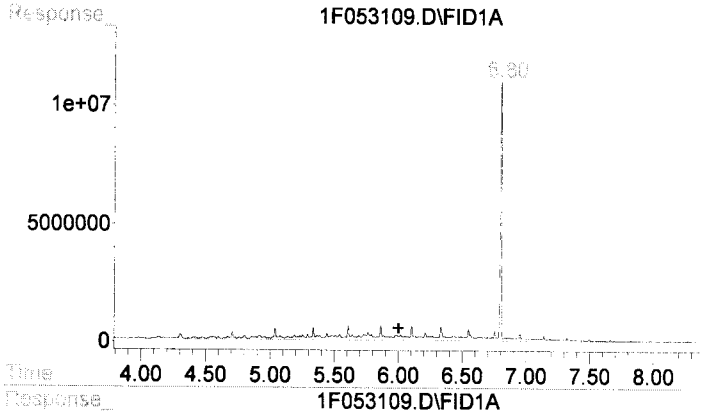
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 220850751
Conc: 173.26 ug/mL m



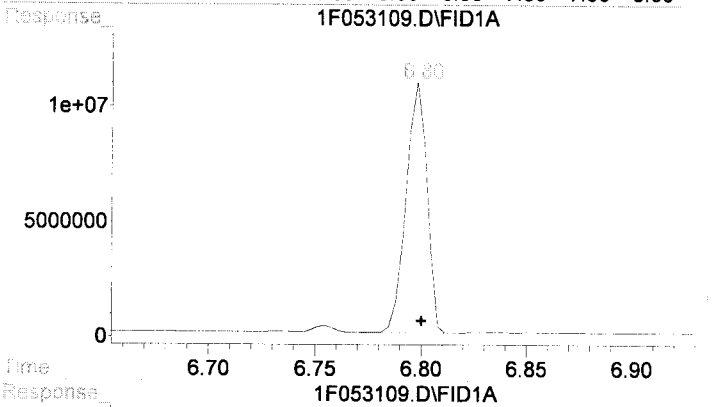
#4 Ca Luft DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 210582820
Conc: 224.66 ug/ml m



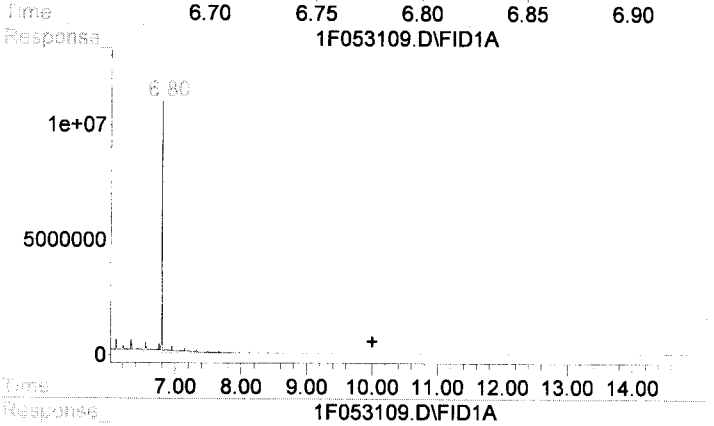
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 257476959
Conc: 222.34 ug/ml m



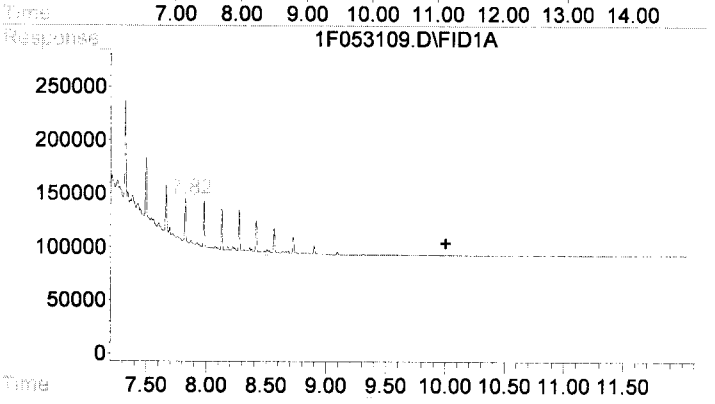
#6 o-Terphenyl

R.T.: 6.799 min
Delta R.T.: -0.001 min
Response: 74956099
Conc: 53.87 ug/mL



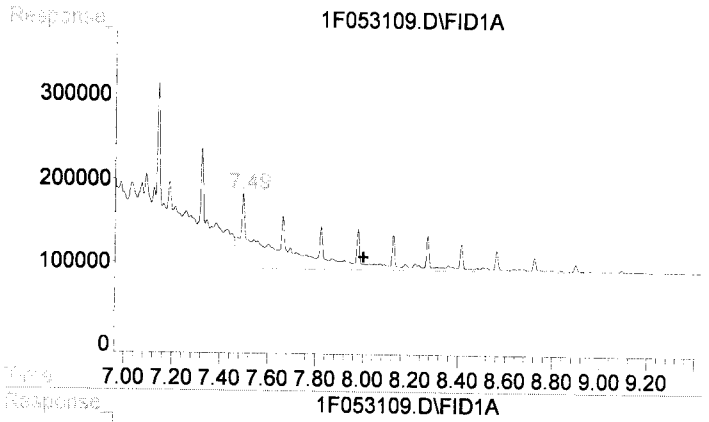
#7 OIL

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 74753283
Conc: 67.93 ug/mL m



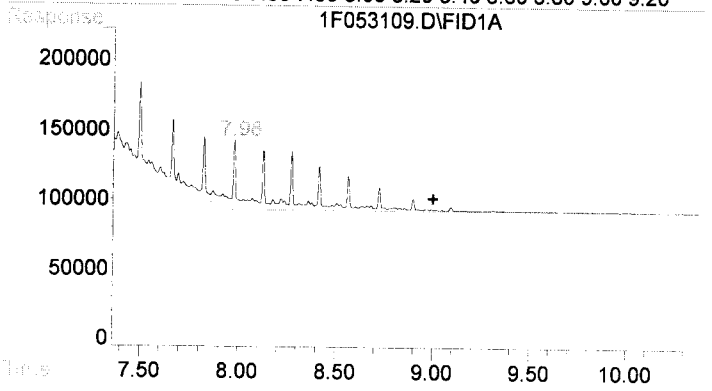
#8 RRO (C24-C40)

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 6469004
Conc: 5.88 ug/mL m



#9 Ca Luft ORO (C23-C32)

R.T.:	8.000 min
Delta R.T.:	0.000 min
Response:	10527076
Conc:	14.47 ug/mL m



#10 TPHmo (C25-C36)

R.T.:	9.000 min
Delta R.T.:	0.000 min
Response:	4464815
Conc:	6.73 ug/mL m

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053110.D Vial: 7
Acq On : 31 May 2019 23:17 Operator: KEH
Sample : 9051466-BS4 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:55 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	6.80	73347948	52.710	ug/mL
		Target Compounds				
1)	H	Mineral Oil	6.00	276153842	216.651	ug/ml
2)	H	Diesel	6.00	276153842	216.651	ug/mL
3)	H	DRO(C12-C24)	6.00	219847917	172.477	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	210223374	224.274	ug/ml
5)	H	TPHd (C10-C25)	6.00	256702570	221.668	ug/ml
7)	H	OIL	10.00	74717239	67.894	ug/mL
8)	H	RRO (C24-C40)	10.00	6847820	6.223	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	10933383	15.032	ug/mL
10)	H	TPHmo (C25-C36)	9.00	4750624	7.159	ug/mL

KEH 6/3/19

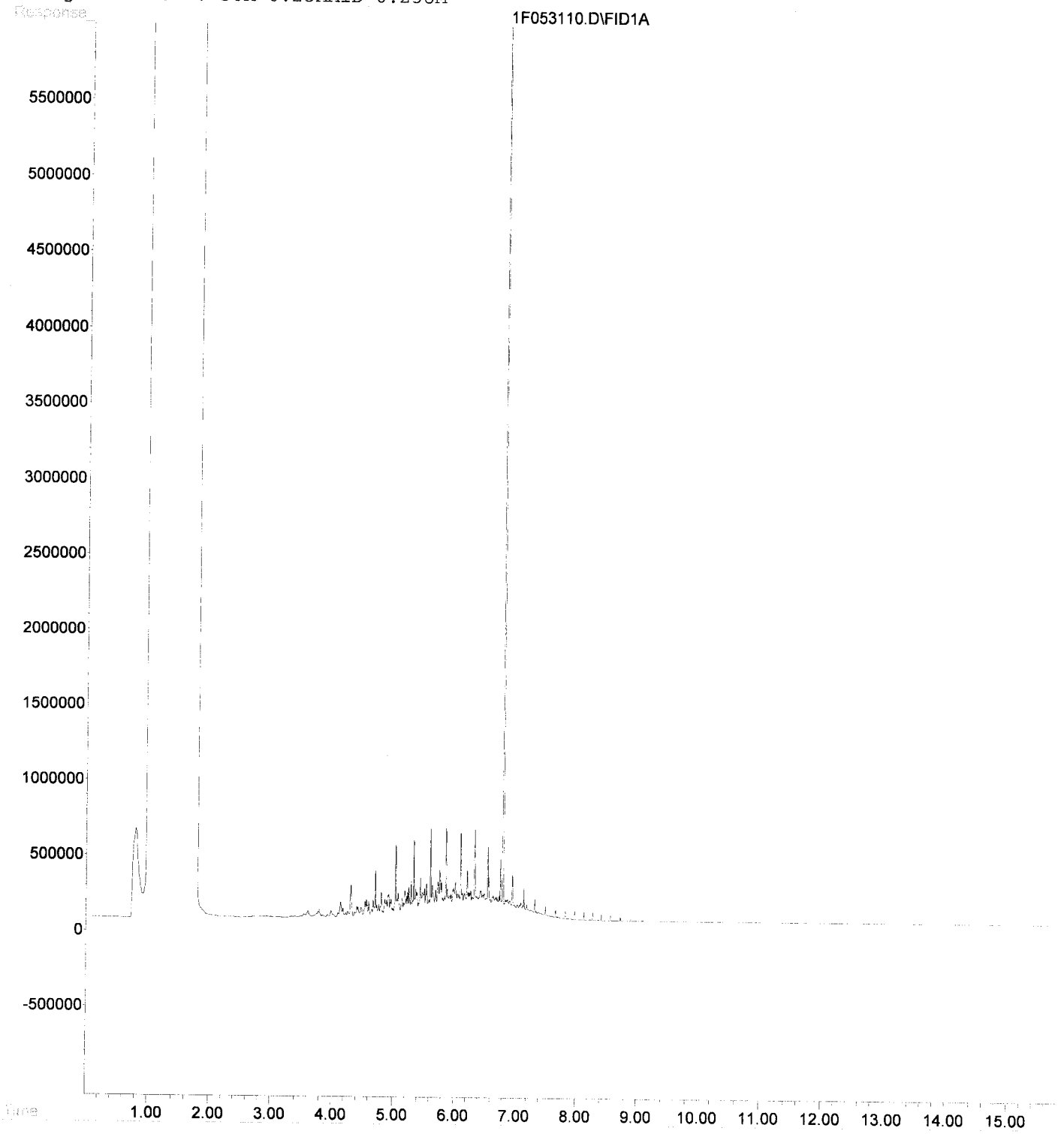
(f)=RT Delta > 1/2 window (m)=manual int.

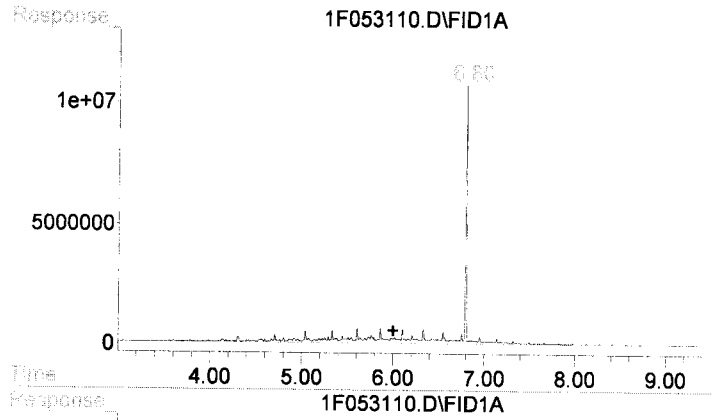
Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053110.D Vial: 7
Acq On : 31 May 2019 23:17 Operator: KEH
Sample : 9051466-BS4 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:55 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

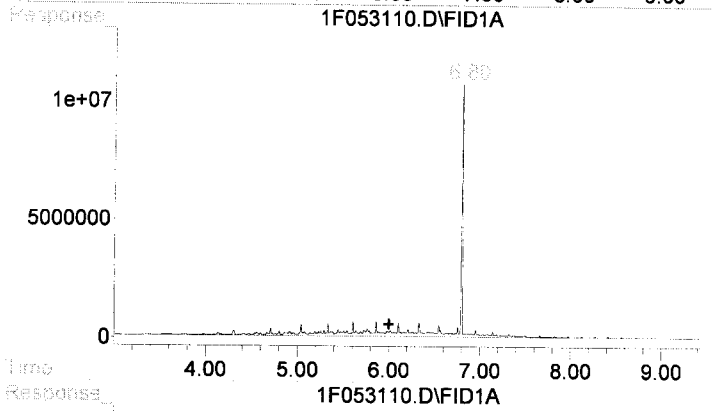
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





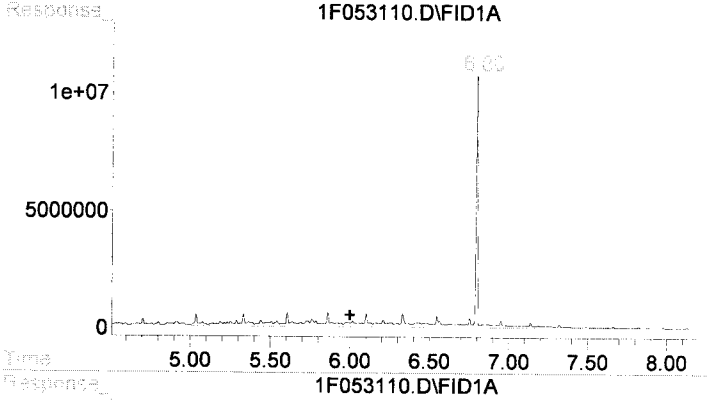
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 276153842
Conc: 216.65 ug/ml m



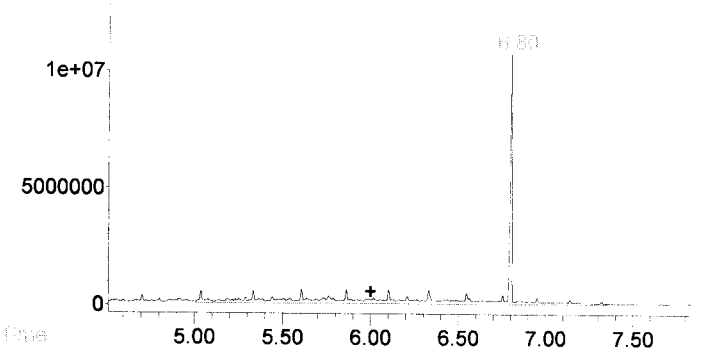
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 276153842
Conc: 216.65 ug/mL m



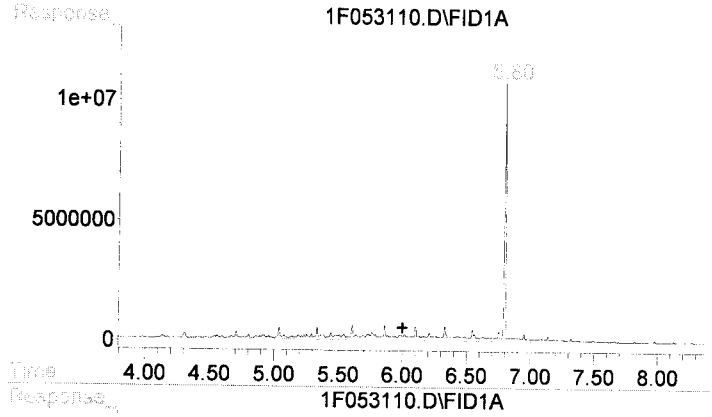
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 219847917
Conc: 172.48 ug/mL m



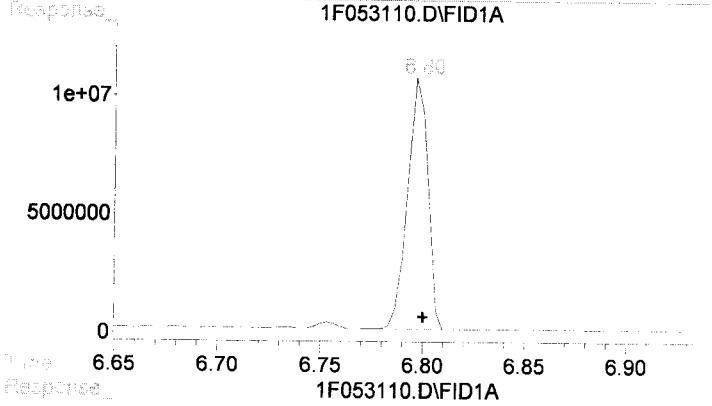
#4 Ca Luft DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 210223374
Conc: 224.27 ug/ml m



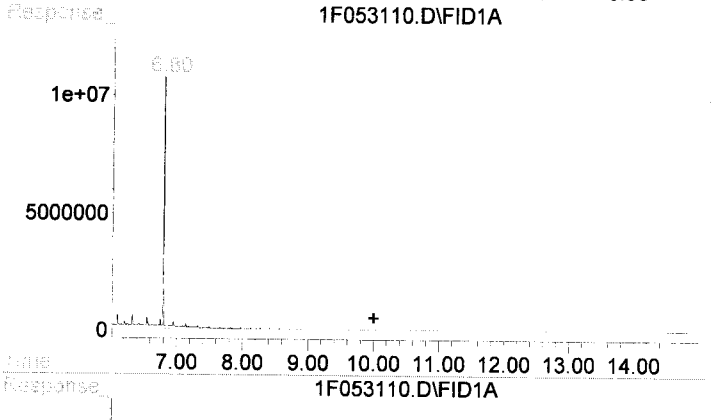
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 256702570
Conc: 221.67 ug/ml m



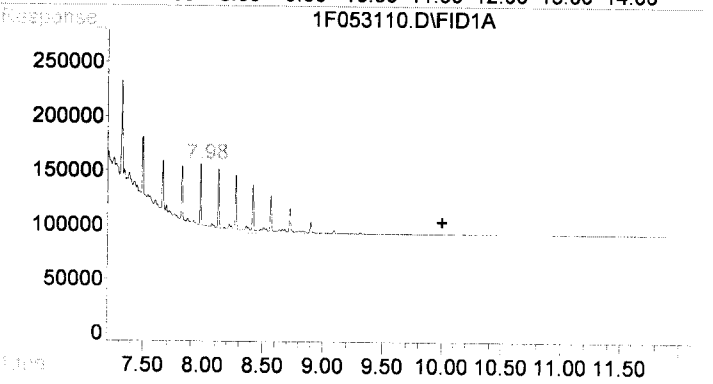
#6 o-Terphenyl

R.T.: 6.798 min
Delta R.T.: -0.002 min
Response: 73347948
Conc: 52.71 ug/mL



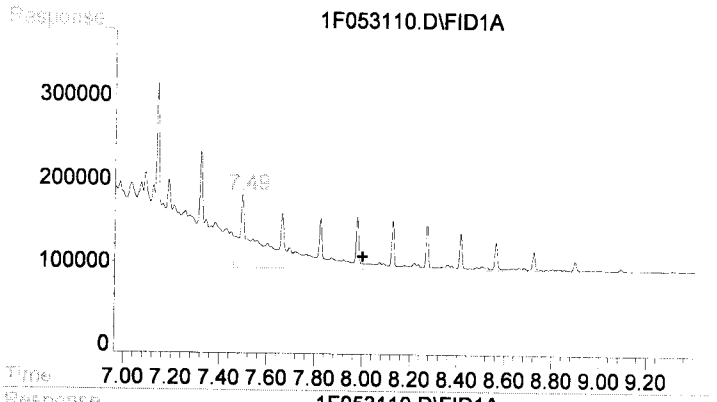
#7 OIL

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 74717239
Conc: 67.89 ug/mL m



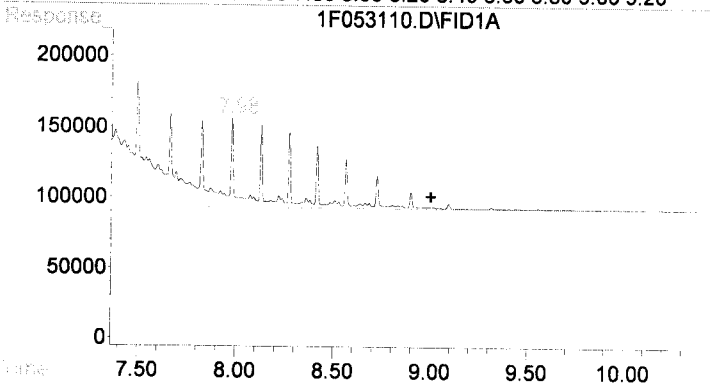
#8 RRO (C24-C40)

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 6847820
Conc: 6.22 ug/mL m



#9 Ca Luft ORO (C23-C32)

R.T.:	8.000 min
Delta R.T.:	0.000 min
Response:	10933383
Conc:	15.03 ug/mL m



#10 TPHmo (C25-C36)

R.T.:	9.000 min
Delta R.T.:	0.000 min
Response:	4750624
Conc:	7.16 ug/mL m

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053112.D Vial: 8
Acq On : 1 Jun 2019 00:03 Operator: KEH
Sample : 9051469-BLK1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:55 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc Units
		System Monitoring Compounds			
6)	S	o-Terphenyl	6.80	63579945	45.691 ug/mL
		Target Compounds			
1)	H	Mineral Oil	6.00	9762900	7.659 ug/ml
2)	H	Diesel	6.00	9762900	7.659 ug/mL
3)	H	DRO(C12-C24)	6.00	2724132	2.137 ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	2447298	2.611 ug/ml
5)	H	TPHd (C10-C25)	6.00	4862319	4.199 ug/ml
7)	H	OIL	10.00	13997255	12.719 ug/mL
8)	H	RRO (C24-C40)	10.00	7324840	6.656 ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	2103006	2.891 ug/mL
10)	H	TPHmo (C25-C36)	9.00	3551603	5.352 ug/mL

< 1/2 MRL

KEH 6/3/19

✓

(f)=RT Delta > 1/2 window (m)=manual int.

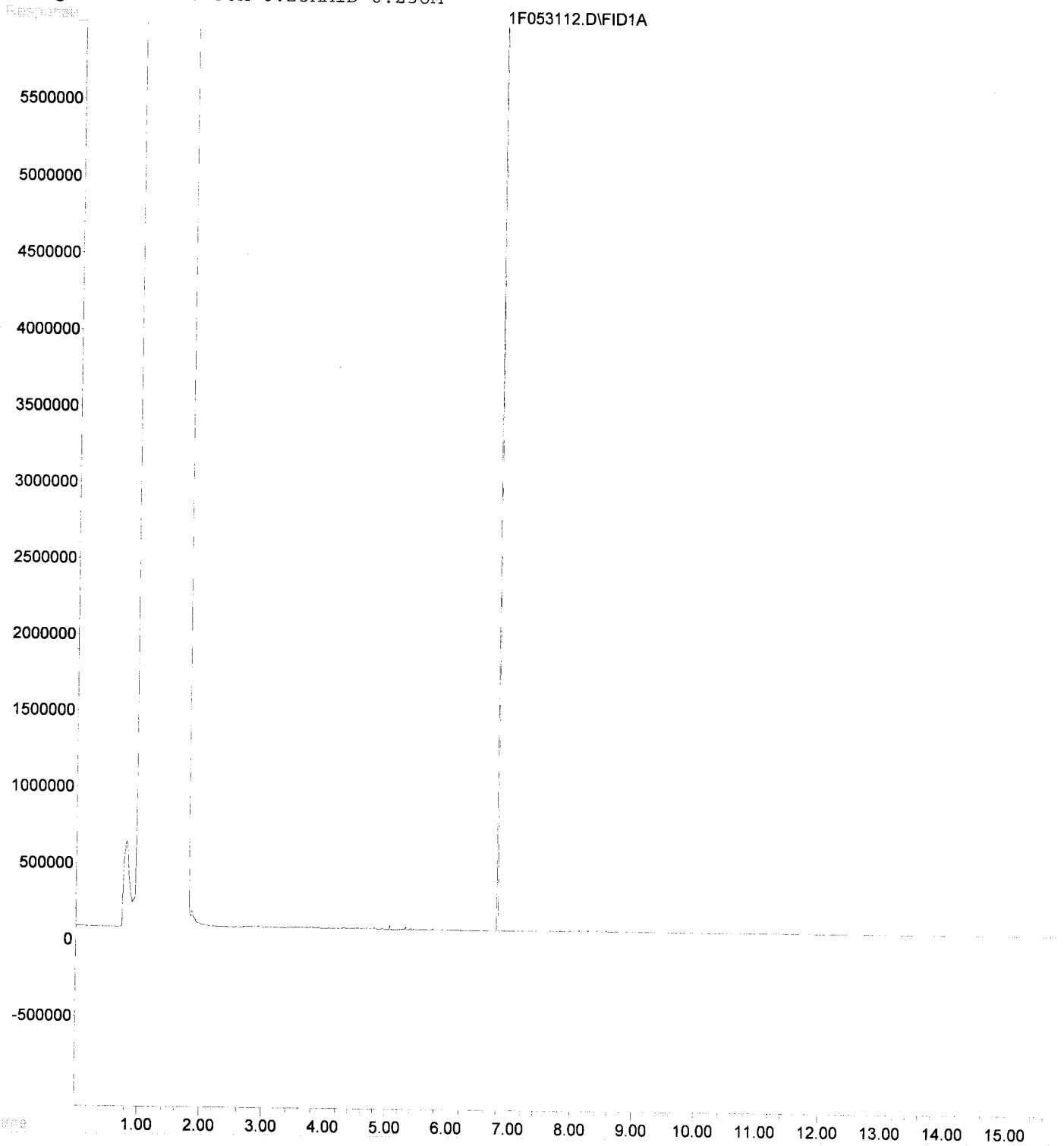
1F053112.D 1F90425D.M Mon Jun 03 07:56:13 2019 SV-GCMS3

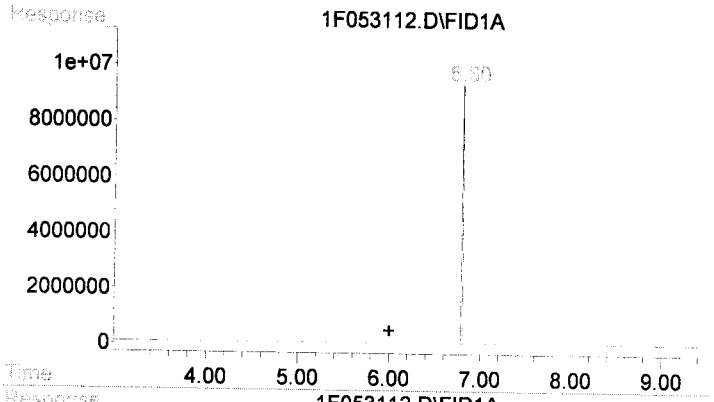
Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053112.D Vial: 8
Acq On : 1 Jun 2019 00:03 Operator: KEH
Sample : 9051469-BLK1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:55 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

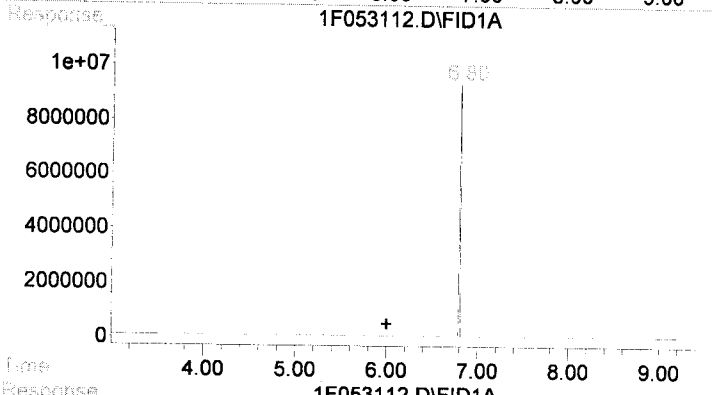
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





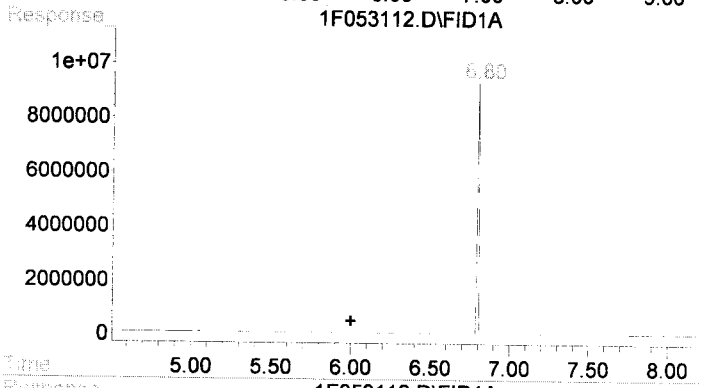
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 9762900
Conc: 7.66 ug/ml m



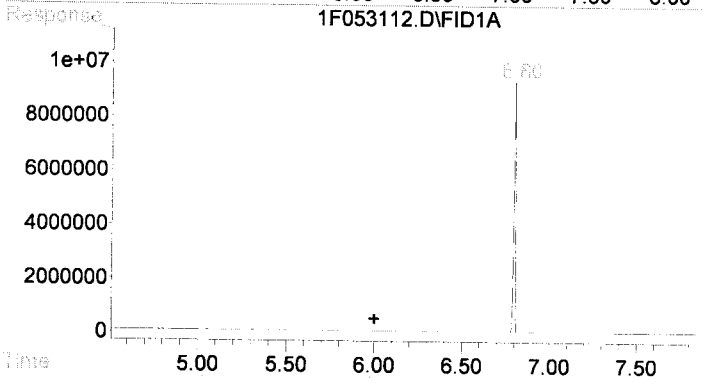
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 9762900
Conc: 7.66 ug/mL m



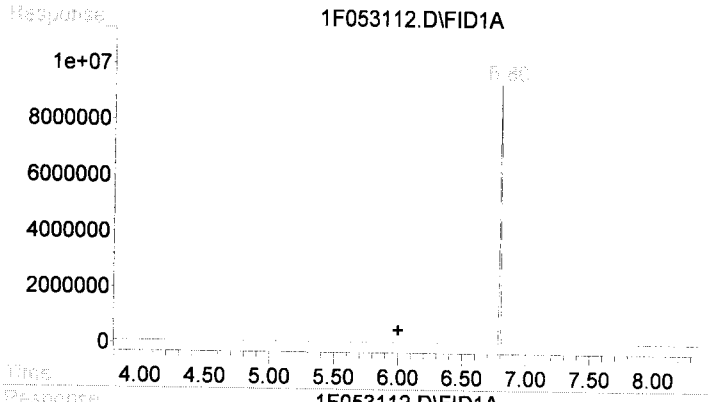
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 2724132
Conc: 2.14 ug/mL m



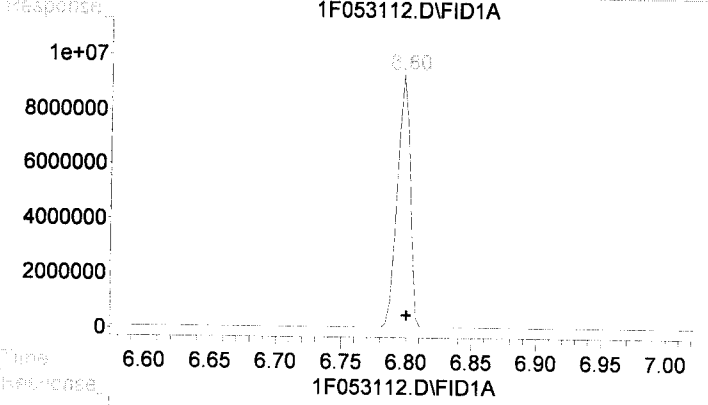
#4 Ca Luft DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 2447298
Conc: 2.61 ug/ml m



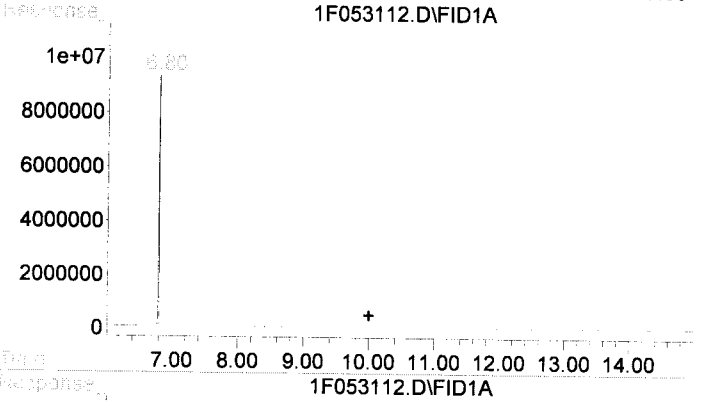
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 4862319
Conc: 4.20 ug/ml m



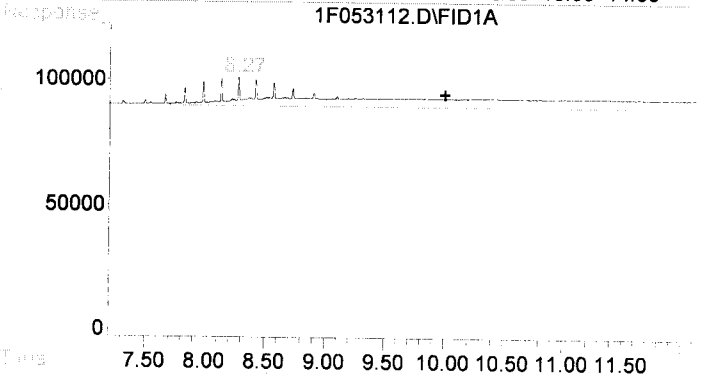
#6 o-Terphenyl

R.T.: 6.798 min
Delta R.T.: -0.002 min
Response: 63579945
Conc: 45.69 ug/mL



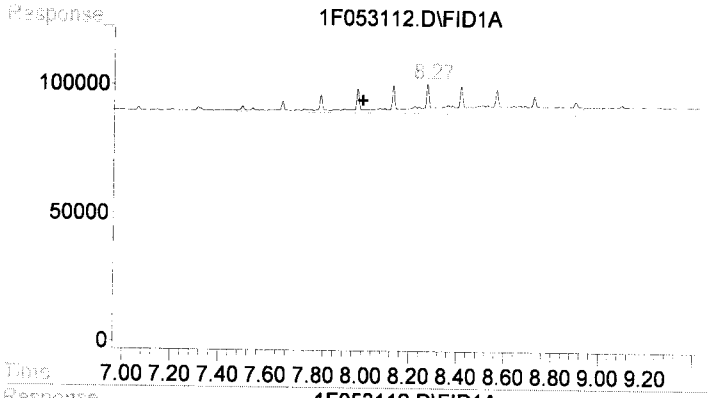
#7 OIL

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 13997255
Conc: 12.72 ug/mL m



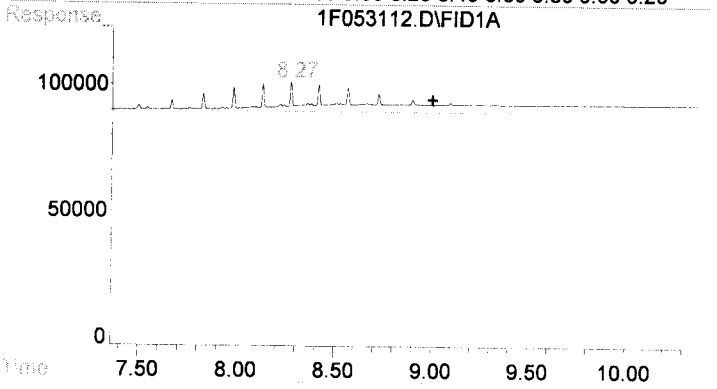
#8 RRO (C24-C40)

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 7324840
Conc: 6.66 ug/mL m



#9 Ca Luft ORO (C23-C32)

R.T.:	8.000 min
Delta R.T.:	0.000 min
Response:	2103006
Conc:	2.89 ug/mL m



#10 TPHmo (C25-C36)

R.T.:	9.000 min
Delta R.T.:	0.000 min
Response:	3551603
Conc:	5.35 ug/mL m

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053113.D Vial: 9
Acq On : 1 Jun 2019 00:25 Operator: KEH
Sample : 9051469-BS1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:55 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	6.80	70216414	50.460	ug/mL
		Target Compounds				
1)	H	Mineral Oil	6.00	281347134	220.725	ug/ml
2)	H	Diesel	6.00	281347134	220.725	ug/mL
3)	H	DRO(C12-C24)	6.00	227351552	178.364	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	217109838	231.620	ug/ml
5)	H	TPHd (C10-C25)	6.00	263248940	227.320	ug/ml
7)	H	OIL	10.00	79792394	72.506	ug/mL
8)	H	RRO (C24-C40)	10.00	4651677	4.227	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	9136321	12.561	ug/mL
10)	H	TPHmo (C25-C36)	9.00	2780127	4.189	ug/mL

KEH 6/3/19

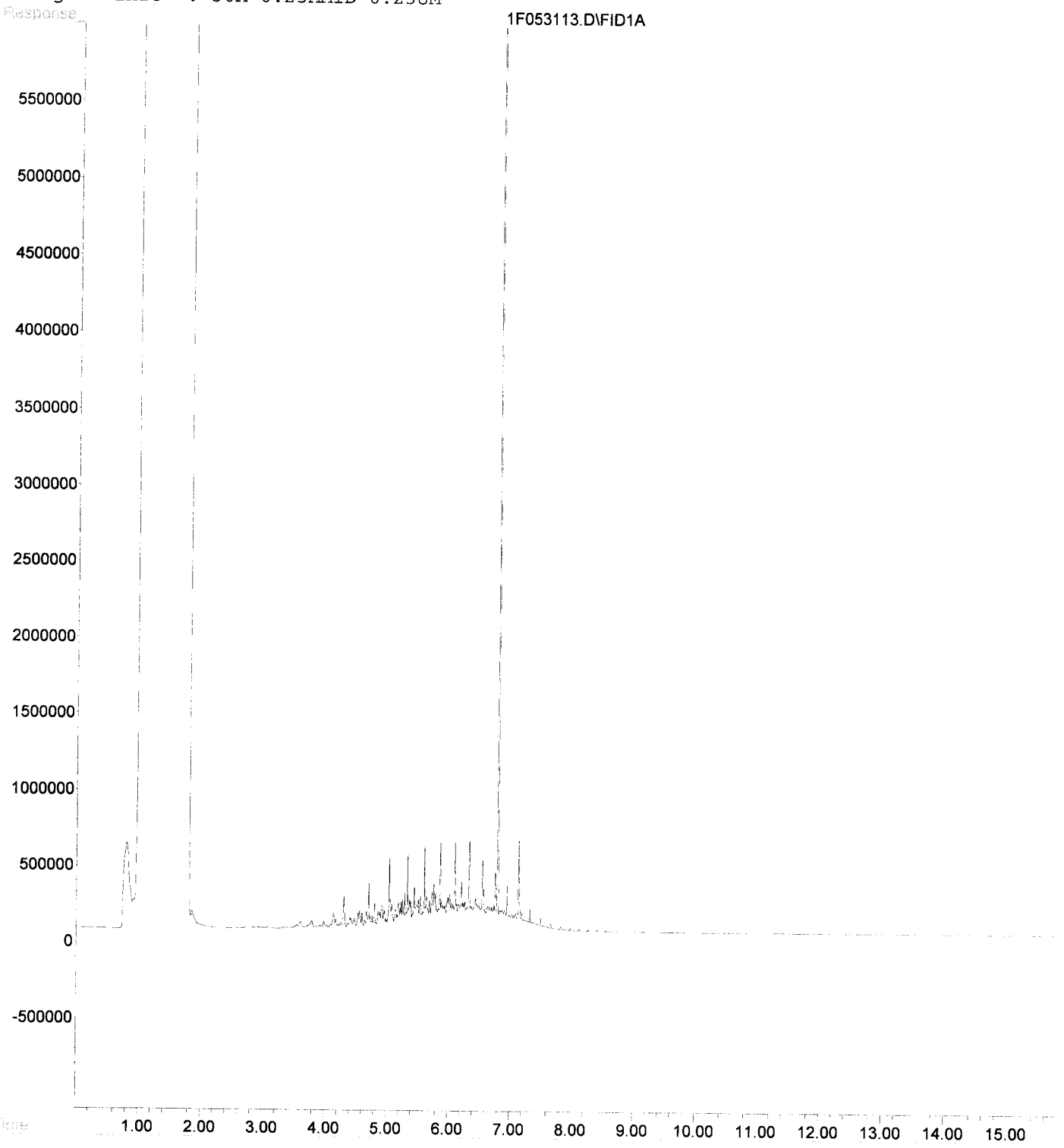
(f)=RT Delta > 1/2 Window (m)=manual inc.
1F053113.D 1F90425D.M Mon Jun 03 07:56:15 2019 SV-GCMS3

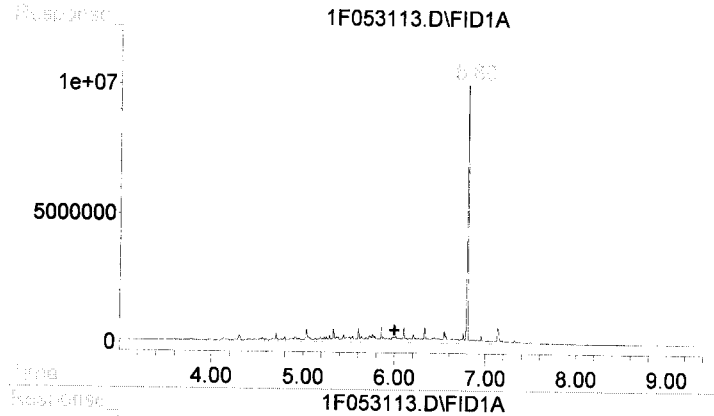
Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053113.D Vial: 9
Acq On : 1 Jun 2019 00:25 Operator: KEH
Sample : 9051469-BS1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:55 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

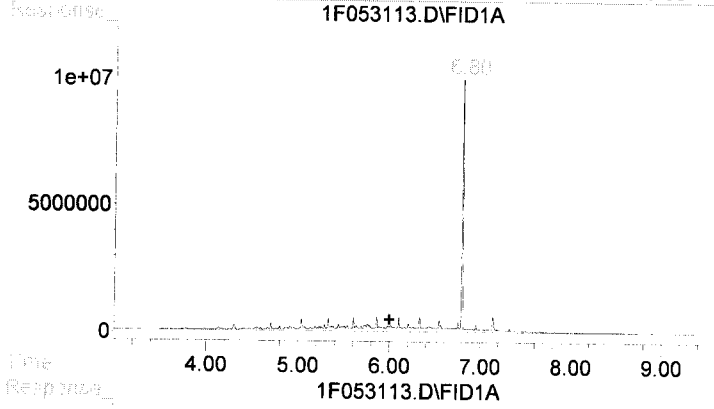
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





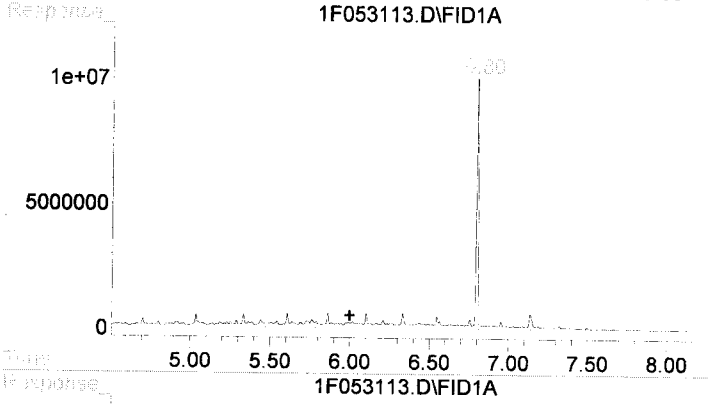
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 281347134
Conc: 220.72 ug/ml m



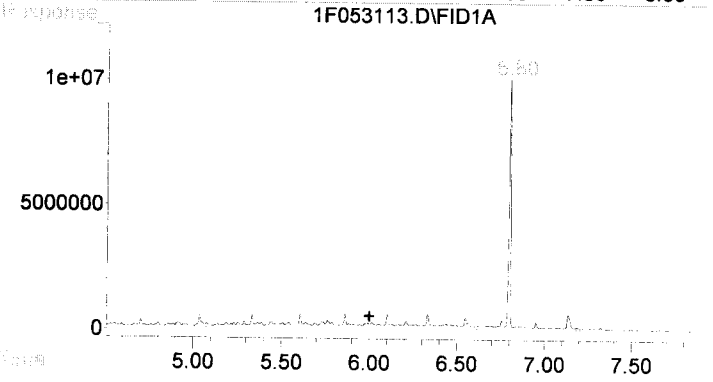
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 281347134
Conc: 220.72 ug/mL m



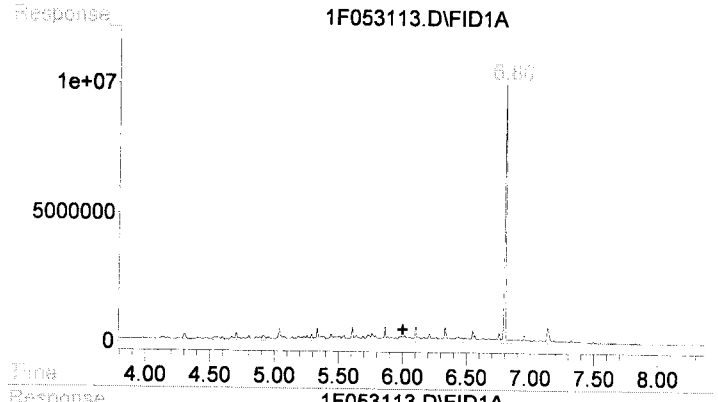
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 227351552
Conc: 178.36 ug/mL m



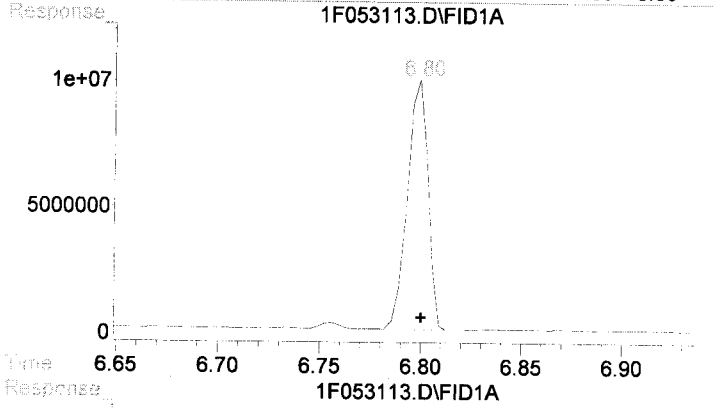
#4 Ca Luft DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 217109838
Conc: 231.62 ug/ml m



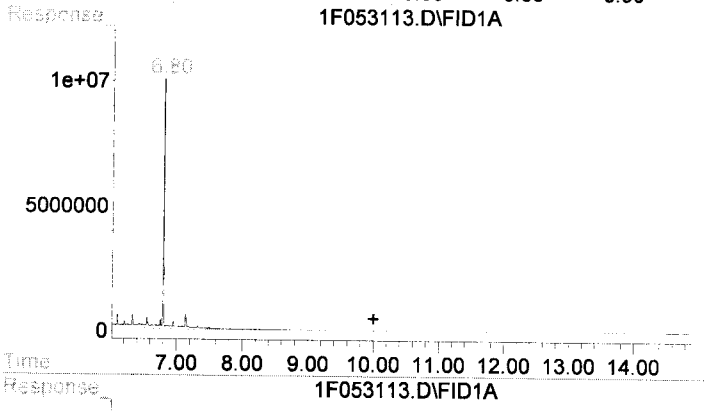
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 263248940
Conc: 227.32 ug/ml m



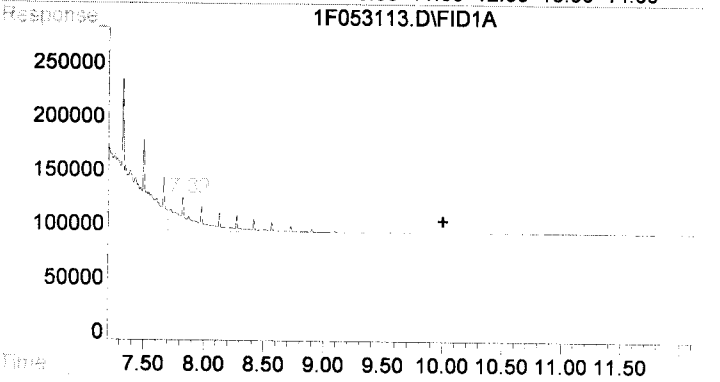
#6 o-Terphenyl

R.T.: 6.799 min
Delta R.T.: 0.000 min
Response: 70216414
Conc: 50.46 ug/mL



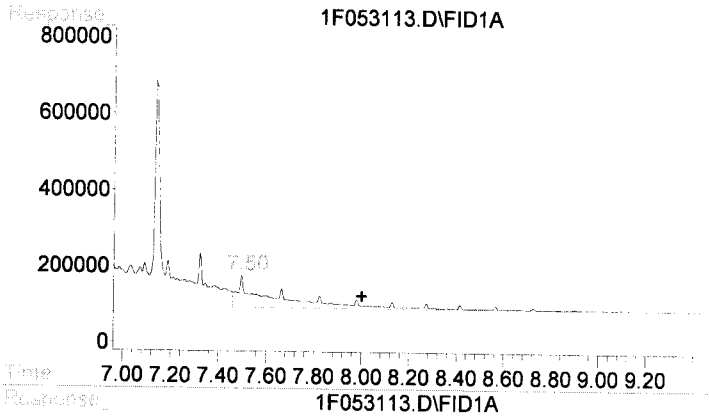
#7 OIL

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 79792394
Conc: 72.51 ug/mL m



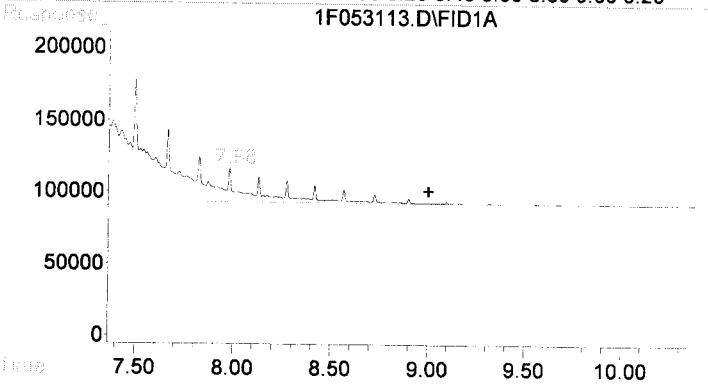
#8 RRO (C24-C40)

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 4651677
Conc: 4.23 ug/mL m



#9 Ca Luft ORO (C23-C32)

R.T.:	8.000 min
Delta R.T.:	0.000 min
Response:	9136321
Conc:	12.56 ug/mL m



#10 TPHmo (C25-C36)

R.T.:	9.000 min
Delta R.T.:	0.000 min
Response:	2780127
Conc:	4.19 ug/mL m

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053114.D Vial: 10
Acq On : 1 Jun 2019 00:48 Operator: KEH
Sample : A9E0902-01@50 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:56 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
System Monitoring Compounds						
6)	S	o-Terphenyl	6.79	1669756	1.200	ug/mL
Target Compounds						
1)	H	Mineral Oil	6.00	388331958	304.657	ug/ml
2)	H	Diesel	6.00	388331958	304.657	ug/mL
3)	H	DRO(C12-C24)	6.00	268548979	210.684	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	247420813	263.957	ug/ml
5)	H	TPHd (C10-C25)	6.00	285565493	246.591	ug/ml
7)	H	OIL	10.00	323938579	294.358	ug/mL
8)	H	RRO (C24-C40)	10.00	156700758	142.391	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	115616070	158.955	ug/mL
10)	H	TPHmo (C25-C36)	9.00	127894390	192.723	ug/mL

S-01

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Recalculate -> DRO/RRO
KEH 6/3/19

✓

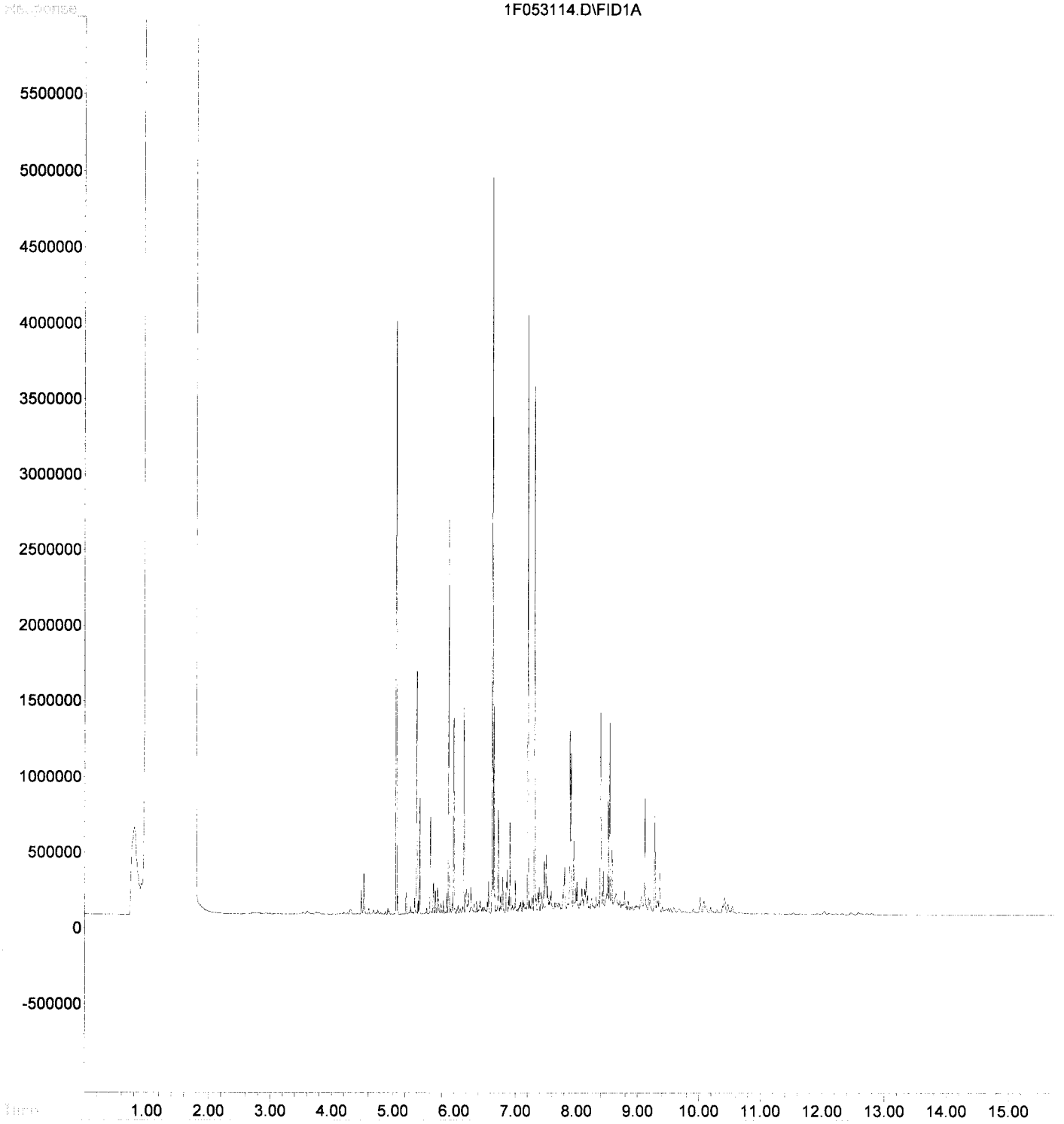
(f)=RT Delta > 1/2 Window (m)=manual inc.
1F053114.D 1F90425D.M Mon Jun 03 07:56:18 2019 SV-GCMS3

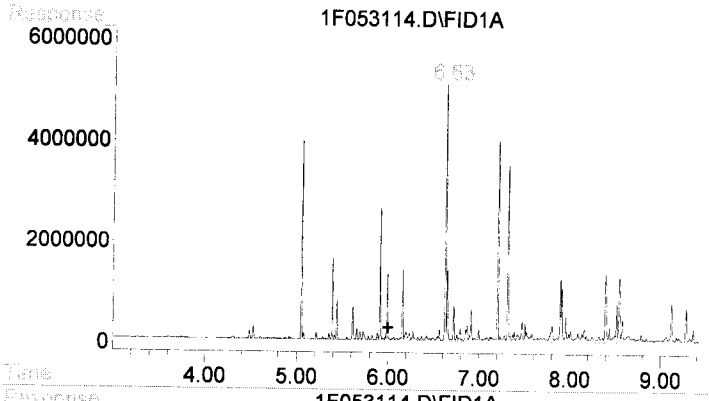
Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053114.D Vial: 10
Acq On : 1 Jun 2019 00:48 Operator: KEH
Sample : A9E0902-01@50 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:56 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

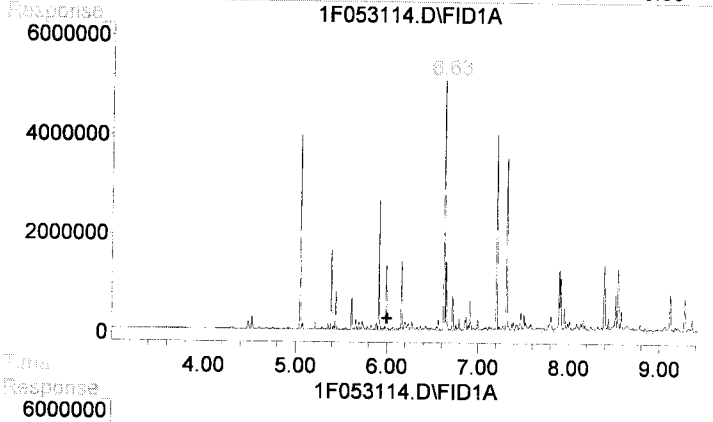
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





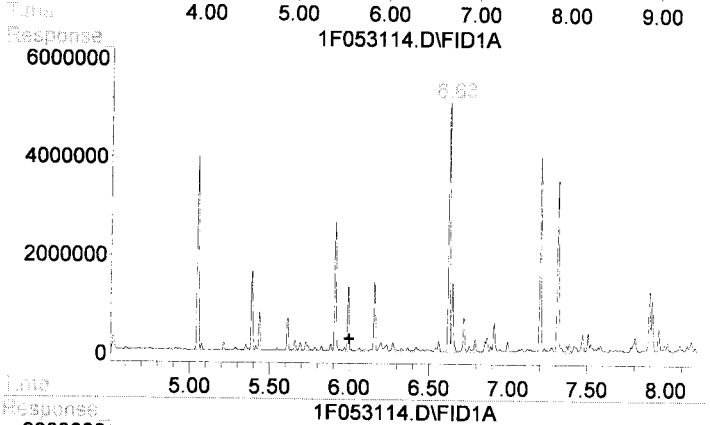
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 388331958
Conc: 304.66 ug/ml m



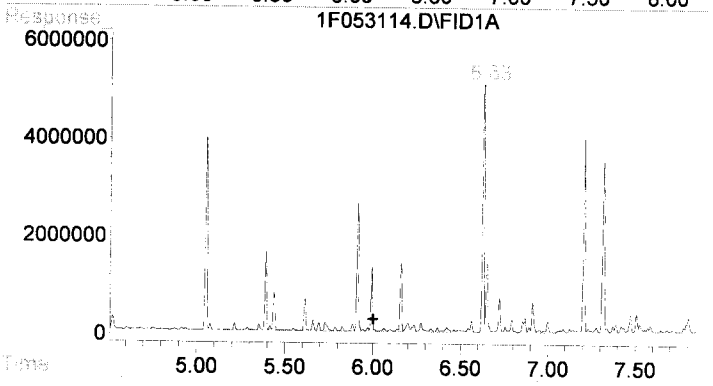
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 388331958
Conc: 304.66 ug/mL m



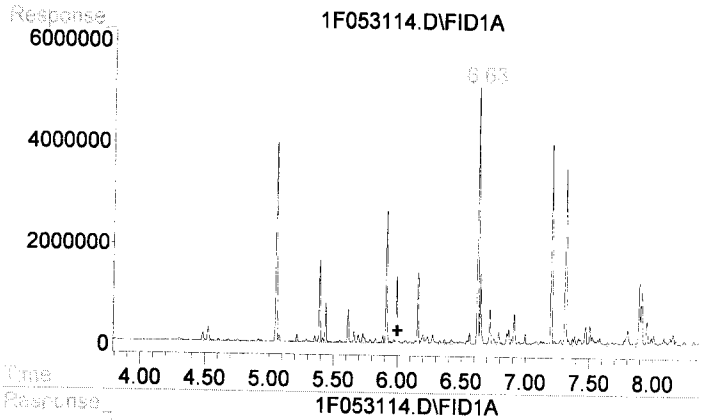
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 268548979
Conc: 210.68 ug/mL m



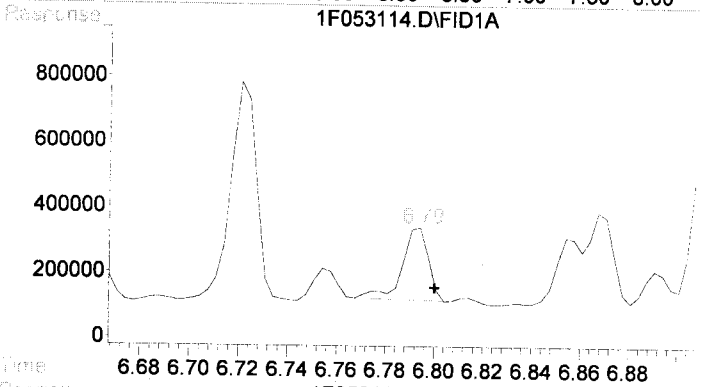
#4 Ca Luft DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 247420813
Conc: 263.96 ug/ml m



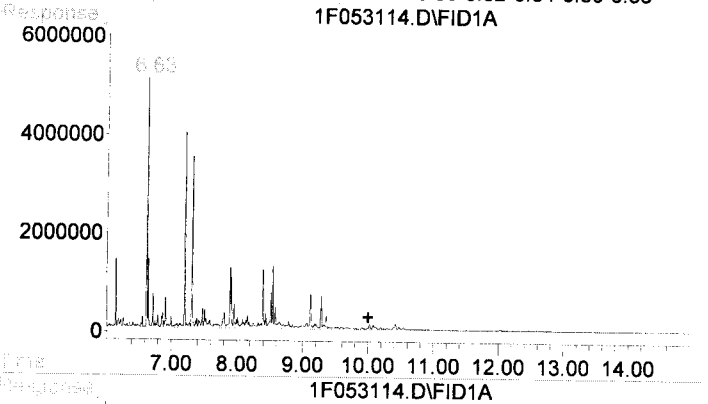
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 285565493
Conc: 246.59 ug/ml m



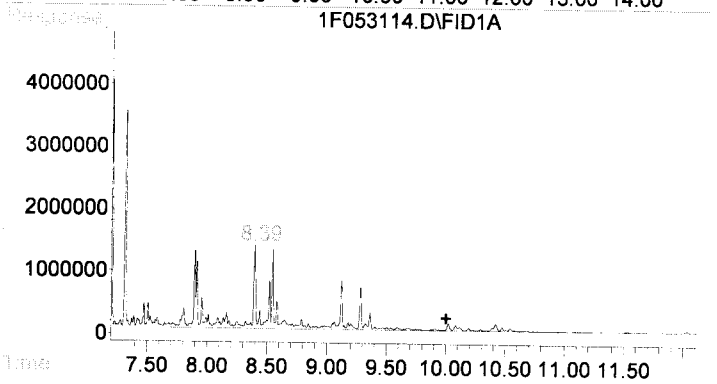
#6 o-Terphenyl

R.T.: 6.794 min
Delta R.T.: -0.006 min
Response: 1669756
Conc: 1.20 ug/mL



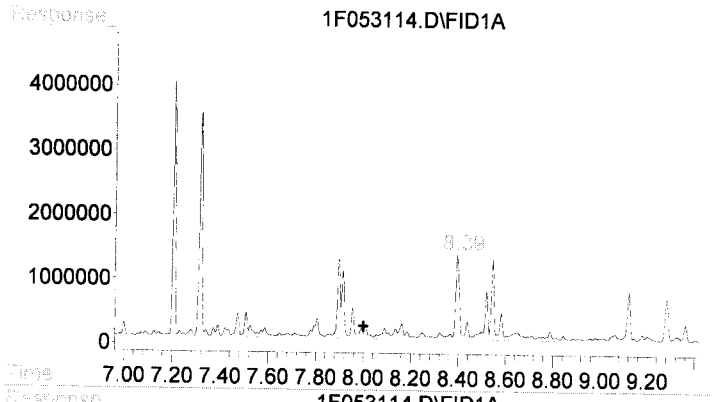
#7 OIL

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 323938579
Conc: 294.36 ug/mL m



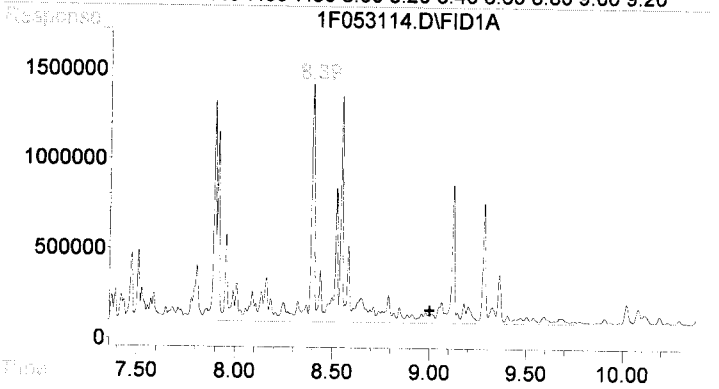
#8 RRO (C24-C40)

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 156700758
Conc: 142.39 ug/mL m



#9 Ca Luft ORO (C23-C32)

R.T.: 8.000 min
Delta R.T.: 0.000 min
Response: 115616070
Conc: 158.96 ug/mL m



#10 TPHmo (C25-C36)

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 127894390
Conc: 192.72 ug/mL m

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053115.D Vial: 11
Acq On : 1 Jun 2019 1:11 Operator: KEH
Sample : 9051469-DUP1@50 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:56 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	6.79	1360039	0.977	ug/mL
		Target Compounds				
1)	H	Mineral Oil	6.00	313403710	245.874	ug/ml
2)	H	Diesel	6.00	313403710	245.874	ug/mL
3)	H	DRO(C12-C24)	6.00	216786566	170.075	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	199874124	213.233	ug/ml
5)	H	TPHd (C10-C25)	6.00	230906226	199.392	ug/ml
7)	H	OIL	10.00	258079053	234.512	ug/mL
8)	H	RRO (C24-C40)	10.00	125520415	114.058	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	91747122	126.139	ug/mL
10)	H	TPHmo (C25-C36)	9.00	102050655	153.779	ug/mL

5-01

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DRO/KEC

KEH 6/3/19

(f)=RT Delta > 1/2 Window (m)=manual int.

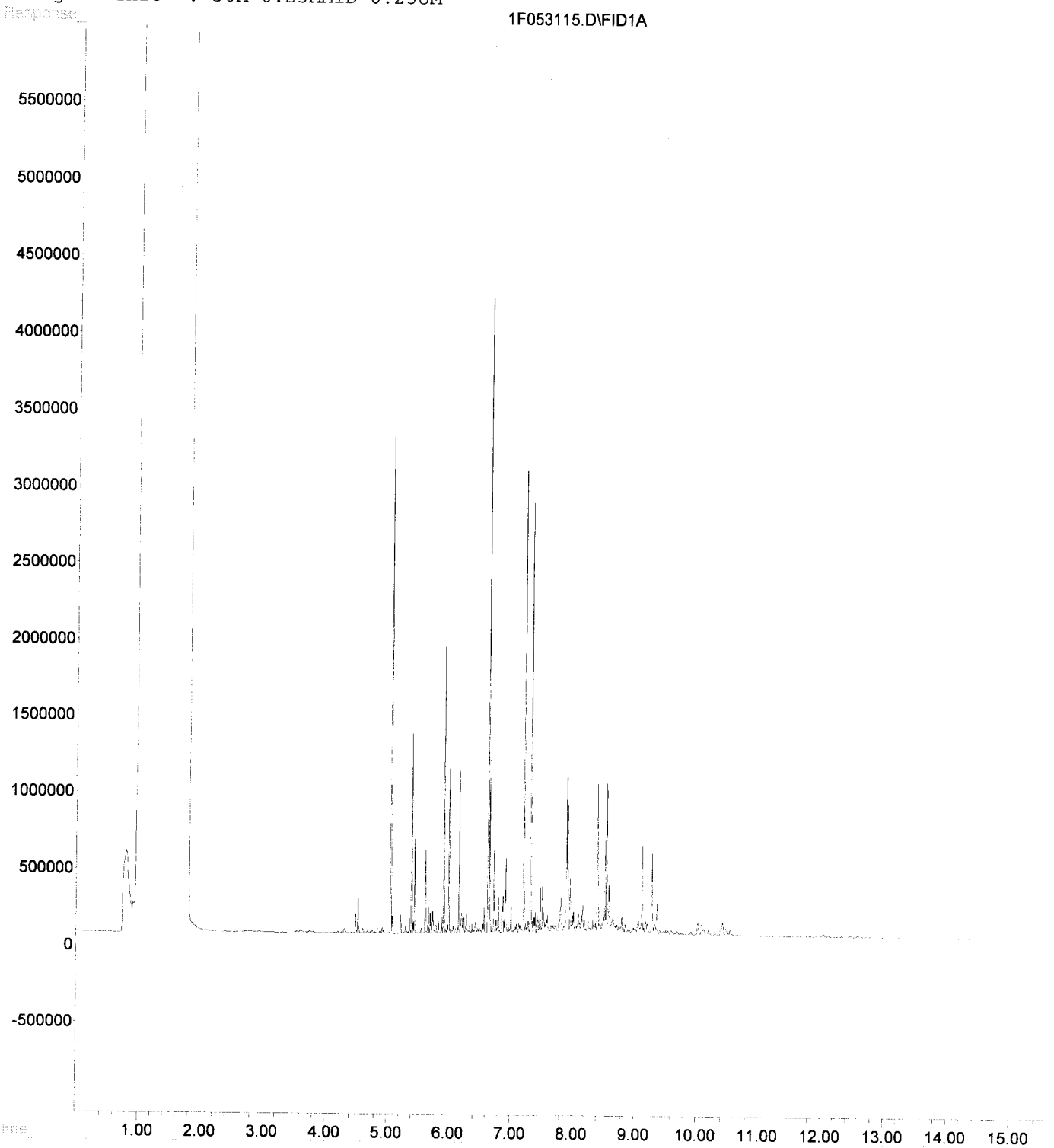
1F053115.D 1F90425D.M Mon Jun 03 07:56:22 2019 SV-GCMS3

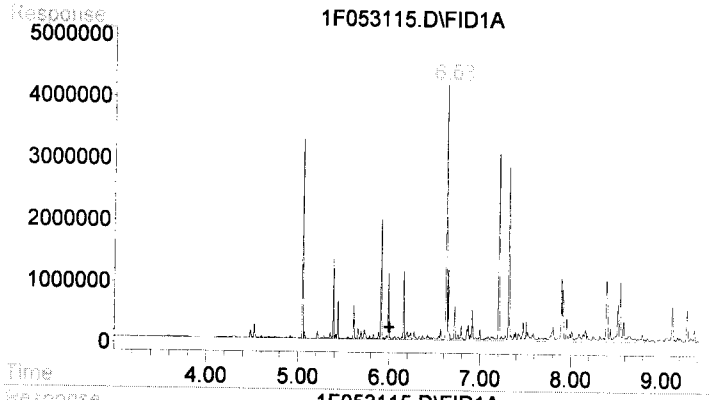
Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053115.D Vial: 11
Acq On : 1 Jun 2019 1:11 Operator: KEH
Sample : 9051469-DUP1@50 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:56 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

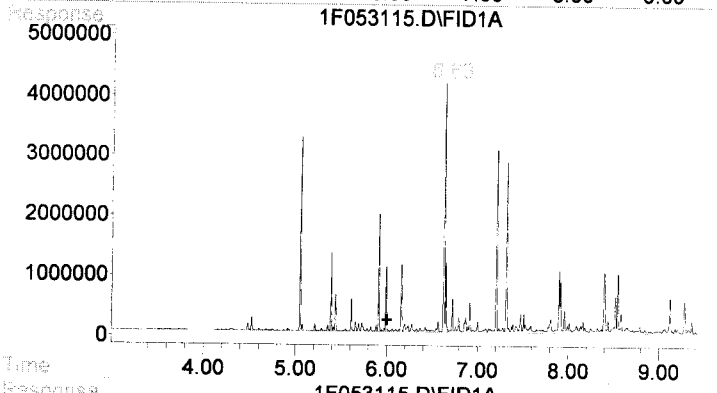
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





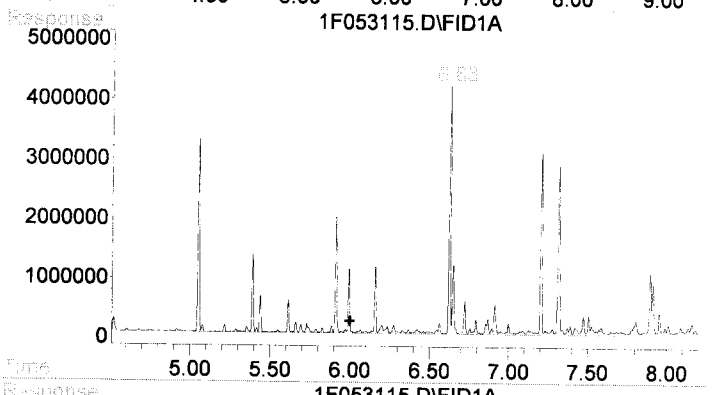
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 313403710
Conc: 245.87 ug/ml m



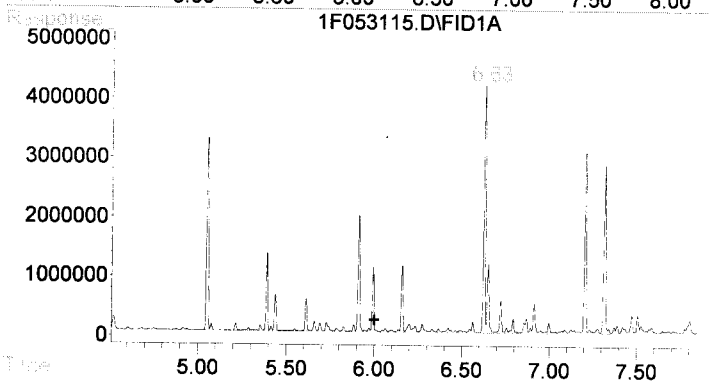
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 313403710
Conc: 245.87 ug/mL m



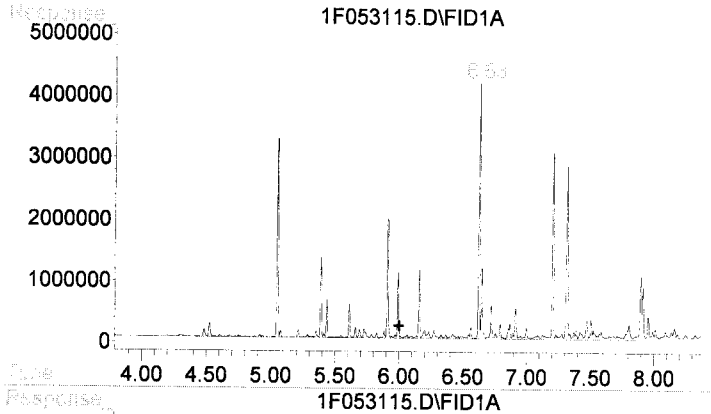
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 216786566
Conc: 170.08 ug/mL m



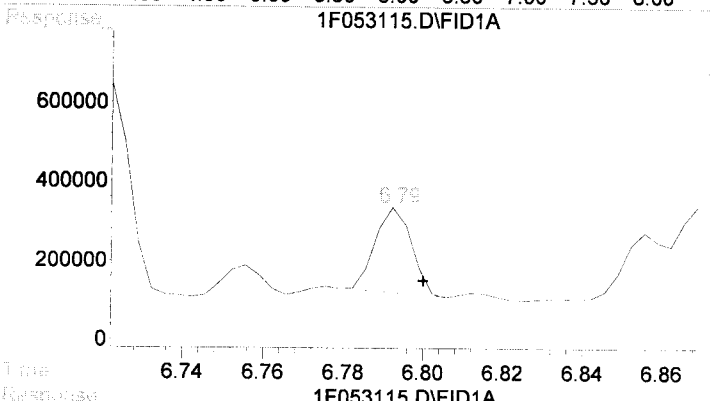
#4 Ca Luft DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 199874124
Conc: 213.23 ug/ml m



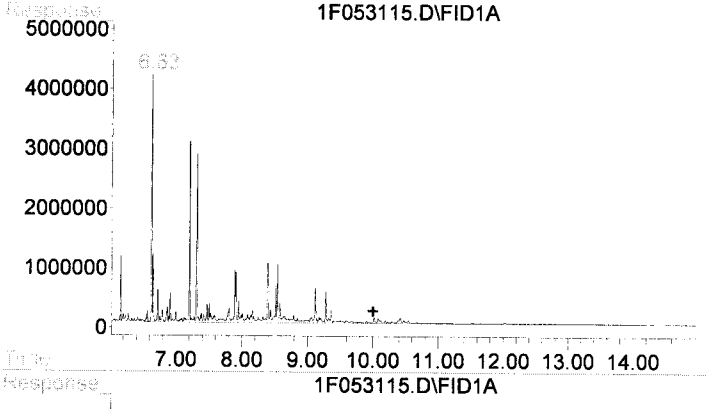
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 230906226
Conc: 199.39 ug/ml m



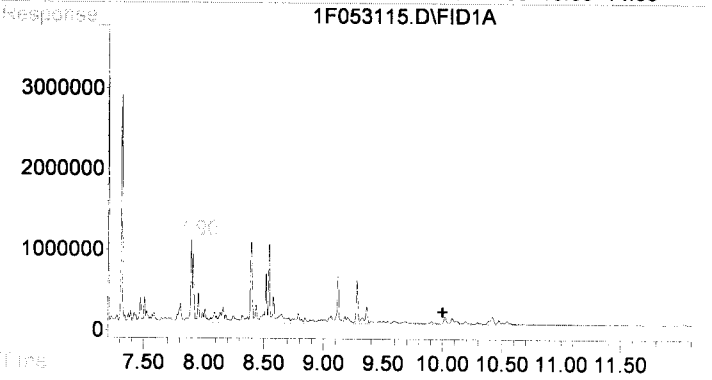
#6 o-Terphenyl

R.T.: 6.794 min
Delta R.T.: -0.006 min
Response: 1360039
Conc: 0.98 ug/mL



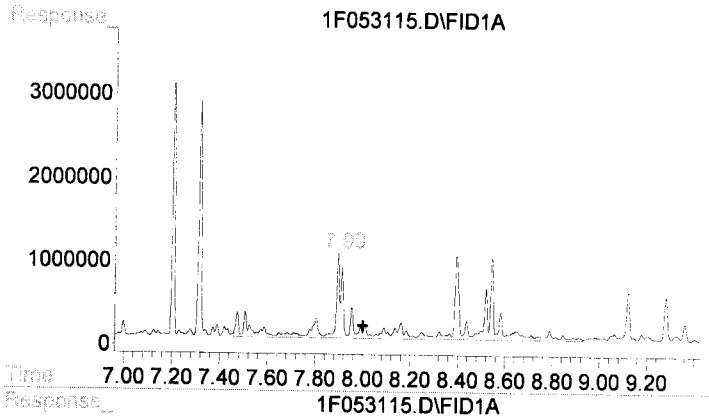
#7 OIL

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 258079053
Conc: 234.51 ug/mL m



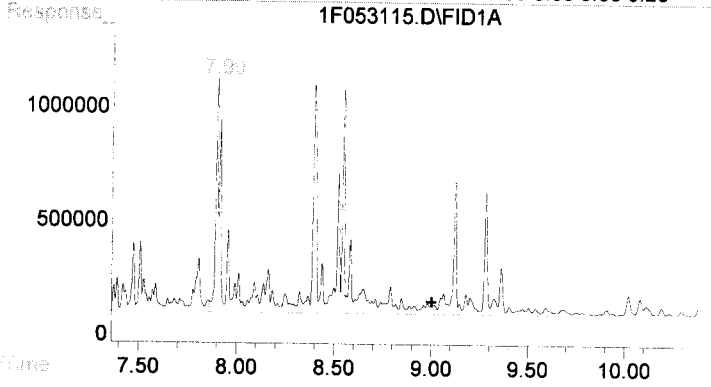
#8 RRO (C24-C40)

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 125520415
Conc: 114.06 ug/mL m



#9 Ca Luft ORO (C23-C32)

R.T.: 8.000 min
Delta R.T.: 0.000 min
Response: 91747122
Conc: 126.14 ug/mL m



#10 TPHmo (C25-C36)

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 102050655
Conc: 153.78 ug/mL m

Evaluate Continuing Calibration Report

Data File : F:\1\DATA\2019-05\9E31029\1F053117.D
Acq On : 1 Jun 2019 1:56
Sample : 9E31029-CCV3
Misc :
IntFile : SUR.E

Vial: 12
Operator: KEH
Inst : HP G1530A
Multiplr: 1.00

Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	H	Mineral Oil	1000.000	966.520	3.3	99	0.00
2	H	Diesel	1000.000	966.520	3.3	99	0.00
3	H	DRO(C12-C24)	1000.000	774.028	22.6#	79	0.00
4	H	Ca Luft DRO (C12-C22)	1000.000	1003.627	-0.4	99	0.00
5	H	TPHd (C10-C25)	1000.000	992.900	0.7	99	0.00
6	S	o-Terphenyl	-1.000	52.387	0.0	0	0.00
7	H	OIL	-1.000	309.142	0.0	99	0.00
8	H	RRO (C24-C40)	-1.000	17.672	0.0	6	0.00
9	H	Ca Luft ORO (C23-C32)	-1.000	54.111	0.0	100	0.00
10	H	TPHmo (C25-C36)	-1.000	17.628	0.0	99	0.00

KEH 6/3/19

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053117.D Vial: 12
Acq On : 1 Jun 2019 1:56 Operator: KEH
Sample : 9E31029-CCV3 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:56 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc Units
		System Monitoring Compounds			
6)	S	o-Terphenyl	6.80	72898068	52.387 ug/mL
		Target Compounds			
1)	H	Mineral Oil	6.00	1231975656	966.520 ug/ml
2)	H	Diesel	6.00	1231975656	966.520 ug/mL
3)	H	DRO(C12-C24)	6.00	986615790	774.028 ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	940752342	1003.627 ug/ml
5)	H	TPHd (C10-C25)	6.00	1149829859	992.900 ug/ml
7)	H	OIL	10.00	340208146	309.142 ug/mL
8)	H	RRO (C24-C40)	10.00	19447745	17.672 ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	39357873	54.111 ug/mL
10)	H	TPHmo (C25-C36)	9.00	11698456	17.628 ug/mL

KEH 6/3/19

(f)=RT Delta > 1/2 Window (m)=manual int.

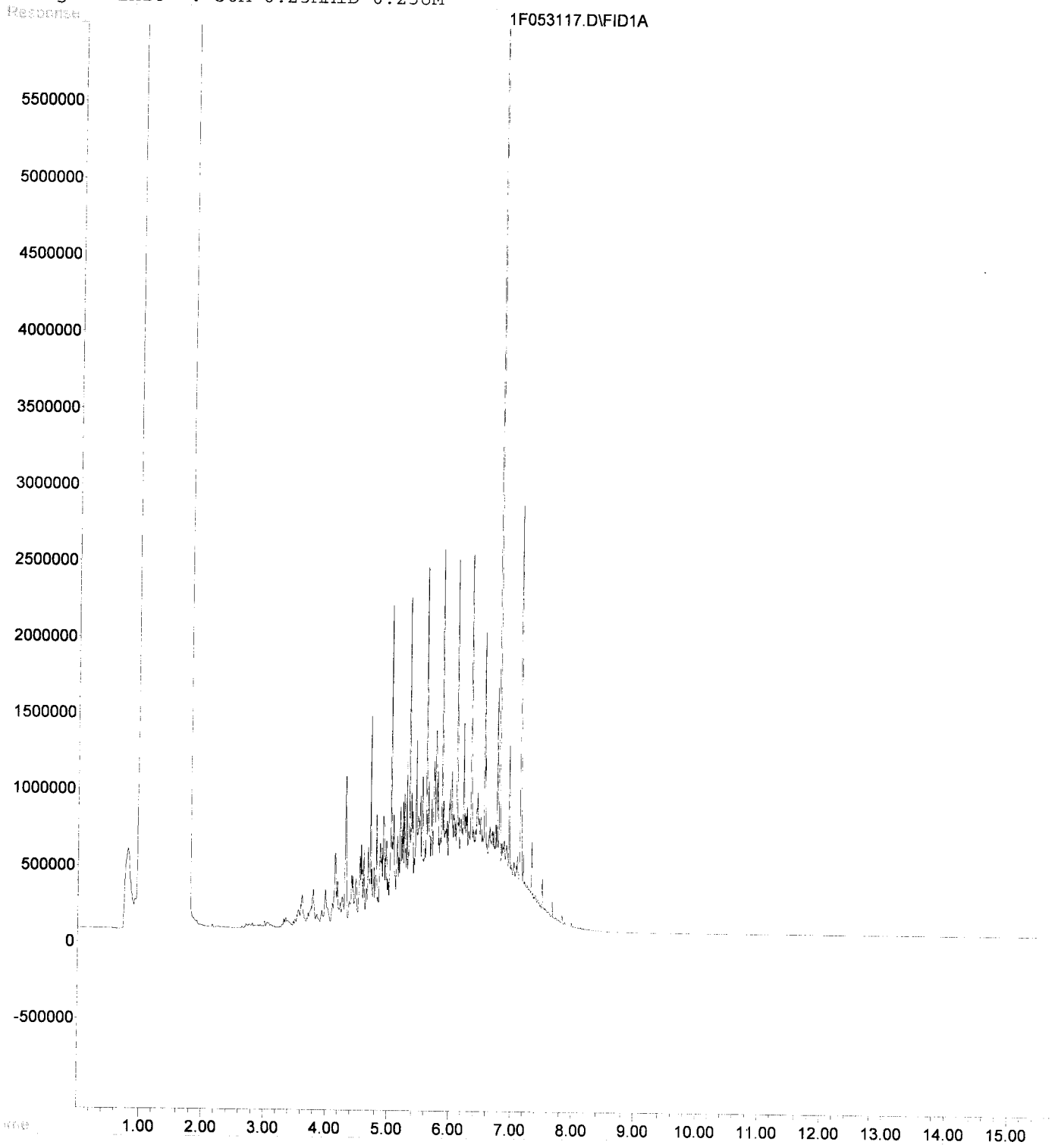
1F053117.D 1F90425D.M Mon Jun 03 07:56:27 2019 SV-GCMS3 Page 1

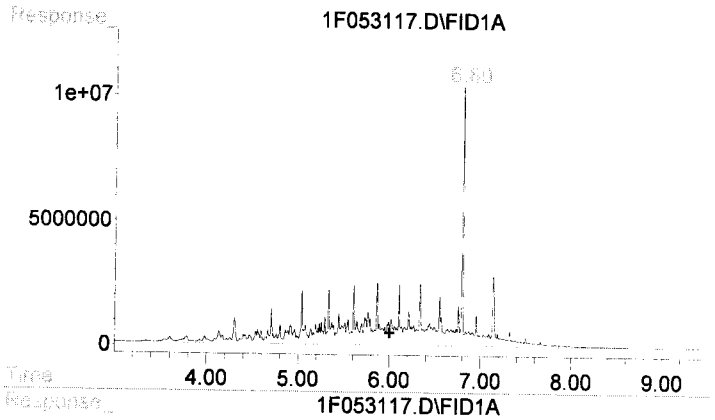
Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053117.D Vial: 12
Acq On : 1 Jun 2019 1:56 Operator: KEH
Sample : 9E31029-CCV3 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:56 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

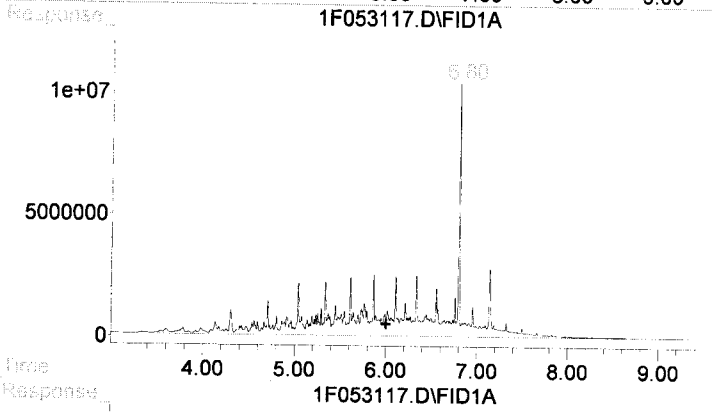
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





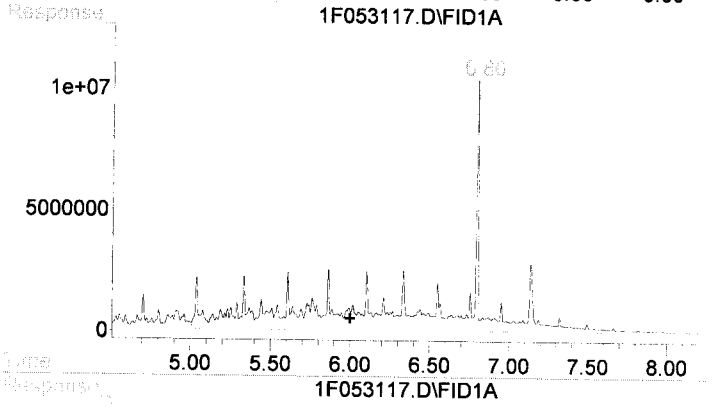
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 1231975656
Conc: 966.52 ug/ml m



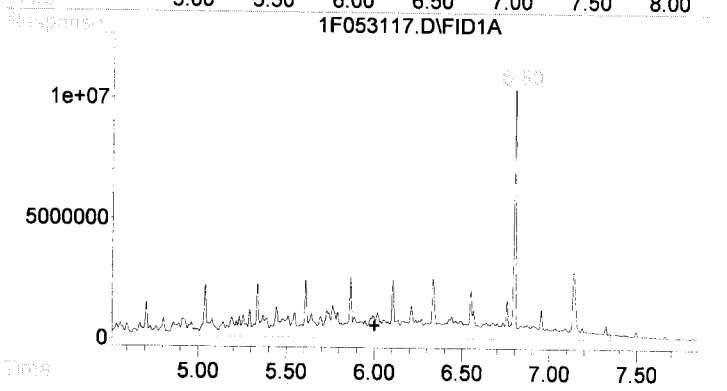
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 1231975656
Conc: 966.52 ug/mL m



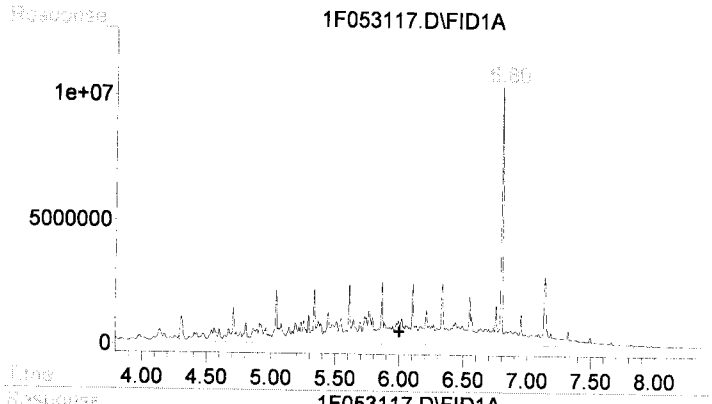
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 986615790
Conc: 774.03 ug/mL m



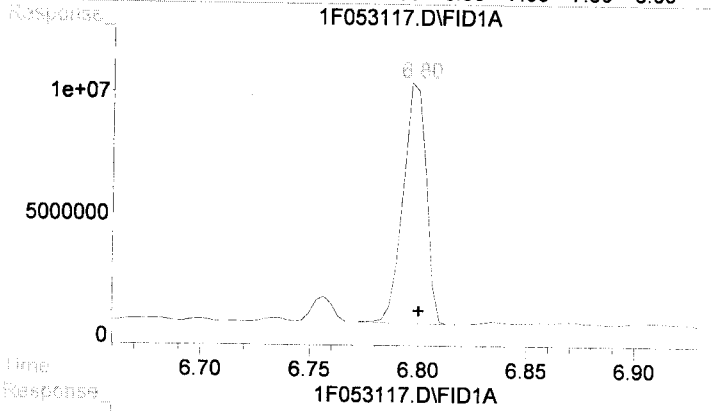
#4 Ca Luft DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 940752342
Conc: 1003.63 ug/ml m



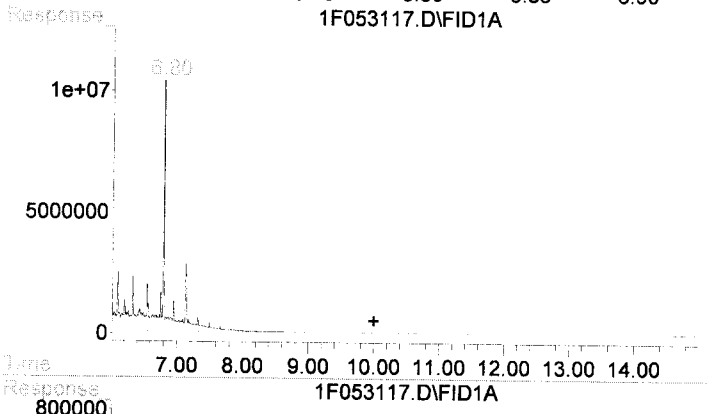
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 1149829859
Conc: 992.90 ug/ml m



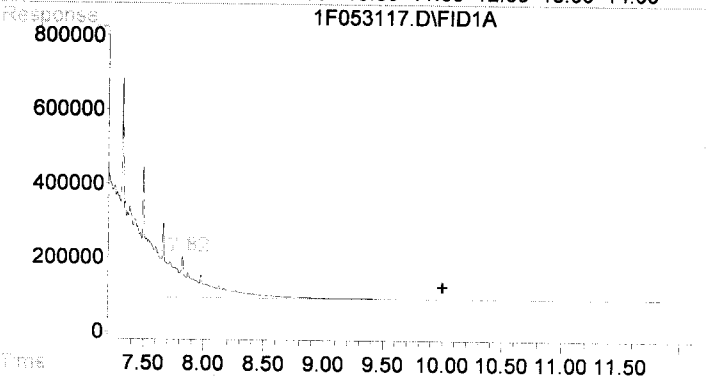
#6 o-Terphenyl

R.T.: 6.799 min
Delta R.T.: 0.000 min
Response: 72898068
Conc: 52.39 ug/mL



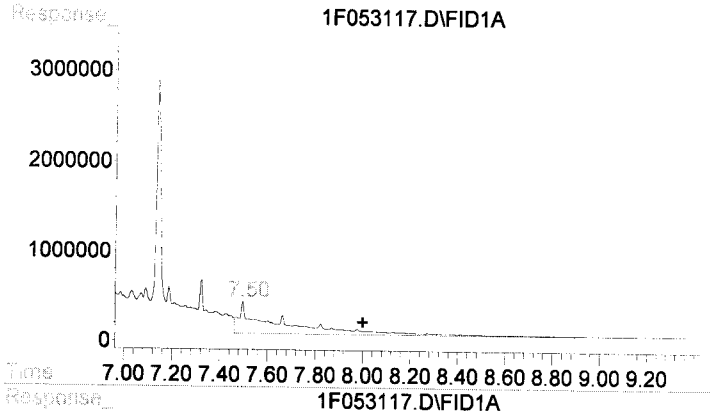
#7 OIL

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 340208146
Conc: 309.14 ug/mL m



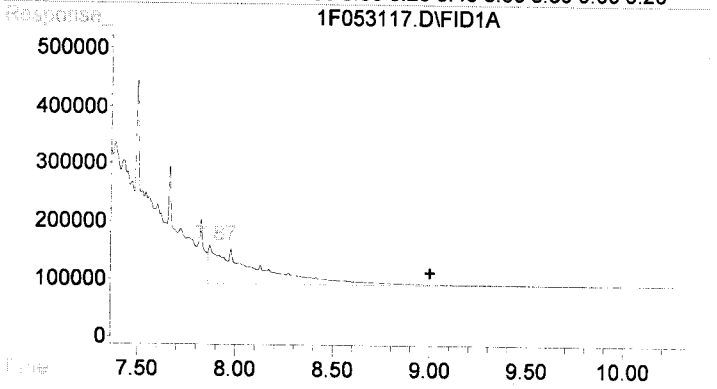
#8 RRO (C24-C40)

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 19447745
Conc: 17.67 ug/mL m



#9 Ca Luft ORO (C23-C32)

R.T.:	8.000 min
Delta R.T.:	0.000 min
Response:	39357873
Conc:	54.11 ug/mL m



#10 TPHmo (C25-C36)

R.T.:	9.000 min
Delta R.T.:	0.000 min
Response:	11698456
Conc:	17.63 ug/mL m

Evaluate Continuing Calibration Report

Data File : F:\1\DATA\2019-05\9E31029\1F053118.D
Acq On : 1 Jun 2019 2:19
Sample : 9E31029-CCV4
Misc :
IntFile : SUR.E

Vial: 13
Operator: KEH
Inst : HP G1530A
Multiplr: 1.00

Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	H	Mineral Oil	-1.000	342.012	0.0	101	0.00
2	H	Diesel	-1.000	342.012	0.0	101	0.00
3	H	DRO(C12-C24)	-1.000	81.416	0.0	24	0.00
4	H	Ca Luft DRO (C12-C22)	-1.000	37.231	0.0	100	0.00
5	H	TPHd (C10-C25)	-1.000	133.483	0.0	103	0.00
6	S	o-Terphenyl	-1.000	50.841	0.0	0	0.00
7	H	OIL	500.000	511.849	-2.4	102	0.00
8	H	RRO (C24-C40)	500.000	396.132	20.8#	79	0.00
9	H	Ca Luft ORO (C23-C32)	500.000	515.533	-3.1	101	0.00
10	H	TPHmo (C25-C36)	500.000	515.595	-3.1	102	0.00

KEH 6/3/19

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053118.D Vial: 13
Acq On : 1 Jun 2019 2:19 Operator: KEH
Sample : 9E31029-CCV4 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:56 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc Units
		System Monitoring Compounds			
6)	S	o-Terphenyl	6.80	70746077	50.841 ug/mL
		Target Compounds			
1)	H	Mineral Oil	6.00	435946564	342.012 ug/ml
2)	H	Diesel	6.00	435946564	342.012 ug/mL
3)	H	DRO(C12-C24)	6.00	103777186	81.416 ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	34898611	37.231 ug/ml
5)	H	TPHd (C10-C25)	6.00	154580126	133.483 ug/ml
7)	H	OIL	10.00	563286565	511.849 ug/mL
8)	H	RRO (C24-C40)	10.00	435940871	396.132 ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	374973086	515.533 ug/mL
10)	H	TPHmo (C25-C36)	9.00	342158340	515.595 ug/mL

KEH 6/3/19

(f)=RT Delta > 1/2 window (m)=manual int.

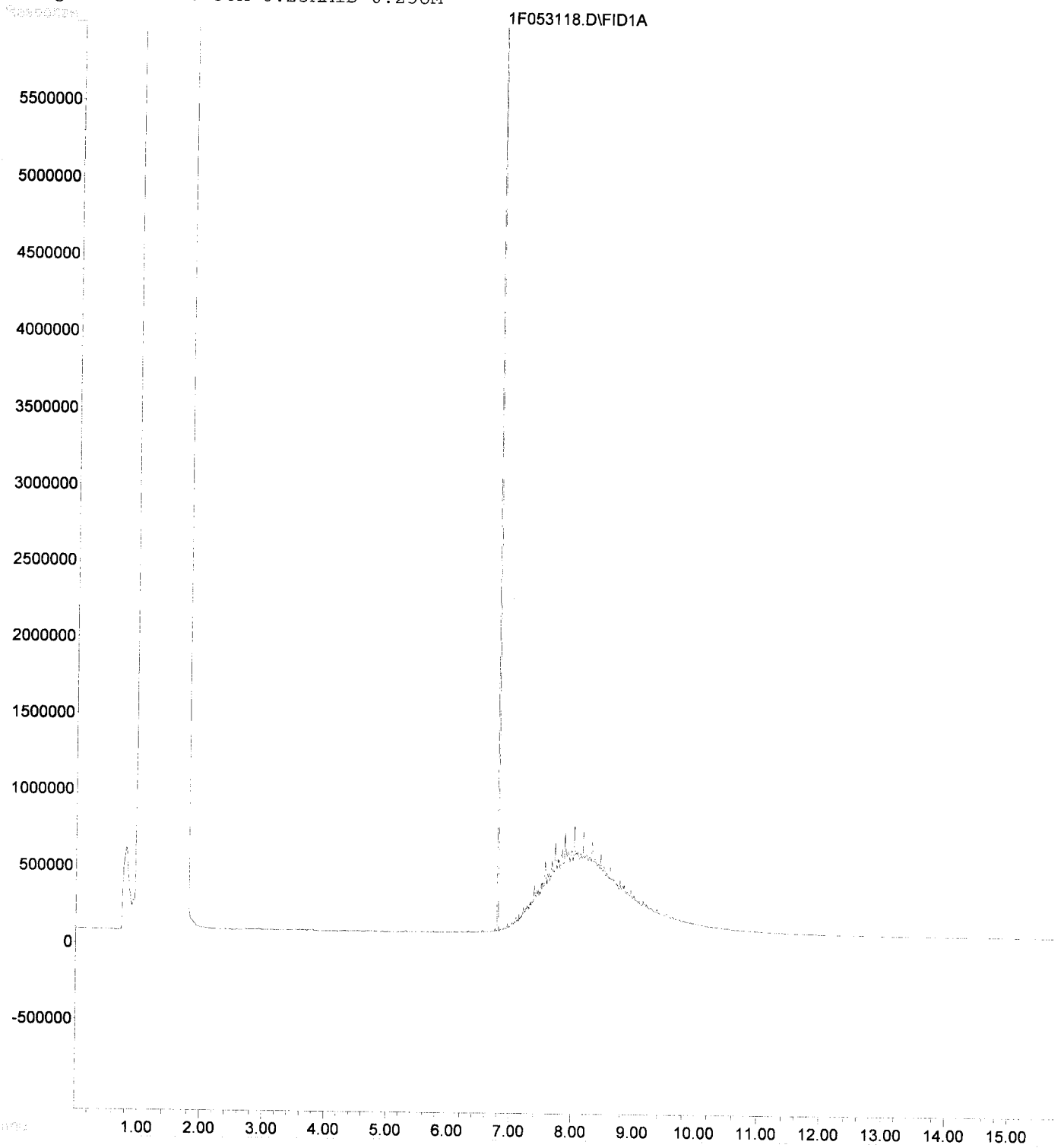
1F053118.D 1F90425D.M Mon Jun 03 07:56:30 2019 SV-GCMS3

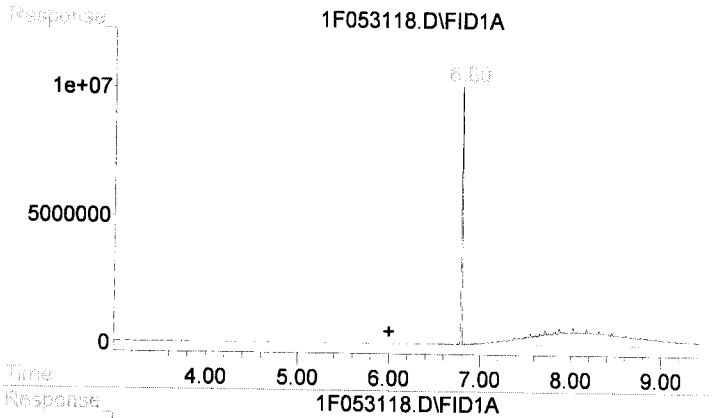
Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-05\9E31029\1F053118.D Vial: 13
Acq On : 1 Jun 2019 2:19 Operator: KEH
Sample : 9E31029-CCV4 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Jun 3 7:56 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Mon Jun 03 07:54:50 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

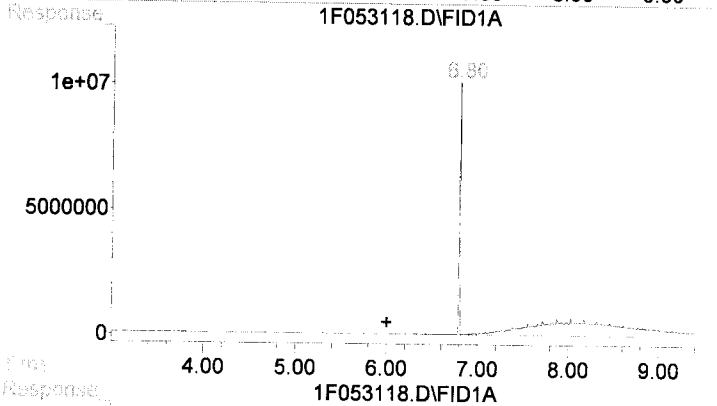
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





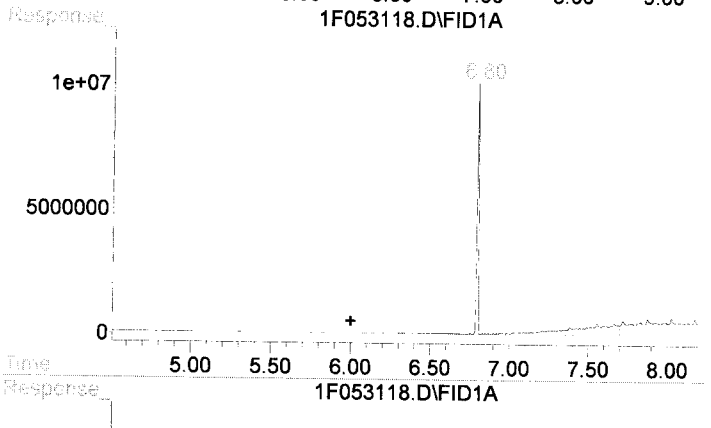
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 435946564
Conc: 342.01 ug/ml m



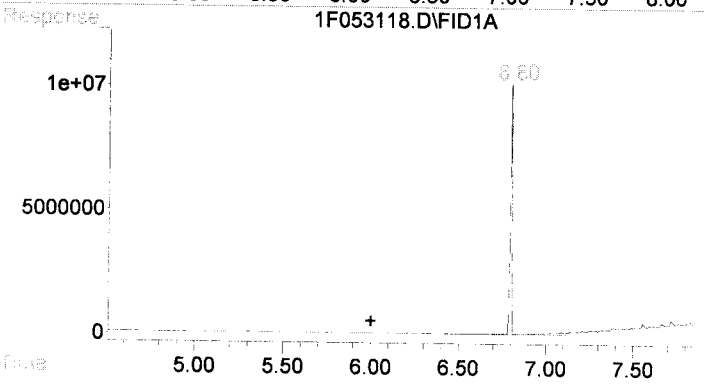
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 435946564
Conc: 342.01 ug/mL m



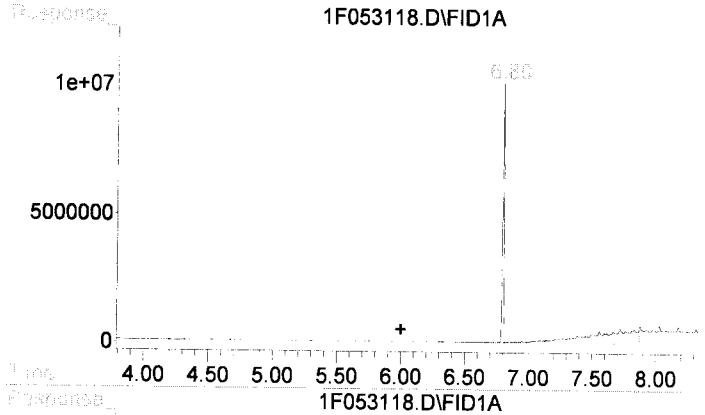
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 103777186
Conc: 81.42 ug/mL m



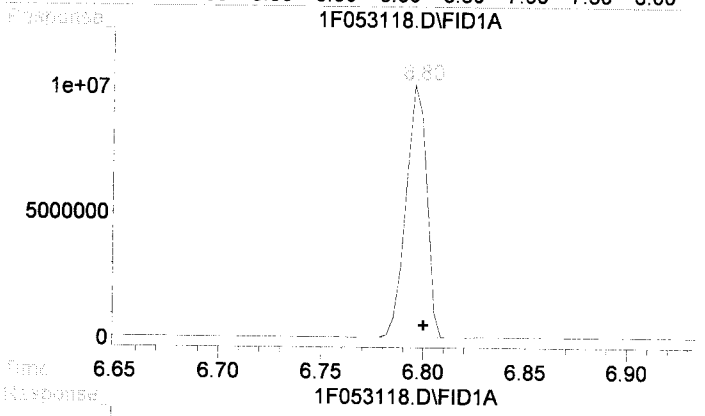
#4 Ca Luft DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 34898611
Conc: 37.23 ug/ml m



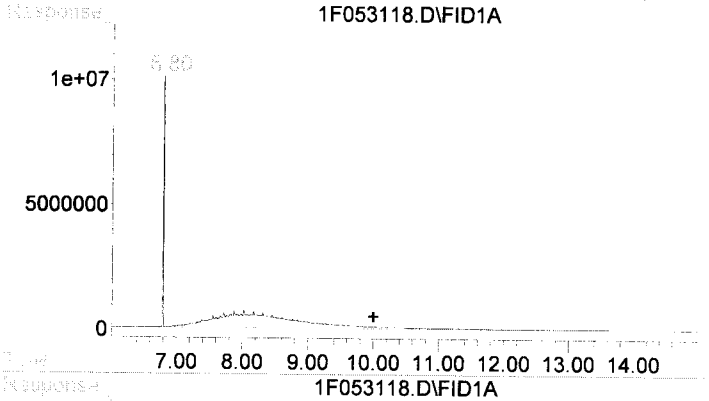
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 154580126
Conc: 133.48 ug/ml m



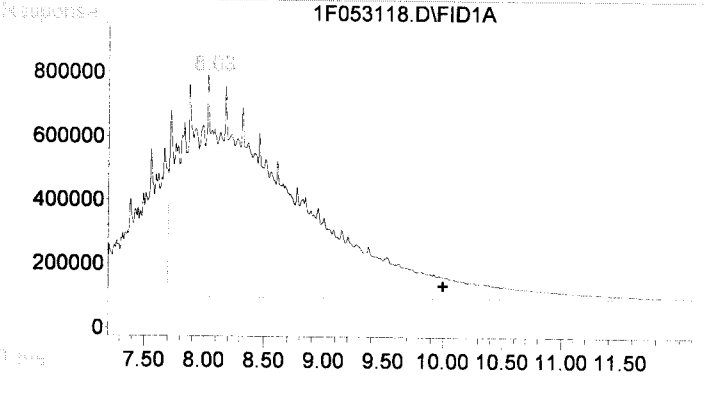
#6 o-Terphenyl

R.T.: 6.797 min
Delta R.T.: -0.003 min
Response: 70746077
Conc: 50.84 ug/mL



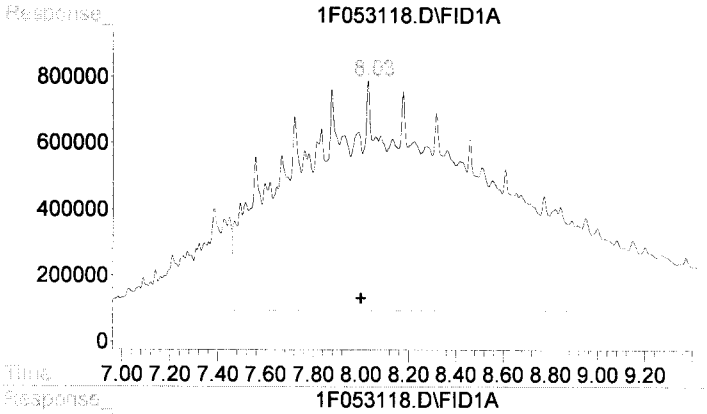
#7 OIL

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 563286565
Conc: 511.85 ug/mL m



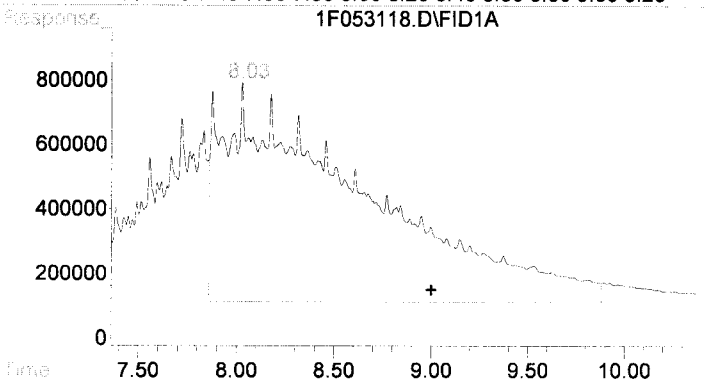
#8 RRO (C24-C40)

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 435940871
Conc: 396.13 ug/mL m



#9 Ca Luft ORO (C23-C32)

R.T.: 8.000 min
Delta R.T.: 0.000 min
Response: 374973086
Conc: 515.53 ug/mL m



#10 TPHmo (C25-C36)

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 342158340
Conc: 515.59 ug/mL m

APEX LABORATORIES, LLC
6700 SW Sandburg St. Tigard OR 97223 phone 503-718-2323

Diesel and /or Oil Hydrocarbons by NWTPH-Dx

Calibration Data

Sequence 9D25027 (Cal ID A9D2602) DUALFID1F

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence:	**9D25027**	Instrument:	**DUALFID1F**
Date:	**04/25/19 11:47**	Calibration:	**A9D2602**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9D25027-RES1	Soil	QC	QC				A19C198
2	9D25027-ICB1	Soil	QC	QC				
3	9D25027-CAL1	Soil	QC	QC				A19C305
4	9D25027-CAL2	Soil	QC	QC				A19C306
5	9D25027-CAL3	Soil	QC	QC				A19C307
6	9D25027-CAL4	Soil	QC	QC				A19C308
7	9D25027-CAL5	Soil	QC	QC				A19C309
8	9D25027-CAL6	Soil	QC	QC				A19C310
9	9D25027-CAL7	Soil	QC	QC				A19C311
10	9D25027-CAL8	Soil	QC	QC				A19C204
11	9D25027-CAL9	Soil	QC	QC				A19D191
12	9D25027-CALA	Soil	QC	QC				A19D192
13	9D25027-CALB	Soil	QC	QC				A19D193
14	9D25027-CALC	Soil	QC	QC				A19D194
15	9D25027-CALD	Soil	QC	QC				A19C210
16	9D25027-CALE	Soil	QC	QC				A19C365
17	9D25027-CALF	Soil	QC	QC				A19C366
18	9D25027-CALG	Soil	QC	QC				A19C367
19	9D25027-CALH	Soil	QC	QC				A19C368
20	9D25027-CALI	Soil	QC	QC				A19C373
21	9D25027-CALJ	Soil	QC	QC				A19C370
22	9D25027-IBL1	Soil	QC	QC				
23	9D25027-CALK	Soil	QC	QC				A19C364
24	9D25027-IBL2	Soil	QC	QC				
25	9D25027-ICV1	Soil	QC	QC				A19D271
26	9D25027-ICV2	Soil	QC	QC				A19D272

Data Entered By: Kelt 4/26/19

Data Reviewed By: [signature] 4/26/19

Comments:

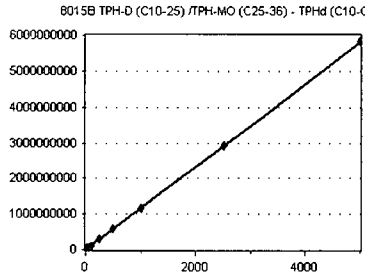
Element Calibration Review Sheet

Calibration ID: **A9D2602** Instrument: **DUALFID1F** Calibration Date: **04/26/2019**

Analysis: **8015B TPH-D (C10-25) /TPH·** Instrument Cal ID: **1F90425D.m**

TPHd (C10-C25)

Curve Fit: **AVERAGE RF**

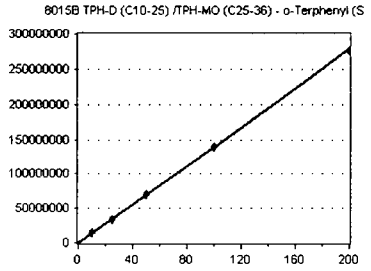


Standard	Concentration	Response	Response Factor	RT
9D25027-CAL1	25	851515E+07	1140606.000	6.00
9D25027-CAL2	40	575255E+07	1143814.000	6.00
9D25027-CAL3	100	134596E+08	1134596.000	6.00
9D25027-CAL4	250	921196E+08	1168479.000	6.00
9D25027-CAL5	500	899296E+08	1179859.000	6.00
9D25027-CAL6	1000	164841E+09	1164841.000	6.00
9D25027-CAL7	2500	.91916E+09	1167664.000	6.00
9D25027-CAL8	5000	822794E+09	1164559.000	6.00

AVE RF **1158052.000** RF RSD **1.39** AVE RT **6.00**

o-Terphenyl (Surr)

Curve Fit: **AVERAGE RF**

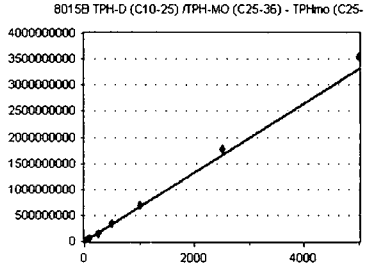


Standard	Concentration	Response	Response Factor	RT
9D25027-CAL9	10	392742E+07	1392742.000	6.79
9D25027-CALA	25	.45403E+07	1381612.000	6.79
9D25027-CALB	50	020782E+07	1404157.000	6.79
9D25027-CALC	100	400981E+08	1400981.000	6.80
9D25027-CALD	200	.75628E+08	1378140.000	6.80

AVE RF **1391526.000** RF RSD **0.83** AVE RT **6.79**

TPHmo (C25-C36)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9D25027-CALE	40	362306E+07	590576.500	9.00
9D25027-CALF	80	952232E+07	619029.000	9.00
9D25027-CALG	250	606323E+08	642529.200	9.00
9D25027-CALH	500	360458E+08	672091.600	9.00
9D25027-CALI	1000	7.0138E+08	701379.900	9.00
9D25027-CALJ	2500	775804E+09	710321.600	9.00
9D25027-CALK	5000	547022E+09	709404.400	9.00

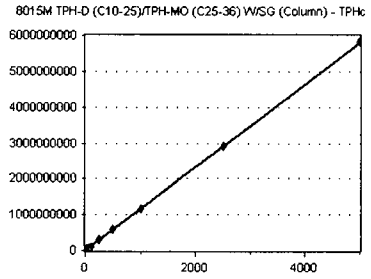
AVE RF **663618.900** RF RSD **7.16** AVE RT **9.00**

Element Calibration Review Sheet

Calibration ID: **A9D2602** Instrument: **DUALFID1F** Calibration Date: **04/26/2019**

Analysis: **8015M TPH-D (C10-25)/TPH-** Instrument Cal ID: **1F90425D.m**

TPHd (C10-C25)

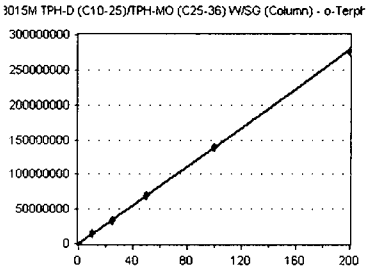


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9D25027-CAL1	25	851515E+07	1140606.000	6.00
9D25027-CAL2	40	575255E+07	1143814.000	6.00
9D25027-CAL3	100	134596E+08	1134596.000	6.00
9D25027-CAL4	250	921196E+08	1168479.000	6.00
9D25027-CAL5	500	899296E+08	1179859.000	6.00
9D25027-CAL6	1000	164841E+09	1164841.000	6.00
9D25027-CAL7	2500	.91916E+09	1167664.000	6.00
9D25027-CAL8	5000	822794E+09	1164559.000	6.00

AVE RF **1158052.000** RF RSD **1.39** AVE RT **6.00**

o-Terphenyl (Surr)

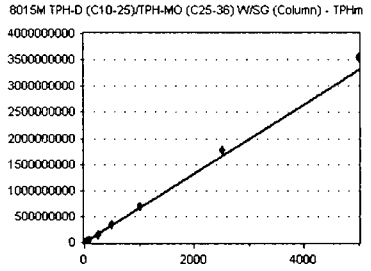


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9D25027-CAL9	10	392742E+07	1392742.000	6.79
9D25027-CALA	25	.45403E+07	1381612.000	6.79
9D25027-CALB	50	020782E+07	1404157.000	6.79
9D25027-CALC	100	400981E+08	1400981.000	6.80
9D25027-CALD	200	.75628E+08	1378140.000	6.80

AVE RF **1391526.000** RF RSD **0.83** AVE RT **6.79**

TPHmo (C25-C36)



Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9D25027-CALE	40	362306E+07	590576.500	9.00
9D25027-CALF	80	952232E+07	619029.000	9.00
9D25027-CALG	250	606323E+08	642529.200	9.00
9D25027-CALH	500	360458E+08	672091.600	9.00
9D25027-CALI	1000	7.0138E+08	701379.900	9.00
9D25027-CALJ	2500	775804E+09	710321.600	9.00
9D25027-CALK	5000	547022E+09	709404.400	9.00

AVE RF **663618.900** RF RSD **7.16** AVE RT **9.00**

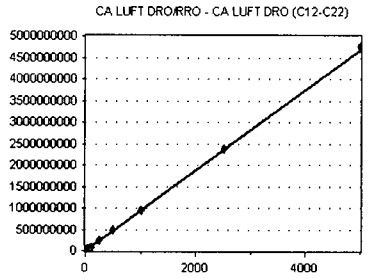
Element Calibration Review Sheet

Calibration ID: **A9D2602** Instrument: **DUALFID1F** Calibration Date: **04/26/2019**

Analysis: **CA LUFT DRO/RRO** Instrument Cal ID: **1F90425D.m**

CA LUFT DRO (C12-C22)

Curve Fit: **AVERAGE RF**

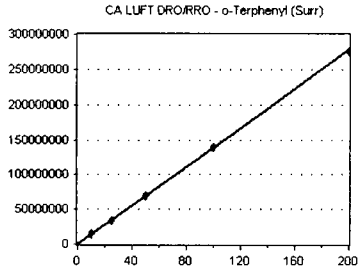


Standard	Concentration	Response	Response Factor	RT
9D25027-CAL1	25	268475E+07	907390.000	6.00
9D25027-CAL2	40	647287E+07	911821.800	6.00
9D25027-CAL3	100	181746E+07	918174.600	6.00
9D25027-CAL4	250	370784E+08	948313.600	6.00
9D25027-CAL5	500	808429E+08	961685.800	6.00
9D25027-CAL6	1000	500637E+08	950063.700	6.00
9D25027-CAL7	2500	380626E+09	952250.400	6.00
9D25027-CAL8	5000	745589E+09	949117.900	6.00

AVE RF **937352.200** RF RSD **2.26** AVE RT **6.00**

o-Terphenyl (Surr)

Curve Fit: **AVERAGE RF**

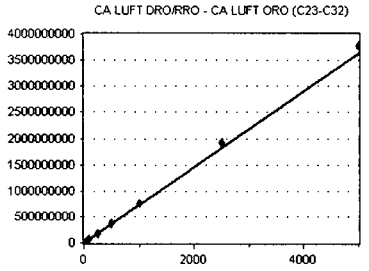


Standard	Concentration	Response	Response Factor	RT
9D25027-CAL9	10	392742E+07	1392742.000	6.79
9D25027-CALA	25	3.45403E+07	1381612.000	6.79
9D25027-CALB	50	020782E+07	1404157.000	6.79
9D25027-CALC	100	400981E+08	1400981.000	6.80
9D25027-CALD	200	1.75628E+08	1378140.000	6.80

AVE RF **1391526.000** RF RSD **0.83** AVE RT **6.79**

CA LUFT ORO (C23-C32)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9D25027-CALE	40	624002E+07	656000.500	8.00
9D25027-CALF	80	537953E+07	692244.100	8.00
9D25027-CALG	250	787992E+08	715196.800	8.00
9D25027-CALH	500	3.69625E+08	739250.000	8.00
9D25027-CALI	1000	7.64513E+08	764513.000	8.00
9D25027-CALJ	2500	913826E+09	765530.400	8.00
9D25027-CALK	5000	793601E+09	758720.200	8.00

AVE RF **727350.700** RF RSD **5.73** AVE RT **8.00**

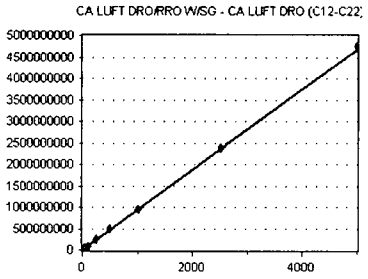
Element Calibration Review Sheet

Calibration ID: **A9D2602** Instrument: **DUALFID1F** Calibration Date: **04/26/2019**

Analysis: **CA LUFT DRO/RRO W/SG** Instrument Cal ID: **1F90425D.m**

CA LUFT DRO (C12-C22)

Curve Fit: **AVERAGE RF**

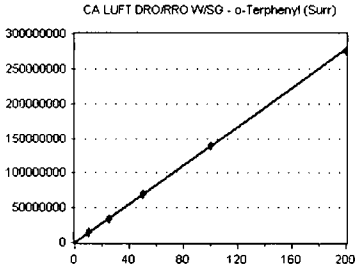


Standard	Concentration	Response	Response Factor	RT
9D25027-CAL1	25	268475E+07	907390.000	6.00
9D25027-CAL2	40	547287E+07	911821.800	6.00
9D25027-CAL3	100	181746E+07	918174.600	6.00
9D25027-CAL4	250	370784E+08	948313.600	6.00
9D25027-CAL5	500	808429E+08	961685.800	6.00
9D25027-CAL6	1000	500637E+08	950063.700	6.00
9D25027-CAL7	2500	380626E+09	952250.400	6.00
9D25027-CAL8	5000	745589E+09	949117.900	6.00

AVE RF **937352.200** RF RSD **2.26** AVE RT **6.00**

o-Terphenyl (Surr)

Curve Fit: **AVERAGE RF**

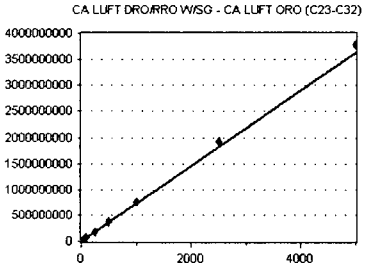


Standard	Concentration	Response	Response Factor	RT
9D25027-CAL9	10	392742E+07	1392742.000	6.79
9D25027-CALA	25	1.45403E+07	1381612.000	6.79
9D25027-CALB	50	020782E+07	1404157.000	6.79
9D25027-CALC	100	400981E+08	1400981.000	6.80
9D25027-CALD	200	1.75628E+08	1378140.000	6.80

AVE RF **1391526.000** RF RSD **0.83** AVE RT **6.79**

CA LUFT ORO (C23-C32)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9D25027-CALE	40	624002E+07	656000.500	8.00
9D25027-CALF	80	537953E+07	692244.100	8.00
9D25027-CALG	250	787992E+08	715196.800	8.00
9D25027-CALH	500	1.69625E+08	739250.000	8.00
9D25027-CALI	1000	7.64513E+08	764513.000	8.00
9D25027-CALJ	2500	913826E+09	765530.400	8.00
9D25027-CALK	5000	793601E+09	758720.200	8.00

AVE RF **727350.700** RF RSD **5.73** AVE RT **8.00**

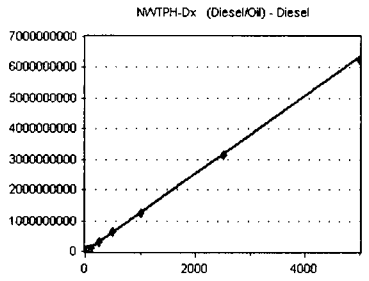
Element Calibration Review Sheet

Calibration ID: **A9D2602** Instrument: **DUALFID1F** Calibration Date: **04/26/2019**

Analysis: **NWTPH-Dx (Diesel/Oil)** Instrument Cal ID: **1F90425D.m**

Diesel

Curve Fit: **AVERAGE RF**

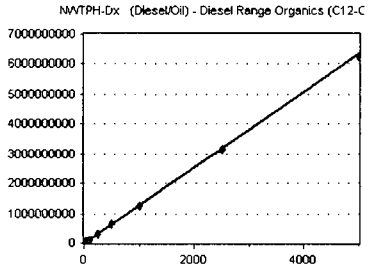


Standard	Concentration	Response	Response Factor	RT
9D25027-CAL1	25	386099E+07	1354440.000	6.00
9D25027-CAL2	40	226552E+07	1306638.000	6.00
9D25027-CAL3	100	253969E+08	1253969.000	6.00
9D25027-CAL4	250	161261E+08	1264505.000	6.00
9D25027-CAL5	500	352581E+08	1270516.000	6.00
9D25027-CAL6	1000	249782E+09	1249782.000	6.00
9D25027-CAL7	2500	126505E+09	1250602.000	6.00
9D25027-CAL8	5000	233782E+09	1246756.000	6.00

AVE RF **1274651.000** RF RSD **2.95** AVE RT **6.00**

Diesel Range Organics (C12-C24

Curve Fit: **AVERAGE RF**

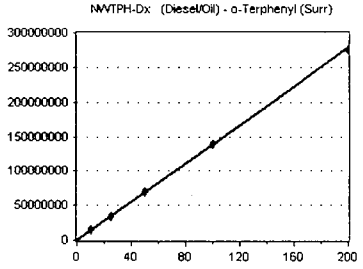


Standard	Concentration	Response	Response Factor	RT
9D25027-CAL1	25	386099E+07	1354440.000	6.00
9D25027-CAL2	40	226552E+07	1306638.000	6.00
9D25027-CAL3	100	253969E+08	1253969.000	6.00
9D25027-CAL4	250	161261E+08	1264505.000	6.00
9D25027-CAL5	500	352581E+08	1270516.000	6.00
9D25027-CAL6	1000	249782E+09	1249782.000	6.00
9D25027-CAL7	2500	126505E+09	1250602.000	6.00
9D25027-CAL8	5000	233782E+09	1246756.000	6.00

AVE RF **1274651.000** RF RSD **2.95** AVE RT **6.00**

o-Terphenyl (Surr)

Curve Fit: **AVERAGE RF**

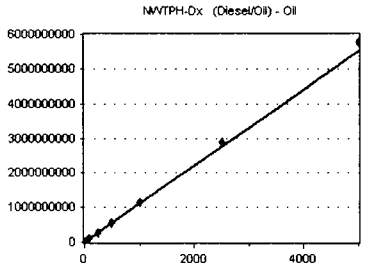


Standard	Concentration	Response	Response Factor	RT
9D25027-CAL9	10	392742E+07	1392742.000	6.79
9D25027-CALA	25	3.45403E+07	1381612.000	6.79
9D25027-CALB	50	020782E+07	1404157.000	6.79
9D25027-CALC	100	400981E+08	1400981.000	6.80
9D25027-CALD	200	1.75628E+08	1378140.000	6.80

AVE RF **1391526.000** RF RSD **0.83** AVE RT **6.79**

Oil

Curve Fit: **AVERAGE RF**

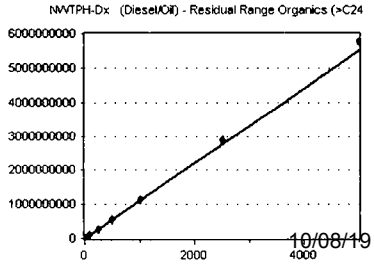


Standard	Concentration	Response	Response Factor	RT
9D25027-CALE	40	065842E+07	1016461.000	10.00
9D25027-CALF	80	408106E+07	1051013.000	10.00
9D25027-CALG	250	671317E+08	1068527.000	10.00
9D25027-CALH	500	513768E+08	1102754.000	10.00
9D25027-CALI	1000	146401E+09	1146401.000	10.00
9D25027-CALJ	2500	902022E+09	1160809.000	10.00
9D25027-CALK	5000	5.78743E+09	1157486.000	10.00

AVE RF **1100493.000** RF RSD **5.18** AVE RT **10.00**

Residual Range Organics (>C24

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9D25027-CALE	40	065842E+07	1016461.000	10.00
9D25027-CALF	80	408106E+07	1051013.000	10.00
9D25027-CALG	250	671317E+08	1068527.000	10.00
9D25027-CALH	500	513768E+08	1102754.000	10.00
9D25027-CALI	1000	146401E+09	1146401.000	10.00
9D25027-CALJ	2500	902022E+09	1160809.000	10.00
9D25027-CALK	5000	5.78743E+09	1157486.000	10.00

AVE RF **1100493.000** RF RSD **5.18** AVE RT **10.00**

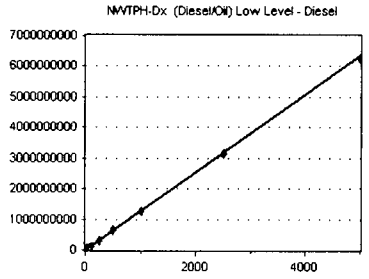
Element Calibration Review Sheet

Calibration ID: **A9D2602** Instrument: **DUALFID1F** Calibration Date: **04/26/2019**

Analysis: **NWTPH-Dx (Diesel/Oil) Low** Instrument Cal ID: **1F90425D.m**

Diesel

Curve Fit: **AVERAGE RF**

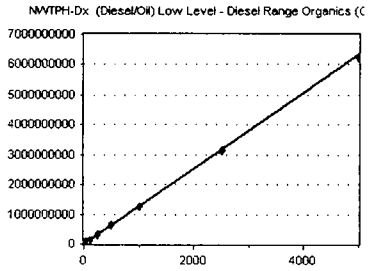


Standard	Concentration	Response	Response Factor	RT
9D25027-CAL1	25	386099E+07	1354440.000	6.00
9D25027-CAL2	40	226552E+07	1306638.000	6.00
9D25027-CAL3	100	253969E+08	1253969.000	6.00
9D25027-CAL4	250	161261E+08	1264505.000	6.00
9D25027-CAL5	500	352581E+08	1270516.000	6.00
9D25027-CAL6	1000	249782E+09	1249782.000	6.00
9D25027-CAL7	2500	126505E+09	1250602.000	6.00
9D25027-CAL8	5000	233782E+09	1246756.000	6.00

AVE RF **1274651.000** RF RSD **2.95** AVE RT **6.00**

Diesel Range Organics (C12-C24

Curve Fit: **AVERAGE RF**

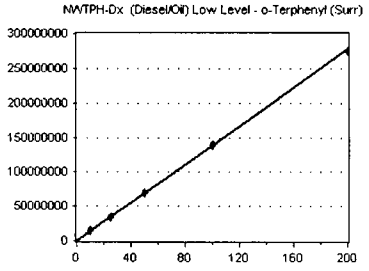


Standard	Concentration	Response	Response Factor	RT
9D25027-CAL1	25	386099E+07	1354440.000	6.00
9D25027-CAL2	40	226552E+07	1306638.000	6.00
9D25027-CAL3	100	253969E+08	1253969.000	6.00
9D25027-CAL4	250	161261E+08	1264505.000	6.00
9D25027-CAL5	500	352581E+08	1270516.000	6.00
9D25027-CAL6	1000	249782E+09	1249782.000	6.00
9D25027-CAL7	2500	126505E+09	1250602.000	6.00
9D25027-CAL8	5000	233782E+09	1246756.000	6.00

AVE RF **1274651.000** RF RSD **2.95** AVE RT **6.00**

o-Terphenyl (Surr)

Curve Fit: **AVERAGE RF**

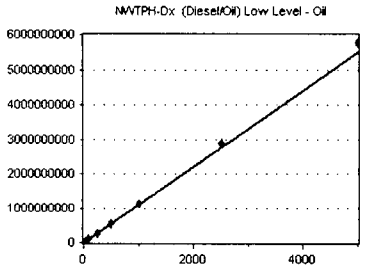


Standard	Concentration	Response	Response Factor	RT
9D25027-CAL9	10	392742E+07	1392742.000	6.79
9D25027-CALA	25	1.45403E+07	1381612.000	6.79
9D25027-CALB	50	020782E+07	1404157.000	6.79
9D25027-CALC	100	400981E+08	1400981.000	6.80
9D25027-CALD	200	1.75628E+08	1378140.000	6.80

AVE RF **1391526.000** RF RSD **0.83** AVE RT **6.79**

Oil

Curve Fit: **AVERAGE RF**

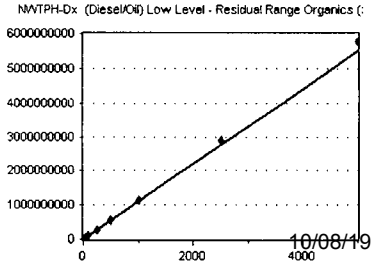


Standard	Concentration	Response	Response Factor	RT
9D25027-CALE	40	065842E+07	1016461.000	10.00
9D25027-CALF	80	408106E+07	1051013.000	10.00
9D25027-CALG	250	671317E+08	1068527.000	10.00
9D25027-CALH	500	513768E+08	1102754.000	10.00
9D25027-CALI	1000	146401E+09	1146401.000	10.00
9D25027-CALJ	2500	902022E+09	1160809.000	10.00
9D25027-CALK	5000	5.78743E+09	1157486.000	10.00

AVE RF **1100493.000** RF RSD **5.18** AVE RT **10.00**

Residual Range Organics (>C24

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9D25027-CALE	40	065842E+07	1016461.000	10.00
9D25027-CALF	80	408106E+07	1051013.000	10.00
9D25027-CALG	250	671317E+08	1068527.000	10.00
9D25027-CALH	500	513768E+08	1102754.000	10.00
9D25027-CALI	1000	146401E+09	1146401.000	10.00
9D25027-CALJ	2500	902022E+09	1160809.000	10.00
9D25027-CALK	5000	5.78743E+09	1157486.000	10.00

AVE RF **1100493.000** RF RSD **5.18** AVE RT **10.00**

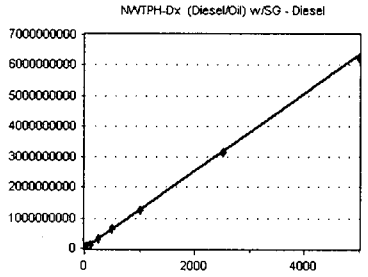
Element Calibration Review Sheet

Calibration ID: **A9D2602** Instrument: **DUALFID1F** Calibration Date: **04/26/2019**

Analysis: **NWTPH-Dx (Diesel/Oil) w/S** Instrument Cal ID: **1F90425D.m**

Diesel

Curve Fit: **AVERAGE RF**

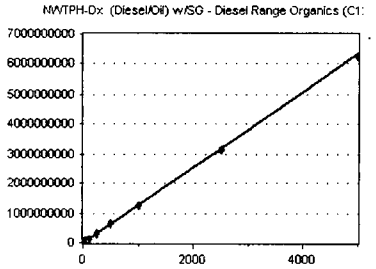


Standard	Concentration	Response	Response Factor	RT
9D25027-CAL1	25	386099E+07	1354440.000	6.00
9D25027-CAL2	40	226552E+07	1306638.000	6.00
9D25027-CAL3	100	253969E+08	1253969.000	6.00
9D25027-CAL4	250	161261E+08	1264505.000	6.00
9D25027-CAL5	500	352581E+08	1270516.000	6.00
9D25027-CAL6	1000	249782E+09	1249782.000	6.00
9D25027-CAL7	2500	126505E+09	1250602.000	6.00
9D25027-CAL8	5000	233782E+09	1246756.000	6.00

AVE RF **1274651.000** RF RSD **2.95** AVE RT **6.00**

Diesel Range Organics (C12-C24

Curve Fit: **AVERAGE RF**

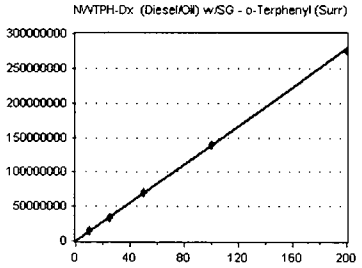


Standard	Concentration	Response	Response Factor	RT
9D25027-CAL1	25	386099E+07	1354440.000	6.00
9D25027-CAL2	40	226552E+07	1306638.000	6.00
9D25027-CAL3	100	253969E+08	1253969.000	6.00
9D25027-CAL4	250	161261E+08	1264505.000	6.00
9D25027-CAL5	500	352581E+08	1270516.000	6.00
9D25027-CAL6	1000	249782E+09	1249782.000	6.00
9D25027-CAL7	2500	126505E+09	1250602.000	6.00
9D25027-CAL8	5000	233782E+09	1246756.000	6.00

AVE RF **1274651.000** RF RSD **2.95** AVE RT **6.00**

o-Terphenyl (Surr)

Curve Fit: **AVERAGE RF**

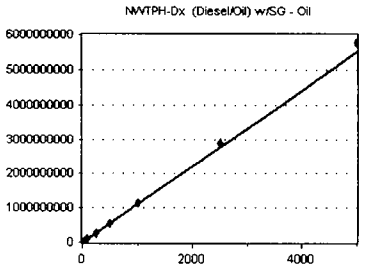


Standard	Concentration	Response	Response Factor	RT
9D25027-CAL9	10	392742E+07	1392742.000	6.79
9D25027-CALA	25	45403E+07	1381612.000	6.79
9D25027-CALB	50	020782E+07	1404157.000	6.79
9D25027-CALC	100	400981E+08	1400981.000	6.80
9D25027-CALD	200	75628E+08	1378140.000	6.80

AVE RF **1391526.000** RF RSD **0.83** AVE RT **6.79**

Oil

Curve Fit: **AVERAGE RF**

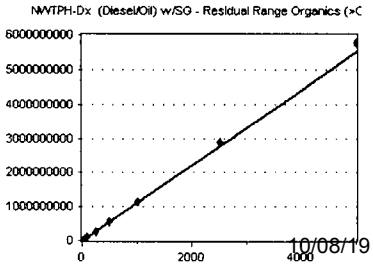


Standard	Concentration	Response	Response Factor	RT
9D25027-CALE	40	065842E+07	1016461.000	10.00
9D25027-CALF	80	408106E+07	1051013.000	10.00
9D25027-CALG	250	671317E+08	1068527.000	10.00
9D25027-CALH	500	513768E+08	1102754.000	10.00
9D25027-CALI	1000	146401E+09	1146401.000	10.00
9D25027-CALJ	2500	902022E+09	1160809.000	10.00
9D25027-CALK	5000	78743E+09	1157486.000	10.00

AVE RF **1100493.000** RF RSD **5.18** AVE RT **10.00**

Residual Range Organics (>C24

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9D25027-CALE	40	065842E+07	1016461.000	10.00
9D25027-CALF	80	408106E+07	1051013.000	10.00
9D25027-CALG	250	671317E+08	1068527.000	10.00
9D25027-CALH	500	513768E+08	1102754.000	10.00
9D25027-CALI	1000	146401E+09	1146401.000	10.00
9D25027-CALJ	2500	902022E+09	1160809.000	10.00
9D25027-CALK	5000	78743E+09	1157486.000	10.00

AVE RF **1100493.000** RF RSD **5.18** AVE RT **10.00**

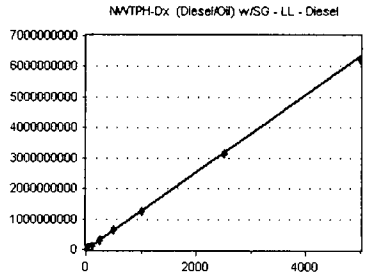
Element Calibration Review Sheet

Calibration ID: **A9D2602** Instrument: **DUALFID1F** Calibration Date: **04/26/2019**

Analysis: **NWTPH-Dx (Diesel/Oil) w/S** Instrument Cal ID: **1F90425D.m**

Diesel

Curve Fit: **AVERAGE RF**

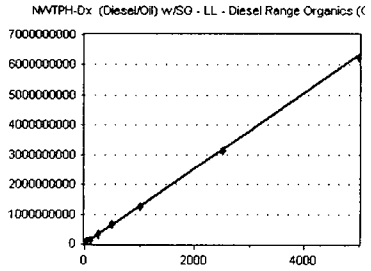


Standard	Concentration	Response	Response Factor	RT
9D25027-CAL1	25	386099E+07	1354440.000	6.00
9D25027-CAL2	40	226552E+07	1306638.000	6.00
9D25027-CAL3	100	253969E+08	1253969.000	6.00
9D25027-CAL4	250	161261E+08	1264505.000	6.00
9D25027-CAL5	500	352581E+08	1270516.000	6.00
9D25027-CAL6	1000	249782E+09	1249782.000	6.00
9D25027-CAL7	2500	126505E+09	1250602.000	6.00
9D25027-CAL8	5000	233782E+09	1246756.000	6.00

AVE RF **1274651.000** RF RSD **2.95** AVE RT **6.00**

Diesel Range Organics (C12-C24)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9D25027-CAL1	25	386099E+07	1354440.000	6.00
9D25027-CAL2	40	226552E+07	1306638.000	6.00
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9D25027-CAL4	250	161261E+08	1264505.000	6.00
9D25027-CAL5	500	352581E+08	1270516.000	6.00
9D25027-CAL6	1000	249782E+09	1249782.000	6.00
9D25027-CAL7	2500	126505E+09	1250602.000	6.00
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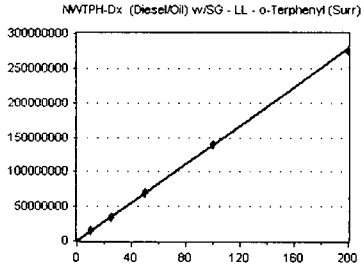
AVE RF **1274651.000** RF RSD **2.95** AVE RT **6.00**

o-Terphenyl (Surr)

Curve Fit: **AVERAGE RF**

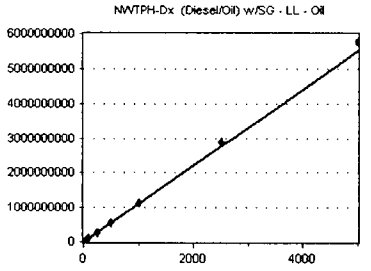


Standard	Concentration	Response	Response Factor	RT
9D25027-CAL9	10	392742E+07	1392742.000	6.79
9D25027-CALA	25	1.45403E+07	1381612.000	6.79
9D25027-CALB	50	020782E+07	1404157.000	6.79
9D25027-CALC	100	400981E+08	1400981.000	6.80
9D25027-CALD	200	1.75628E+08	1378140.000	6.80

AVE RF **1391526.000** RF RSD **0.83** AVE RT **6.79**

Oil

Curve Fit: **AVERAGE RF**

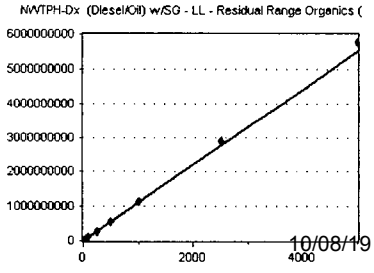


Standard	Concentration	Response	Response Factor	RT
9D25027-CALE	40	065842E+07	1016461.000	10.00
9D25027-CALF	80	408106E+07	1051013.000	10.00
9D25027-CALG	250	671317E+08	1068527.000	10.00
9D25027-CALH	500	513768E+08	1102754.000	10.00
9D25027-CALI	1000	146401E+09	1146401.000	10.00
9D25027-CALJ	2500	902022E+09	1160809.000	10.00
9D25027-CALK	5000	5.78743E+09	1157486.000	10.00

AVE RF **1100493.000** RF RSD **5.18** AVE RT **10.00**

Residual Range Organics (>C24)

Curve Fit: **AVERAGE RF**



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9D25027-CALF	80	408106E+07	1051013.000	10.00
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9D25027-CALI	1000	146401E+09	1146401.000	10.00
9D25027-CALJ	2500	902022E+09	1160809.000	10.00
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AVE RF **1100493.000** RF RSD **5.18** AVE RT **10.00**

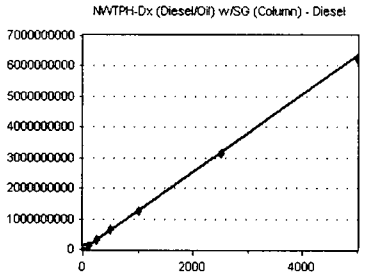
Element Calibration Review Sheet

Calibration ID: **A9D2602** Instrument: **DUALFID1F** Calibration Date: **04/26/2019**

Analysis: **NWTPH-Dx (Diesel/Oil) w/SC** Instrument Cal ID: **1F90425D.m**

Diesel

Curve Fit: **AVERAGE RF**



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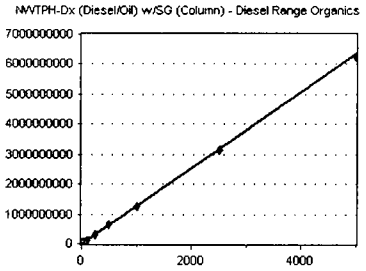
Diesel Range Organics (C12-C24

Curve Fit: **AVERAGE RF**



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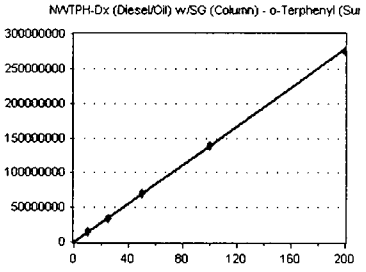
AVE RF **1274651.000** RF RSD **2.95** AVE RT **6.00**

o-Terphenyl (Surr)

Curve Fit: **AVERAGE RF**



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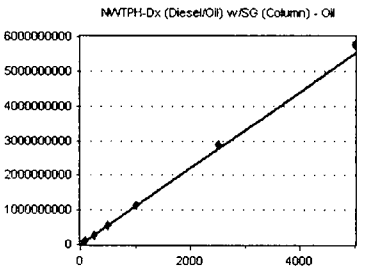
Oil

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
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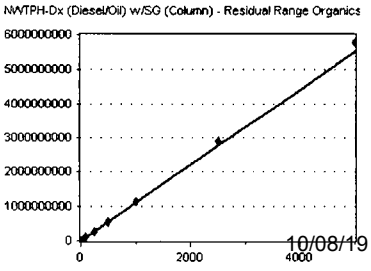
9D25027-CALF	80	408106E+07	1051013.000	10.00
9D25027-CALG	250	671317E+08	1068527.000	10.00
9D25027-CALH	500	513768E+08	1102754.000	10.00
9D25027-CALI	1000	146401E+09	1146401.000	10.00
9D25027-CALJ	2500	902022E+09	1160809.000	10.00
9D25027-CALK	5000	5.78743E+09	1157486.000	10.00

AVE RF **1100493.000** RF RSD **5.18** AVE RT **10.00**

Residual Range Organics (>C24

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
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9D25027-CALF	80	408106E+07	1051013.000	10.00
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9D25027-CALH	500	513768E+08	1102754.000	10.00
9D25027-CALI	1000	146401E+09	1146401.000	10.00
9D25027-CALJ	2500	902022E+09	1160809.000	10.00
9D25027-CALK	5000	5.78743E+09	1157486.000	10.00

AVE RF **1100493.000** RF RSD **5.18** AVE RT **10.00**

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9D25027 **Seq. Date: 4/26/2019**

SEQUENCE LOG

SampleID	Analysis	Matrix	STDID	Analyzed
9D25027-ICB1	8015B TPH-D (C10-25) /TPH-MO	Soil		4/25/2019 5:18:00PM
"	+8015M TPH-D (C10-25)/TPH-M	"		"
"	+CA LUFT DRO/RRO	"		"
"	+CA LUFT DRO/RRO W/SG	"		"
"	+NWTPH-Dx (Diesel/Oil)	"		"
"	+NWTPH-Dx (Diesel/Oil) Low Le	"		"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"		"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"		"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"		"
9D25027-CAL1	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C305	4/25/2019 5:41:00PM
"	+8015M TPH-D (C10-25)/TPH-M	"	A19C305	"
"	+CA LUFT DRO/RRO	"	A19C305	"
"	+CA LUFT DRO/RRO W/SG	"	A19C305	"
"	+NWTPH-Dx (Diesel/Oil)	"	A19C305	"
"	+NWTPH-Dx (Diesel/Oil) Low Le	"	A19C305	"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19C305	"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19C305	"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19C305	"
9D25027-CAL2	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C306	4/25/2019 6:03:00PM
"	+8015M TPH-D (C10-25)/TPH-M	"	A19C306	"
"	+CA LUFT DRO/RRO	"	A19C306	"
"	+CA LUFT DRO/RRO W/SG	"	A19C306	"
"	+NWTPH-Dx (Diesel/Oil)	"	A19C306	"
"	+NWTPH-Dx (Diesel/Oil) Low Le	"	A19C306	"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19C306	"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19C306	"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19C306	"
9D25027-CAL3	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C307	4/25/2019 6:26:00PM
"	+8015M TPH-D (C10-25)/TPH-M	"	A19C307	"
"	+CA LUFT DRO/RRO	"	A19C307	"
"	+CA LUFT DRO/RRO W/SG	"	A19C307	"
"	+NWTPH-Dx (Diesel/Oil)	"	A19C307	"
"	+NWTPH-Dx (Diesel/Oil) Low Le	"	A19C307	"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19C307	"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19C307	"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19C307	"
9D25027-CAL4	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C308	4/25/2019 6:49:00PM
"	+8015M TPH-D (C10-25)/TPH-M	"	A19C308	"
"	+CA LUFT DRO/RRO	"	A19C308	"
"	+CA LUFT DRO/RRO W/SG	"	A19C308	"
"	+NWTPH-Dx (Diesel/Oil)	"	A19C308	"
"	+NWTPH-Dx (Diesel/Oil) Low Le	"	A19C308	"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19C308	"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19C308	"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19C308	"

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9D25027 **Seq. Date: 4/26/2019**

9D25027-CAL5	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C309	4/25/2019	7:12:00PM
"	+8015M TPH-D (C10-25)/TPH-M	"	A19C309		"
"	+CA LUFT DRO/RRO	"	A19C309		"
"	+CA LUFT DRO/RRO W/SG	"	A19C309		"
"	+NWTPH-Dx (Diesel/Oil)	"	A19C309		"
"	+NWTPH-Dx (Diesel/Oil) Low Le	"	A19C309		"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19C309		"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19C309		"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19C309		"
9D25027-CAL6	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C310	4/25/2019	7:35:00PM
"	+8015M TPH-D (C10-25)/TPH-M	"	A19C310		"
"	+CA LUFT DRO/RRO	"	A19C310		"
"	+CA LUFT DRO/RRO W/SG	"	A19C310		"
"	+NWTPH-Dx (Diesel/Oil)	"	A19C310		"
"	+NWTPH-Dx (Diesel/Oil) Low Le	"	A19C310		"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19C310		"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19C310		"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19C310		"
9D25027-CAL7	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C311	4/25/2019	7:58:00PM
"	+8015M TPH-D (C10-25)/TPH-M	"	A19C311		"
"	+CA LUFT DRO/RRO	"	A19C311		"
"	+CA LUFT DRO/RRO W/SG	"	A19C311		"
"	+NWTPH-Dx (Diesel/Oil)	"	A19C311		"
"	+NWTPH-Dx (Diesel/Oil) Low Le	"	A19C311		"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19C311		"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19C311		"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19C311		"
9D25027-CAL8	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C204	4/25/2019	8:20:00PM
"	+8015M TPH-D (C10-25)/TPH-M	"	A19C204		"
"	+CA LUFT DRO/RRO	"	A19C204		"
"	+CA LUFT DRO/RRO W/SG	"	A19C204		"
"	+NWTPH-Dx (Diesel/Oil)	"	A19C204		"
"	+NWTPH-Dx (Diesel/Oil) Low Le	"	A19C204		"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19C204		"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19C204		"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19C204		"
9D25027-CAL9	8015B TPH-D (C10-25) /TPH-MO	Soil	A19D191	4/25/2019	8:43:00PM
"	+8015M TPH-D (C10-25)/TPH-M	"	A19D191		"
"	+CA LUFT DRO/RRO	"	A19D191		"
"	+CA LUFT DRO/RRO W/SG	"	A19D191		"
"	+NWTPH-Dx (Diesel/Oil)	"	A19D191		"
"	+NWTPH-Dx (Diesel/Oil) Low Le	"	A19D191		"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19D191		"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19D191		"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19D191		"
9D25027-CALA	8015B TPH-D (C10-25) /TPH-MO	Soil	A19D192	4/25/2019	9:06:00PM
"	+8015M TPH-D (C10-25)/TPH-M	"	A19D192		"
"	+CA LUFT DRO/RRO	"	A19D192		"
"	+CA LUFT DRO/RRO W/SG	"	A19D192		"

"	+NWTPH-Dx (Diesel/Oil)	"	A19D192		"
"	+NWTPH-Dx (Diesel/Oil) Low L	"	A19D192		"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19D192		"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19D192		"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19D192		"
9D25027-CALB	8015B TPH-D (C10-25) /TPH-MO	Soil	A19D193	4/25/2019 9:29:00PM	
"	+8015M TPH-D (C10-25)/TPH-M	"	A19D193		"
"	+CA LUFT DRO/RRO	"	A19D193		"
"	+CA LUFT DRO/RRO W/SG	"	A19D193		"
"	+NWTPH-Dx (Diesel/Oil)	"	A19D193		"
"	+NWTPH-Dx (Diesel/Oil) Low L	"	A19D193		"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19D193		"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19D193		"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19D193		"
9D25027-CALC	8015B TPH-D (C10-25) /TPH-MO	Soil	A19D194	4/25/2019 9:51:00PM	
"	+8015M TPH-D (C10-25)/TPH-M	"	A19D194		"
"	+CA LUFT DRO/RRO	"	A19D194		"
"	+CA LUFT DRO/RRO W/SG	"	A19D194		"
"	+NWTPH-Dx (Diesel/Oil)	"	A19D194		"
"	+NWTPH-Dx (Diesel/Oil) Low L	"	A19D194		"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19D194		"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19D194		"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19D194		"
9D25027-CALD	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C210	4/25/2019 10:14:00PM	
"	+8015M TPH-D (C10-25)/TPH-M	"	A19C210		"
"	+CA LUFT DRO/RRO	"	A19C210		"
"	+CA LUFT DRO/RRO W/SG	"	A19C210		"
"	+NWTPH-Dx (Diesel/Oil)	"	A19C210		"
"	+NWTPH-Dx (Diesel/Oil) Low L	"	A19C210		"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19C210		"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19C210		"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19C210		"
9D25027-CALE	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C365	4/25/2019 10:37:00PM	
"	+8015M TPH-D (C10-25)/TPH-M	"	A19C365		"
"	+CA LUFT DRO/RRO	"	A19C365		"
"	+CA LUFT DRO/RRO W/SG	"	A19C365		"
"	+NWTPH-Dx (Diesel/Oil)	"	A19C365		"
"	+NWTPH-Dx (Diesel/Oil) Low L	"	A19C365		"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19C365		"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19C365		"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19C365		"
9D25027-CALF	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C366	4/25/2019 10:59:00PM	
"	+8015M TPH-D (C10-25)/TPH-M	"	A19C366		"
"	+CA LUFT DRO/RRO	"	A19C366		"
"	+CA LUFT DRO/RRO W/SG	"	A19C366		"
"	+NWTPH-Dx (Diesel/Oil)	"	A19C366		"
"	+NWTPH-Dx (Diesel/Oil) Low L	"	A19C366		"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19C366		"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19C366		"

"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19C366	"
9D25027-CALG	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C367	4/25/2019 11:22:00PM
"	+8015M TPH-D (C10-25)/TPH-M	"	A19C367	"
"	+CA LUFT DRO/RRO	"	A19C367	"
"	+CA LUFT DRO/RRO W/SG	"	A19C367	"
"	+NWTPH-Dx (Diesel/Oil)	"	A19C367	"
"	+NWTPH-Dx (Diesel/Oil) Low Le	"	A19C367	"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19C367	"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19C367	"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19C367	"
9D25027-CALH	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C368	4/25/2019 11:45:00PM
"	+8015M TPH-D (C10-25)/TPH-M	"	A19C368	"
"	+CA LUFT DRO/RRO	"	A19C368	"
"	+CA LUFT DRO/RRO W/SG	"	A19C368	"
"	+NWTPH-Dx (Diesel/Oil)	"	A19C368	"
"	+NWTPH-Dx (Diesel/Oil) Low Le	"	A19C368	"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19C368	"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19C368	"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19C368	"
9D25027-CALI	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C373	4/26/2019 12:07:00AM
"	+8015M TPH-D (C10-25)/TPH-M	"	A19C373	"
"	+CA LUFT DRO/RRO	"	A19C373	"
"	+CA LUFT DRO/RRO W/SG	"	A19C373	"
"	+NWTPH-Dx (Diesel/Oil)	"	A19C373	"
"	+NWTPH-Dx (Diesel/Oil) Low Le	"	A19C373	"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19C373	"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19C373	"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19C373	"
9D25027-CALJ	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C370	4/26/2019 12:30:00AM
"	+8015M TPH-D (C10-25)/TPH-M	"	A19C370	"
"	+CA LUFT DRO/RRO	"	A19C370	"
"	+CA LUFT DRO/RRO W/SG	"	A19C370	"
"	+NWTPH-Dx (Diesel/Oil)	"	A19C370	"
"	+NWTPH-Dx (Diesel/Oil) Low Le	"	A19C370	"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19C370	"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19C370	"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19C370	"
9D25027-CALK	8015B TPH-D (C10-25) /TPH-MO	Soil	A19C364	4/26/2019 1:15:00AM
"	+8015M TPH-D (C10-25)/TPH-M	"	A19C364	"
"	+CA LUFT DRO/RRO	"	A19C364	"
"	+CA LUFT DRO/RRO W/SG	"	A19C364	"
"	+NWTPH-Dx (Diesel/Oil)	"	A19C364	"
"	+NWTPH-Dx (Diesel/Oil) Low Le	"	A19C364	"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19C364	"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19C364	"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19C364	"
9D25027-ICV1	8015B TPH-D (C10-25) /TPH-MO	Soil	A19D271	4/26/2019 2:00:00AM
"	+8015M TPH-D (C10-25)/TPH-M	"	A19D271	"
"	+CA LUFT DRO/RRO	"	A19D271	"

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9D25027 **Seq. Date: 4/26/2019**

"	+CA LUFT DRO/RRO W/SG	"	A19D271		"
"	+NWTPH-Dx (Diesel/Oil)	"	A19D271		"
"	+NWTPH-Dx (Diesel/Oil) Low L	"	A19D271		"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19D271		"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19D271		"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19D271		"
9D25027-ICV2	8015B TPH-D (C10-25) /TPH-MO	Soil	A19D272	4/26/2019 2:23:00AM	
"	+8015M TPH-D (C10-25)/TPH-M	"	A19D272		"
"	+CA LUFT DRO/RRO	"	A19D272		"
"	+CA LUFT DRO/RRO W/SG	"	A19D272		"
"	+NWTPH-Dx (Diesel/Oil)	"	A19D272		"
"	+NWTPH-Dx (Diesel/Oil) Low L	"	A19D272		"
"	+NWTPH-Dx (Diesel/Oil) w/SG	"	A19D272		"
"	+NWTPH-Dx (Diesel/Oil) w/SG -	"	A19D272		"
"	+NWTPH-Dx (Diesel/Oil) w/SG (	"	A19D272		"

CALIBRATION STANDARD RECOVERIES

Calibration: **A9D2602** Instrument: **DUALFID1F**

8015B TPH-D (C10-25) /TPH- Sequence: **9D25027** Matrix: **Soil**

9D25027-CAL1	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D25027-CAL2	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D25027-CAL3	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D25027-CAL4	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D25027-CAL5	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D25027-CAL6	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D25027-CAL7	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D25027-CAL8	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D25027-CALE	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D25027-CALF	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D25027-CALG	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D25027-CALH	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D25027-CALI	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D25027-CALJ	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9D25027-CALK	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**

Compounds listed above have recalculated recoveries outside 85-115% of the true values, and the calibration levels are above the reporting level. If no compounds are listed, all are OK. Please see the next section for quadatic fit compounds.

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9D25027 **Seq. Date: 4/26/2019**

Analytes With Quadratic Curve Fits

Qualifier	MRL	Recalc Value	OK?	Raise MRL to ?
		_____	☐	☐ _____

Analytes listed above have quadratic curve fits. If they are using a weighting otpion, they must be checked against the requanted curve points to determine if the recalculated results are within limits (85-115 or as specified).

ICV RECOVERIES

Calibration: **A9D2602** Instrument: **DUALFID1F**

NWTPH-Dx (Diesel/Oil) Sequence: **9D25027** Matrix: **Soil**

9D25027-ICV1	**Inst. MRL**	**ICV Level**	**Result**	**%Rec.**	**Qual**

9D25027-ICV2	**Inst. MRL**	**ICV Level**	**Result**	**%Rec.**	**Qual**

Compounds listed above have Initial Calibration Verification standard recoveries outside 70-130% of the true values. If no compounds are listed, all have passing recoveries.

Calibration Status Report HP G1530A

Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:45:04 2019
Response via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	D1	25.00	0.00	F:\1\DATA\2019-04\9D25027\1F042504.D
2	D2	40.00	0.00	F:\1\DATA\2019-04\9D25027\1F042505.D
3	D3	100.00	0.00	F:\1\DATA\2019-04\9D25027\1F042506.D
4	D4	250.00	0.00	F:\1\DATA\2019-04\9D25027\1F042507.D
5	D5	500.00	0.00	F:\1\DATA\2019-04\9D25027\1F042508.D
6	D6	1000.00	0.00	F:\1\DATA\2019-04\9D25027\1F042509.D
7	D7	2500.00	0.00	F:\1\DATA\2019-04\9D25027\1F042510.D
8	D8	5000.00	0.00	F:\1\DATA\2019-04\9D25027\1F042511.D
9	S1	-1.00	0.00	F:\1\DATA\2019-04\9D25027\1F042512.D
10	S2	-1.00	0.00	F:\1\DATA\2019-04\9D25027\1F042513.D
11	S3	-1.00	0.00	F:\1\DATA\2019-04\9D25027\1F042514.D
12	S4	-1.00	0.00	F:\1\DATA\2019-04\9D25027\1F042515.D
13	S5	-1.00	0.00	F:\1\DATA\2019-04\9D25027\1F042516.D
14	01	-1.00	0.00	F:\1\DATA\2019-04\9D25027\1F042517.D
15	02	-1.00	0.00	F:\1\DATA\2019-04\9D25027\1F042518.D
16	03	-1.00	0.00	F:\1\DATA\2019-04\9D25027\1F042519.D
17	04	-1.00	0.00	F:\1\DATA\2019-04\9D25027\1F042520.D
18	05	-1.00	0.00	F:\1\DATA\2019-04\9D25027\1F042521.D
19	06	-1.00	0.00	F:\1\DATA\2019-04\9D25027\1F042522.D
20	07	-1.00	0.00	F:\1\DATA\2019-04\9D25027\1F042524.D

A9D2602
kat 4/26/19

#	ID	Update Time	Quant Time	Acquisition Time
1	D1	Apr 26 08:37 2019	Apr 26 08:21 2019	25 Apr 2019 17:41
2	D2	Apr 26 08:37 2019	Apr 26 08:22 2019	25 Apr 2019 18:03
3	D3	Apr 26 08:37 2019	Apr 26 08:22 2019	25 Apr 2019 18:26
4	D4	Apr 26 08:38 2019	Apr 26 08:23 2019	25 Apr 2019 18:49
5	D5	Apr 26 08:38 2019	Apr 26 08:23 2019	25 Apr 2019 19:12
6	D6	Apr 26 08:38 2019	Apr 26 08:24 2019	25 Apr 2019 19:35
7	D7	Apr 26 08:38 2019	Apr 26 08:24 2019	25 Apr 2019 19:58
8	D8	Apr 26 08:38 2019	Apr 26 08:27 2019	25 Apr 2019 20:20
9	S1	Apr 26 08:39 2019	Apr 26 08:27 2019	25 Apr 2019 20:43
10	S2	Apr 26 08:39 2019	Apr 26 08:28 2019	25 Apr 2019 21:06
11	S3	Apr 26 08:39 2019	Apr 26 08:28 2019	25 Apr 2019 21:29
12	S4	Apr 26 08:39 2019	Apr 26 08:28 2019	25 Apr 2019 21:51
13	S5	Apr 26 08:39 2019	Apr 26 08:28 2019	25 Apr 2019 22:14
14	01	Apr 26 08:40 2019	Apr 26 08:29 2019	25 Apr 2019 22:37
15	02	Apr 26 08:40 2019	Apr 26 08:29 2019	25 Apr 2019 22:59
16	03	Apr 26 08:44 2019	Apr 26 08:29 2019	25 Apr 2019 23:22
17	04	Apr 26 08:44 2019	Apr 26 08:30 2019	25 Apr 2019 23:45
18	05	Apr 26 08:44 2019	Apr 26 08:30 2019	26 Apr 2019 00:07
19	06	Apr 26 08:44 2019	Apr 26 08:31 2019	26 Apr 2019 00:30
20	07	Apr 26 08:45 2019	Apr 26 08:31 2019	26 Apr 2019 1:15

✓

1F90425D.M Fri Apr 26 09:06:16 2019 SV-GCMS3

Response Factor Report HP G1530A

Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:45:04 2019

Calibration Files
D1 =1F042504.D D2 =1F042505.D D3 =1F042506.D
D4 =1F042507.D D5 =1F042508.D D6 =1F042509.D

		Compound	D1	D2	D3	D4	D5	D6	Avg		%RSD
1)	H	Mineral Oil	1.354	1.307	1.254	1.265	1.271	1.250	1.275	E6	2.95
2)	H	Diesel	1.354	1.307	1.254	1.265	1.271	1.250	1.275	E6	2.95
3)	H	DRO(C12-C24)	1.354	1.307	1.254	1.265	1.271	1.250	1.275	E6	2.95
4)	H	Ca Luft DRO (C12-C2	9.074	9.118	9.182	9.483	9.617	9.501	9.374	E5	2.26
5)	H	TPHd (C10-C25)	1.141	1.144	1.135	1.168	1.180	1.165	1.158	E6	1.39
6)	S	o-Terphenyl							1.392	E6	0.83
7)	H	OIL							1.100	E6	5.18
8)	H	RRO (C24-C40)							1.100	E6	5.18
9)	H	Ca Luft ORO (C23-C3							7.274	E5	5.73
10)	H	TPHmo (C25-C36)							6.636	E5	7.16

Jeff 4/26/19

(#) = Out of Range ### Number of calibration levels exceeded format ###

Compound List Report HP G1530A

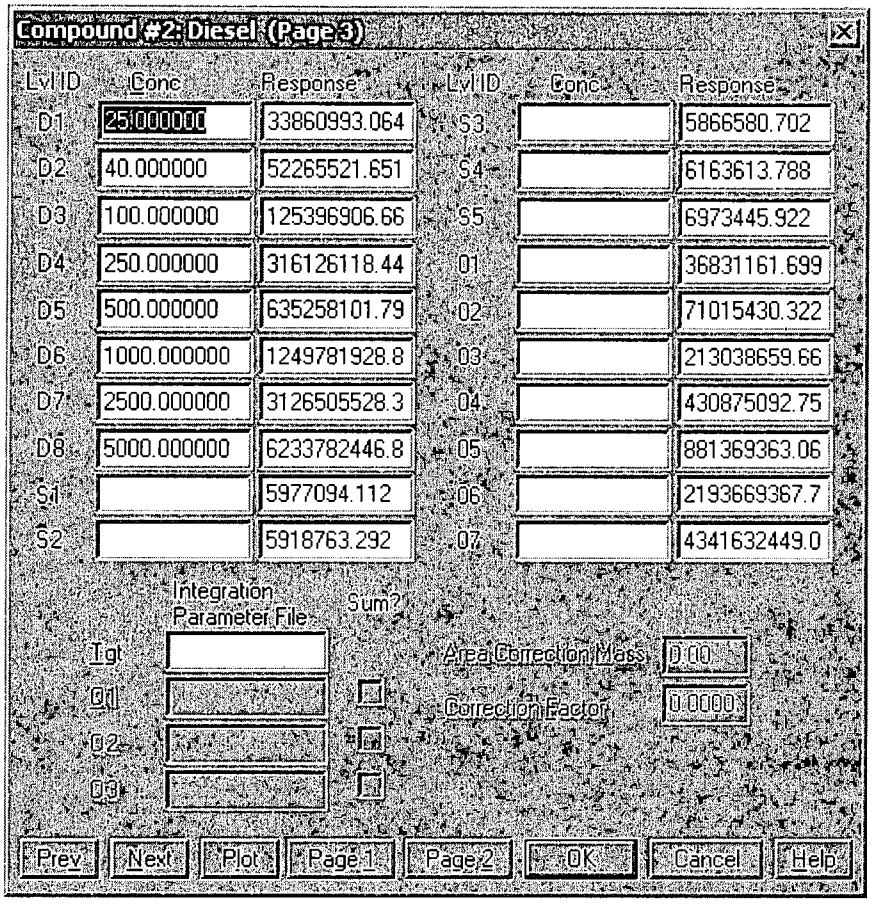
Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:45:04 2019
Response via : Initial Calibration
Total Cpnds : 10

PK#	Type	Compound Name	Exp_RT	Rel_RT	Cal	A/H	ID
1	H	Mineral Oil	6.00	1.000	A	A	A
2	H	Diesel	6.00	1.000	A	A	A
3	H	DRO(C12-C24)	6.00	1.000	A	A	A
4	H	Ca Luft DRO (C12-C22)	6.00	1.000	A	A	A
5	H	TPHd (C10-C25)	6.00	1.000	A	A	A
6	S	o-Terphenyl	6.79	1.000	A	A	R
7	H	OIL	10.00	1.000	A	A	A
8	H	RRO (C24-C40)	10.00	1.000	A	A	A
9	H	Ca Luft ORO (C23-C32)	8.00	1.000	A	A	A
10	H	TPHmo (C25-C36)	9.00	1.000	A	A	A

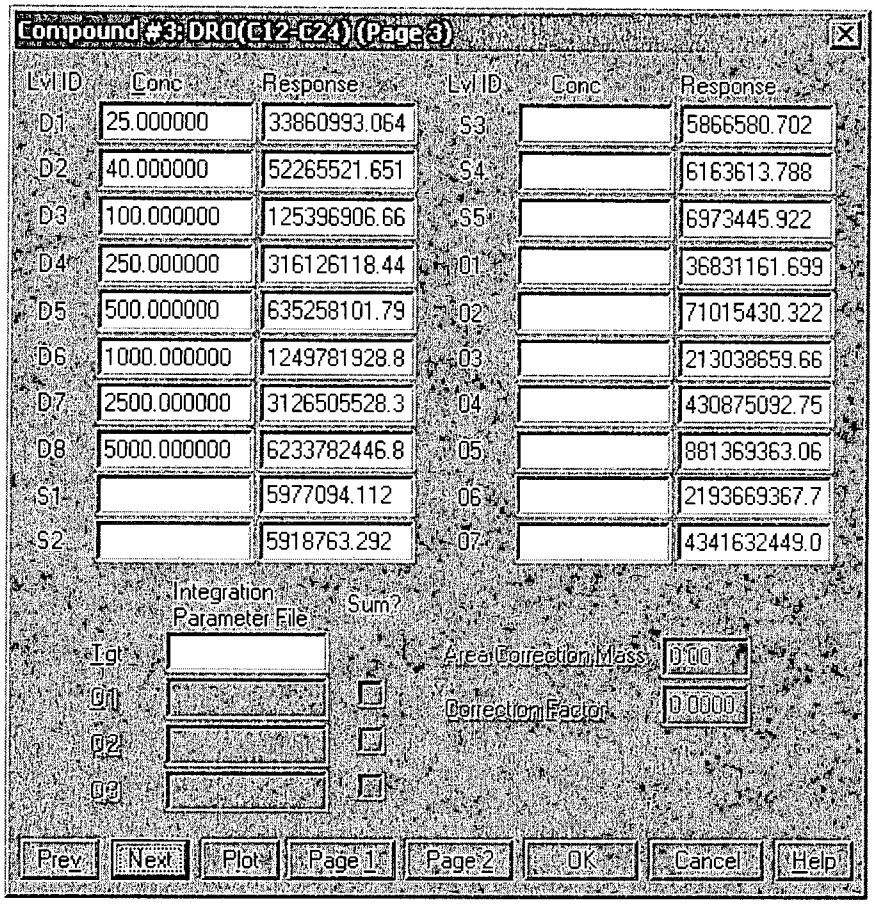
kat 4/26/19

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

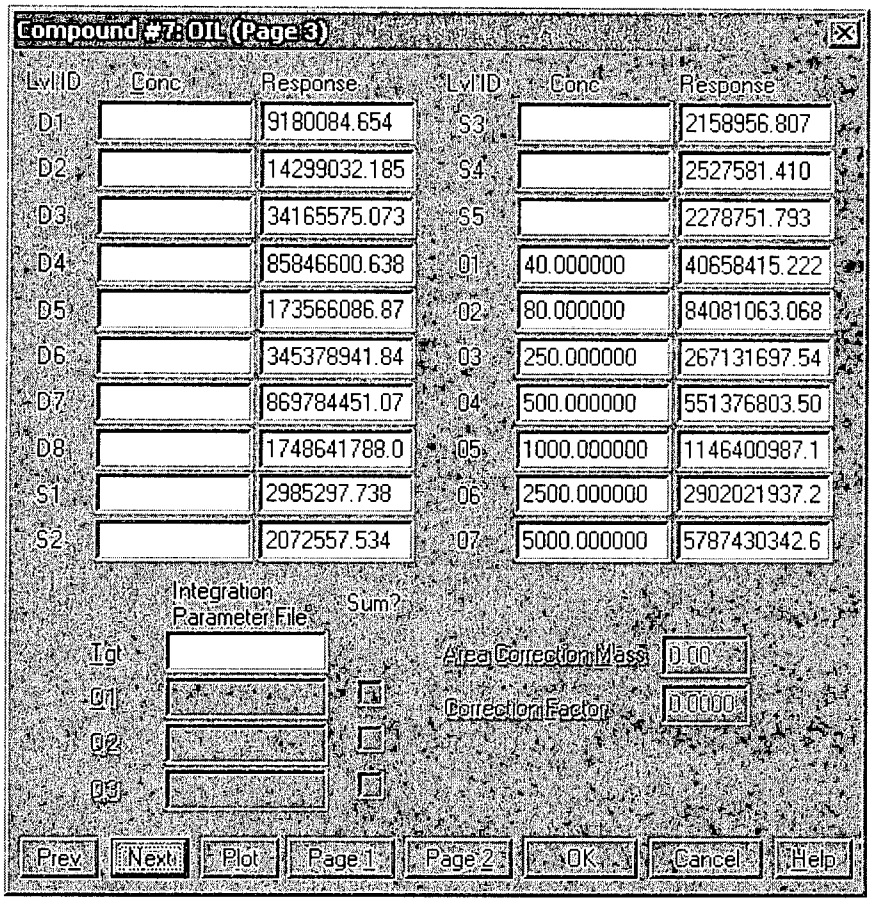
1F90425D.M Fri Apr 26 08:52:40 2019 SV-GCMS3


Compound #2: Diesel (Page 3)
LvlID
Conc
Response
LvlID
Conc
Response
D1
25.000000
33860993.064
S3
5866580.702
D2
40.000000
52265521.651
S4
6163613.788
D3
100.000000
125396906.66
S5
6973445.922
D4
250.000000
316126118.44
01
36831161.699
D5
500.000000
635258101.79
02
71015430.322
D6
1000.000000
1249781928.8
03
213038659.66
D7
2500.000000
3126505528.3
04
430875092.75
D8
5000.000000
6233782446.8
05
881369363.06
S1
5977094.112
06
2193669367.7
S2
5918763.292
07
4341632449.0
Integration Parameter File
Sum?
Tgt
01
02
03
Area Correction Mass
0.00
Correction Factor
0.0000
Prev
Next
Plot
Page 1
Page 2
OK
Cancel
Help

fcH 4/26/19


Compound #3: DRO(C12-C24) (Page 3)
Lvl ID
Conc
Response
D1 25.000000 33860993.064
D2 40.000000 52265521.651
D3 100.000000 125396906.66
D4 250.000000 316126118.44
D5 500.000000 635258101.79
D6 1000.000000 1249781928.8
D7 2500.000000 3126505528.3
D8 5000.000000 6233782446.8
S1 5977094.112
S2 5918763.292
S3 5866580.702
S4 6163613.788
S5 6973445.922
01 36831161.699
02 71015430.322
03 213038659.66
04 430875092.75
05 881369363.06
06 2193669367.7
07 4341632449.0
Integration Parameter File
Sum?
Lg
01
02
03
Area Correction Mass 0.00
Correction Factor 0.0000
Prev
Next
Plot
Page 1
Page 2
OK
Cancel
Help

Keith 4/26/19


Compound #7: OIL (Page 3)
Lvl ID
Conc
Response
D1
9180084.654
D2
14299032.185
D3
34165575.073
D4
85846600.638
D5
173566086.87
D6
345378941.84
D7
869784451.07
D8
1748641788.0
S1
2985297.738
S2
2072557.534
Lvl ID
Conc
Response
S3
2158956.807
S4
2527581.410
S5
2278751.793
01
40.000000
40658415.222
02
80.000000
84081063.068
03
250.000000
267131697.54
04
500.000000
551376803.50
05
1000.000000
1146400987.1
06
2500.000000
2902021937.2
07
5000.000000
5787430342.6
Integration Parameter File
Sum?
Tgt
01
02
03
Area Correction Mass
0.00
Correction Factor
0.0000
Prev
Next
Plot
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OK
Cancel
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KEH 4/26/19

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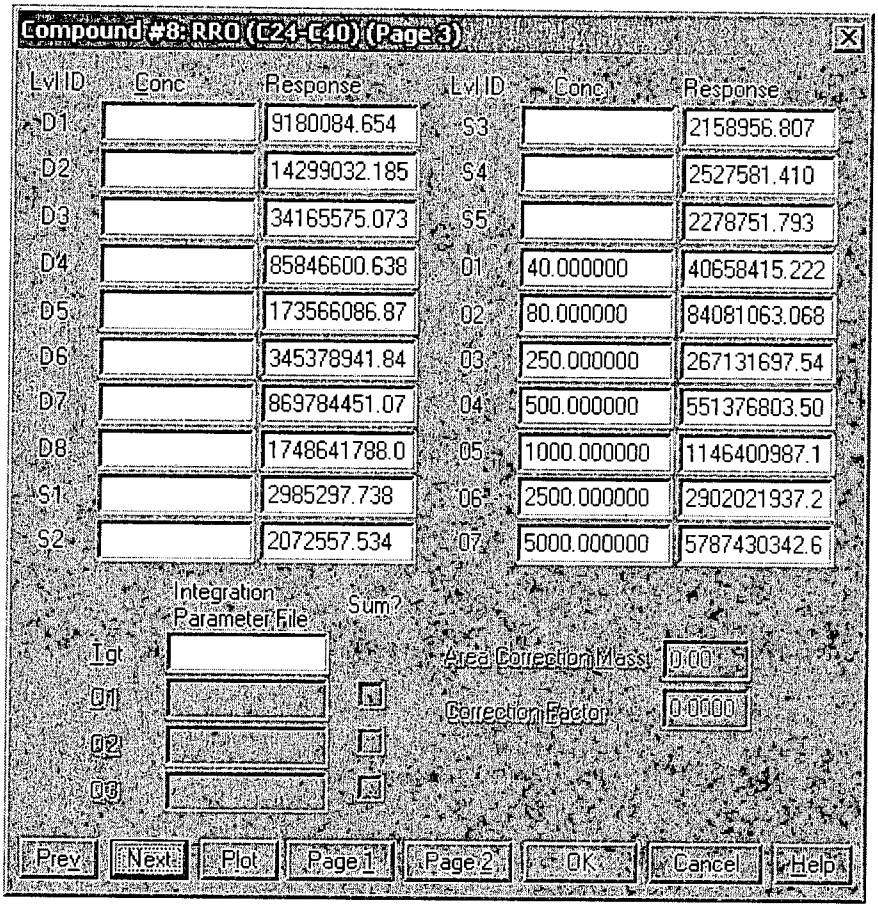
Compound #8: RRO (C24-C40) (Page 3)
Lvl ID
Conc
Response
D1
9180084.654
D2
14299032.185
D3
34165575.073
D4
85846600.638
D5
173566086.87
D6
345378941.84
D7
869784451.07
D8
1748641788.0
S1
2985297.738
S2
2072557.534
Lvl ID
Conc
Response
S3
2158956.807
S4
2527581.410
S5
2278751.793
01
40.000000
40658415.222
02
80.000000
84081063.068
03
250.000000
267131697.54
04
500.000000
551376803.50
05
1000.000000
1146400987.1
06
2500.000000
2902021937.2
07
5000.000000
5787430342.6
Integration Parameter File
Sum?
Igt
01
02
03
Area Correction Mass
0.00
Correction Factor
0.0000
Prev
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Page 1
Page 2
OK
Cancel
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kst 4/24/19

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\REQUANTF\1F042503.D Vial: 99
Acq On : 25 Apr 2019 17:18 Operator: KEH
Sample : 9D25027-ICB1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:48 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:45:04 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mL
		Target Compounds				
1)	H	Mineral Oil	6.00	5781618	4.536	ug/ml
2)	H	Diesel	6.00	5781618	4.536	ug/mL
3)	H	DRO(C12-C24)	6.00	5781618	4.536	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	1385695	1.478	ug/ml
5)	H	TPHd (C10-C25)	6.00	2645348	2.284	ug/ml
7)	H	OIL	10.00	3856780	3.505	ug/mL
8)	H	RRO (C24-C40)	10.00	3856780	3.505	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	808628	1.112	ug/mL
10)	H	TPHmo (C25-C36)	9.00	1042130	1.570	ug/mL

Kent 4/26/19

(f)=RT Delta > 1/2 Window (m)=manually Int.

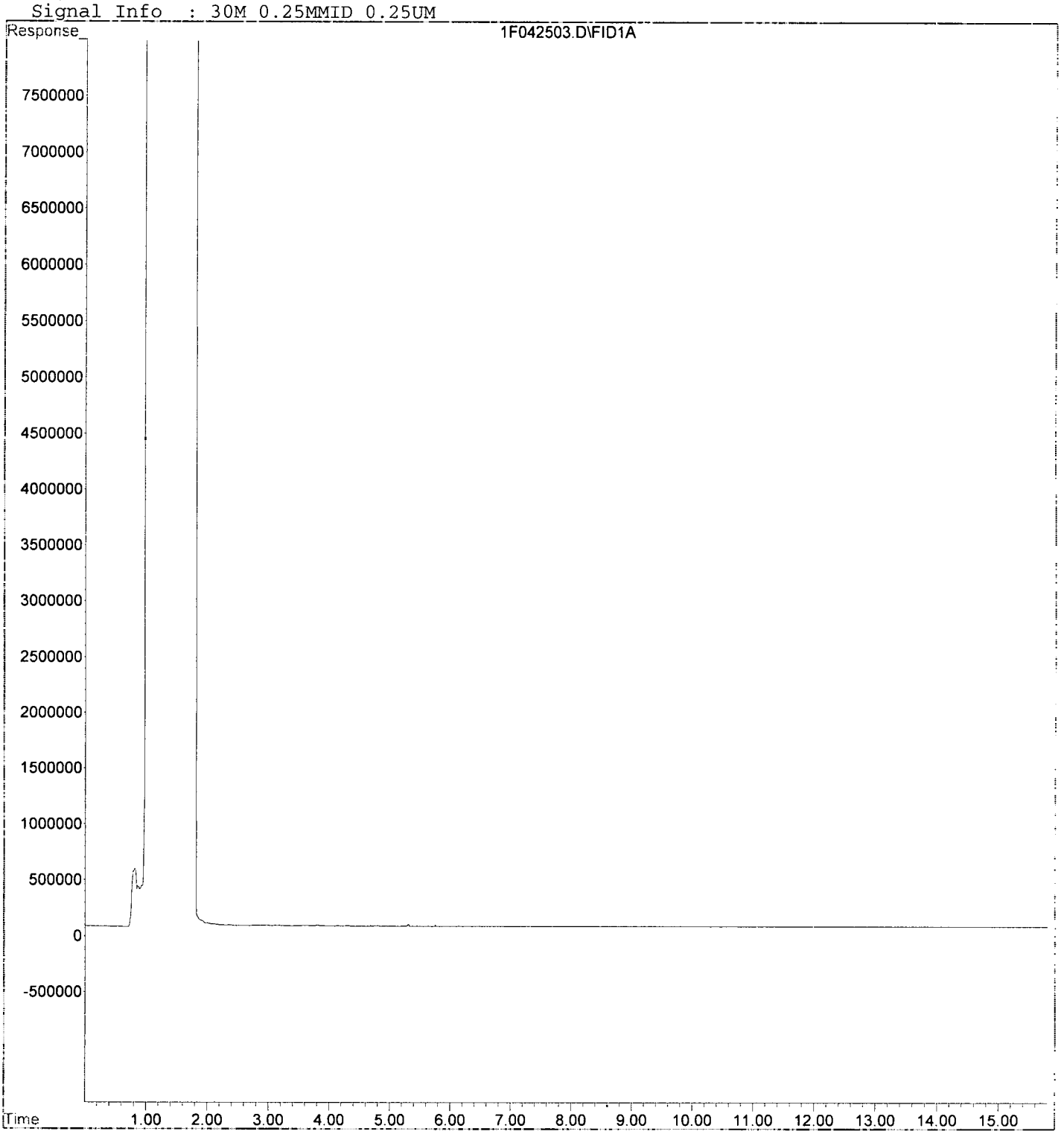
1F042503.D 1F90425D.M Fri Apr 26 09:00:05 2019 SV-GCMS3

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\REQUANTF\1F042503.D Vial: 99
Acq On : 25 Apr 2019 17:18 Operator: KEH
Sample : 9D25027-ICB1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:48 2019 Quant Results File: 1F90425D.RES

Quant Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:45:04 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Evaluate Continuing Calibration Report

Data File : F:\1\DATA\2019-04\9D25027\REQUANTF\1F042526.D Vial: 21
Acq On : 26 Apr 2019 2:00 Operator: KEH
Sample : 9D25027-ICV1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E

Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:45:04 2019
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	H	Mineral Oil	1000.000	962.289	3.8	98	0.00
2	H	Diesel	1000.000	962.289	3.8	98	0.00
3	H	DRO(C12-C24)	1000.000	962.289	3.8	98	0.00
4	H	Ca Luft DRO (C12-C22)	1000.000	994.989	0.5	98	0.00
5	H	TPHd (C10-C25)	1000.000	986.382	1.4	98	0.00
7	H	OIL	-1.000	315.549	0.0	101	0.00
8	H	RRO (C24-C40)	-1.000	315.549	0.0	101	0.00
9	H	Ca Luft ORO (C23-C32)	-1.000	56.094	0.0	104	0.00
10	H	TPHmo (C25-C36)	-1.000	19.874	0.0	111	0.00

Kat 4/26/19

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : F:\1\DATA\2019-04\9D25027\REQUANTF\1F042527.D Vial: 22
Acq On : 26 Apr 2019 2:23 Operator: KEH
Sample : 9D25027-ICV2 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E

Method : F:\1\METHODS\1F90425D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:45:04 2019
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	H	Mineral Oil	-1.000	708.334	0.0	102	0.00
2	H	Diesel	-1.000	708.334	0.0	102	0.00
3	H	DRO(C12-C24)	-1.000	708.334	0.0	102	0.00
4	H	Ca Luft DRO (C12-C22)	-1.000	94.472	0.0	128	0.00
5	H	TPHd (C10-C25)	-1.000	289.474	0.0	110	0.00
7	H	OIL	1000.000	1032.482	-3.2	99	0.00
8	H	RRO (C24-C40)	1000.000	1032.482	-3.2	99	0.00
9	H	Ca Luft ORO (C23-C32)	1000.000	1040.226	-4.0	99	0.00
10	H	TPHmo (C25-C36)	1000.000	1002.532	-0.3	95	0.00

KAH 4/24/19

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Sequence: C:\HPCHEM\1\SEQUENCE\9D25027.S

Sequence Table (Front Injector):

Method and Injection Info Part:

Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 99	DCM	A1F40422	1	Sample		
2	Vial 94	9D25027-RES1	A1F40422	1	Sample		
3	Vial 99	9D25027-ICB1	A1F40422	1	Sample		
4	Vial 1	9D25027-CAL1	A1F40422	1	Sample		
5	Vial 2	9D25027-CAL2	A1F40422	1	Sample		
6	Vial 3	9D25027-CAL3	A1F40422	1	Sample		
7	Vial 4	9D25027-CAL4	A1F40422	1	Sample		
8	Vial 5	9D25027-CAL5	A1F40422	1	Sample		
9	Vial 6	9D25027-CAL6	A1F40422	1	Sample		
10	Vial 7	9D25027-CAL7	A1F40422	1	Sample		
11	Vial 8	9D25027-CAL8	A1F40422	1	Sample		
12	Vial 9	9D25027-CAL9	A1F40422	1	Sample		
13	Vial 10	9D25027-CALA	A1F40422	1	Sample		
14	Vial 11	9D25027-CALB	A1F40422	1	Sample		
15	Vial 12	9D25027-CALC	A1F40422	1	Sample		
16	Vial 13	9D25027-CALD	A1F40422	1	Sample		
17	Vial 14	9D25027-CALE	A1F40422	1	Sample		
18	Vial 15	9D25027-CALF	A1F40422	1	Sample		
19	Vial 16	9D25027-CALG	A1F40422	1	Sample		
20	Vial 17	9D25027-CALH	A1F40422	1	Sample		
21	Vial 18	9D25027-CALI	A1F40422	1	Sample		
22	Vial 19	9D25027-CALJ	A1F40422	1	Sample		
23	Vial 99	9D25027-IBL1	A1F40422	1	Sample		
24	Vial 20	9D25027-CALK	A1F40422	1	Sample		
25	Vial 99	9D25027-IBL2	A1F40422	1	Sample		
26	Vial 21	9D25027-ICV1	A1F40422	1	Sample		
27	Vial 22	9D25027-ICV2	A1F40422	1	Sample		
28	Vial 99	DCM	A1F40422	1	Sample		
29	Vial 99	DCM	A1F40422	1	Sample		

4/26/19

Sequence Table (Back Injector):

Method and Injection Info Part:

Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 100	DCM	A1F40422	1	Sample		
2	Vial 100	DCM	A1F40422	1	Sample		
3	Vial 95	9D25028-RES1	A1F40422	1	Sample		
4	Vial 100	9D25028-ICB1	A1F40422	1	Sample		
5	Vial 1	9D25028-CAL1	A1F40422	1	Sample		
6	Vial 2	9D25028-CAL2	A1F40422	1	Sample		
7	Vial 3	9D25028-CAL3	A1F40422	1	Sample		
8	Vial 4	9D25028-CAL4	A1F40422	1	Sample		
9	Vial 5	9D25028-CAL5	A1F40422	1	Sample		
10	Vial 6	9D25028-CAL6	A1F40422	1	Sample		
11	Vial 7	9D25028-CAL7	A1F40422	1	Sample		
12	Vial 8	9D25028-CAL8	A1F40422	1	Sample		
13	Vial 9	9D25028-CAL9	A1F40422	1	Sample		
14	Vial 10	9D25028-CALA	A1F40422	1	Sample		
15	Vial 11	9D25028-CALB	A1F40422	1	Sample		
16	Vial 12	9D25028-CALC	A1F40422	1	Sample		
17	Vial 13	9D25028-CALD	A1F40422	1	Sample		
18	Vial 14	9D25028-CALE	A1F40422	1	Sample		
19	Vial 15	9D25028-CALF	A1F40422	1	Sample		
20	Vial 16	9D25028-CALG	A1F40422	1	Sample		
21	Vial 17	9D25028-CALH	A1F40422	1	Sample		

Injection Log

Directory: F:\1\DATA\2019-04\9D25027

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	99	1f042501.d	1.	DCM		25 Apr 2019 16:33
2	94	1f042502.d	1.	9D25027-RES1		25 Apr 2019 16:55
3	99	1f042503.d	1.	9D25027-ICB1		25 Apr 2019 17:18
4	1	1f042504.d	1.	9D25027-CAL1		25 Apr 2019 17:41
5	2	1f042505.d	1.	9D25027-CAL2		25 Apr 2019 18:03
6	3	1f042506.d	1.	9D25027-CAL3		25 Apr 2019 18:26
7	4	1f042507.d	1.	9D25027-CAL4		25 Apr 2019 18:49
8	5	1f042508.d	1.	9D25027-CAL5		25 Apr 2019 19:12
9	6	1f042509.d	1.	9D25027-CAL6		25 Apr 2019 19:35
10	7	1f042510.d	1.	9D25027-CAL7		25 Apr 2019 19:58
11	8	1f042511.d	1.	9D25027-CAL8		25 Apr 2019 20:20
12	9	1f042512.d	1.	9D25027-CAL9		25 Apr 2019 20:43
13	10	1f042513.d	1.	9D25027-CALA		25 Apr 2019 21:06
14	11	1f042514.d	1.	9D25027-CALB		25 Apr 2019 21:29
15	12	1f042515.d	1.	9D25027-CALC		25 Apr 2019 21:51
16	13	1f042516.d	1.	9D25027-CALD		25 Apr 2019 22:14
17	14	1f042517.d	1.	9D25027-CALE		25 Apr 2019 22:37
18	15	1f042518.d	1.	9D25027-CALF		25 Apr 2019 22:59
19	16	1f042519.d	1.	9D25027-CALG		25 Apr 2019 23:22
20	17	1f042520.d	1.	9D25027-CALH		25 Apr 2019 23:45
21	18	1f042521.d	1.	9D25027-CALI		26 Apr 2019 00:07
22	19	1f042522.d	1.	9D25027-CALJ		26 Apr 2019 00:30
23	99	1f042523.d	1.	9D25027-IBL1		26 Apr 2019 00:52
24	20	1f042524.d	1.	9D25027-CALK		26 Apr 2019 01:15
25	99	1f042525.d	1.	9D25027-IBL2		26 Apr 2019 01:38
26	21	1f042526.d	1.	9D25027-ICV1		26 Apr 2019 02:00
27	22	1f042527.d	1.	9D25027-ICV2		26 Apr 2019 02:23
28	99	1f042528.d	1.	DCM		26 Apr 2019 02:45
29	99	1f042529.d	1.	DCM		26 Apr 2019 03:08
30	100	1r042501.d	1.	DCM		25 Apr 2019 16:33
31	100	1r042502.d	1.	DCM		25 Apr 2019 16:55

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042502.D Vial: 94
Acq On : 25 Apr 2019 16:55 Operator: KEH
Sample : 9D25027-RES1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:33 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

KEH 4/26/19

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

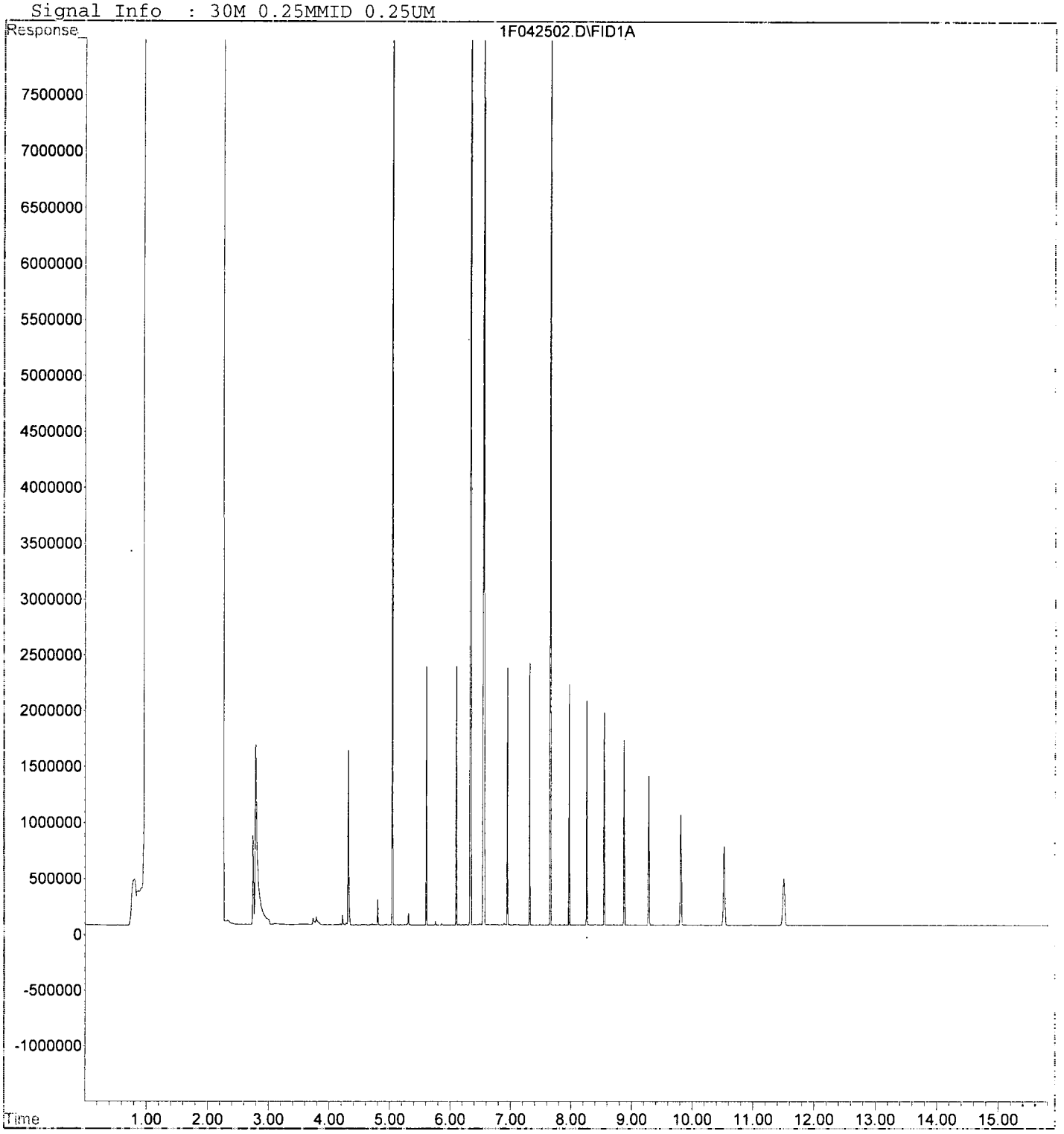
		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	6.89f	97544	0.049	ug/mL
		Target Compounds				
1)	H	Mineral Oil	6.00	520082471	302.541	ug/ml
2)	H	Diesel	6.00	520082471	302.541	ug/mL
3)	H	DRO(C12-C24)	6.00	520082471	302.541	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	360736775	278.530	ug/ml
5)	H	TPHd (C10-C25)	6.00	457146954	287.017	ug/ml
7)	H	OIL	10.00	335090044	208.451	ug/mL
8)	H	RRO (C24-C40)	10.00	335090044	208.451	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	135403820	134.522	ug/mL
10)	H	TPHmo (C25-C36)	9.00	83077489	91.148	ug/mL

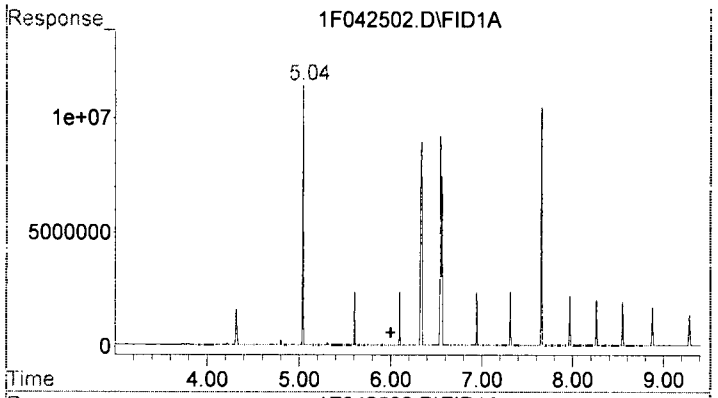
Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042502.D Vial: 94
Acq On : 25 Apr 2019 16:55 Operator: KEH
Sample : 9D25027-RES1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:33 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

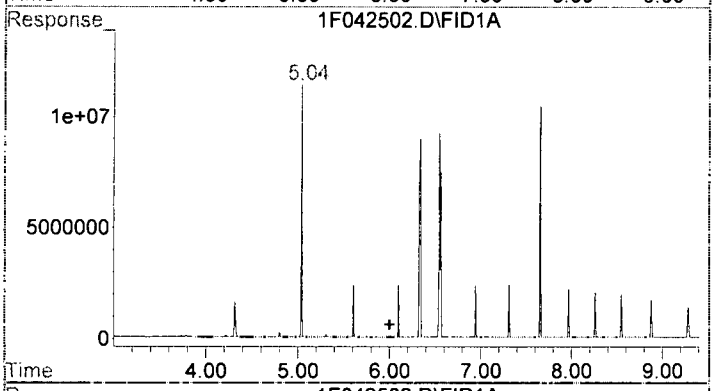
Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM





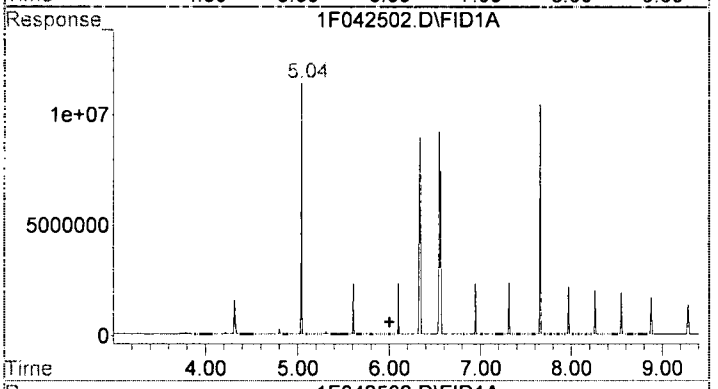
#1 Mineral Oil

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 520082471
Conc: 302.54 ug/ml m



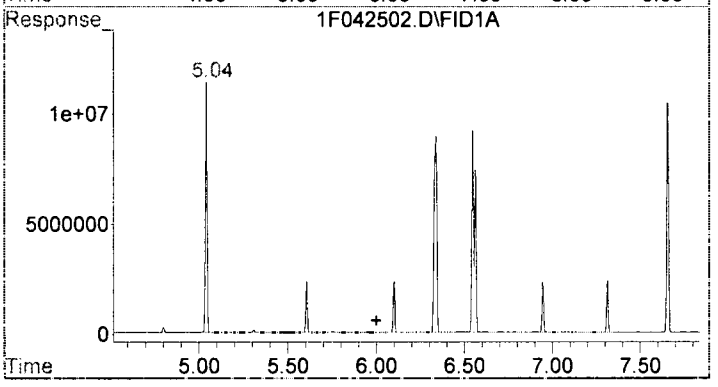
#2 Diesel

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 520082471
Conc: 302.54 ug/mL m



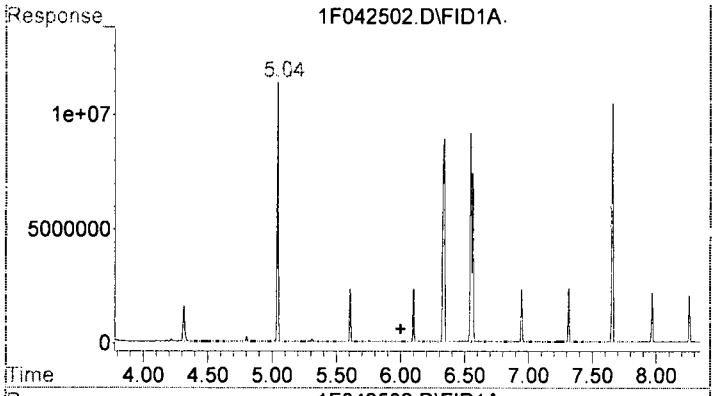
#3 DRO(C12-C24)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 520082471
Conc: 302.54 ug/mL m



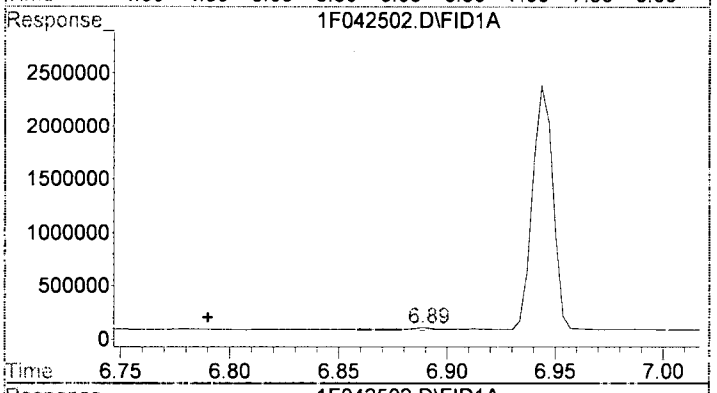
#4 Ca Luft DRO (C12-C22)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 360736775
Conc: 278.53 ug/ml m



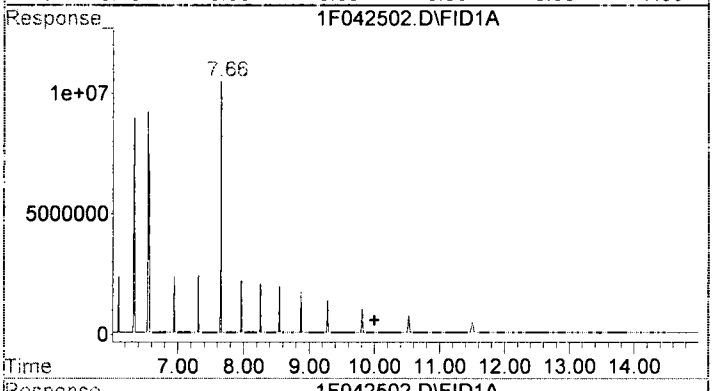
#5 TPHd (C10-C25)

R.T.: 6.000 min
Delta R.T.: 0.000 min
Response: 457146954
Conc: 287.02 ug/ml m



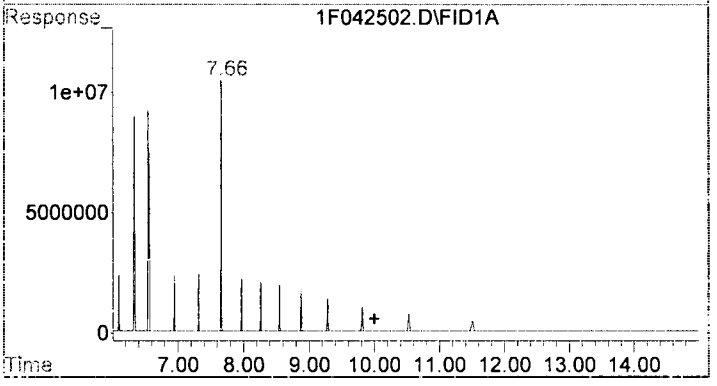
#6 o-Terphenyl

R.T.: 6.890 min
Delta R.T.: 0.100 min
Response: 97544
Conc: 0.05 ug/mL



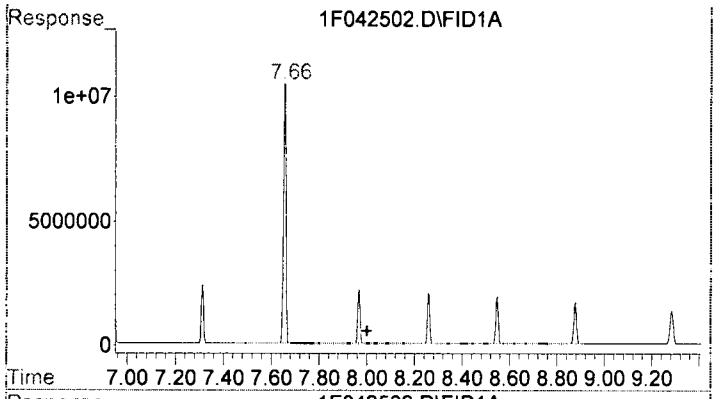
#7 OIL

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 335090044
Conc: 208.45 ug/mL m



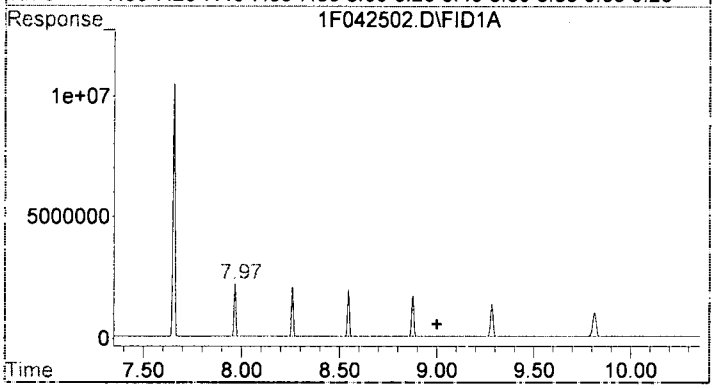
#8 RRO (C24-C40)

R.T.: 10.000 min
Delta R.T.: 0.000 min
Response: 335090044
Conc: 208.45 ug/mL m



#9 Ca Luft ORO (C23-C32)

R.T.: 8.000 min
Delta R.T.: 0.000 min
Response: 135403820
Conc: 134.52 ug/mL m



#10 TPHmo (C25-C36)

R.T.: 9.000 min
Delta R.T.: 0.000 min
Response: 83077489
Conc: 91.15 ug/mL m

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042503.D Vial: 99
Acq On : 25 Apr 2019 17:18 Operator: KEH
Sample : 9D25027-ICB1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:21 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:19:31 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

KEH 4/24/19

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mL
		Target Compounds				
1)	H	Mineral Oil	6.00	5781618	3.363	ug/ml
2)	H	Diesel	6.00	5781618	3.363	ug/mL
3)	H	DRO(C12-C24)	6.00	5781618	3.363	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	1385695	1.070	ug/ml
5)	H	TPHd (C10-C25)	6.00	2645348	1.661	ug/ml
7)	H	OIL	10.00	3856780	2.399	ug/mL
8)	H	RRO (C24-C40)	10.00	3856780	2.399	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	808628	0.803	ug/mL
10)	H	TPHmo (C25-C36)	9.00	1042130	1.143	ug/mL

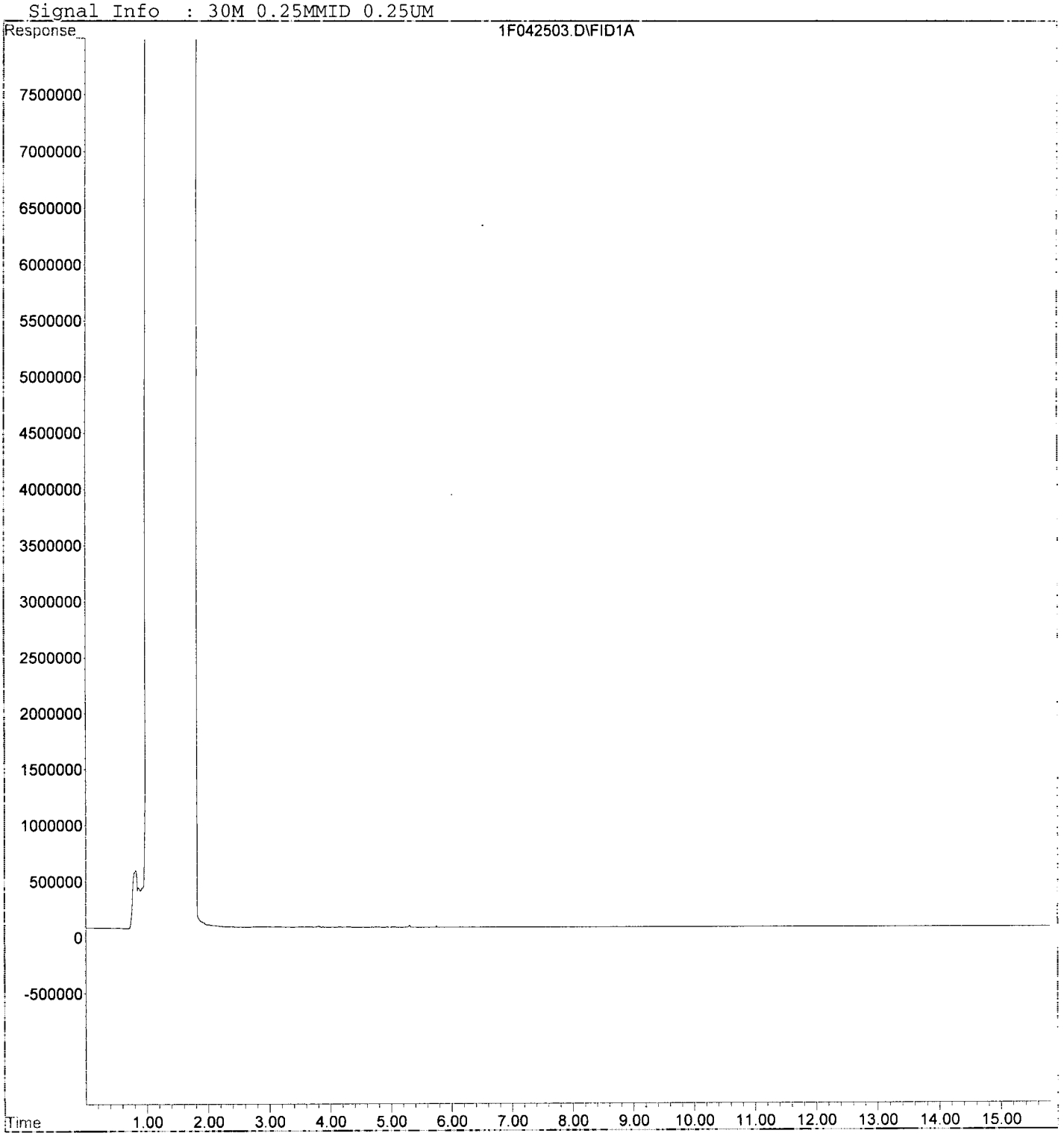
(f)=RT Delta > 1/2 Window (m)=manual inc.

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042503.D Vial: 99
Acq On : 25 Apr 2019 17:18 Operator: KEH
Sample : 9D25027-ICB1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:21 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:19:31 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042504.D Vial: 1
Acq On : 25 Apr 2019 17:41 Operator: KEH
Sample : 9D25027-CAL1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:21 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:19:31 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mLd
		Target Compounds				
1)	H	Mineral Oil	6.00	33860993	19.698	ug/ml
2)	H	Diesel	6.00	33860993	19.698	ug/mL
3)	H	DRO(C12-C24)	6.00	33860993	19.698	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	22684746	17.515	ug/ml
5)	H	TPHd (C10-C25)	6.00	28515147	17.903	ug/ml
7)	H	OIL	10.00	9180085	5.711	ug/mL
8)	H	RRO (C24-C40)	10.00	9180085	5.711	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	1269961	1.262	ug/mL
10)	H	TPHmo (C25-C36)	9.00	801867	0.880	ug/mL

kst 4/26/19

(f)=RT Delta > 1/2 window (m)=manual int.

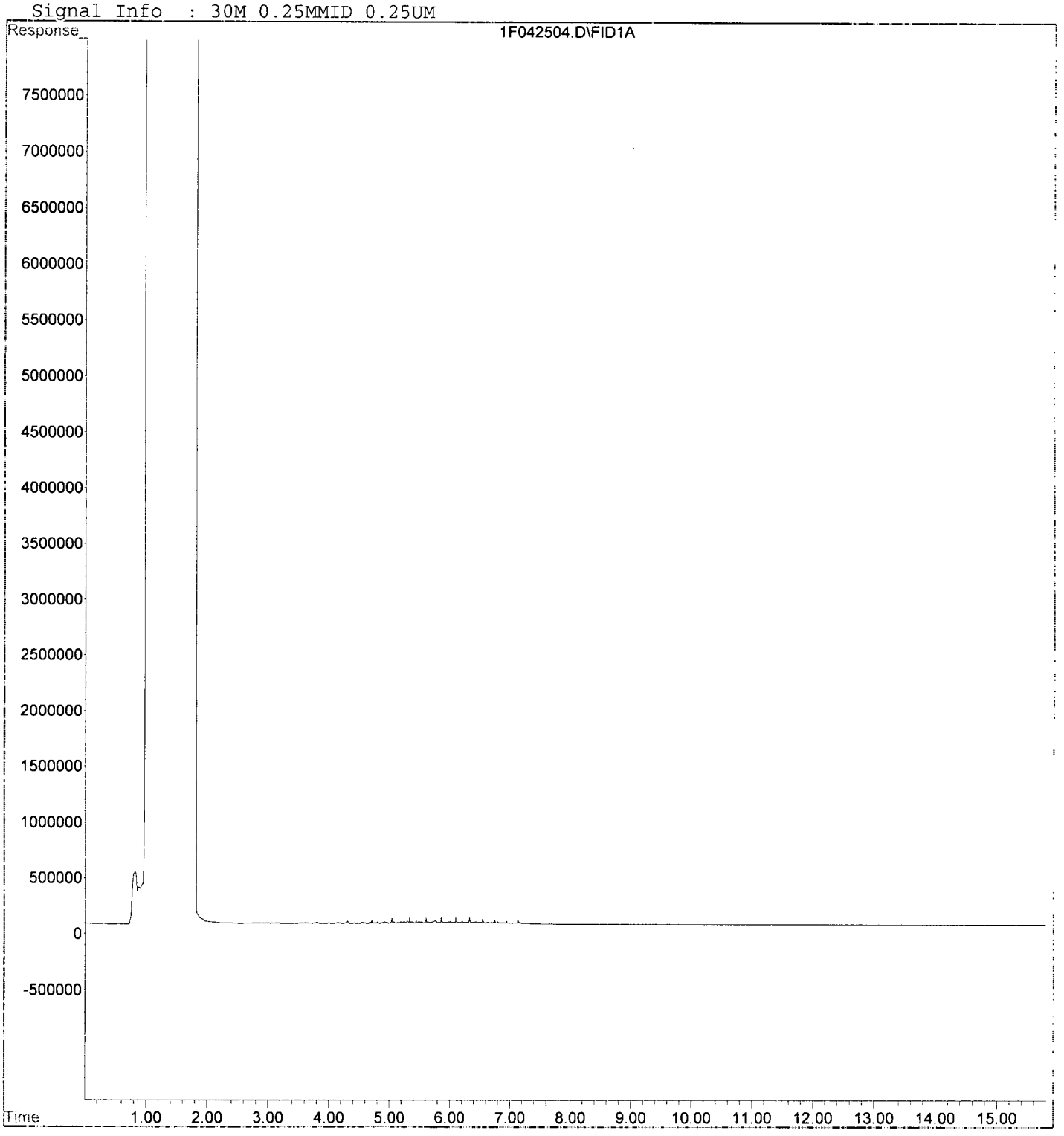
1F042504.D 1F90329D.M Fri Apr 26 08:34:14 2019 SV-GCMS3 Page 1

Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042504.D Vial: 1
Acq On : 25 Apr 2019 17:41 Operator: KEH
Sample : 9D25027-CAL1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:21 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:19:31 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042505.D Vial: 2
Acq On : 25 Apr 2019 18:03 Operator: KEH
Sample : 9D25027-CAL2 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:22 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:19:31 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mLd
		Target Compounds				
1)	H	Mineral Oil	6.00	52265522	30.404	ug/ml
2)	H	Diesel	6.00	52265522	30.404	ug/mL
3)	H	DRO(C12-C24)	6.00	52265522	30.404	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	36472870	28.161	ug/ml
5)	H	TPHd (C10-C25)	6.00	45752550	28.725	ug/ml
7)	H	OIL	10.00	14299032	8.895	ug/mL
8)	H	RRO (C24-C40)	10.00	14299032	8.895	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	1844602	1.833	ug/mL
10)	H	TPHmo (C25-C36)	9.00	1029381	1.129	ug/mL

KEH 4/26/19

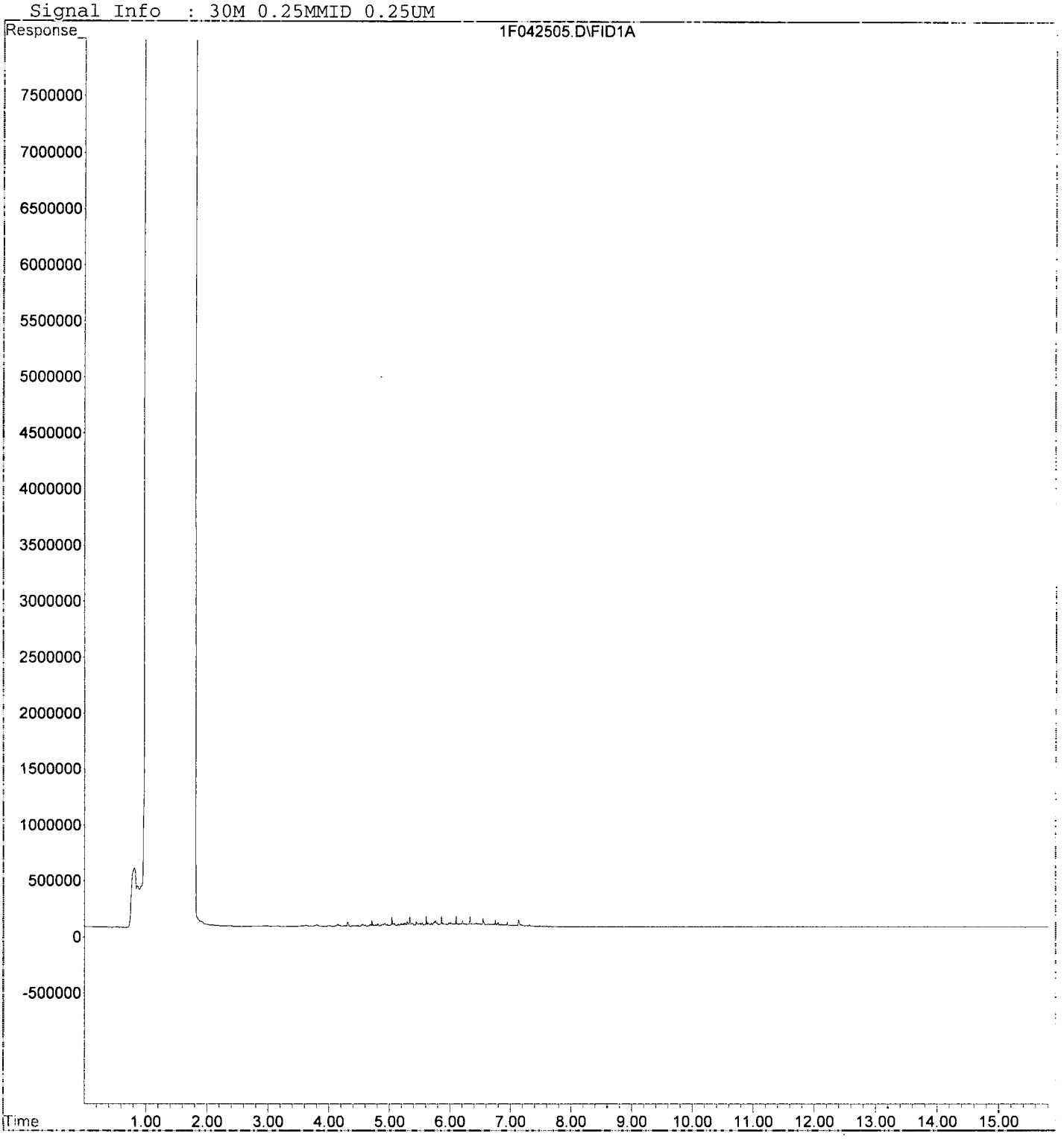
v

Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042505.D Vial: 2
Acq On : 25 Apr 2019 18:03 Operator: KEH
Sample : 9D25027-CAL2 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:22 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:19:31 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042506.D Vial: 3
Acq On : 25 Apr 2019 18:26 Operator: KEH
Sample : 9D25027-CAL3 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:22 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:19:31 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mLd
		Target Compounds				
1)	H	Mineral Oil	6.00	125396907	72.945	ug/ml
2)	H	Diesel	6.00	125396907	72.945	ug/mL
3)	H	DRO(C12-C24)	6.00	125396907	72.945	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	91817455	70.894	ug/ml
5)	H	TPHd (C10-C25)	6.00	113459598	71.235	ug/ml
7)	H	OIL	10.00	34165575	21.253	ug/mL
8)	H	RRO (C24-C40)	10.00	34165575	21.253	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	4041069	4.015	ug/mL
10)	H	TPHmo (C25-C36)	9.00	1688690	1.853	ug/mL

KEH 4/26/19

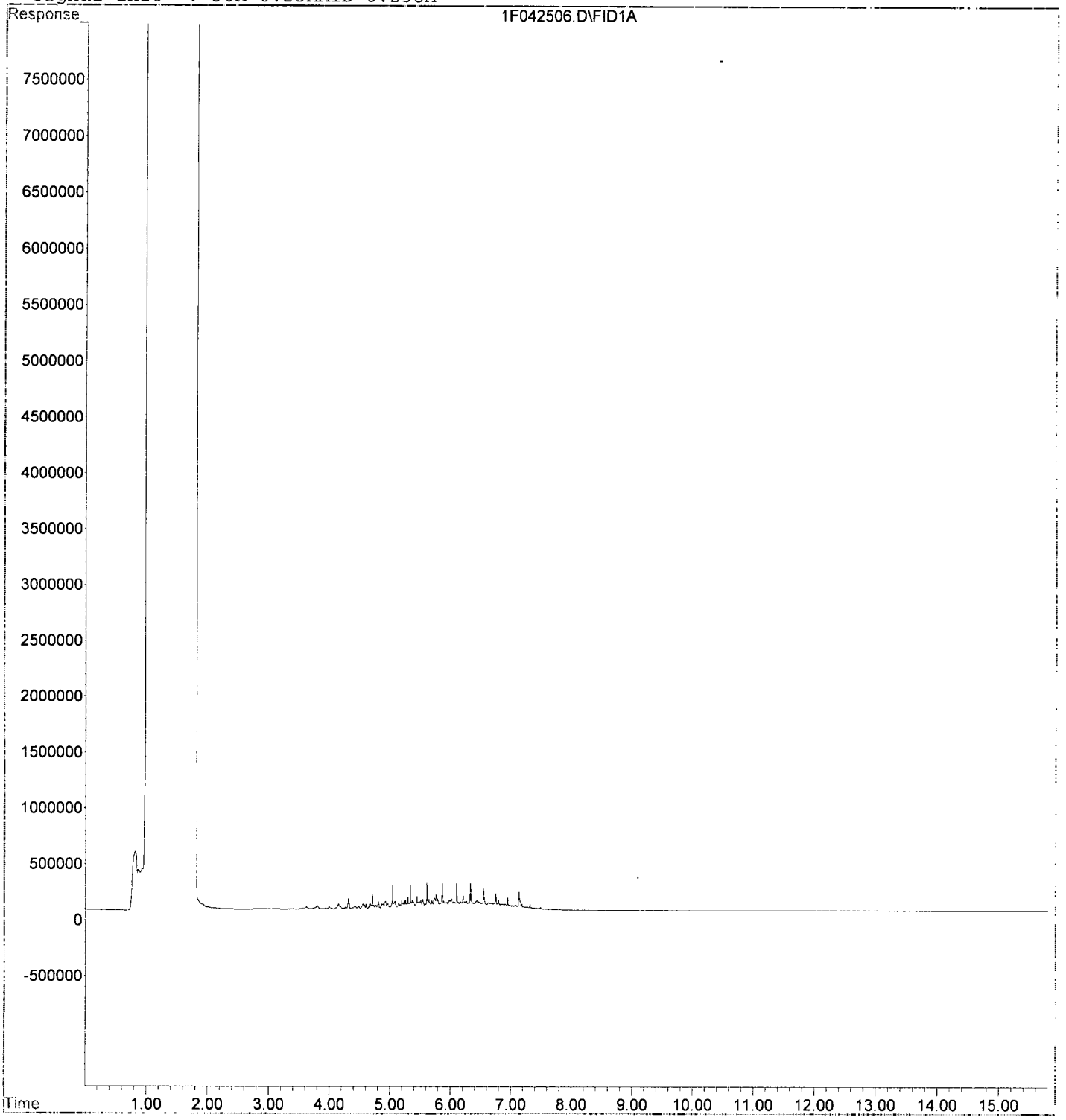
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042506.D Vial: 3
Acq On : 25 Apr 2019 18:26 Operator: KEH
Sample : 9D25027-CAL3 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:22 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:19:31 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042507.D Vial: 4
Acq On : 25 Apr 2019 18:49 Operator: KEH
Sample : 9D25027-CAL4 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:23 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:19:31 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mLd
		Target Compounds				
1)	H	Mineral Oil	6.00	316126118	183.896	ug/ml
2)	H	Diesel	6.00	316126118	183.896	ug/mL
3)	H	DRO(C12-C24)	6.00	316126118	183.896	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	237078422	183.052	ug/ml
5)	H	TPHd (C10-C25)	6.00	292119635	183.405	ug/ml
7)	H	OIL	10.00	85846601	53.403	ug/mL
8)	H	RRO (C24-C40)	10.00	85846601	53.403	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	9744076	9.681	ug/mL
10)	H	TPHmo (C25-C36)	9.00	3415923	3.748	ug/mL

KAH 4/26/19

✓

(f)=RT Delta > 1/2 Window (m)=manual Int.

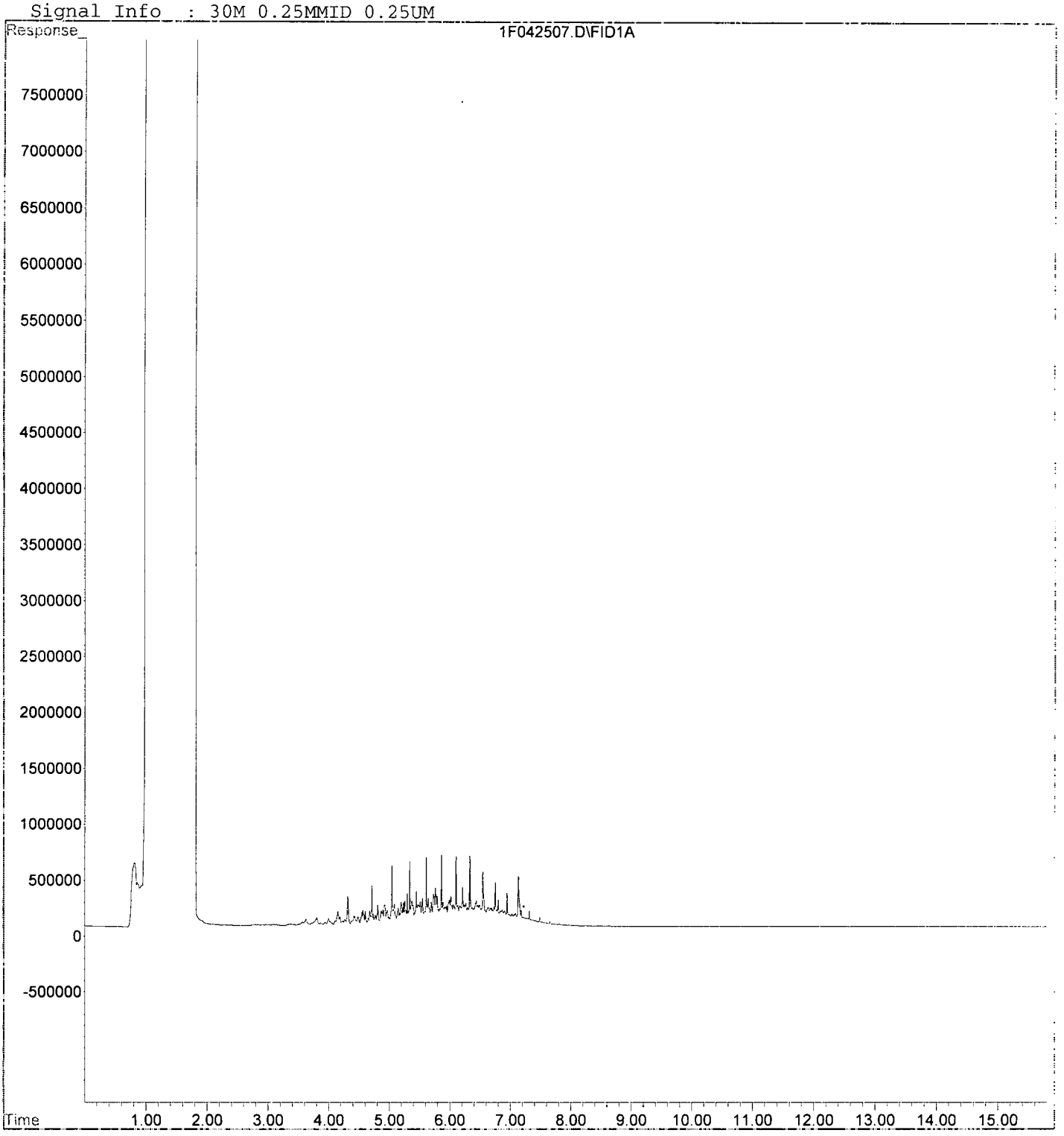
1F042507.D 1F90329D.M Fri Apr 26 08:34:16 2019 SV-GCMS3 Page 1

Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042507.D Vial: 4
Acq On : 25 Apr 2019 18:49 Operator: KEH
Sample : 9D25027-CAL4 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:23 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:19:31 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042508.D Vial: 5
Acq On : 25 Apr 2019 19:12 Operator: KEH
Sample : 9D25027-CAL5 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:23 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:19:31 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mLd
		Target Compounds				
1)	H	Mineral Oil	6.00	635258102	369.540	ug/ml
2)	H	Diesel	6.00	635258102	369.540	ug/mL
3)	H	DRO(C12-C24)	6.00	635258102	369.540	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	480842896	371.266	ug/ml
5)	H	TPHd (C10-C25)	6.00	589929594	370.383	ug/ml
7)	H	OIL	10.00	173566087	107.971	ug/mL
8)	H	RRO (C24-C40)	10.00	173566087	107.971	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	19752176	19.624	ug/mL
10)	H	TPHmo (C25-C36)	9.00	6164011	6.763	ug/mL

KEH 4/26/19

(f)=RT Delta > 1/2 Window (m)=manual int.

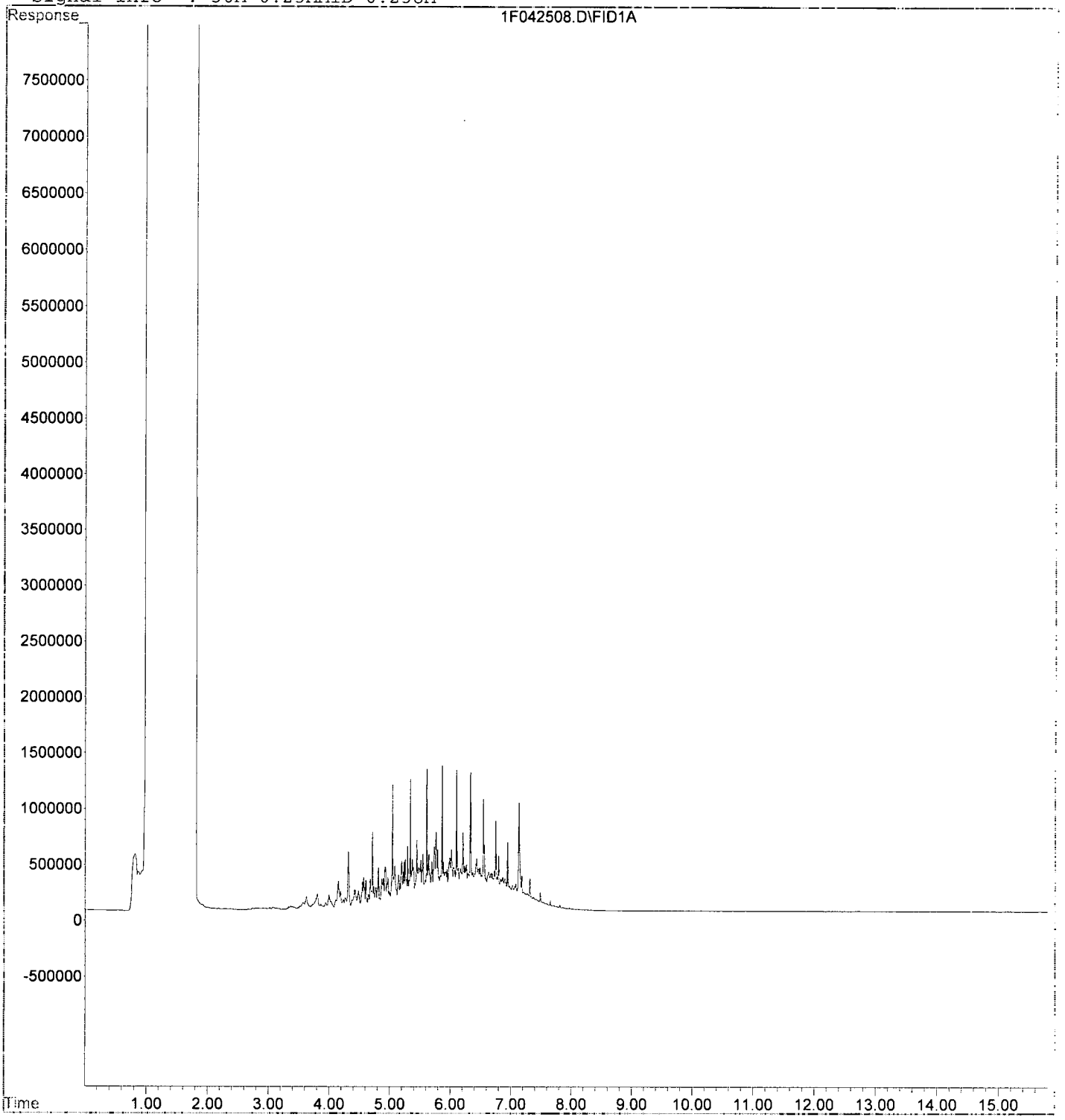
1F042508.D 1F90329D.M Fri Apr 26 08:34:17 2019 SV-GCMS3 Page 1

Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042508.D Vial: 5
Acq On : 25 Apr 2019 19:12 Operator: KEH
Sample : 9D25027-CAL5 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:23 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:19:31 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042509.D Vial: 6
Acq On : 25 Apr 2019 19:35 Operator: KEH
Sample : 9D25027-CAL6 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:24 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:19:31 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mLd
		Target Compounds				
1)	H	Mineral Oil	6.00	1249781929	727.019	ug/ml
2)	H	Diesel	6.00	1249781929	727.019	ug/mL
3)	H	DRO(C12-C24)	6.00	1249781929	727.019	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	950063692	733.558	ug/ml
5)	H	TPHd (C10-C25)	6.00	1164841259	731.337	ug/ml
7)	H	OIL	10.00	345378942	214.851	ug/mL
8)	H	RRO (C24-C40)	10.00	345378942	214.851	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	39198271	38.943	ug/mL
10)	H	TPHmo (C25-C36)	9.00	11854960	13.007	ug/mL

KEH 4/24/19

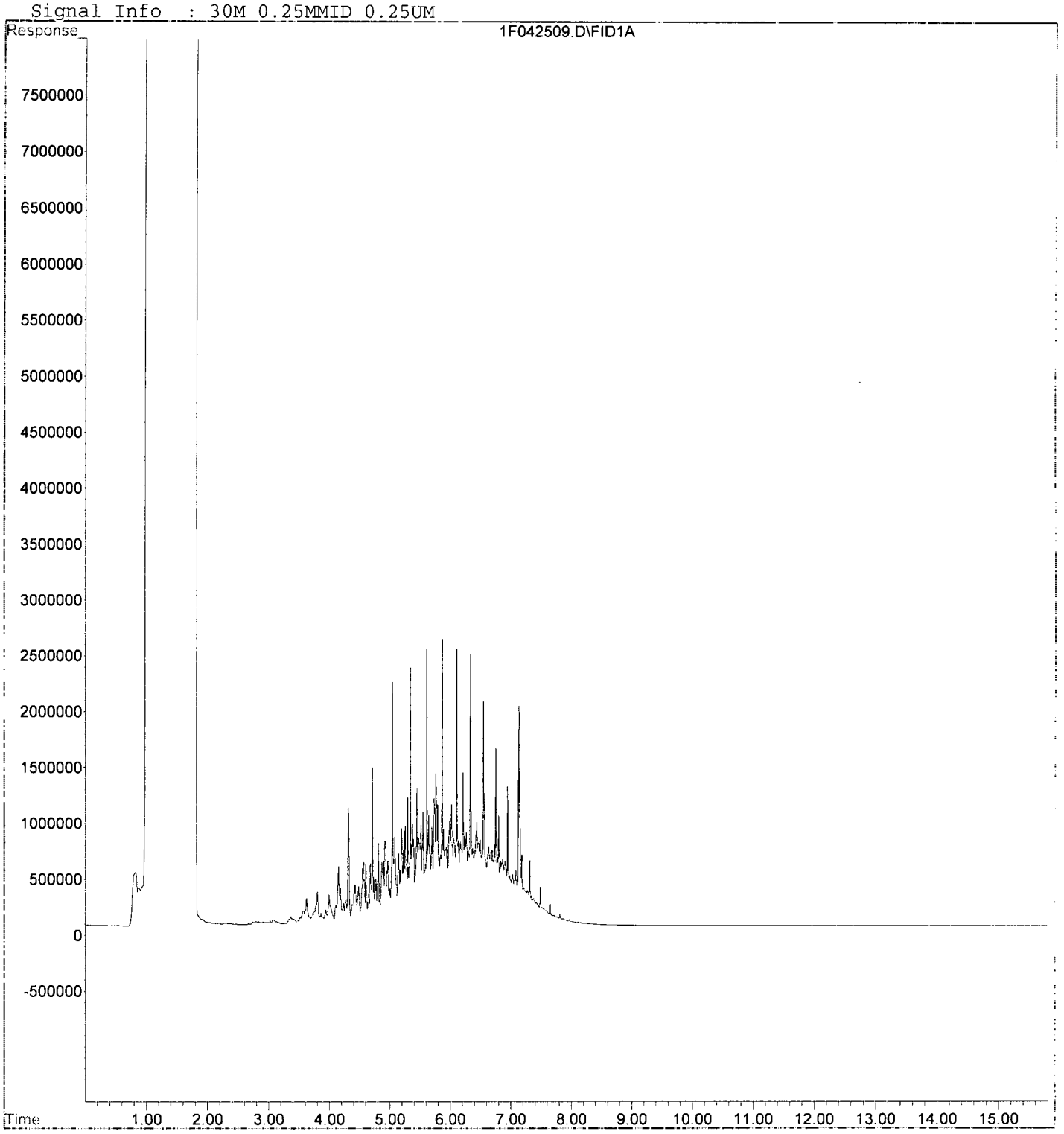
(f)=RT Delta > 1/2 window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042509.D Vial: 6
Acq On : 25 Apr 2019 19:35 Operator: KEH
Sample : 9D25027-CAL6 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:24 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:19:31 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042510.D Vial: 7
Acq On : 25 Apr 2019 19:58 Operator: KEH
Sample : 9D25027-CAL7 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:24 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:19:31 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mLd
		Target Compounds				
1)	H	Mineral Oil	6.00	3126505528	1818.741	ug/ml
2)	H	Diesel	6.00	3126505528	1818.741	ug/mL
3)	H	DRO(C12-C24)	6.00	3126505528	1818.741	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	2380625778	1838.115	ug/ml
5)	H	TPHd (C10-C25)	6.00	2919159469	1832.774	ug/ml
7)	H	OIL	10.00	869784451	541.070	ug/mL
8)	H	RRO (C24-C40)	10.00	869784451	541.070	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	99816400	99.167	ug/mL
10)	H	TPHmo (C25-C36)	9.00	29597171	32.472	ug/mL

KEH 4/26/19

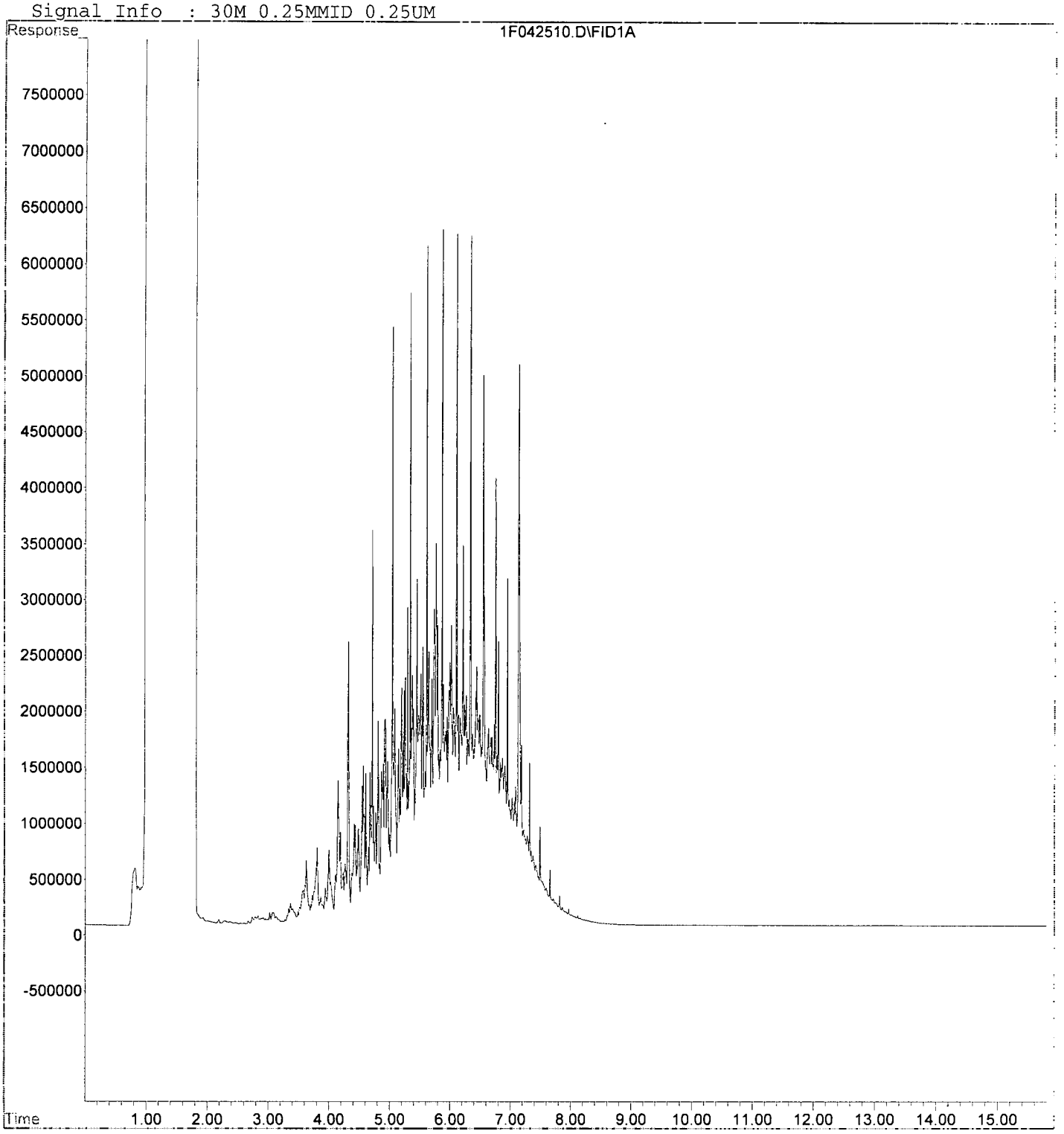
(f)=RT Delta > 1/2 window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042510.D Vial: 7
Acq On : 25 Apr 2019 19:58 Operator: KEH
Sample : 9D25027-CAL7 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:24 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:19:31 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042511.D Vial: 8
Acq On : 25 Apr 2019 20:20 Operator: KEH
Sample : 9D25027-CAL8 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:27 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:19:31 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mLd
		Target Compounds				
1)	H	Mineral Oil	6.00	6233782447	3626.296	ug/ml
2)	H	Diesel	6.00	6233782447	3626.296	ug/mL
3)	H	DRO(C12-C24)	6.00	6233782447	3626.296	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	4745589091	3664.137	ug/ml
5)	H	TPHd (C10-C25)	6.00	5822794146	3655.801	ug/ml
7)	H	OIL	10.00	1748641788	1087.783	ug/mL
8)	H	RRO (C24-C40)	10.00	1748641788	1087.783	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	202599923	201.281	ug/mL
10)	H	TPHmo (C25-C36)	9.00	59879783	65.697	ug/mL

KGH 4/26/19

✓

(f)=RT Delta > 1/2 window (m)=manual int.

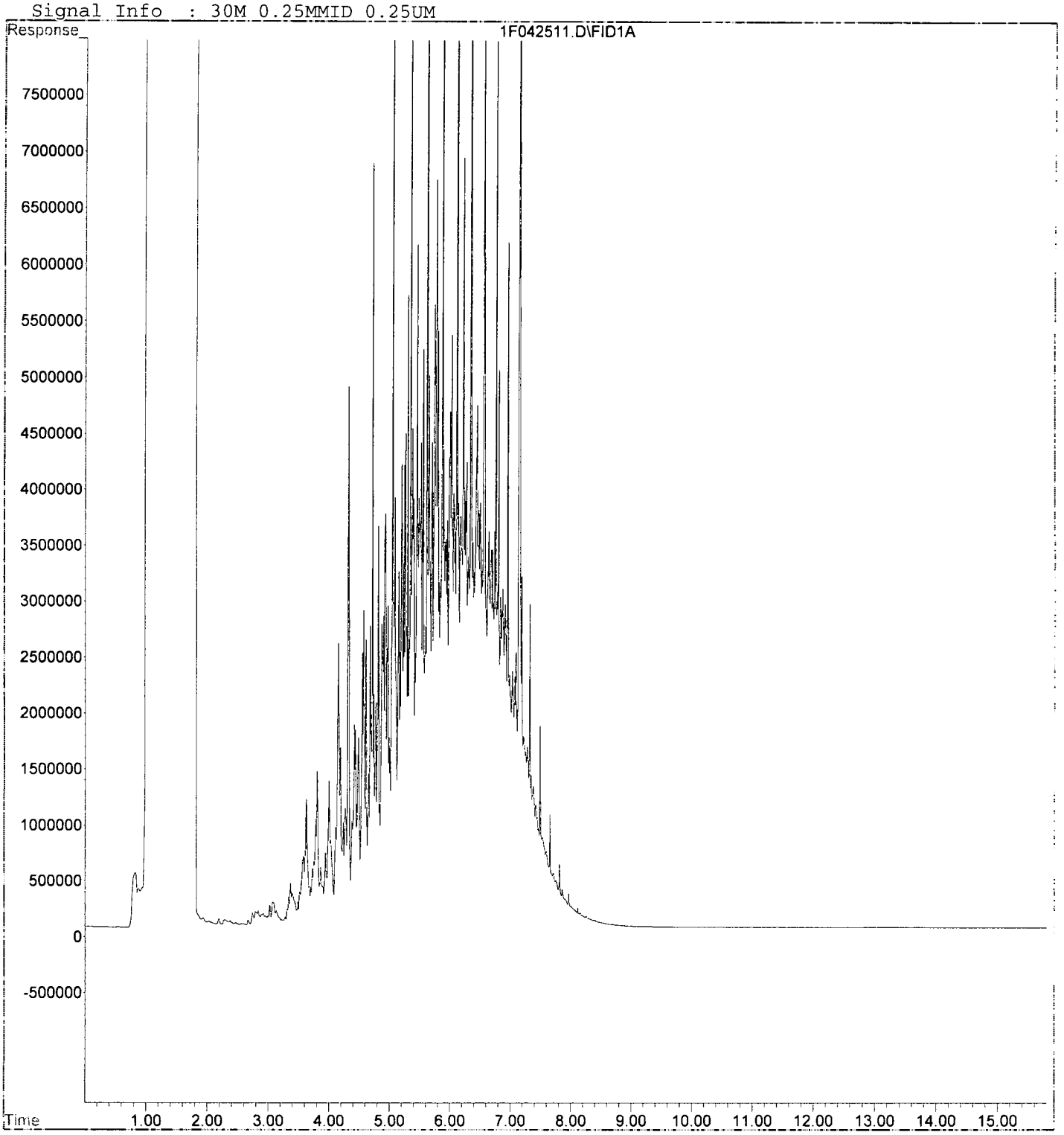
1F042511.D 1F90329D.M Fri Apr 26 08:34:19 2019 SV-GCMS3 Page 1

Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042511.D Vial: 8
Acq On : 25 Apr 2019 20:20 Operator: KEH
Sample : 9D25027-CAL8 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:27 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:19:31 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042512.D Vial: 9
Acq On : 25 Apr 2019 20:43 Operator: KEH
Sample : 9D25027-CAL9 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:27 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc Units
		System Monitoring Compounds			
6)	S	o-Terphenyl	6.79	13927415	6.967 ug/mL
		Target Compounds			
1)	H	Mineral Oil	6.00	5977094	3.477 ug/ml
2)	H	Diesel	6.00	5977094	3.477 ug/mL
3)	H	DRO(C12-C24)	6.00	5977094	3.477 ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	1650864	1.275 ug/ml
5)	H	TPHd (C10-C25)	6.00	2898648	1.820 ug/ml
7)	H	OIL	10.00	2985298	1.857 ug/mL
8)	H	RRO (C24-C40)	10.00	2985298	1.857 ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	693563	0.689 ug/mL
10)	H	TPHmo (C25-C36)	9.00	774201	0.849 ug/mL

Fqit 4/26/19

(f)=RT Delta > 1/2 window (m)=manual int.

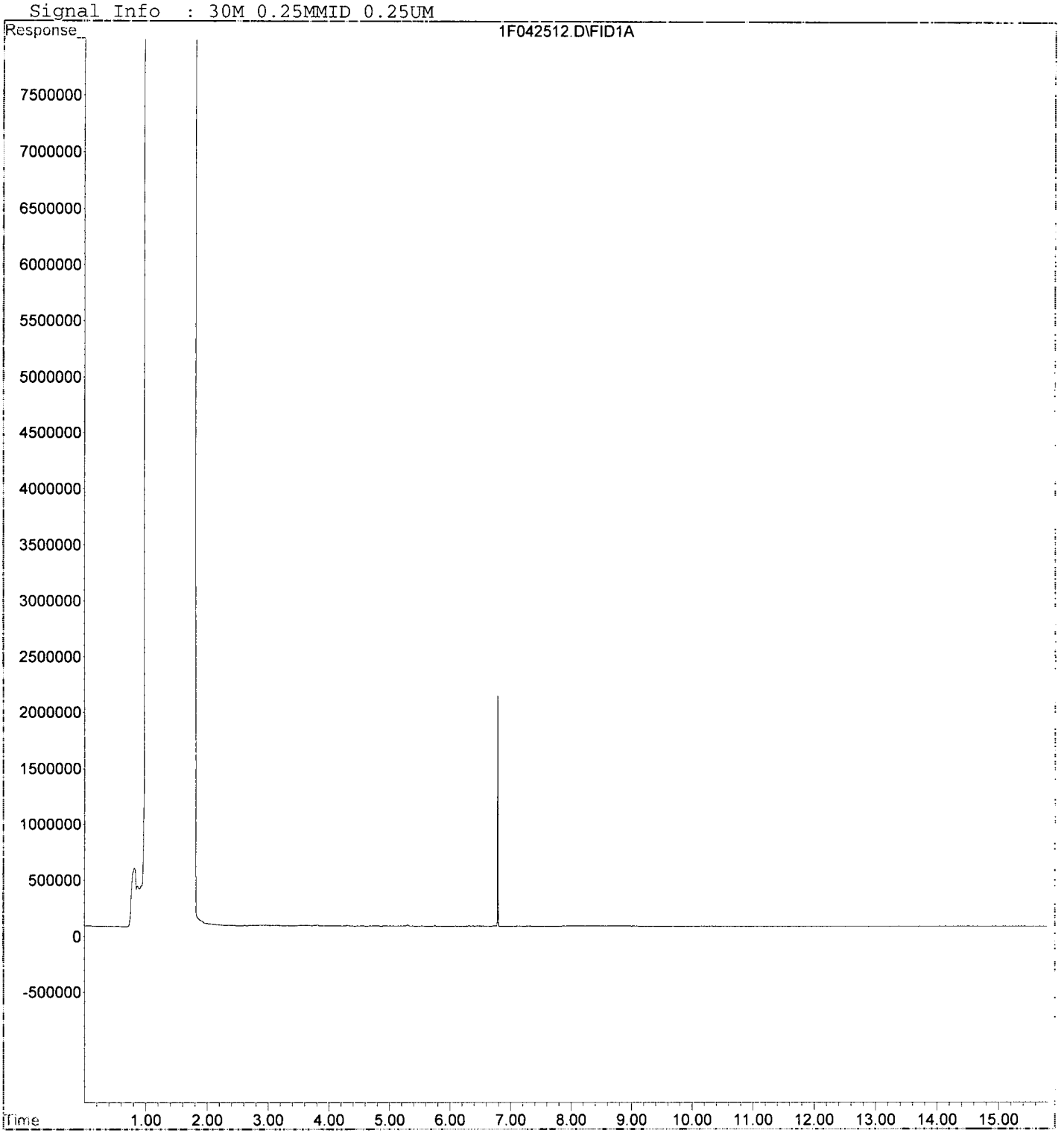
1F042512.D 1F90329D.M Fri Apr 26 08:34:19 2019 SV-GCMS3 Page 1

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042512.D Vial: 9
Acq On : 25 Apr 2019 20:43 Operator: KEH
Sample : 9D25027-CAL9 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:27 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042513.D Vial: 10
Acq On : 25 Apr 2019 21:06 Operator: KEH
Sample : 9D25027-CALA Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:28 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc Units
		System Monitoring Compounds			
6)	S	o-Terphenyl	6.79	34540304	17.279 ug/mL
		Target Compounds			
1)	H	Mineral Oil	6.00	5918763	3.443 ug/ml
2)	H	Diesel	6.00	5918763	3.443 ug/mL
3)	H	DRO(C12-C24)	6.00	5918763	3.443 ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	1529139	1.181 ug/ml
5)	H	TPHd (C10-C25)	6.00	2819953	1.770 ug/ml
7)	H	OIL	10.00	2072558	1.289 ug/mL
8)	H	RRO (C24-C40)	10.00	2072558	1.289 ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	674006	0.670 ug/mL
10)	H	TPHmo (C25-C36)	9.00	725827	0.796 ug/mL

KEH 4/26/19

v

(f)=RT Delta > 1/2 window (m)=manual int.

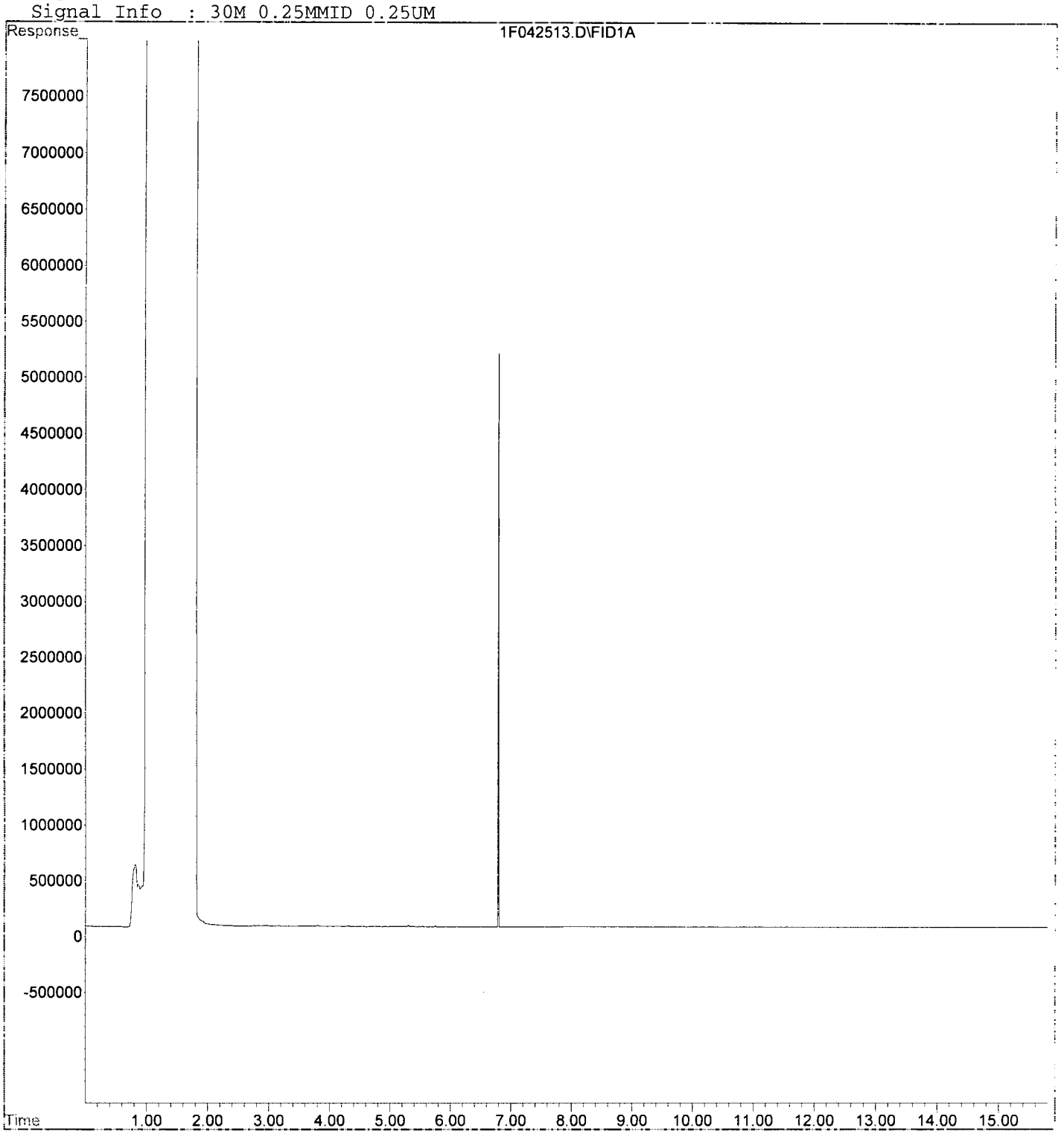
1F042513.D 1F90329D.M Fri Apr 26 08:34:20 2019 SV-GCMS3 Page 1

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042513.D Vial: 10
Acq On : 25 Apr 2019 21:06 Operator: KEH
Sample : 9D25027-CALA Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:28 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042514.D Vial: 11
Acq On : 25 Apr 2019 21:29 Operator: KEH
Sample : 9D25027-CALB Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:28 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc Units
		System Monitoring Compounds			
6)	S	o-Terphenyl	6.79	70207816	35.123 ug/mL
		Target Compounds			
1)	H	Mineral Oil	6.00	5866581	3.413 ug/ml
2)	H	Diesel	6.00	5866581	3.413 ug/mL
3)	H	DRO(C12-C24)	6.00	5866581	3.413 ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	1567369	1.210 ug/ml
5)	H	TPHd (C10-C25)	6.00	2849847	1.789 ug/ml
7)	H	OIL	10.00	2158957	1.343 ug/mL
8)	H	RRO (C24-C40)	10.00	2158957	1.343 ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	587997	0.584 ug/mL
10)	H	TPHmo (C25-C36)	9.00	718951	0.789 ug/mL

KEH 4/26/19

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(f)=RT Delta > 1/2 Window (m)=manual int.

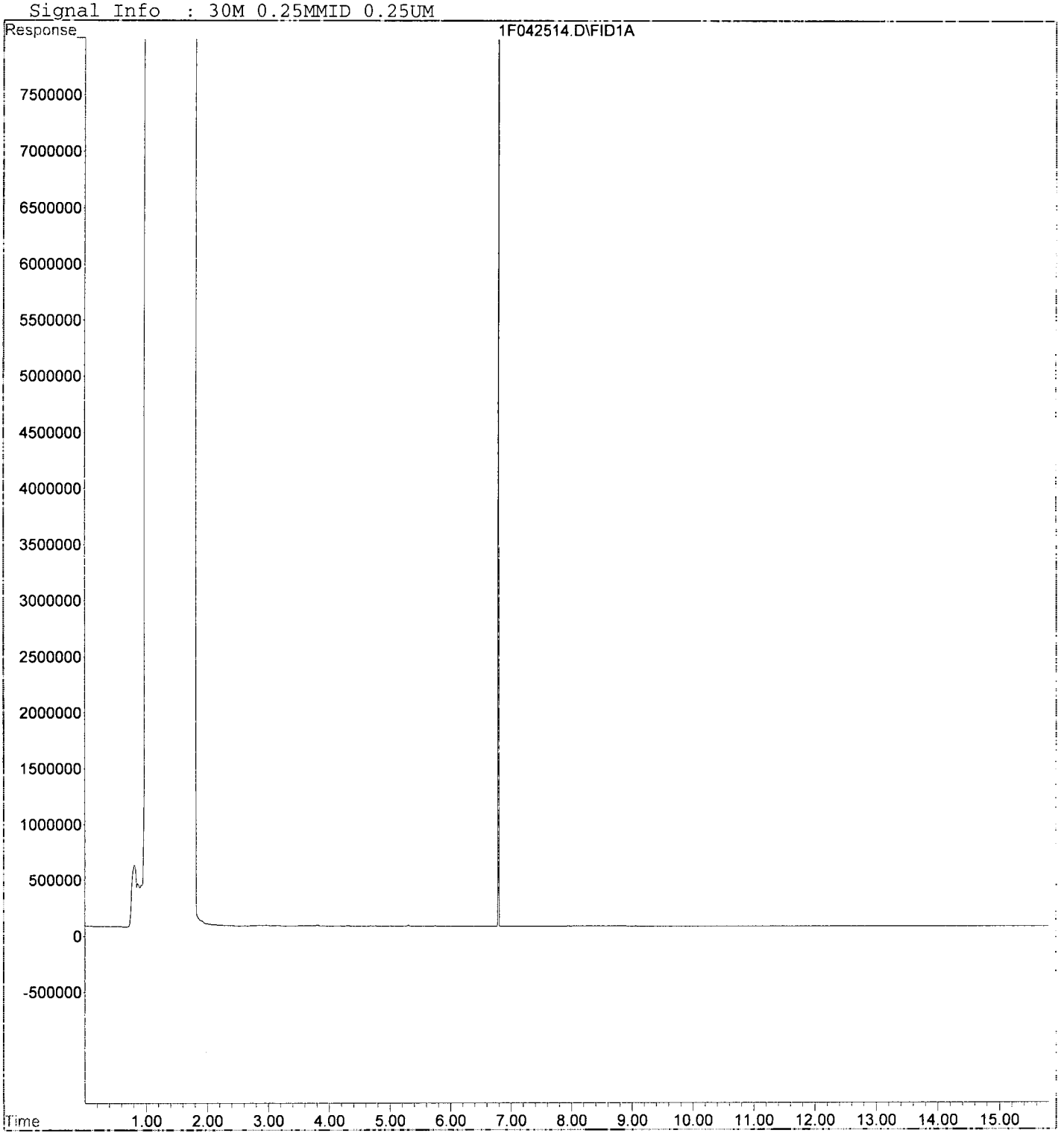
1F042514.D 1F90329D.M Fri Apr 26 08:34:20 2019 SV-GCMS3

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042514.D Vial: 11
Acq On : 25 Apr 2019 21:29 Operator: KEH
Sample : 9D25027-CALB Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:28 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042515.D Vial: 12
Acq On : 25 Apr 2019 21:51 Operator: KEH
Sample : 9D25027-CALC Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:28 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc Units
		System Monitoring Compounds			
6)	S	o-Terphenyl	6.80	140098135	70.087 ug/mL
		Target Compounds			
1)	H	Mineral Oil	6.00	6163614	3.585 ug/ml
2)	H	Diesel	6.00	6163614	3.585 ug/mL
3)	H	DRO(C12-C24)	6.00	6163614	3.585 ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	1722774	1.330 ug/ml
5)	H	TPHd (C10-C25)	6.00	3016373	1.894 ug/ml
7)	H	OIL	10.00	2527581	1.572 ug/mL
8)	H	RRO (C24-C40)	10.00	2527581	1.572 ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	623874	0.620 ug/mL
10)	H	TPHmo (C25-C36)	9.00	687656	0.754 ug/mL

KEH 4/26/19

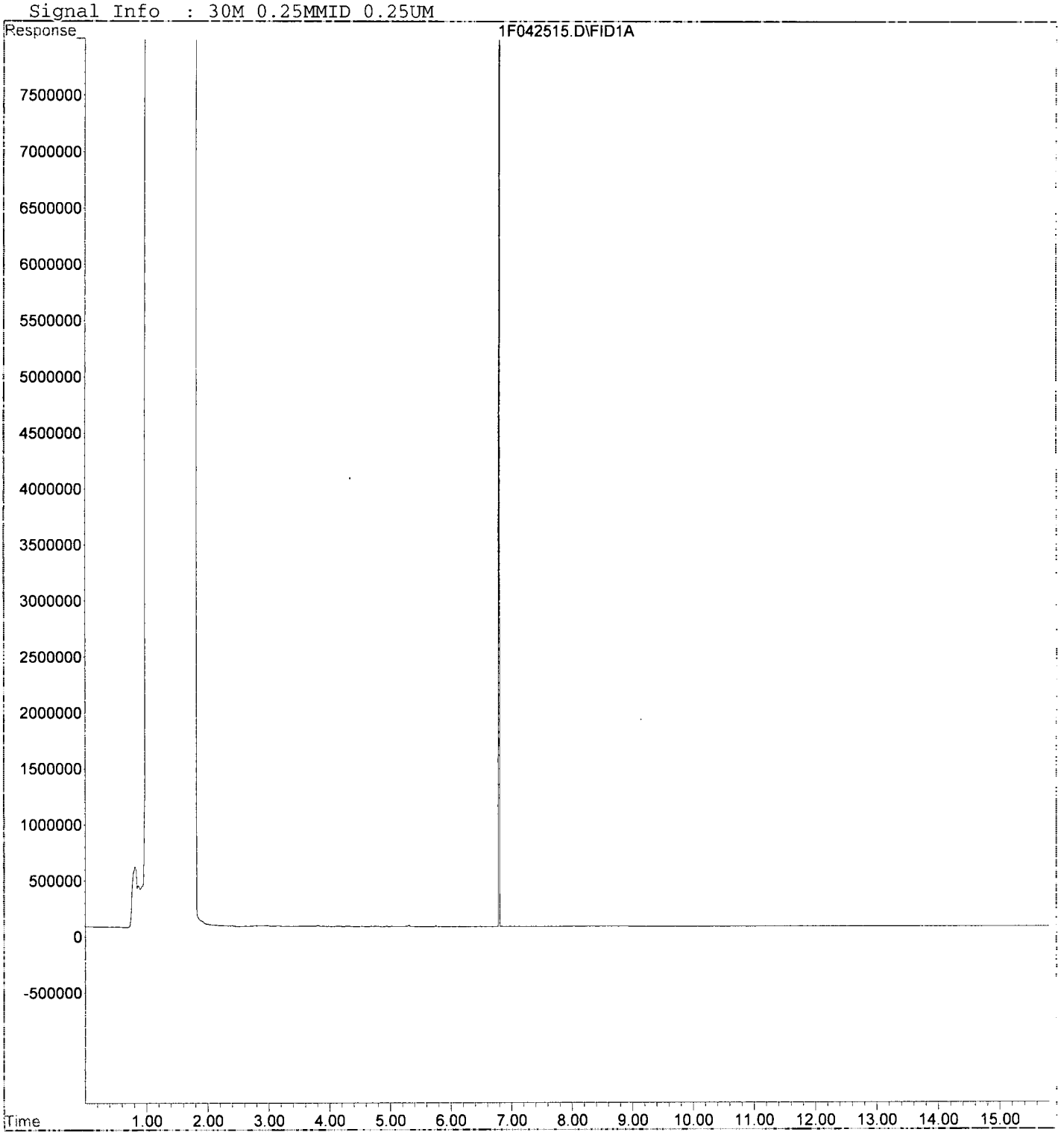
V

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042515.D Vial: 12
Acq On : 25 Apr 2019 21:51 Operator: KEH
Sample : 9D25027-CALC Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:28 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042516.D Vial: 13
Acq On : 25 Apr 2019 22:14 Operator: KEH
Sample : 9D25027-CALD Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:28 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
System Monitoring Compounds						
6)	S	o-Terphenyl	6.80	275627983	137.888	ug/mL
Target Compounds						
1)	H	Mineral Oil	6.00	6973446	4.057	ug/ml
2)	H	Diesel	6.00	6973446	4.057	ug/mL
3)	H	DRO(C12-C24)	6.00	6973446	4.057	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	2051907	1.584	ug/ml
5)	H	TPHd (C10-C25)	6.00	3468122	2.177	ug/ml
7)	H	OIL	10.00	2278752	1.418	ug/mL
8)	H	RRO (C24-C40)	10.00	2278752	1.418	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	639985	0.636	ug/mL
10)	H	TPHmo (C25-C36)	9.00	754331	0.828	ug/mL

KEH 4/26/19

(f)=RT Delta > 1/2 window (m)=manual int.

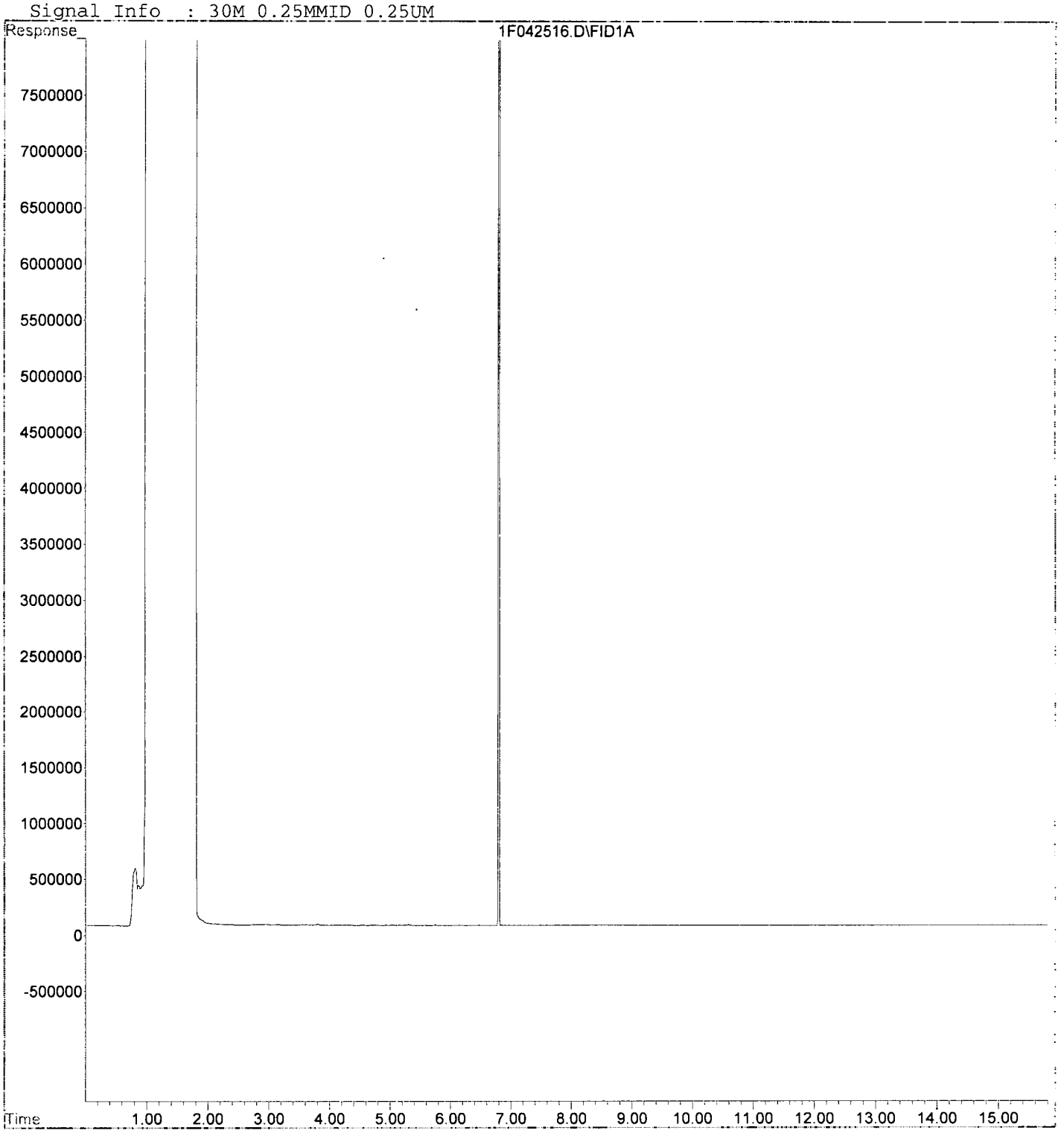
1F042516.D 1F90329D.M Fri Apr 26 08:34:21 2019 SV-GCMS3 Page 1

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042516.D Vial: 13
Acq On : 25 Apr 2019 22:14 Operator: KEH
Sample : 9D25027-CALD Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:28 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042517.D Vial: 14
Acq On : 25 Apr 2019 22:37 Operator: KEH
Sample : 9D25027-CALE Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:29 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mLd
		Target Compounds				
1)	H	Mineral Oil	6.00	36831162	21.425	ug/ml
2)	H	Diesel	6.00	36831162	21.425	ug/mL
3)	H	DRO(C12-C24)	6.00	36831162	21.425	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	4658754	3.597	ug/ml
5)	H	TPHd (C10-C25)	6.00	14352579	9.011	ug/ml
7)	H	OIL	10.00	40658415	25.293	ug/mL
8)	H	RRO (C24-C40)	10.00	40658415	25.293	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	26240021	26.069	ug/mL
10)	H	TPHmo (C25-C36)	9.00	23623063	25.918	ug/mL

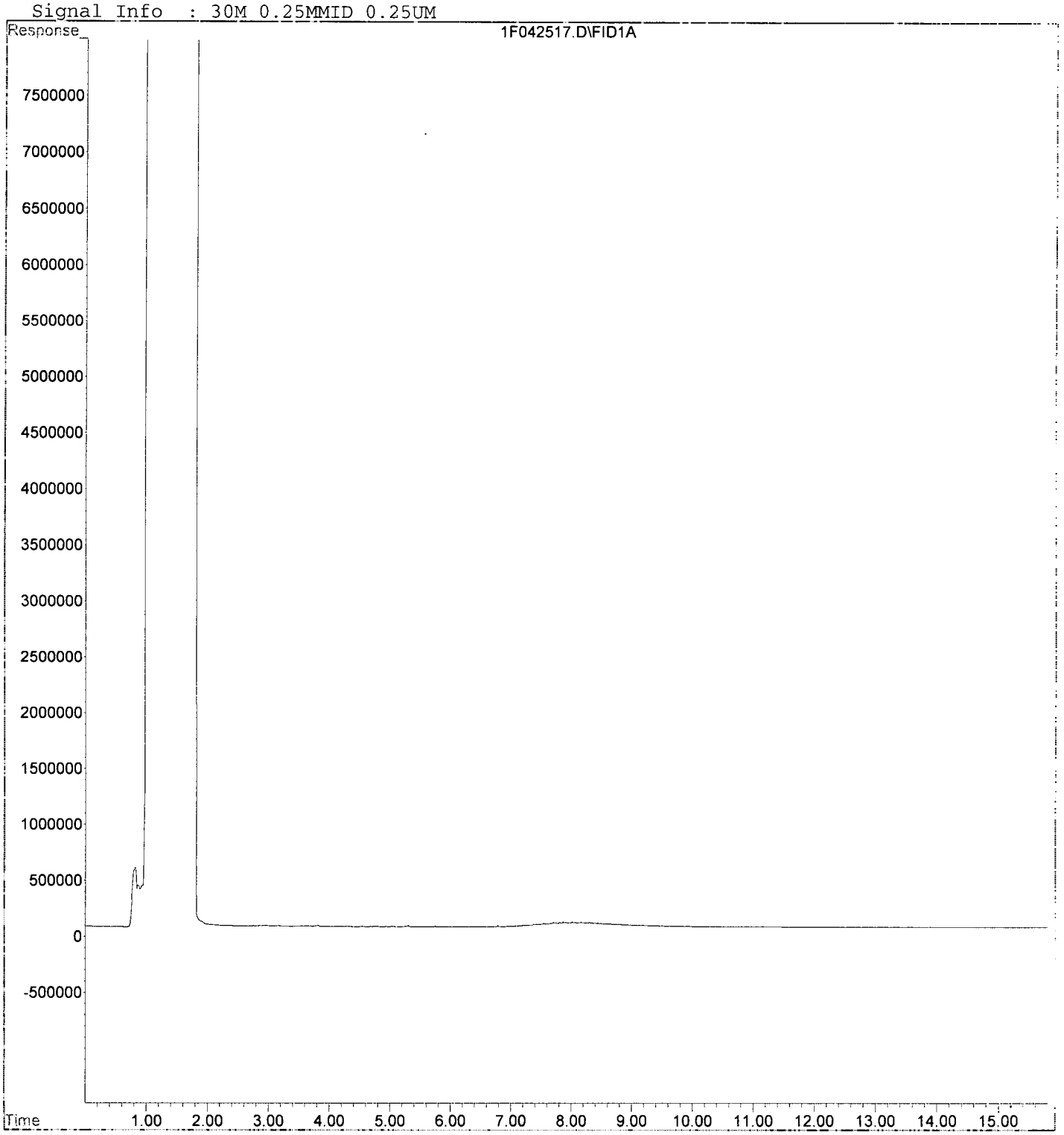
KEH 4/26/19

Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042517.D Vial: 14
Acq On : 25 Apr 2019 22:37 Operator: KEH
Sample : 9D25027-CALE Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:29 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042518.D Vial: 15
Acq On : 25 Apr 2019 22:59 Operator: KEH
Sample : 9D25027-CALF Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:29 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mL
		Target Compounds				
1)	H	Mineral Oil	6.00	71015430	41.311	ug/ml
2)	H	Diesel	6.00	71015430	41.311	ug/mL
3)	H	DRO(C12-C24)	6.00	71015430	41.311	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	7510524	5.799	ug/ml
5)	H	TPHd (C10-C25)	6.00	26686415	16.755	ug/ml
7)	H	OIL	10.00	84081063	52.305	ug/mL
8)	H	RRO (C24-C40)	10.00	84081063	52.305	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	55379526	55.019	ug/mL
10)	H	TPHmo (C25-C36)	9.00	49522315	54.333	ug/mL

KSH 4/26/19

(f)=RT Delta > 1/2 Window (m)=manual int.

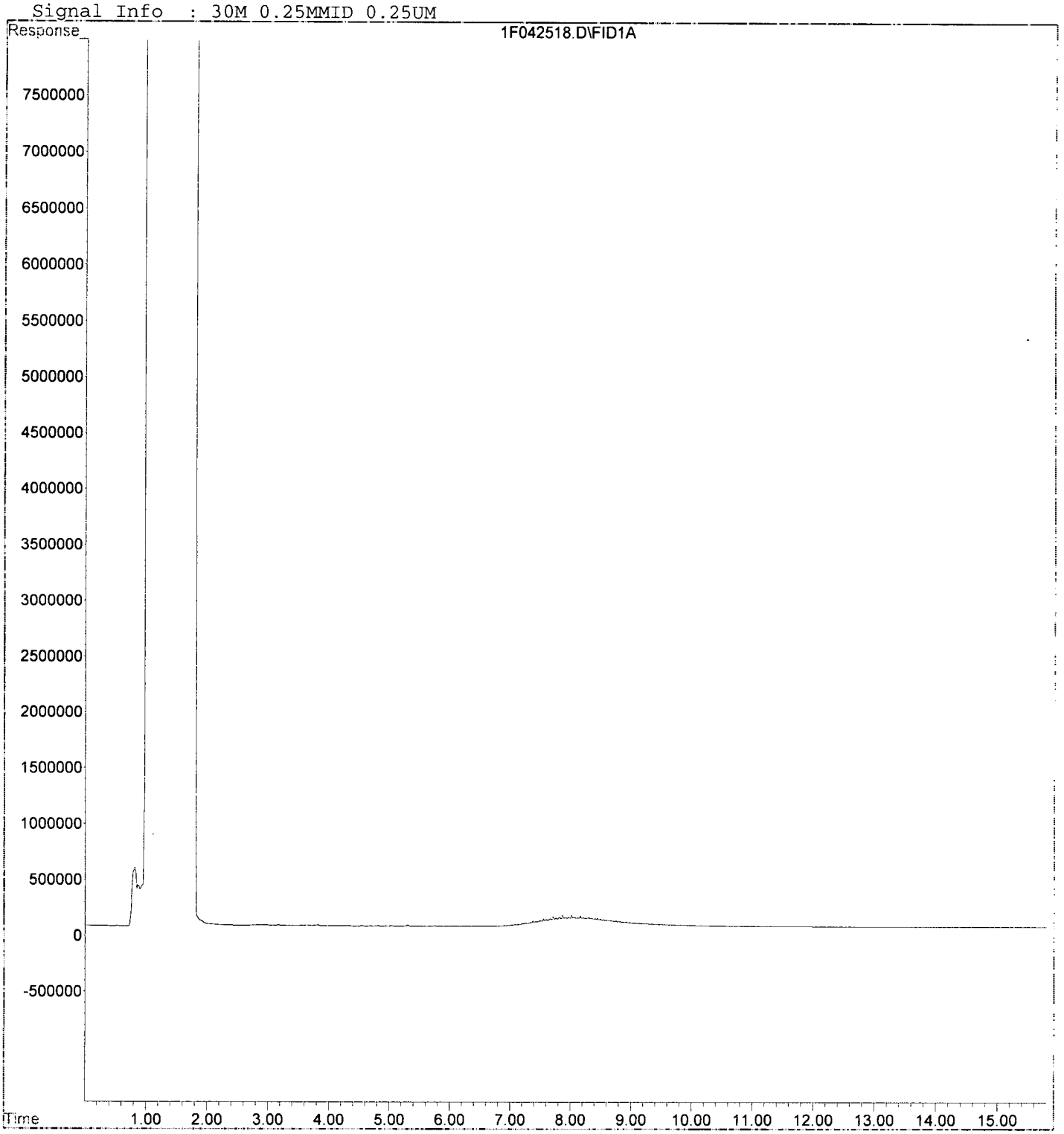
1F042518.D 1F90329D.M Fri Apr 26 08:34:23 2019 SV-GCMS3 Page 1

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042518.D Vial: 15
Acq On : 25 Apr 2019 22:59 Operator: KEH
Sample : 9D25027-CALF Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:29 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042519.D Vial: 16
Acq On : 25 Apr 2019 23:22 Operator: KEH
Sample : 9D25027-CALG Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:29 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mL
		Target Compounds				
1)	H	Mineral Oil	6.00	213038660	123.928	ug/ml
2)	H	Diesel	6.00	213038660	123.928	ug/mL
3)	H	DRO(C12-C24)	6.00	213038660	123.928	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	18384233	14.195	ug/ml
5)	H	TPHd (C10-C25)	6.00	76186160	47.833	ug/ml
7)	H	OIL	10.00	267131698	166.176	ug/mL
8)	H	RRO (C24-C40)	10.00	267131698	166.176	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	178799247	177.635	ug/mL
10)	H	TPHmo (C25-C36)	9.00	160632315	176.237	ug/mL

KEH 4/26/19

✓

(f)=RT Delta > 1/2 window (m)=manual int.

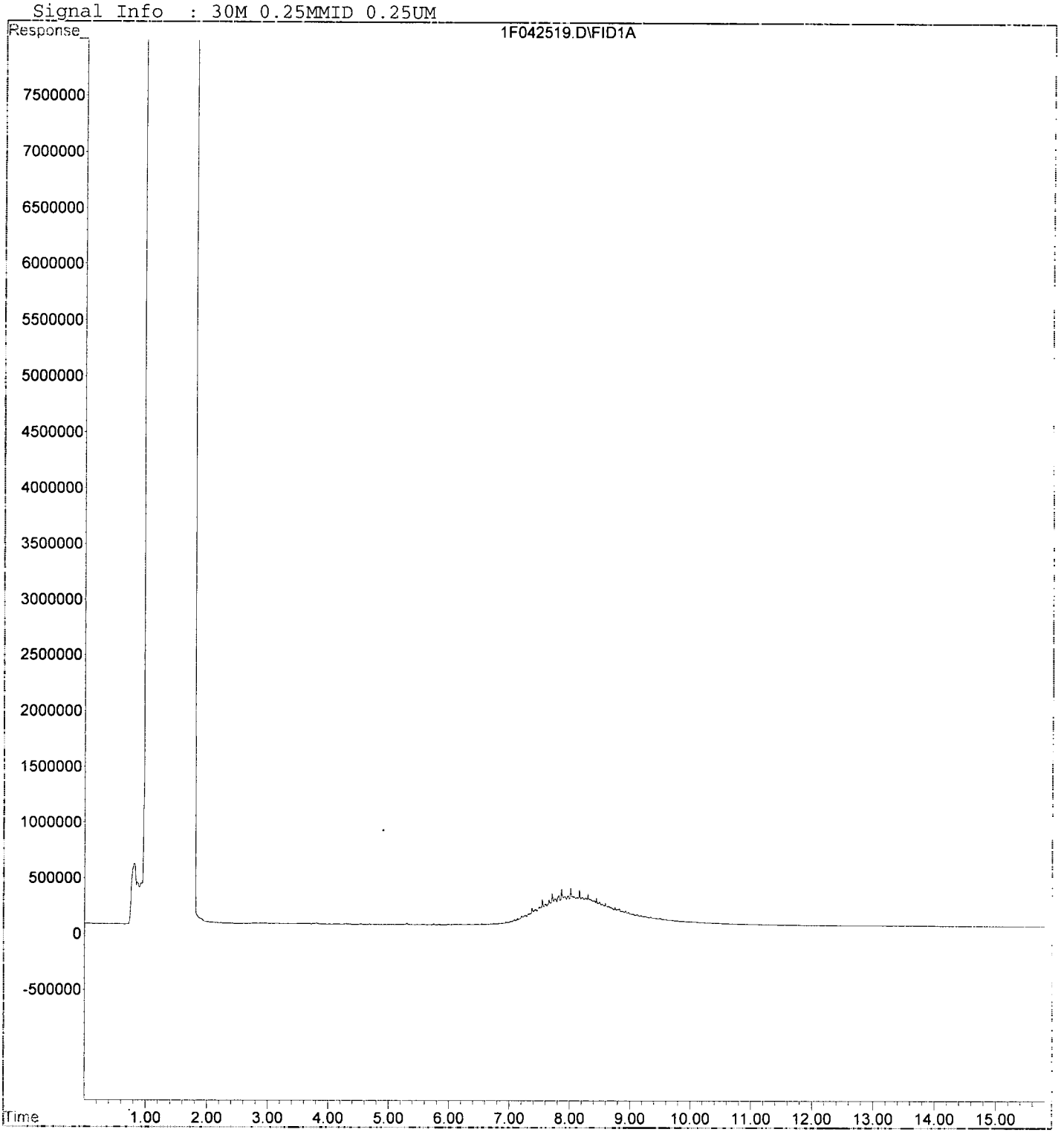
1F042519.D 1F90329D.M Fri Apr 26 08:34:23 2019 SV-GCMS3 Page 1

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042519.D Vial: 16
Acq On : 25 Apr 2019 23:22 Operator: KEH
Sample : 9D25027-CALG Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:29 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042520.D Vial: 17
Acq On : 25 Apr 2019 23:45 Operator: KEH
Sample : 9D25027-CALH Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:30 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mLd
		Target Compounds				
1)	H	Mineral Oil	6.00	430875093	250.647	ug/ml
2)	H	Diesel	6.00	430875093	250.647	ug/mL
3)	H	DRO(C12-C24)	6.00	430875093	250.647	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	35036900	27.052	ug/ml
5)	H	TPHd (C10-C25)	6.00	150801879	94.680	ug/ml
7)	H	OIL	10.00	551376804	342.997	ug/mL
8)	H	RRO (C24-C40)	10.00	551376804	342.997	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	369625025	367.219	ug/mL
10)	H	TPHmo (C25-C36)	9.00	336045814	368.690	ug/mL

KEH 4/26/19

✓

(f)=RT Delta > 1/2 Window (m)=manual int.

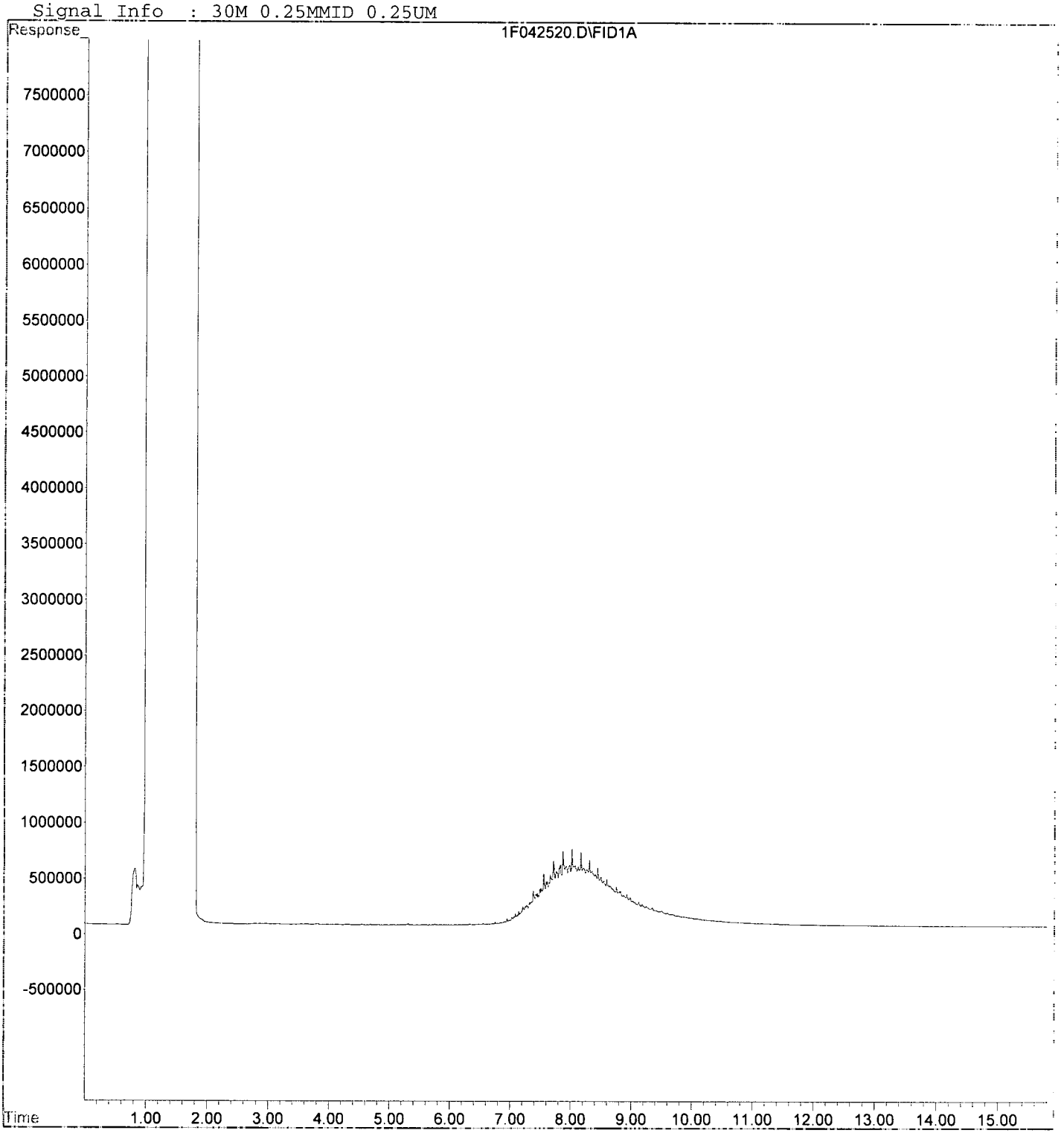
1F042520.D 1F90329D.M Fri Apr 26 08:34:24 2019 SV-GCMS3

Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042520.D Vial: 17
Acq On : 25 Apr 2019 23:45 Operator: KEH
Sample : 9D25027-CALH Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:30 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042521.D Vial: 18
Acq On : 26 Apr 2019 00:07 Operator: KEH
Sample : 9D25027-CALI Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:30 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mLd
		Target Compounds				
1)	H	Mineral Oil	6.00	881369363	512.707	ug/ml
2)	H	Diesel	6.00	881369363	512.707	ug/mL
3)	H	DRO(C12-C24)	6.00	881369363	512.707	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	68981455	53.262	ug/ml
5)	H	TPHd (C10-C25)	6.00	304588612	191.234	ug/ml
7)	H	OIL	10.00	1146400987	713.145	ug/mL
8)	H	RRO (C24-C40)	10.00	1146400987	713.145	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	764513007	759.536	ug/mL
10)	H	TPHmo (C25-C36)	9.00	701380034	769.514	ug/mL

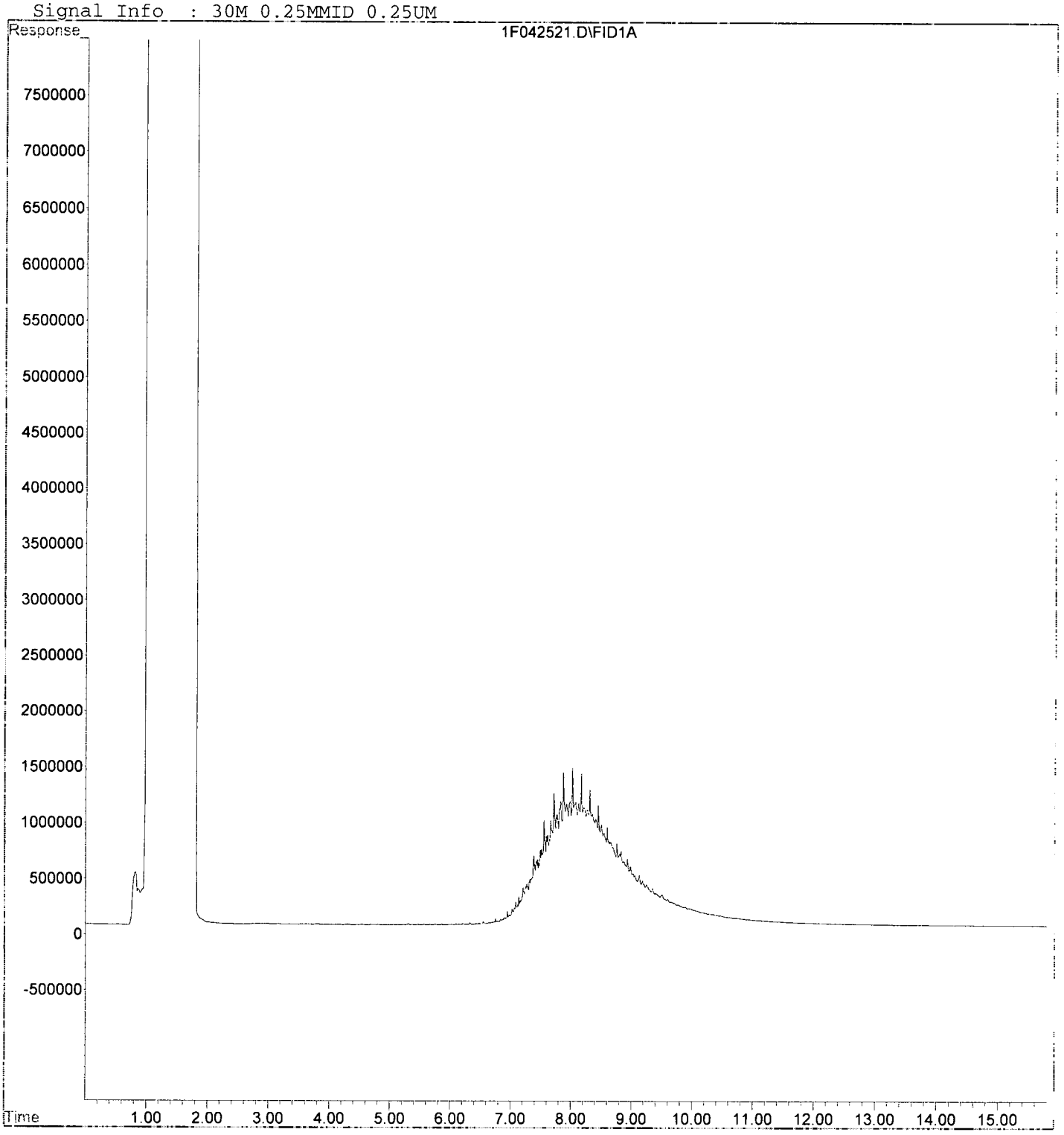
KAH 4/29/19

Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042521.D Vial: 18
Acq On : 26 Apr 2019 00:07 Operator: KEH
Sample : 9D25027-CALI Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:30 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042522.D Vial: 19
Acq On : 26 Apr 2019 00:30 Operator: KEH
Sample : 9D25027-CALJ Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:31 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mLd
		Target Compounds				
1)	H	Mineral Oil	6.00	2193669368	1276.095	ug/ml
2)	H	Diesel	6.00	2193669368	1276.095	ug/mL
3)	H	DRO(C12-C24)	6.00	2193669368	1276.095	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	167378076	129.235	ug/ml
5)	H	TPHd (C10-C25)	6.00	750009055	470.888	ug/ml
7)	H	OIL	10.00	2902021937	1805.270	ug/mL
8)	H	RRO (C24-C40)	10.00	2902021937	1805.270	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	1913826307	1901.368	ug/mL
10)	H	TPHmo (C25-C36)	9.00	1775803656	1948.311	ug/mL

KEH 4/26/19

(f)=RT Delta > 1/2 Window (m) =manual int.

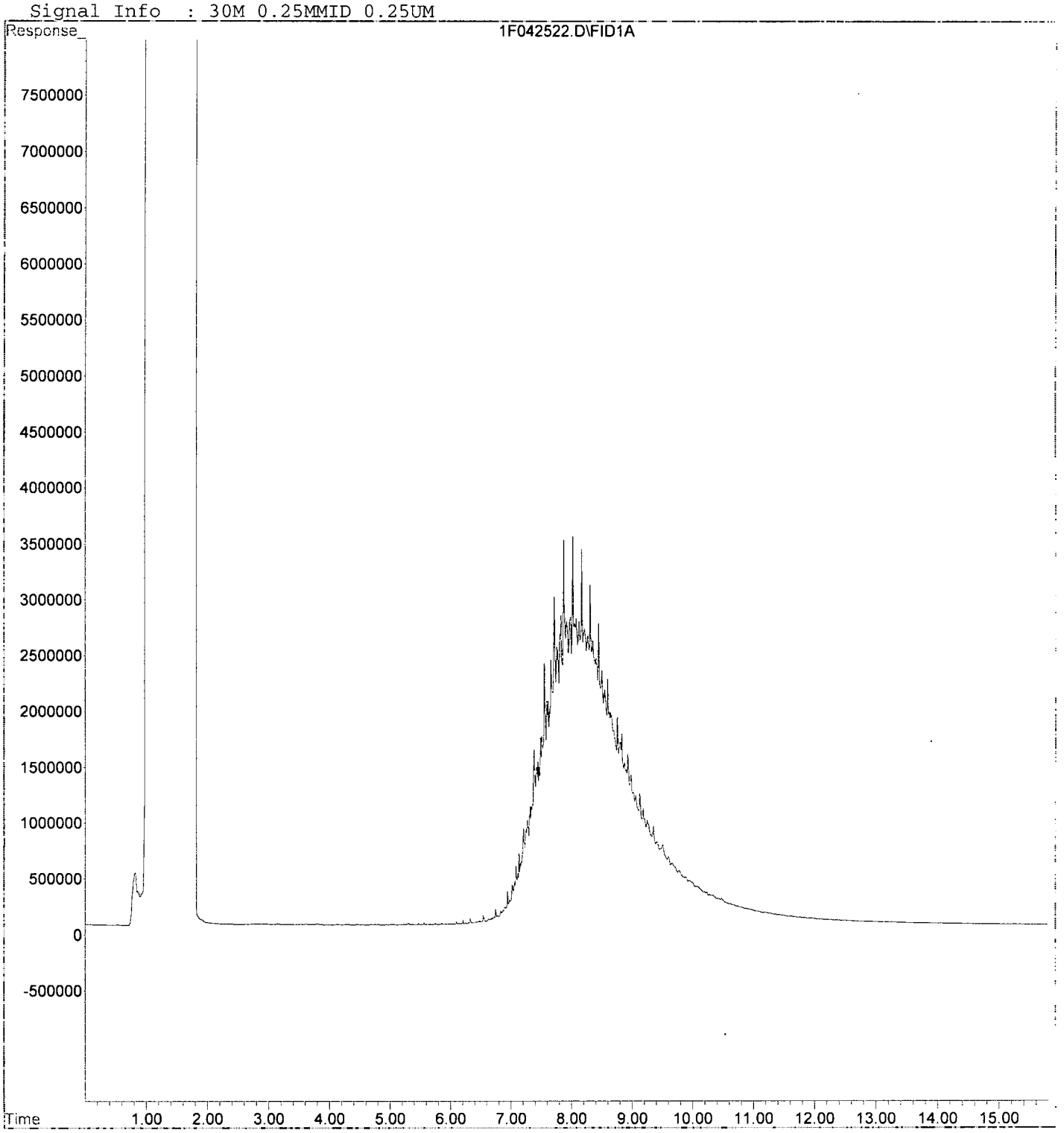
1F042522.D 1F90329D.M Fri Apr 26 08:34:25 2019 SV-GCMS3 Page 1

Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042522.D Vial: 19
Acq On : 26 Apr 2019 00:30 Operator: KEH
Sample : 9D25027-CALJ Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:31 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042523.D Vial: 99
Acq On : 26 Apr 2019 00:52 Operator: KEH
Sample : 9D25027-IBL1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:31 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mL
		Target Compounds				
1)	H	Mineral Oil	6.00	12553111	7.302	ug/ml
2)	H	Diesel	6.00	12553111	7.302	ug/mL
3)	H	DRO(C12-C24)	6.00	12553111	7.302	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	3043185	2.350	ug/ml
5)	H	TPHd (C10-C25)	6.00	5401700	3.391	ug/ml
7)	H	OIL	10.00	13157718	8.185	ug/mL
8)	H	RRO (C24-C40)	10.00	13157718	8.185	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	4396275	4.368	ug/mL
10)	H	TPHmo (C25-C36)	9.00	6098211	6.691	ug/mL

NK
KAH 4/26/19

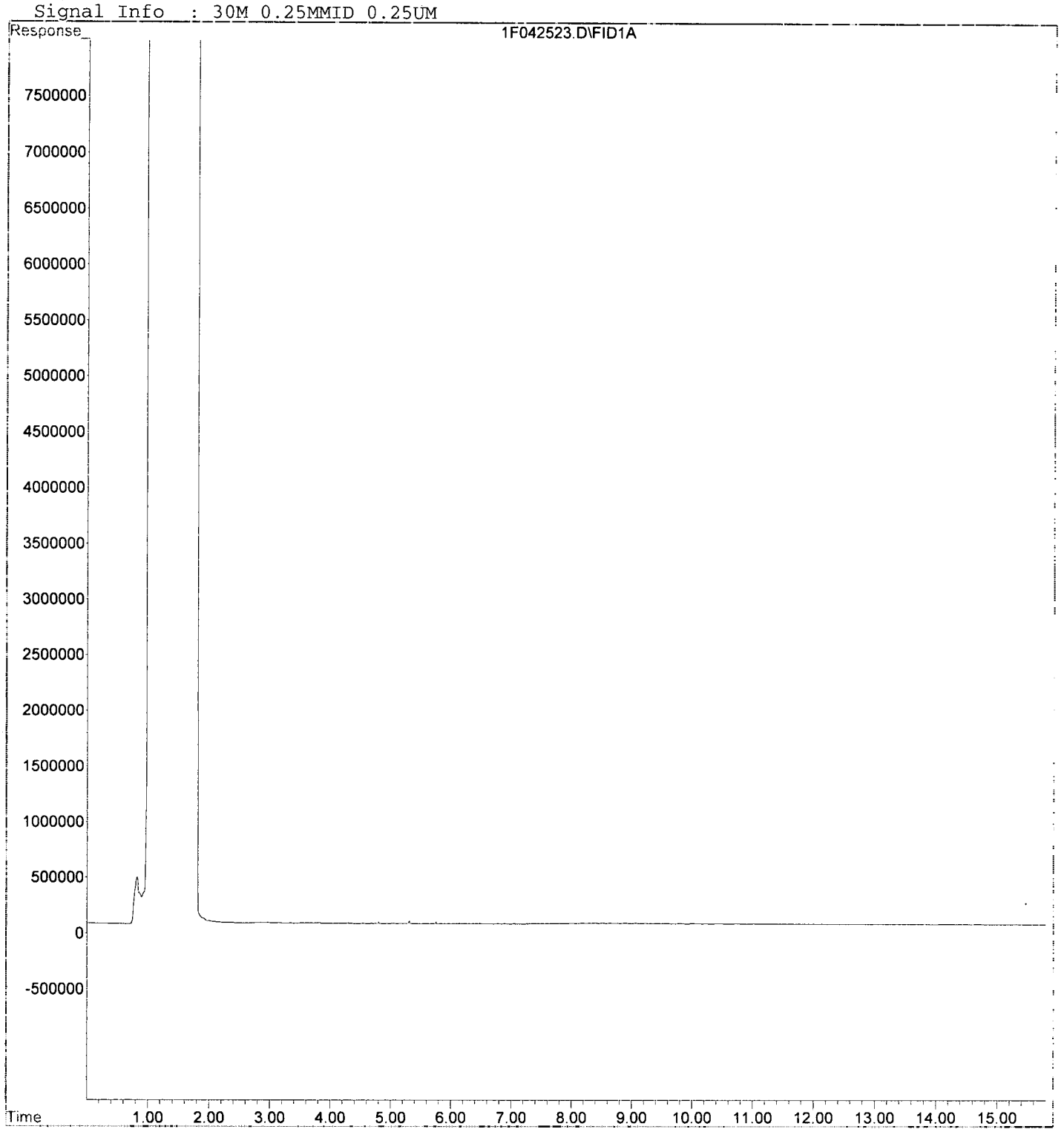
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042523.D Vial: 99
Acq On : 26 Apr 2019 00:52 Operator: KEH
Sample : 9D25027-IBL1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:31 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042524.D Vial: 20
Acq On : 26 Apr 2019 1:15 Operator: KEH
Sample : 9D25027-CALK Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:31 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mLd
		Target Compounds				
1)	H	Mineral Oil	6.00	4341632449	2525.601	ug/ml
2)	H	Diesel	6.00	4341632449	2525.601	ug/mL
3)	H	DRO(C12-C24)	6.00	4341632449	2525.601	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	330829671	255.438	ug/ml
5)	H	TPHd (C10-C25)	6.00	1477040392	927.350	ug/ml
7)	H	OIL	10.00	5787430343	3600.206	ug/mL
8)	H	RRO (C24-C40)	10.00	5787430343	3600.206	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	3793601205	3768.907	ug/mL
10)	H	TPHmo (C25-C36)	9.00	3547021564	3891.590	ug/mL

Kat 4/24/19

V

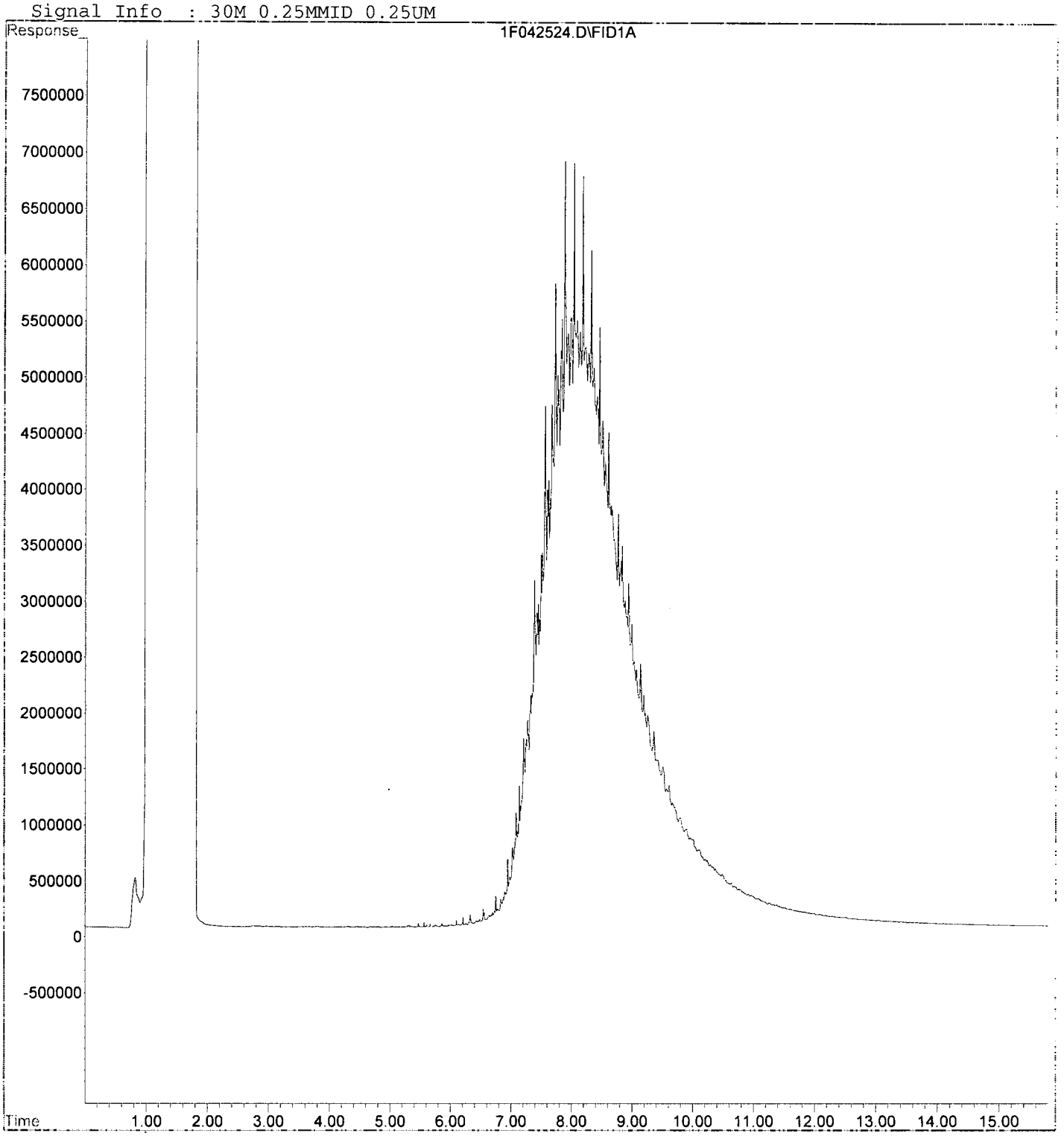
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042524.D Vial: 20
Acq On : 26 Apr 2019 1:15 Operator: KEH
Sample : 9D25027-CALK Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:31 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042525.D Vial: 99
Acq On : 26 Apr 2019 1:38 Operator: KEH
Sample : 9D25027-IBL2 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:32 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mL
		Target Compounds				
1)	H	Mineral Oil	6.00	17306765	10.068	ug/ml
2)	H	Diesel	6.00	17306765	10.068	ug/mL
3)	H	DRO(C12-C24)	6.00	17306765	10.068	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	3341633	2.580	ug/ml
5)	H	TPHd (C10-C25)	6.00	6442173	4.045	ug/ml
7)	H	OIL	10.00	25756096	16.022	ug/mL
8)	H	RRO (C24-C40)	10.00	25756096	16.022	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	8614639	8.559	ug/mL
10)	H	TPHmo (C25-C36)	9.00	12535043	13.753	ug/mL

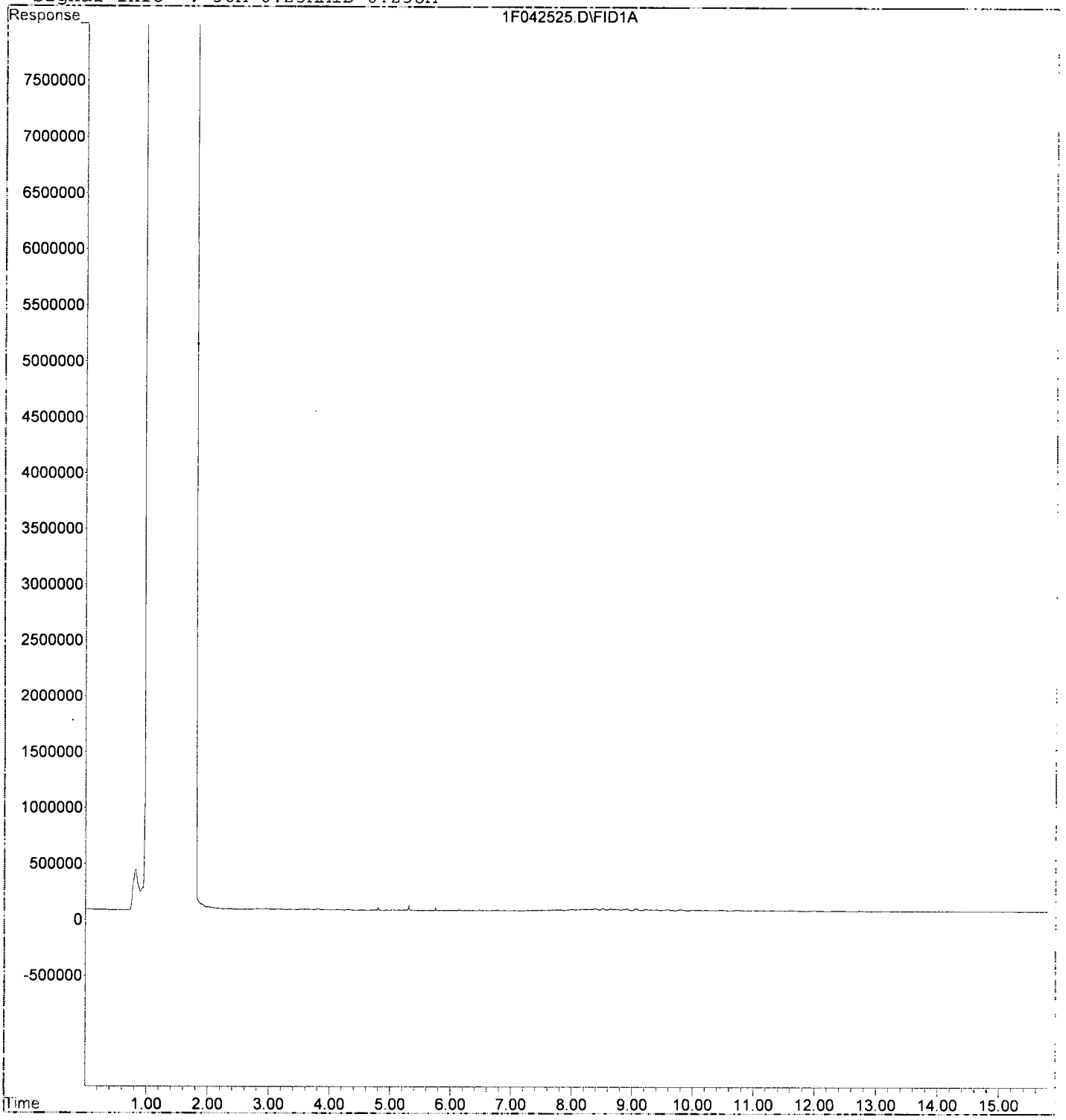
NR
Kat 4/24/19

Quantitation Report (Not Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042525.D Vial: 99
Acq On : 26 Apr 2019 1:38 Operator: KEH
Sample : 9D25027-IBL2 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:32 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042526.D Vial: 21
Acq On : 26 Apr 2019 2:00 Operator: KEH
Sample : 9D25027-ICV1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:32 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mLd
		Target Compounds				
1)	H	Mineral Oil	6.00	1226583001	713.524	ug/ml
2)	H	Diesel	6.00	1226583001	713.524	ug/mL
3)	H	DRO(C12-C24)	6.00	1226583001	713.524	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	932655378	720.117	ug/ml
5)	H	TPHd (C10-C25)	6.00	1142282058	717.174	ug/ml
7)	H	OIL	10.00	347259589	216.021	ug/mL
8)	H	RRO (C24-C40)	10.00	347259589	216.021	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	40800192	40.535	ug/mL
10)	H	TPHmo (C25-C36)	9.00	13188744	14.470	ug/mL

KGH 4/26/19

✓

(f)=RT Delta > 1/2 Window (m)=manual Int.

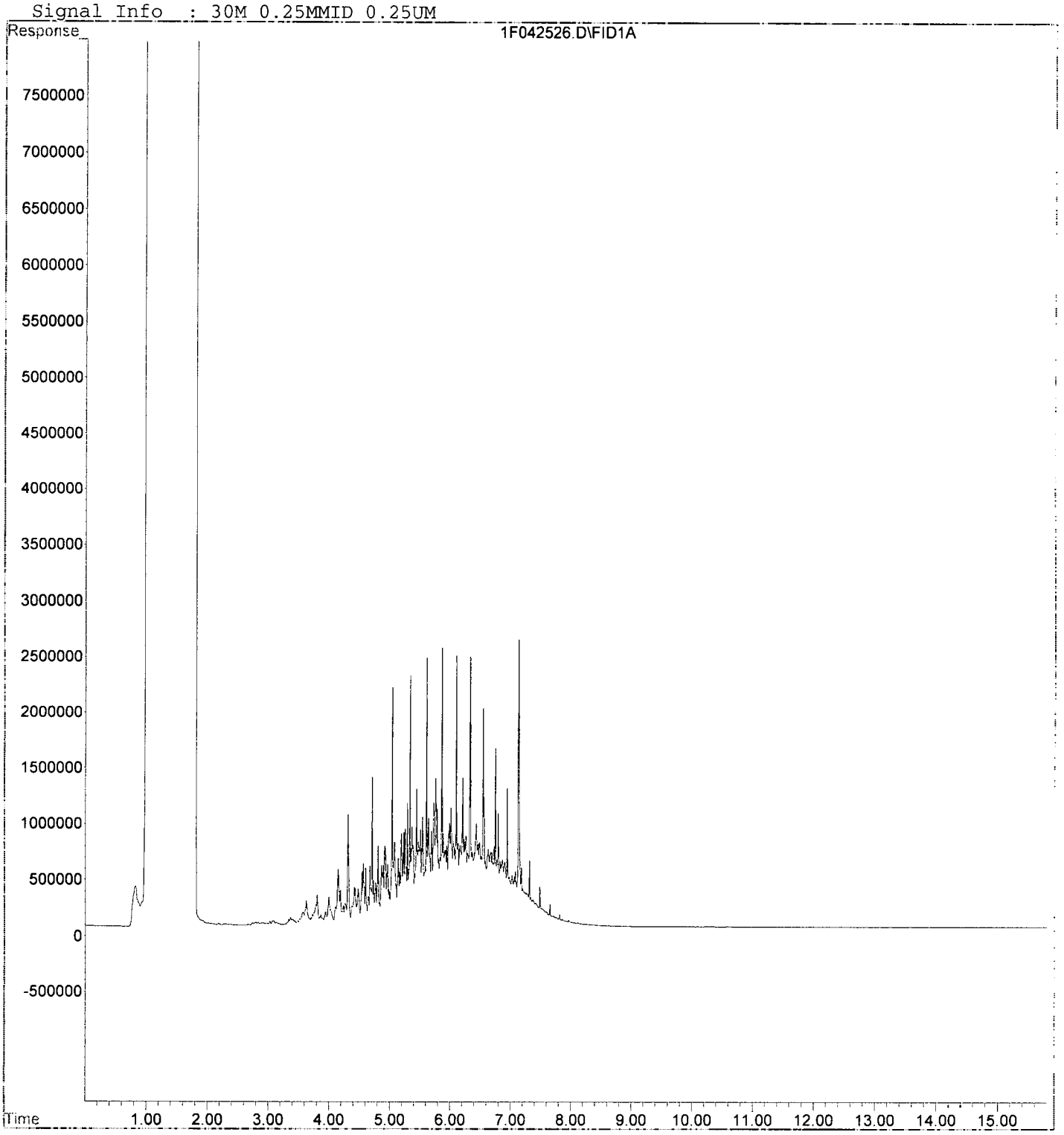
1F042526.D 1F90329D.M Fri Apr 26 08:34:27 2019 SV-GCMS3 Page 1

Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042526.D Vial: 21
Acq On : 26 Apr 2019 2:00 Operator: KEH
Sample : 9D25027-ICV1 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:32 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042527.D Vial: 22
Acq On : 26 Apr 2019 2:23 Operator: KEH
Sample : 9D25027-ICV2 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:33 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Initial Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM

		Compound	R.T.	Response	Conc	Units
		System Monitoring Compounds				
6)	S	o-Terphenyl	0.00	0	N.D.	ug/mLd
		Target Compounds				
1)	H	Mineral Oil	6.00	902879266	525.220	ug/ml
2)	H	Diesel	6.00	902879266	525.220	ug/mL
3)	H	DRO(C12-C24)	6.00	902879266	525.220	ug/mL
4)	H	Ca Luft DRO (C12-C22)	6.00	88553298	68.373	ug/ml
5)	H	TPHd (C10-C25)	6.00	335225897	210.469	ug/ml
7)	H	OIL	10.00	1136238940	706.824	ug/mL
8)	H	RRO (C24-C40)	10.00	1136238940	706.824	ug/mL
9)	H	Ca Luft ORO (C23-C32)	8.00	756609544	751.684	ug/mL
10)	H	TPHmo (C25-C36)	9.00	665299183	729.928	ug/mL

KEH 4/26/19

✓

(f)=RT Delta > 1/2 Window (m)=manual int.

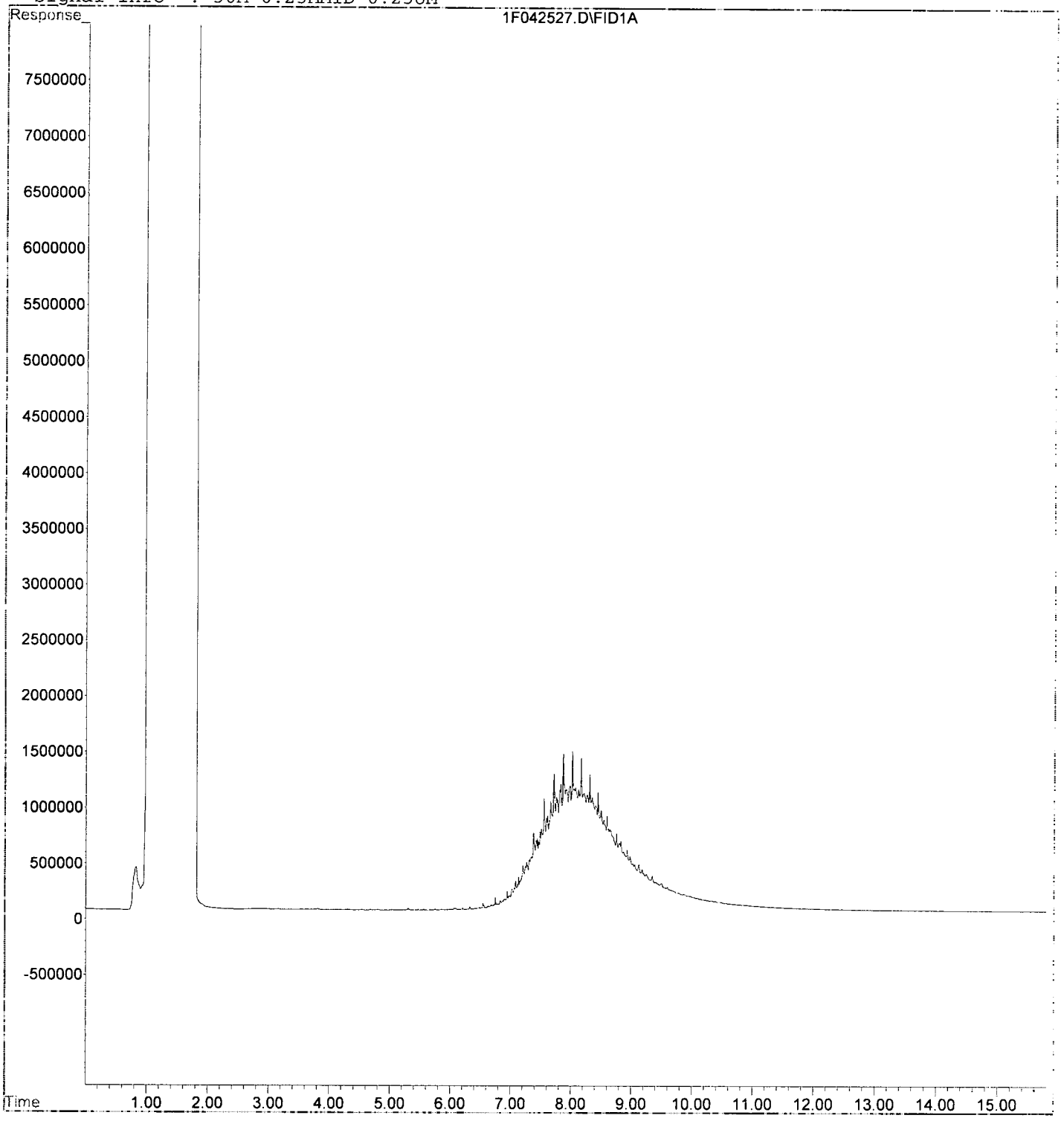
1F042527.D 1F90329D.M Fri Apr 26 08:34:28 2019 SV-GCMS3 Page 1

Quantitation Report (QT Reviewed)

Data File : F:\1\DATA\2019-04\9D25027\1F042527.D Vial: 22
Acq On : 26 Apr 2019 2:23 Operator: KEH
Sample : 9D25027-ICV2 Inst : HP G1530A
Misc : Multiplr: 1.00
IntFile : SUR.E
Quant Time: Apr 26 8:33 2019 Quant Results File: 1F90329D.RES

Quant Method : F:\1\METHODS\1F90329D.M (Chemstation Integrator)
Title : DUALFID1F, NWTPH-Dx/TPH-8015m
Last Update : Fri Apr 26 08:27:45 2019
Response via : Multiple Level Calibration
DataAcq Meth : A1F40422.M

Volume Inj. : 1uL
Signal Phase : Restek Rxi-5Sil MS
Signal Info : 30M 0.25MMID 0.25UM



APEX LABORATORIES, LLC
6700 SW Sandburg St. Tigard OR 97223 phone 503-718-2323

Gasoline Range Hydrocarbons (Benzene though Naphthalene) by NWTPH-Gx

Benchsheet & Analysis Sequence Data

Batch 9051463

Sequence 9E31027 (A9E0902-01)

PREPARATION BENCH SHEET

BATCH #: 9051463 (Soil)

Apex Laboratories

Prep Method: EPA 5035A

Lab Number	Cont.	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surr.	ClientID / Sample	Extraction Comments	pH*
9051463-BLK1		QC	05/31/19 13:00	7.5	5							
9051463-BS1		QC	05/31/19 13:00	5	5	A19E350		62.5				
9051463-BS2		QC	05/31/19 13:00	5	5	A19E314		250				
9051463-BS3		QC	05/31/19 13:00	5	5	A19E311		250				
A9D0906-17	A	8260D Full List - Developmei	04/26/19 15:44	5	5					Medium Level Volatiles	FP, PT	
A9D0906-17	A	8260B Full List + Misc	04/26/19 15:44	5	5					Medium Level Volatiles	FP, PT	
A9D0906-17	A	8260C Oxygenates	04/26/19 15:44	5	5					Medium Level Volatiles	TAME/DIPE Only	
A9D0906-17	A	8260C Full List	04/26/19 15:44	5	5					Medium Level Volatiles	FP, PT	
A9E0895-06	B	NWTPH-Gx	(Date Sampled)	5.72 ✓	5					P28-13' (052319)	FP, Added for BatchQC in: 905146	
A9E0895-06	B	8260C Halogenated VOCs	(Date Sampled)	5.72	5					P28-13' (052319)	FP	
A9E0895-06	B	8260D Full List - Developmei	(Date Sampled)	5.72	5					P28-13' (052319)	FP, Added for BatchQC in: 905146	
A9E0895-06	B	8260C Oxygenates	(Date Sampled)	5.72	5					P28-13' (052319)	FP, Added for BatchQC in: 905146	
A9E0895-06	B	8260C Full List	(Date Sampled)	5.72	5					P28-13' (052319)	FP, Added for BatchQC in: 905146	
A9E0895-06	B	8260B Full List + Misc	(Date Sampled)	5.72	5					P28-13' (052319)	FP, Added for BatchQC in: 905146	
9051463-DUP1		QC	05/31/19 15:27	6.17 ✓	5		A9E0895-06					
A9E0895-07	B	8260C Halogenated VOCs	(Date Sampled)	5.32 ✓	5					P23-1' (052319)	FP	
A9E0895-08	B	8260C Halogenated VOCs	(Date Sampled)	3.45 ✓	5					P23-6' (052319)	FP, Use Cont B.	
A9E0895-09	B	8260C Halogenated VOCs	(Date Sampled)	3.92 ✓	5					P23-8' (052319)	FP	
A9E0895-10	B	8260C Halogenated VOCs	(Date Sampled)	5.87 ✓	5					P23-13' (052319)	FP	
A9E0895-11	B	8260C Halogenated VOCs	(Date Sampled)	5.91 ✓	5					P23-12' (052319)	FP	
A9E0895-12	B	8260C Halogenated VOCs	(Date Sampled)	4.31 ✓	5					P24-1' (052319)	FP	
A9E0895-13	B	8260B Full List + Misc	(Date Sampled)	4.85 ✓	5					P24-3' (052319)	FP, Added for BatchQC in: 905146	

Prepared By: [signature] 6/3/19 Date

Reviewed By: [signature] 6/3/19 Date

PREPARATION BENCH SHEET

BATCH #: 9051463 (Soil)

Apex Laboratories

Prep Method: EPA 5035A

Lab Number	Cont.	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surr.	ClientID / Sample	Extraction Comments	pH*
A9E0895-13	B	8260C Halogenated VOCs	(Date Sampled)	4.85	5					P24-3' (052319)	FP	
A9E0895-13	B	8260D Full List - Developmei	(Date Sampled)	4.85	5					P24-3' (052319)	FP, Added for BatchQC in: 905146	
A9E0895-13	B	NWTPH-Gx	(Date Sampled)	4.85	5					P24-3' (052319)	FP, Added for BatchQC in: 905146	
A9E0895-13	B	8260C Full List	(Date Sampled)	4.85	5					P24-3' (052319)	FP, Added for BatchQC in: 905146	
A9E0895-13	B	8260C Oxygenates	(Date Sampled)	4.85	5					P24-3' (052319)	FP, Added for BatchQC in: 905146	
9051463-MS1		QC	05/31/19 15:27	4.85	5	A19E314	A9E0895-13	340			DW=62.9% @50X	
A9E0902-01	D	NWTPH-Gx	05/29/19 17:00	5.73	5					2708-190524-014	MOD	
A9E0902-01	D	8260C Full List	05/29/19 17:00	5.73	5					2708-190524-014	MOD	
A9E0929-01	B	8260C Full List	(Date Sampled)	14.5	15					GSWIDW-339-13-052919	FP	
A9E0929-02	B	8260C Full List	(Date Sampled)	14.39	15					GSWIDW-341-13-052919	FP	
A9E0929-03	B	8260C Full List	(Date Sampled)	14.59	15					GSWIDW-396-13-052919	FP	
A9E0929-03	B	8260C Halogenated VOCs	(Date Sampled)	14.59	15					GSWIDW-396-13-052919	FP, Added for BatchQC in: 905146	
A9E0929-03	B	NWTPH-Gx	(Date Sampled)	14.59	15					GSWIDW-396-13-052919	FP, Added for BatchQC in: 905146	
A9E0929-03	B	8260D Full List - Developmei	(Date Sampled)	14.59	15					GSWIDW-396-13-052919	FP, Added for BatchQC in: 905146	
A9E0929-03	B	8260C Oxygenates	(Date Sampled)	14.59	15					GSWIDW-396-13-052919	FP, Added for BatchQC in: 905146	
A9E0929-03	B	8260B Full List + Misc	(Date Sampled)	14.59	15					GSWIDW-396-13-052919	FP, Added for BatchQC in: 905146	
9051463-MS2		QC	05/31/19 15:27	14.59	15	A19E350	A9E0929-03	204.25			DW=90.8% @50X	

*pH <2 verified

Standards/Reagents

Reagent(s)

Std ID	Exp. Date	Description
A16L123	11/30/23	Sample Prep Bal 3
A19C375	09/25/19	Methanol - Fisher (P/T) #185562

Analyte Spike(s)

Std ID	Exp. Date	Description
A19E311	11/09/19	Prim NWTPH-Gx Spike (500 ug/mL)
A19E314	11/09/19	8260B Cal. Std. B VOC Spike Mix (20-40ug/ml
A19E350	11/26/19	Oxygenates Cal. Std. B Spike Mix (20-5000ug/n

Surrogate(s)

Std ID	Exp. Date	Description

Prepared By: Date

Reviewed By: Date

PREPARATION BENCH SHEET

BATCH #: 9051463 (Soil)

Apex Laboratories

Prep Method: EPA 5035A

Lab Number	Cont.	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surr.	ClientID / Sample	Extraction Comments	pH*
SOIL MS3												

Prepared By: Date

Reviewed By: Date

Volatile Soils Matrix Spike Volume Calculation (Validated 5/3/2013)

Enter the Spike Amount value into the Bench Sheet to ensure correct MS/MSD recoveries.

Batch: 9051463

Matrix Spike

Sample Weight	Final Volume	Dilution	Dry Weight
g	mL		%
4.850	5	50	62.9
			0.629

Final Spike Level	**Spike Amount**
ug/kg	**ul**
2228.82	**340**

Assumptions:
Spiking Solution = 20ug/mL
Spike Amount into 50mL = 50ul
Dilution = 1mL of MeOH to 50mL of water
Initial Spike Concentration = 20ug/L

A9E0895-13

6/3/19

VOC

Volatile Soils Matrix Spike Volume Calculation (Validated 5/3/2013)

Enter the Spike Amount value into the Bench Sheet to ensure correct MS/MSD recoveries.

Batch: 9051463

Matrix Spike

Sample Weight	Final Volume	Dilution	Dry Weight
g	mL		%
14.590	15	50	90.8
			0.908

Final Spike Level	**Spike Amount**
ug/kg	**ul**
1233.59	**817**

$\times \frac{12.5}{50} = 204.25\ \mu L$

Assumptions:
Spiking Solution = 20ug/mL ~~8~~ 6/3/19
Spike Amount into 50mL = ~~50ul~~ 12.5 µL
Dilution = 1mL of MeOH to 50mL of water
Initial Spike Concentration = 20ug/L

A9E0929-03

OXY

Worksheet

5035 Field Prep Worksheet (Validated 7/11/16)

Sample ID	Container	Container Weight (g)	Tare Weight (g)	Net Sample Weight (g)	Formula Check
A9E0895-06	B	39.61	33.89	5.72	
A9E0895-06	C DUP	39.41	33.24	6.17	
A9E0895-07	B	39.07	33.75	5.32	
A9E0895-08	B	37.11	33.66	3.45	
A9E0895-09	B	37.18	33.26	3.92	
A9E0895-10	B	39.28	33.41	5.87	
A9E0895-11	B	38.97	33.06	5.91	
A9E0895-12	B	37.29	32.98	4.31	
A9E0895-13	B	38.11	33.26	4.85	
A9E0929-01	B	48.14	33.64	14.5	
A9E0929-02	B	47.9	33.51	14.39	
A9E0929-03	B	48.24	33.65	14.59	

6/3/19

A9E0902

5035 Container Prep Worksheet
~Soil Jar Extraction~

A9E0902-01	2708-190524-014	Sampled: 05/24/19 12:50

		Container Used	Sample Weight (g)	Volume MeOH (mL)	Prepared By:	Prepared date/time	Within 48 hours?	Notes:
D Solid	40 mL VOA - In House Prep - 5035 (MeOH)	A	5.73	5 10 15	AB	@ 5/29/19 1700	Y N	Mod. odor, rocky

8260C Full List Expires: 05/26/19 12:50 Due: 06/10/19 17:00

NWTPH-Gx Expires: 05/26/19 12:50 Due: 06/04/19 17:00

10,000

Methanol Reagent ID: A19C375~ Balance ID: A18J327~

A9E0895

5035 Container Prep Worksheet
~Field MeOH Preserved~

(Prepared = Sampled Date/Time)

A9E0895-06 — **P28-13' (052319)** — Sampled: **05/23/19 09:50**

		Container Weight (g)	Tare Weight (g)	Volume MeOH (mL)	Notes:
(B) Soil	40 mL VOA - 5035 (MeOH)	39.61	33.89	(5) 10 15 Other	
(C) Soil	40 mL VOA - 5035 (MeOH)	39.41	33.24	(5) 10 15 Other	

Due: TAT:

Halo

A9E0895-07 — **P23-1' (052319)** — Sampled: **05/23/19 10:30**

		Container Weight (g)	Tare Weight (g)	Volume MeOH (mL)	Notes:
(B) Soil	40 mL VOA - 5035 (MeOH)	39.07	33.75	(5) 10 15 Other	
(C) Soil	40 mL VOA - 5035 (MeOH)	39.22	33.63	(5) 10 15 Other	

Due: TAT:

A9E0895-08 — **P23-6' (052319)** — Sampled: **05/23/19 10:35**

		Container Weight (g)	Tare Weight (g)	Volume MeOH (mL)	Notes:
(B) Soil	40 mL VOA - 5035 (MeOH)	37.11	33.66	(5) 10 15 Other	D
(C) Soil	40 mL VOA - 5035 (MeOH)			(5) 10 15 Other	~~DO Not Use~~

Due: TAT:

A9E0895-09 — **P23-8' (052319)** — Sampled: **05/23/19 10:20**

		Container Weight (g)	Tare Weight (g)	Volume MeOH (mL)	Notes:
(B) Soil	40 mL VOA - 5035 (MeOH)	37.18	33.26	(5) 10 15 Other	
(C) Soil	40 mL VOA - 5035 (MeOH)	36.20	33.36	(5) 10 15 Other	

Due: TAT:

A9E0895-10 — **P23-13' (052319)** — Sampled: **05/23/19 10:35**

		Container Weight (g)	Tare Weight (g)	Volume MeOH (mL)	Notes:
(B) Soil	40 mL VOA - 5035 (MeOH)	39.28	33.41	(5) 10 15 Other	
(C) Soil	40 mL VOA - 5035 (MeOH)	38.84	32.97	(5) 10 15 Other	

Due: TAT:

Weighed by: MS @ 5/29/19 16:08

Methanol Reagent ID: A19C375 Balance ID: A18J327

Print Date: 5/29/2019 2:52:16PM

A9E0895

5035 Container Prep Worksheet
~Field MeOH Preserved~

(Prepared = Sampled Date/Time)

A9E0895-11 — **P23-12' (052319)** — Sampled: **05/23/19 10:35**

		Container Weight (g)	Tare Weight (g)	Volume MeOH (mL)	Notes:
B Soil	40 mL VOA - 5035 (MeOH)	38.97	33.86	5 10 15 Other	
C Soil	40 mL VOA - 5035 (MeOH)	39.78	33.45	5 10 15 Other	

Halo

Due: TAT:

A9E0895-12 — **P24-1' (052319)** — Sampled: **05/23/19 10:55**

		Container Weight (g)	Tare Weight (g)	Volume MeOH (mL)	Notes:
B Soil	40 mL VOA - 5035 (MeOH)	37.29	32.98	5 10 15 Other	
C Soil	40 mL VOA - 5035 (MeOH)	39.49	33.50	5 10 15 Other	

Due: TAT:

A9E0895-13 — **P24-3' (052319)** — Sampled: **05/23/19 11:00**

MS VOC

		Container Weight (g)	Tare Weight (g)	Volume MeOH (mL)	Notes:
B Soil	40 mL VOA - 5035 (MeOH)	38.11	33.26	5 10 15 Other	
C Soil	40 mL VOA - 5035 (MeOH)	38.25	33.44	5 10 15 Other	

Due: TAT:

A9E0895-17 — **P29-1' (052319)** — Sampled: **05/23/19 13:15**

		Container Weight (g)	Tare Weight (g)	Volume MeOH (mL)	Notes:
B Soil	40 mL VOA - 5035 (MeOH)	42.98	33.39	5 10 15 Other	
C Soil	40 mL VOA - 5035 (MeOH)	40.35	33.58	5 10 15 Other	

Due: TAT:

A9E0895-18 — **P29-6' (052319)** — Sampled: **05/23/19 13:20**

		Container Weight (g)	Tare Weight (g)	Volume MeOH (mL)	Notes:
B Soil	40 mL VOA - 5035 (MeOH)	38.67	33.14	5 10 15 Other	
C Soil	40 mL VOA - 5035 (MeOH)	39.49	33.30	5 10 15 Other	

Due: TAT:

Weighed by: MM @ 5/29/19 16:08

Methanol Reagent ID: A19C375~ Balance ID: A18J327~

A9E0929

5035 Container Prep Worksheet
~Field MeOH Preserved~

(Prepared = Sampled Date/Time)

A9E0929-01 — **GSWIDW-339-13-052919** — Sampled: **05/29/19 11:30**

			Container Weight (g)	Tare Weight (g)	Volume MeOH (mL)	Notes:
B	Soil	40 mL VOA - 5035 (MeOH)	48.14	33.64	5 10 15 Other	Over weight
C	Soil	40 mL VOA - 5035 (MeOH)	46.13	33.42	5 10 15 Other	

8260 — Due: — TAT: — added 10mL TB 5/31/19

A9E0929-02 — **GSWIDW-341-13-052919** — Sampled: **05/29/19 11:45**

			Container Weight (g)	Tare Weight (g)	Volume MeOH (mL)	Notes:
B	Soil	40 mL VOA - 5035 (MeOH)	47.90	33.51	5 10 15 Other	
C	Soil	40 mL VOA - 5035 (MeOH)	46.11	33.74	5 10 15 Other	

Due: — TAT: — added 10mL TB 5/31/19

A9E0929-03 — **GSWIDW-396-13-052919** — Sampled: **05/29/19 12:00**

			Container Weight (g)	Tare Weight (g)	Volume MeOH (mL)	Notes:
B	Soil	40 mL VOA - 5035 (MeOH)	48.24	33.65	5 10 15 Other	
C	Soil	40 mL VOA - 5035 (MeOH)	47.10	33.41	5 10 15 Other	

Due: — TAT: — added 10mL TB 5/31/19

VLS OK — DW=90.8%

Weighed by: VLS @ 5/30/19 14:29

Methanol Reagent ID: A19C375 — Balance ID: A18J327

[redacted]

SAMPLE DESCRIPTION

- Provided as a 5 g pre-spiked soil matrix and 5 mL methanol flame sealed in a 10 mL amber ampoule.
- The standard should be stored at 4±2°C.

GENERAL INFORMATION

- This standard is pre-dried so percent moisture is 0%.
- Store any remaining standard at 4±2°C.
- The diluted standard will contain all or a subset of the analytes in the required concentration range.
- It is recommended to save any remaining standard until final reports have been sent.

ADDITIONAL INFORMATION

- Use a sample weight of 5 grams when reporting
- Transfer the remainder of methanol to an appropriate storage vial.
- Due to stability issues, the standard must be analyzed **immediately** after dilution.

INSTRUCTIONS

- The standard should be brought to room temperature when used.
- Shake the sample for a couple of minutes prior to opening.
- Carefully open the ampule by snapping off the top at the narrow part of the neck.
- Remove an aliquot, using a gas tight syringe, from the vial and inject into your purge and trap vessel below the surface of the water.
- Analyze the methanol extract following your normal procedure.
- It is recommended that the standard be analyzed immediately.
- Report result in µg/kg.

Please take all necessary safety precautions when handling this product. Phenova products are intended for use by laboratory professionals only and may be hazardous. Buyer/user shall ensure sufficient knowledge, training, facilities and skills necessary to safely handle and store products provided. Material Safety Data Sheets (MSDS) for all Phenova products are available upon request.

Soil / Hazardous Waste PT Concentration Ranges and PTRLs

PTRL NELAC Proficiency Testing Reporting Limits (PTRLs) are provided as guidance to laboratories analyzing NELAC PT samples. At a minimum, the laboratory should use a method that is sensitive enough to generate quantitative results at the PTRLs shown. (REF: NELAC PT FOT Tables)

NA Not Applicable (NA) has been applied to analytes where a PTRL is not applicable and to state specific analytes that have not had a PTRL determined by the applicable accrediting agency.

NELAC Code	Analyte	Units	Concentration Range	PTRL	
4315	Acetone	µg/kg	4000 - 20000	929	16,900
4375	Benzene	µg/kg	1000 - 10000	750	0
4395	Bromodichloromethane	µg/kg	1000 - 10000	650	0
4400	Bromoform	µg/kg	1000 - 10000	600	4000
4410	2-Butanone (MEK)	µg/kg	4000 - 20000	808	9600
4455	Carbon tetrachloride	µg/kg	1000 - 10000	480	0
4475	Chlorobenzene	µg/kg	1000 - 10000	750	7140
4575	Chlorodibromomethane	µg/kg	1000 - 10000	700	6180
4505	Chloroform	µg/kg	1000 - 10000	700	5570
4570	1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	2000 - 10000	1200	0
4585	1,2-Dibromoethane(EDB)	µg/kg	2000 - 10000	1200	2720
4595	Dibromomethane	µg/kg	2000 - 10000	1200	3940
4610	1,2-Dichlorobenzene	µg/kg	1000 - 10000	750	4210
4615	1,3-Dichlorobenzene	µg/kg	1000 - 10000	606	5710
4620	1,4-Dichlorobenzene	µg/kg	1000 - 10000	723	5800
4630	1,1-Dichloroethane	µg/kg	1000 - 10000	650	9820
4635	1,2-Dichloroethane	µg/kg	1500 - 10000	930	5560
4640	1,1-Dichloroethene	µg/kg	2000 - 10000	1000	0
4645	cis-1,2-Dichloroethene	µg/kg	2000 - 10000	1200	5010
4700	trans-1,2-Dichloroethene	µg/kg	2000 - 10000	1200	0
4655	1,2-Dichloropropane	µg/kg	2000 - 10000	1400	2220
4680	cis-1,3-Dichloropropene	µg/kg	2000 - 10000	1200	0
4685	trans-1,3-Dichloropropene	µg/kg	2000 - 10000	1200	4980
4765	Ethylbenzene	µg/kg	1000 - 10000	700	8340
4835	Hexachlorobutadiene	µg/kg	1500 - 15000	150	0
4840	Hexachloroethane	µg/kg	1500 - 15000	150	—
4860	2-Hexanone	µg/kg	4000 - 20000	2000	16,600
4975	Methylene chloride (Dichloromethane)	µg/kg	1000 - 10000	600	0
6385	2-Methylnaphthalene	µg/kg	1000 - 12000	100	—
5000	Methyl-tert-butyl ether (MTBE)	µg/kg	2000 - 10000	1400	7120
4995	4-Methyl-2-pentanone (MIBK)	µg/kg	4000 - 20000	2000	14,700
5005	Naphthalene	µg/kg	2000 - 10000	721	0
5015	Nitrobenzene	µg/kg	1500 - 15000	150	—

Soil / Hazardous Waste PT Concentration Ranges and PTRLs

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NA Not Applicable (NA) has been applied to analytes where a PTRL is not applicable and to state specific analytes that have not had a PTRL determined by the applicable accrediting agency.

NELAC Code	Analyte	Units	Concentration Range	PTRL
5100	Styrene	µg/kg	2000 - 10000	1200
5105	1,1,1,2-Tetrachloroethane	µg/kg	1000 - 10000	520
5110	1,1,2,2-Tetrachloroethane	µg/kg	1500 - 10000	455
5115	Tetrachloroethene	µg/kg	1000 - 10000	747
5140	Toluene	µg/kg	1000 - 10000	750
5155	1,2,4-Trichlorobenzene	µg/kg	2000 - 10000	1200
5160	1,1,1-Trichloroethane	µg/kg	1000 - 10000	600
5165	1,1,2-Trichloroethane	µg/kg	1000 - 10000	650
5170	Trichloroethene	µg/kg	1000 - 10000	643
5180	1,2,3-Trichloropropane	µg/kg	1500 - 10000	825
5260	Xylenes, total	µg/kg	2000 - 20000	700
4320	Acetonitrile	µg/kg	5000 - 15000	NA
4325	Acrolein	µg/kg	1000 - 15000	NA
4340	Acrylonitrile	µg/kg	1000 - 10000	NA
4385	Bromobenzene	µg/kg	2000 - 10000	NA
4390	Bromochloromethane	µg/kg	1000 - 10000	NA
4950	Bromomethane	µg/kg	2000 - 10000	NA
4435	n-Butylbenzene	µg/kg	1000 - 10000	NA
4440	sec-Butylbenzene	µg/kg	1000 - 10000	NA
4445	tert-Butylbenzene	µg/kg	1000 - 10000	NA
4450	Carbon disulfide	µg/kg	1000 - 15000	NA
4465	Chloroacetaldehyde	µg/kg	1000 - 15000	NA
4485	Chloroethane	µg/kg	2000 - 10000	NA
5765	bis(2-Chloroethyl)ether	µg/kg	1000 - 15000	NA
5760	bis(2-Chloroethoxy)methane	µg/kg	1000 - 15000	NA
4659	2,2'-Oxybis(1-Chloropropane)	µg/kg	1000 - 15000	NA
4500	2-Chloroethylvinylether	µg/kg	1000 - 15000	NA
4960	Chloromethane	µg/kg	2000 - 10000	NA
4535	2-Chlorotoluene	µg/kg	1000 - 10000	NA
4540	4-Chlorotoluene	µg/kg	1000 - 10000	NA
4625	Dichlorodifluoromethane	µg/kg	2000 - 10000	NA
4660	1,3-Dichloropropane	µg/kg	1000 - 10000	NA
4665	2,2-Dichloropropane	µg/kg	1000 - 10000	NA

Soil / Hazardous Waste PT Concentration Ranges and PTRLs

PTRL NELAC Proficiency Testing Reporting Limits (PTRLs) are provided as guidance to laboratories analyzing NELAC PT samples. At a minimum, the laboratory should use a method that is sensitive enough to generate quantitative results at the PTRLs shown. (REF: NELAC PT FOT Tables)

NA Not Applicable (NA) has been applied to analytes where a PTRL is not applicable and to state specific analytes that have not had a PTRL determined by the applicable accrediting agency.

NELAC Code	Analyte	Units	Concentration Range	PTRL
4670	1,1-Dichloropropene	µg/kg	1000 - 10000	NA
9375	DIPE	µg/kg	1000 - 10000	NA
5185	Freon 113	µg/kg	1000 - 15000	NA
4900	Isopropylbenzene	µg/kg	2000 - 10000	NA
4910	p-Isopropyltoluene	µg/kg	1000 - 10000	NA
5090	n-Propylbenzene	µg/kg	1000 - 15000	NA
4370	TAME	µg/kg	1000 - 10000	NA
5150	1,2,3-Trichlorobenzene	µg/kg	1000 - 10000	NA
5175	Trichlorofluoromethane	µg/kg	2000 - 10000	NA
5210	1,2,4-Trimethylbenzene	µg/kg	1000 - 10000	NA
5215	1,3,5-Trimethylbenzene	µg/kg	1000 - 10000	NA
5225	Vinyl acetate	µg/kg	1000 - 15000	NA
5235	Vinyl chloride	µg/kg	2000 - 10000	NA
5250	o-Xylene	µg/kg	1000 - 10000	NA
5240	m+p-Xylene	µg/kg	1000 - 10000	NA

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence: 9E31027 Instrument: VOA-GCMS3

Date: 05/31/19 12:56 Calibration: A9E3104

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9E31027-IBL1	Soil	QC	QC			A19C135	
2	9E31027-TUN1	Soil	QC	QC			A19C135	
3	9E31027-CCV1	Soil	QC	QC			A19C135	
4	9051463-BS1	Soil	QC	QC		9051463	A19C135	
5	9E31027-CCV2	Soil	QC	QC			A19C135	
6	9051463-BS2	Soil	QC	QC		9051463	A19C135	
7	9E31027-CCV3	Soil	QC	QC			A19C135	
8	9051463-BS3	Soil	QC	QC		9051463	A19C135	
9	9051463-BLK1	Soil	QC	QC		9051463	A19C135	
10	A9D0906-17	Soil	8260B Full List + Misc		06/03/19	9051463	A19C135	
"	"	Soil	8260C Full List	"	06/03/19	9051463	A19C135	
"	"	Soil	8260C Oxygenates	"	06/03/19	9051463	A19C135	
"	"	Soil	8260D Full List - Development Only	"	06/03/19	9051463	A19C135	
11	9E31027-IBL2	Soil	QC	QC			A19C135	
12	A9E0895-06	Soil	8260C Halogenated VOCs		06/04/19	9051463	A19C135	
"	"	Soil	8260B Full List + Misc	(QC Source)		9051463	A19C135	
"	"	Soil	8260C Full List	(QC Source)		9051463	A19C135	
"	"	Soil	8260C Oxygenates	(QC Source)		9051463	A19C135	
"	"	Soil	8260D Full List - Development Only	(QC Source)		9051463	A19C135	
"	"	Soil	NWTPH-Gx	(QC Source)		9051463	A19C135	
13	9051463-DUP1	Soil	QC	QC		9051463	A19C135	
14	A9E0895-07	Soil	8260C Halogenated VOCs		06/04/19	9051463	A19C135	
15	A9E0895-08	Soil	8260C Halogenated VOCs		06/04/19	9051463	A19C135	
16	A9E0895-09	Soil	8260C Halogenated VOCs		06/04/19	9051463	A19C135	
17	A9E0895-10	Soil	8260C Halogenated VOCs		06/04/19	9051463	A19C135	
18	A9E0895-11	Soil	8260C Halogenated VOCs		06/04/19	9051463	A19C135	
19	A9E0895-12	Soil	8260C Halogenated VOCs		06/04/19	9051463	A19C135	
20	A9E0895-13	Soil	8260C Halogenated VOCs		06/04/19	9051463	A19C135	
"	"	Soil	8260B Full List + Misc	(QC Source)		9051463	A19C135	
"	"	Soil	8260C Full List	(QC Source)		9051463	A19C135	
"	"	Soil	8260C Oxygenates	(QC Source)		9051463	A19C135	
"	"	Soil	8260D Full List - Development Only	(QC Source)		9051463	A19C135	
"	"	Soil	NWTPH-Gx	(QC Source)		9051463	A19C135	
21	9051463-MS1	Soil	QC	QC		9051463	A19C135	
22	9E31027-IBL3	Soil	QC	QC			A19C135	
23	A9E0929-01	Soil	8260C Full List		06/11/19	9051463	A19C135	
24	A9E0929-02	Soil	8260C Full List		06/11/19	9051463	A19C135	
25	A9E0929-03	Soil	8260C Full List		06/11/19	9051463	A19C135	
"	"	Soil	8260B Full List + Misc	(QC Source)		9051463	A19C135	
"	"	Soil	8260C Halogenated VOCs	(QC Source)		9051463	A19C135	
"	"	Soil	8260C Oxygenates	(QC Source)		9051463	A19C135	
"	"	Soil	8260D Full List - Development Only	(QC Source)		9051463	A19C135	
"	"	Soil	NWTPH-Gx	(QC Source)		9051463	A19C135	
26	9051463-MS2	Soil	QC	QC		9051463	A19C135	
27	A9E0902-01	Soil	8260C Full List	Hahn and Associates	06/03/19	9051463	A19C135	
"	"	Soil	NWTPH-Gx	"	06/03/19	9051463	A19C135	
28	9E31027-IBL4	Soil	QC	QC			A19C135	

Sequence:	9E31027	Instrument:	VOA-GCMS3
Date:	05/31/19 12:56	Calibration:	A9E3104

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID

- Oxy is custom

Data Entered By: 6/3/19

Data Reviewed By: 6/4/19

Comments: TMDL = MRL for CH_3Cl ✓

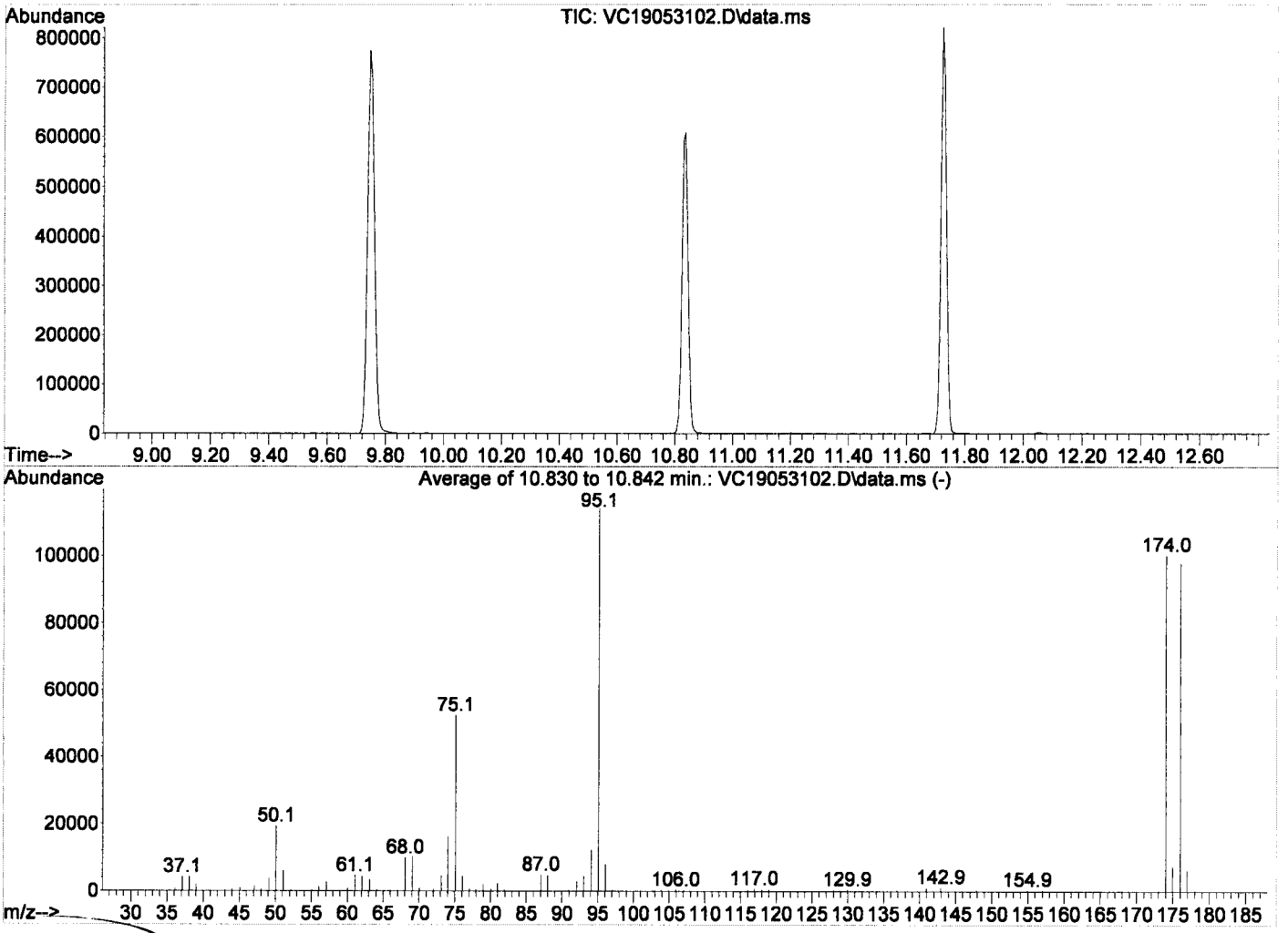
BFB

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053102.D
Acq On : 31 May 2019 1:28 pm
Operator : TB
Sample : 9E31027-TUN1
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\VC190529S.M
Title : EPA 8260: Volatile Organic Compounds
Last Update : Thu May 30 14:50:00 2019

TB 6/3/19



AutoFind: Scans 1519, 1520, 1521; Background Corrected with Scan 1511

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	12	40	16.9	19329	PASS
75	95	30	60	46.0	52536	PASS
95	95	100	100	100.0	114200	PASS
96	95	5	9	7.1	8084	PASS
173	174	0.00	2	0.2	183	PASS
174	95	50	200	87.8	100221	PASS
175	174	5	9	7.4	7413	PASS
176	174	95	101	97.7	97914	PASS
177	176	5	9	6.4	6287	PASS

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053102.D
Acq On : 31 May 2019 1:28 pm
Operator : TB
Sample : 9E31027-TUN1
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:17 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

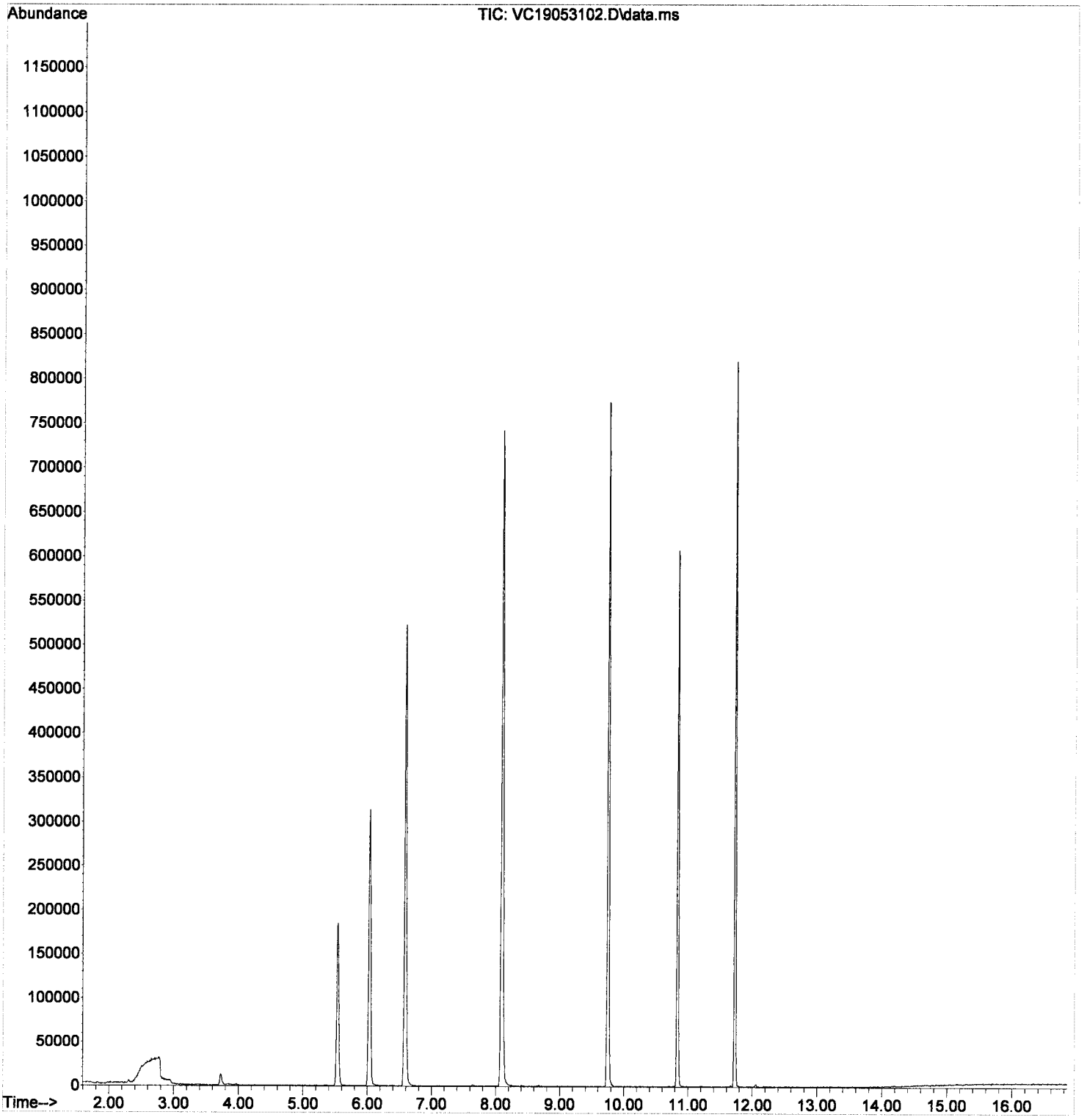
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.030	168	258414	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.747	117	443669	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.724	152	187881	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.538	111	129371	46.23	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.590	114	496500	49.95	ug/L		0.00
39) Toluene-d8 (S)	8.093	98	598892	49.90	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.836	174	162198	50.00	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.857	50	534	0.14	ug/L	#	48
5) Bromomethane	2.301	96	1465	0.99	ug/L	#	72
6) Chloroethane	2.478	64	103	0.10	ug/L	#	1
9) Carbon Disulfide	3.110	76	485	0.12	ug/L		77
12) Methylene Chloride	3.731	84	7347	Below Cal			93
13) Acetone	3.846	43	2112	1.81	ug/L		93
28) 2-Butanone (MEK)	5.738	43	282	0.14	ug/L		54
50) Ethylbenzene	9.753	91	992	0.08	ug/L	#	1

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053102.D
Acq On : 31 May 2019 1:28 pm
Operator : TB
Sample : 9E31027-TUN1
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:17 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\OXY\
Data File : VC19053103.D
Acq On : 31 May 2019 1:56 pm
Operator : TB
Sample : 9051463-BS1
Misc : 50X 5g/5mLx1000uL/50mL OXY+MeOH A19E350
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:44:48 2019
Quant Method : C:\msdchem\1\METHODS\VC190531OXY.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Fri May 31 14:50:42 2019
Response via : Initial Calibration

6/3/19

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Pentafluorobenzene (ISTD)	50.000	50.000	0.0	97	0.00
2		Ethanol	1250.000	1115.461	10.8	89	-0.02
3	P	tert-Butanol (TBA)	1250.000	1285.846	-2.9	89	-0.01
4		Diisopropyl ether (DIPE)	5.000	4.973	0.5	96	0.00
5		Ethyl-tert-butyl ether (ETB	5.000	4.993	0.1	95	0.00
6	S	Dibromofluoromethane (Surr)	50.000	51.094	-2.2	99	0.00
7		tert-Amyl methyl ether (TAM	5.000	4.729	5.4	91	0.00
8	S	1,4-Difluorobenzene (Surr)	50.000	49.754	0.5	96	0.00
9		tert-Amyl ethyl ether (TAEE	5.000	5.016	-0.3	95	0.00
10		Chlorobenzene-d5 (ISTD)	50.000	50.000	0.0	95	0.00
11	S	Toluene-d8 (Surr)	50.000	50.221	-0.4	96	0.00
12	I	1,4-Dichlorobenzene-d4 (IST	50.000	50.000	0.0	92	0.00
13	S	4-Bromofluorobenzene (Surr)	50.000	49.845	0.3	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\OXY\
Data File : VC19053103.D
Acq On : 31 May 2019 1:56 pm
Operator : TB
Sample : 9051463-BS1
Misc : 50X 5g/5mLx1000uL/50mL OXY+MeOH A19E350
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:44:48 2019
Quant Method : C:\msdchem\1\METHODS\VC190531OXY.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Fri May 31 14:50:42 2019
Response via : Initial Calibration

6/3/19

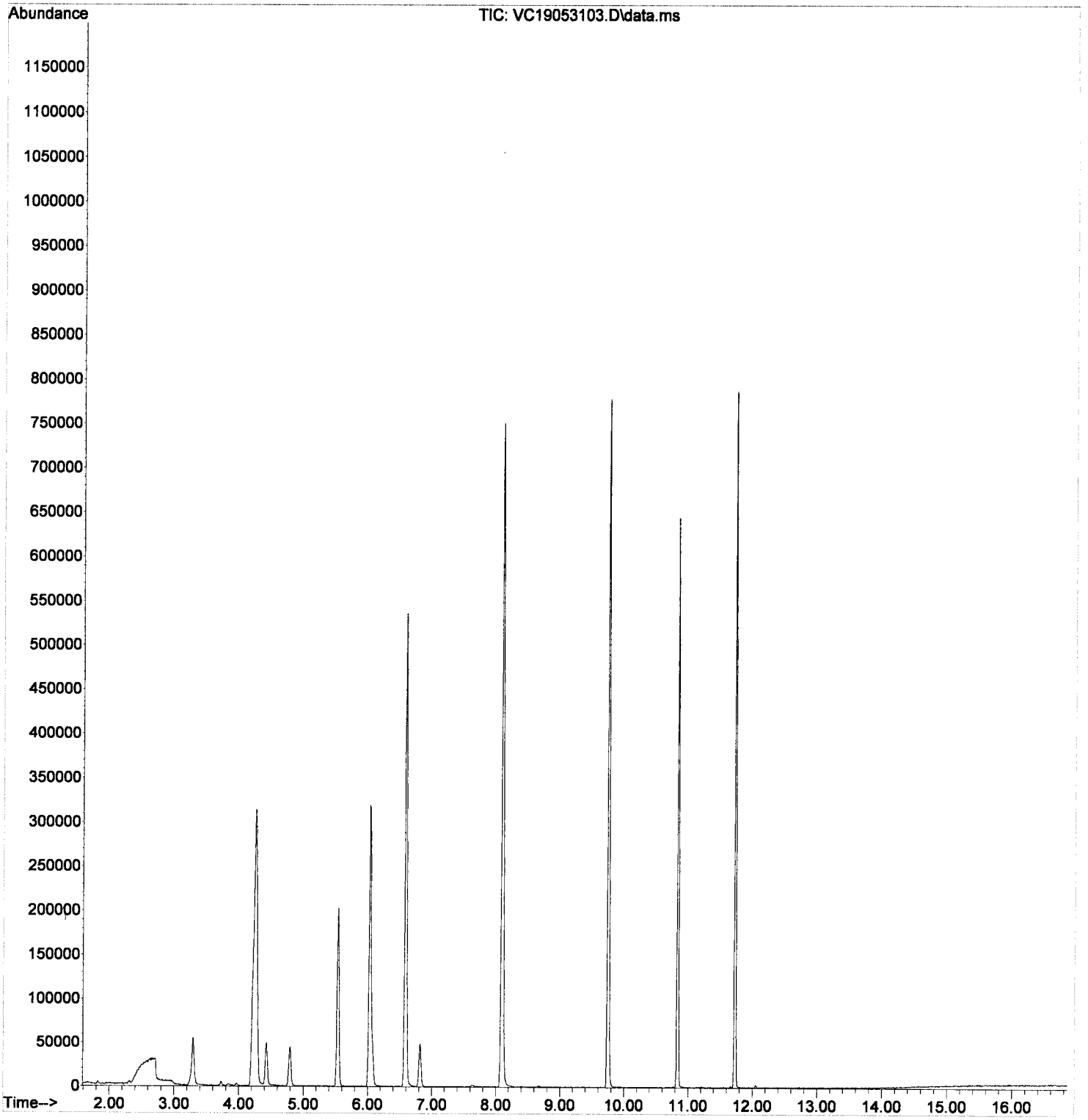
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (ISTD)	6.034	168	258381	50.00	ug/L	0.00
10) Chlorobenzene-d5 (ISTD)	9.751	117	448747	50.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.728	152	187634	50.00	ug/L	0.00
System Monitoring Compounds						
6) Dibromofluoromethane (...	5.535	111	138493	51.09	ug/L	0.00
8) 1,4-Difluorobenzene (S...	6.588	114	496405	49.75	ug/L	0.00
11) Toluene-d8 (Surr)	8.097	98	601121	50.22	ug/L	0.00
13) 4-Bromofluorobenzene (...	10.834	174	164124	49.85	ug/L	0.00
Target Compounds						Qvalue
2) Ethanol	3.291	45	85525	1115.46	ug/L	92
3) tert-Butanol (TBA)	4.258	59	701650	1285.85	ug/L	89
4) Diisopropyl ether (DIPE)	4.428	45	48892	4.97	ug/L	91
5) Ethyl-tert-butyl ether...	4.793	59	46799	4.99	ug/L	92
7) tert-Amyl methyl ether...	6.071	73	42877	4.73	ug/L	95
9) tert-Amyl ethyl ether ...	6.819	59	33699	5.02	ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053103.D
Acq On : 31 May 2019 1:56 pm
Operator : TB
Sample : 9051463-BS1
Misc : 50X 5g/5mLx1000uL/50mL OXY+MeOH A19E350
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:19 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053104.D
Acq On : 31 May 2019 2:24 pm
Operator : TB
Sample : 9051463-BS2
Misc : 50X 5g/5mLx1000uL/50mL VOV+MeOH A19E314
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

6/3/19

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)	
1	I	Pentafluorobenzene (I)	50.000	50.000	0.0	103	0.00	
2		Dichlorodifluoromethane	20.000	19.242	3.8	101	0.00	
3	P	Chloromethane	20.000	17.951	10.2	96	0.00	
4	C	Vinyl Chloride	20.000	18.169	9.2	93	0.00	
5		Bromomethane	20.000	20.182	-0.9	108	0.00	
6		Chloroethane	20.000	16.105	19.5	85	0.00	
7		Trichlorofluoromethane	20.000	15.115	24.4	76	-0.01	-Q55
8	C	1,1-Dichloroethene	20.000	20.458	-2.3	106	-0.01	
9		Carbon Disulfide	20.000	19.325	3.4	102	0.00	
10		Freon 113	20.000	18.602	7.0	102	0.00	
11		Iodomethane	20.000	13.841	30.8#	81	0.00	-NA
12		Methylene Chloride	20.000	16.407	18.0	91	0.00	
13		Acetone	40.000	43.112	-7.8	116	0.00	
14		t-1,2-Dichloroethene	20.000	20.496	-2.5	104	-0.01	
15		n-Hexane	20.000	18.398	8.0	101	0.00	
16		Methyl-tert-butyl-ether	20.000	19.939	0.3	102	0.00	
17	P	1,1-Dichloroethane	20.000	20.950	-4.7	106	0.00	
18		Acrylonitrile	20.000	21.485	-7.4	109	0.00	
19		c-1,2-Dichloroethene	20.000	20.155	-0.8	103	0.00	
20		2,2-Dichloropropane	20.000	22.041	-10.2	113	0.00	
21		Bromochloromethane	20.000	21.303	-6.5	108	0.00	
22	C	Chloroform	20.000	19.455	2.7	102	0.00	
23		Carbon Tetrachloride	20.000	19.893	0.5	103	-0.01	
24		Tetrahydrofuran	20.000	19.873	0.6	111	0.00	
25		1,1,1-Trichloroethane	20.000	20.249	-1.2	102	0.00	
26	S	Dibromofluoromethane (S)	50.000	50.686	-1.4	103	0.00	
27		1,1-Dichloropropene	20.000	19.236	3.8	102	0.00	
28		2-Butanone (MEK)	40.000	41.836	-4.6	108	0.00	
29		Benzene	20.000	19.761	1.2	103	0.00	
30		1,2-Dichloroethane (EDC)	20.000	20.041	-0.2	104	0.00	
31		iso-Butyl Alcohol	500.000	455.072	9.0	95	-0.02	
32	S	1,4-Difluorobenzene (S)	50.000	49.765	0.5	102	0.00	
33		Trichloroethene (TCE)	20.000	18.915	5.4	101	0.00	
34		Dibromomethane	20.000	20.692	-3.5	103	0.00	
35	C	1,2-Dichloropropane	20.000	20.420	-2.1	103	0.00	
36		Bromodichloromethane	20.000	20.473	-2.4	100	0.00	
37		Chlorobenzene-d5 (I)	50.000	50.000	0.0	103	0.00	
38		c-1,3-Dichloropropene	20.000	21.173	-5.9	101	0.00	
39	S	Toluene-d8 (S)	50.000	49.233	1.5	101	0.00	
40	C	Toluene	20.000	19.449	2.8	103	0.00	
41		Tetrachloroethene (PCE)	20.000	18.821	5.9	104	0.00	
42		4-Methyl-2-Pentanone (MIBK)	40.000	37.684	5.8	102	0.00	
43		t-1,3-Dichloropropene	20.000	21.236	-6.2	105	0.00	
44		1,1,2-Trichloroethane	20.000	20.398	-2.0	102	0.00	
45		Dibromochloromethane	20.000	17.786	11.1	103	0.00	
46		1,3-Dichloropropane	20.000	20.520	-2.6	104	0.00	
47		1,2-Dibromoethane (EDB)	20.000	21.661	-8.3	107	0.00	
48		2-Hexanone	40.000	39.205	2.0	100	0.00	
49	P	Chlorobenzene	20.000	19.453	2.7	103	0.00	
50	C	Ethylbenzene	20.000	19.597	2.0	103	0.00	

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053104.D
Acq On : 31 May 2019 2:24 pm
Operator : TB
Sample : 9051463-BS2
Misc : 50X 5g/5mLx1000uL/50mL VOV+MeOH A19E314
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
51		1,1,1,2-Tetrachloroethane	20.000	21.685	-8.4	106	0.00
52		m,p-Xylenes (2)	40.000	40.182	-0.5	103	0.00
53		o-Xylene	20.000	19.665	1.7	102	0.00
54		Styrene	20.000	21.067	-5.3	101	0.00
55	P	Bromoform	20.000	16.915	15.4	101	0.00
56		Isopropylbenzene	20.000	20.064	-0.3	103	0.00
57	I	1,4-Dichlorobenzene-d4 (I)	50.000	50.000	0.0	103	0.00
58	S	4-Bromofluorobenzene (S)	50.000	51.090	-2.2	104	0.00
59		Bromobenzene	20.000	21.033	-5.2	106	0.00
60		n-Propylbenzene	20.000	20.160	-0.8	105	0.00
61	P	1,1,2,2-Tetrachloroethane	20.000	20.624	-3.1	101	0.00
62		2-Chlorotoluene	20.000	20.277	-1.4	105	0.00
63		1,3,5-Trimethylbenzene	20.000	20.558	-2.8	103	0.00
64		1,2,3-Trichloropropane	20.000	20.428	-2.1	103	0.00
65		t-1,4-Dichloro-2-butene	20.000	17.941	10.3	97	0.00
66		4-Chlorotoluene	20.000	19.858	0.7	103	0.00
67		tert-Butylbenzene	20.000	19.568	2.2	103	0.00
68		1,2,4-Trimethylbenzene	20.000	20.181	-0.9	102	0.00
69		sec-Butylbenzene	20.000	19.784	1.1	102	0.00
70		4-Isopropyltoluene	20.000	20.503	-2.5	105	0.00
71		1,3-Dichlorobenzene	20.000	19.405	3.0	104	0.00
72		1,4-Dichlorobenzene	20.000	18.872	5.6	102	0.00
73		n-Butylbenzene	20.000	19.904	0.5	104	0.00
74		1,2-Dichlorobenzene	20.000	19.249	3.8	101	0.00
75		1,2-Dibromo-3-Chloropropane	20.000	18.369	8.2	93	0.00
76		Hexachlorobutadiene	20.000	20.256	-1.3	100	0.00
77		1,2,4-Trichlorobenzene	20.000	20.491	-2.5	106	0.00
78		Naphthalene	20.000	20.222	-1.1	97	0.00
79		1,2,3-Trichlorobenzene	20.000	20.814	-4.1	103	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053104.D
Acq On : 31 May 2019 2:24 pm
Operator : TB
Sample : 9051463-BS2
Misc : 50X 5g/5mLx1000uL/50mL VOV+MeOH A19E314
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

6/3/19

Quant Time: Jun 03 09:12:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.029	168	265297	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	463832	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.723	152	195645	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.531	111	145609	50.69	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.589	114	507811	49.76	ug/L		0.00
39) Toluene-d8 (S)	8.092	98	617762	49.23	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.835	174	172597	51.09	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.661	85	45827	19.24	ug/L		97
3) Chloromethane	1.856	50	70224	17.95	ug/L		99
4) Vinyl Chloride	1.947	62	49134	18.17	ug/L		99
5) Bromomethane	2.300	96	30784	20.18	ug/L		94
6) Chloroethane	2.434	64	16363	16.11	ug/L		78
7) Trichlorofluoromethane	2.556	101	22785	15.12	ug/L		99
8) 1,1-Dichloroethene	3.085	61	54912	20.46	ug/L		83
9) Carbon Disulfide	3.097	76	82334	19.32	ug/L		99
10) Freon 113	3.140	101	42390	18.60	ug/L		87
11) Iodomethane	3.237	142	15051	13.84	ug/L		92
12) Methylene Chloride	3.724	84	53069	16.41	ug/L		94
13) Acetone	3.827	43	51555	43.11	ug/L		99
14) t-1,2-Dichloroethene	3.882	61	63791	20.50	ug/L		97
15) n-Hexane	3.961	86	10145	18.40	ug/L	#	86
16) Methyl-tert-butyl-ether	4.034	73	183827	19.94	ug/L		98
17) 1,1-Dichloroethane	4.515	63	80359	20.95	ug/L		95
18) Acrylonitrile	4.594	53	33333	21.48	ug/L		88
19) c-1,2-Dichloroethene	5.068	61	70009	20.16	ug/L		98
20) 2,2-Dichloropropane	5.172	77	66251	22.04	ug/L		92
21) Bromochloromethane	5.263	49	43715	21.30	ug/L		97
22) Chloroform	5.348	83	88675	19.46	ug/L		100
23) Carbon Tetrachloride	5.470	117	48976	19.89	ug/L		98
24) Tetrahydrofuran	5.531	42	34510	19.87	ug/L		95
25) 1,1,1-Trichloroethane	5.549	97	70479	20.25	ug/L		98
27) 1,1-Dichloropropene	5.677	75	68920	19.24	ug/L		98
28) 2-Butanone (MEK)	5.683	43	89219	41.84	ug/L		97
29) Benzene	5.926	78	227866	19.76	ug/L		98
30) 1,2-Dichloroethane (EDC)	6.145	62	68894	20.04	ug/L		99
31) iso-Butyl Alcohol	6.248	43	120182	455.07	ug/L		91
33) Trichloroethene (TCE)	6.546	130	61179	18.92	ug/L		99
34) Dibromomethane	6.997	93	31893	20.69	ug/L		93
35) 1,2-Dichloropropane	7.106	63	60190	20.42	ug/L		96
36) Bromodichloromethane	7.185	83	53004	20.47	ug/L		98
38) c-1,3-Dichloropropene	7.885	75	77309	21.17	ug/L		97
40) Toluene	8.152	91	238639	19.45	ug/L		99
41) Tetrachloroethene (PCE)	8.597	166	53546	18.82	ug/L		96
42) 4-Methyl-2-Pentanone (...	8.615	43	142750	37.68	ug/L		96
43) t-1,3-Dichloropropene	8.645	75	71940	21.24	ug/L		99
44) 1,1,2-Trichloroethane	8.822	97	51130	20.40	ug/L		97
45) Dibromochloromethane	9.004	129	37356	17.79	ug/L		97
46) 1,3-Dichloropropane	9.108	76	95147	20.52	ug/L		95
47) 1,2-Dibromoethane (EDB)	9.241	107	53081	21.66	ug/L		99
48) 2-Hexanone	9.497	43	100683	39.20	ug/L		98

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053104.D
Acq On : 31 May 2019 2:24 pm
Operator : TB
Sample : 9051463-BS2
Misc : 50X 5g/5mLx1000uL/50mL VOV+MeOH A19E314
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

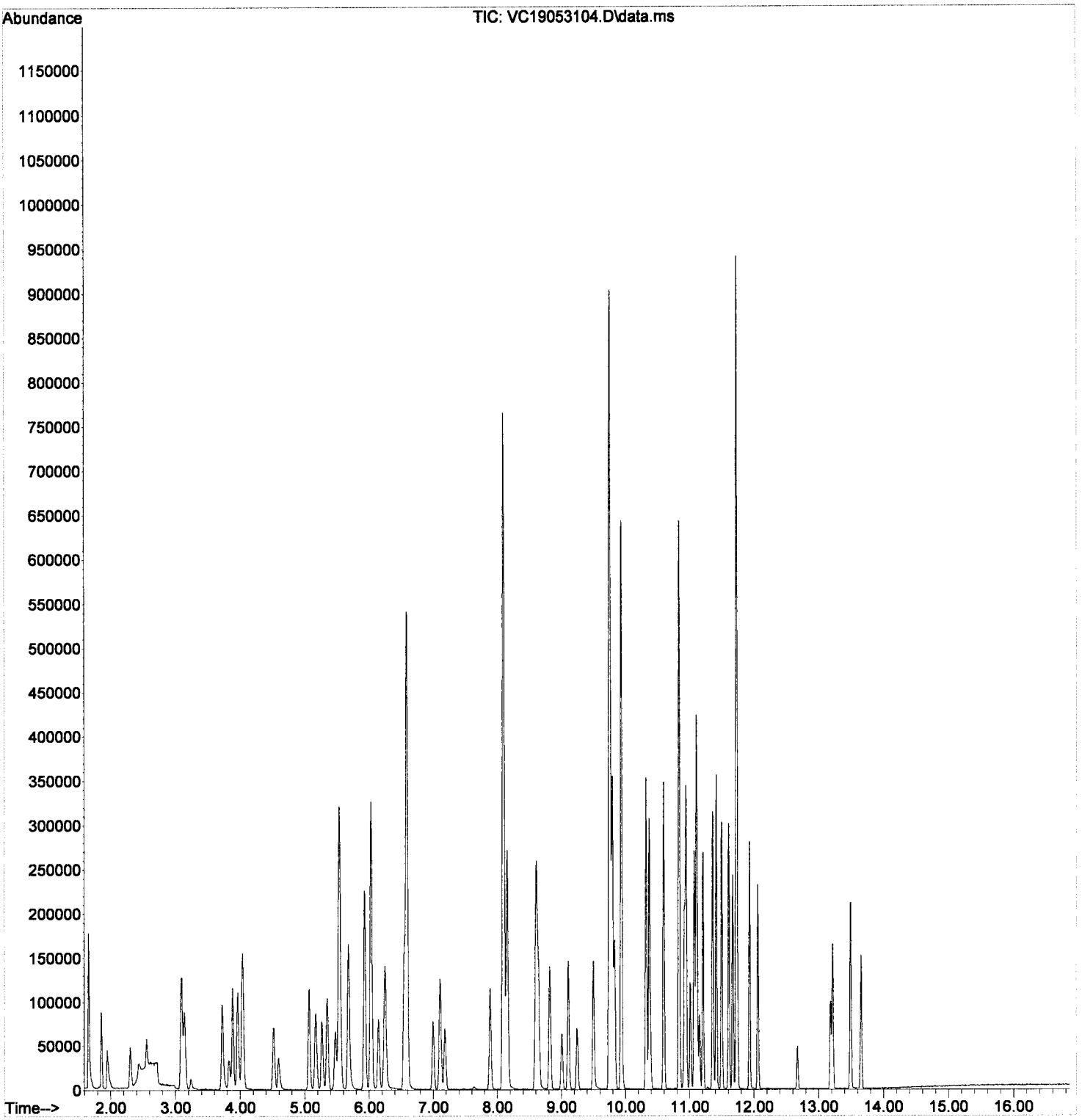
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.765	112	144775	19.45	ug/L		99
50) Ethylbenzene	9.795	91	244484	19.60	ug/L		98
51) 1,1,1,2-Tetrachloroethane	9.832	131	45527	21.69	ug/L		97
52) m,p-Xylenes (2)	9.929	91	361887	40.18	ug/L		97
53) o-Xylene	10.318	91	186161	19.67	ug/L		98
54) Styrene	10.367	104	139398	21.07	ug/L		98
55) Bromoform	10.391	173	20139	16.92	ug/L		97
56) Isopropylbenzene	10.592	105	217793	20.06	ug/L		98
59) Bromobenzene	10.920	156	54335	21.03	ug/L		95
60) n-Propylbenzene	10.939	91	237469	20.16	ug/L		96
61) 1,1,2,2-Tetrachloroethane	11.006	83	52866	20.62	ug/L		96
62) 2-Chlorotoluene	11.073	126	49444	20.28	ug/L		90
63) 1,3,5-Trimethylbenzene	11.103	105	163699	20.56	ug/L		97
64) 1,2,3-Trichloropropane	11.115	110	21592	20.43	ug/L	#	81
65) t-1,4-Dichloro-2-butene	11.152	88	6369	17.94	ug/L	#	86
66) 4-Chlorotoluene	11.206	91	139946	19.86	ug/L		98
67) tert-Butylbenzene	11.358	91	87328	19.57	ug/L		98
68) 1,2,4-Trimethylbenzene	11.413	105	164445	20.18	ug/L		99
69) sec-Butylbenzene	11.498	105	186693	19.78	ug/L		97
70) 4-Isopropyltoluene	11.608	119	157401	20.50	ug/L		98
71) 1,3-Dichlorobenzene	11.669	146	87973	19.40	ug/L		98
72) 1,4-Dichlorobenzene	11.736	146	85473	18.87	ug/L		98
73) n-Butylbenzene	11.930	91	129958	19.90	ug/L		99
74) 1,2-Dichlorobenzene	12.058	146	80152	19.25	ug/L		100
75) 1,2-Dibromo-3-Chloropr...	12.672	157	11151	18.37	ug/L		92
76) Hexachlorobutadiene	13.184	223	12211	20.26	ug/L		96
77) 1,2,4-Trichlorobenzene	13.214	180	49676	20.49	ug/L		97
78) Naphthalene	13.494	128	165054	20.22	ug/L		98
79) 1,2,3-Trichlorobenzene	13.652	180	47804	20.81	ug/L		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053104.D
Acq On : 31 May 2019 2:24 pm
Operator : TB
Sample : 9051463-BS2
Misc : 50X 5g/5mLx1000uL/50mL VOV+MeOH A19E314
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053105.D
Acq On : 31 May 2019 2:51 pm
Operator : TB
Sample : 9051463-BS3
Misc : 50X 5g/5mLx1000uL/50mL GX+MeOH A19E311
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:46:51 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

6/3/19

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Pentafluorobenzene (IS)	50.000	50.000	0.0	99	0.00
2	S	1,4-Difluorobenzene (Sur)	50.000	47.148	5.7	96	0.00
3	S	4-Bromofluorobenzene (Sur)	50.000	49.986	0.0	100	0.00
4	S	Chlorobenzene-d5 (NR)	-1.000	0.000	0.0	97	0.00
5	H	CA-LUFT (C5-C12)	500.000	512.312	-2.5	98	0.00
6	H	TPHg (C5-C9)	500.000	515.219	-3.0	97	0.00
7	H	TPHg (C6-C10)	500.000	522.376	-4.5	100	0.00
8	H	NWTPH-Gx	500.000	501.562	-0.3	99	0.00
9		Benzene (NR)	-1.000	0.000	0.0	97	0.00
10	S	Toluene-d8 (NR)	-1.000	0.000	0.0	99	0.00
11	C	Toluene (NR)	-1.000	0.000	0.0	96	0.00
12	S	1,4-Dichlorobenzene-d4 (NR)	-1.000	0.000	0.0	99	0.00
13		Naphthalene (NR)	-1.000	0.000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053105.D
Acq On : 31 May 2019 2:51 pm
Operator : TB
Sample : 9051463-BS3
Misc : 50X 5g/5mLx1000uL/50mL GX+MeOH A19E311
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

6/3/19

Quant Time: Jun 03 09:46:51 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

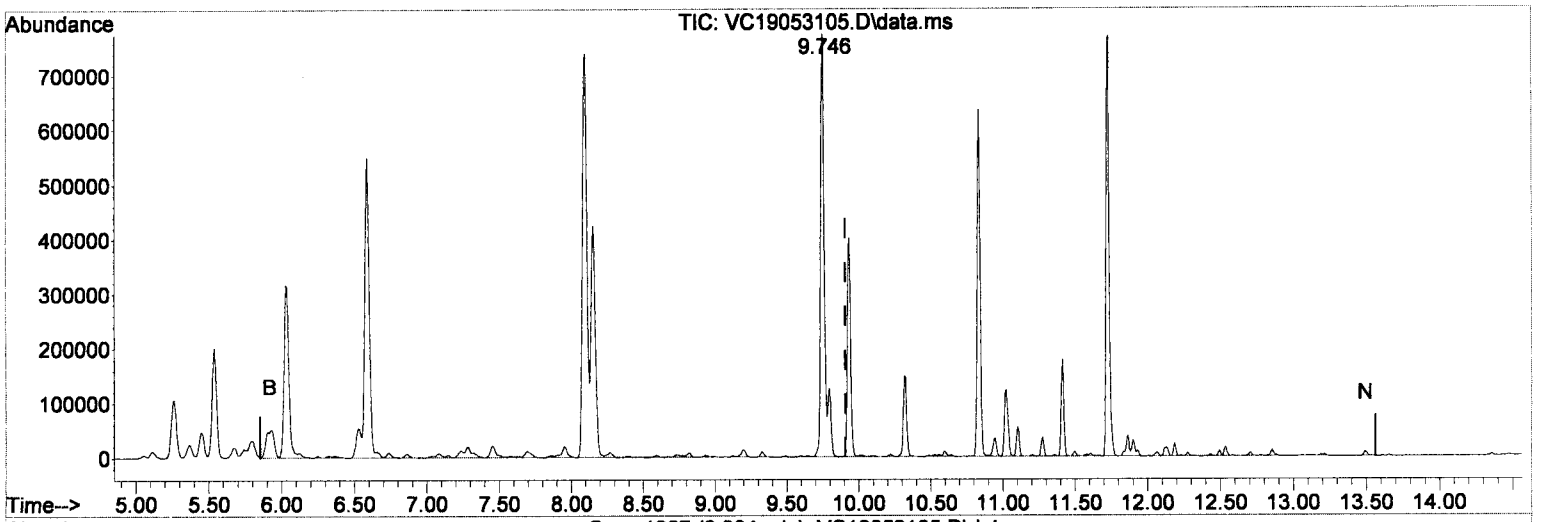
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.035	168	258660	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.589	TIC	1136528	47.15	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.835	TIC	900141	49.99	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.746	TIC	1338255	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.098	TIC	1615226	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.729	TIC	1129324	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	6441719m	512.31	ug/L	
6) TPHg (C5-C9)	9.906	TIC	5535636m	515.22	ug/L	
7) TPHg (C6-C10)	9.906	TIC	4379823m	522.38	ug/L	
8) NWTPH-Gx	9.906	TIC	3680638m	501.56	ug/L	

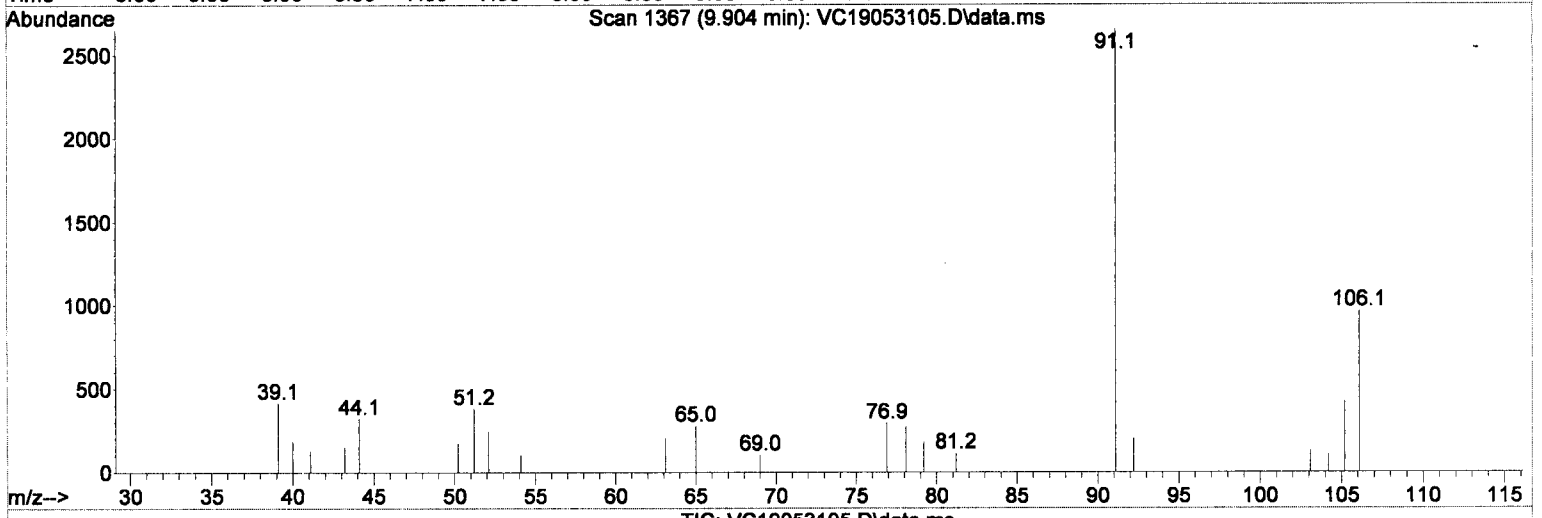
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053105.D
Acq On : 31 May 2019 2:51 pm
Operator : TB
Sample : 9051463-BS3
Misc : 50X 5g/5mLx1000uL/50mL GX+MeOH A19E311
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:46:51 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration





TIC: VC19053105.D\data.ms

(8) NWTPH-Gx (H)

9.906min (0.000) 501.56 ug/L m

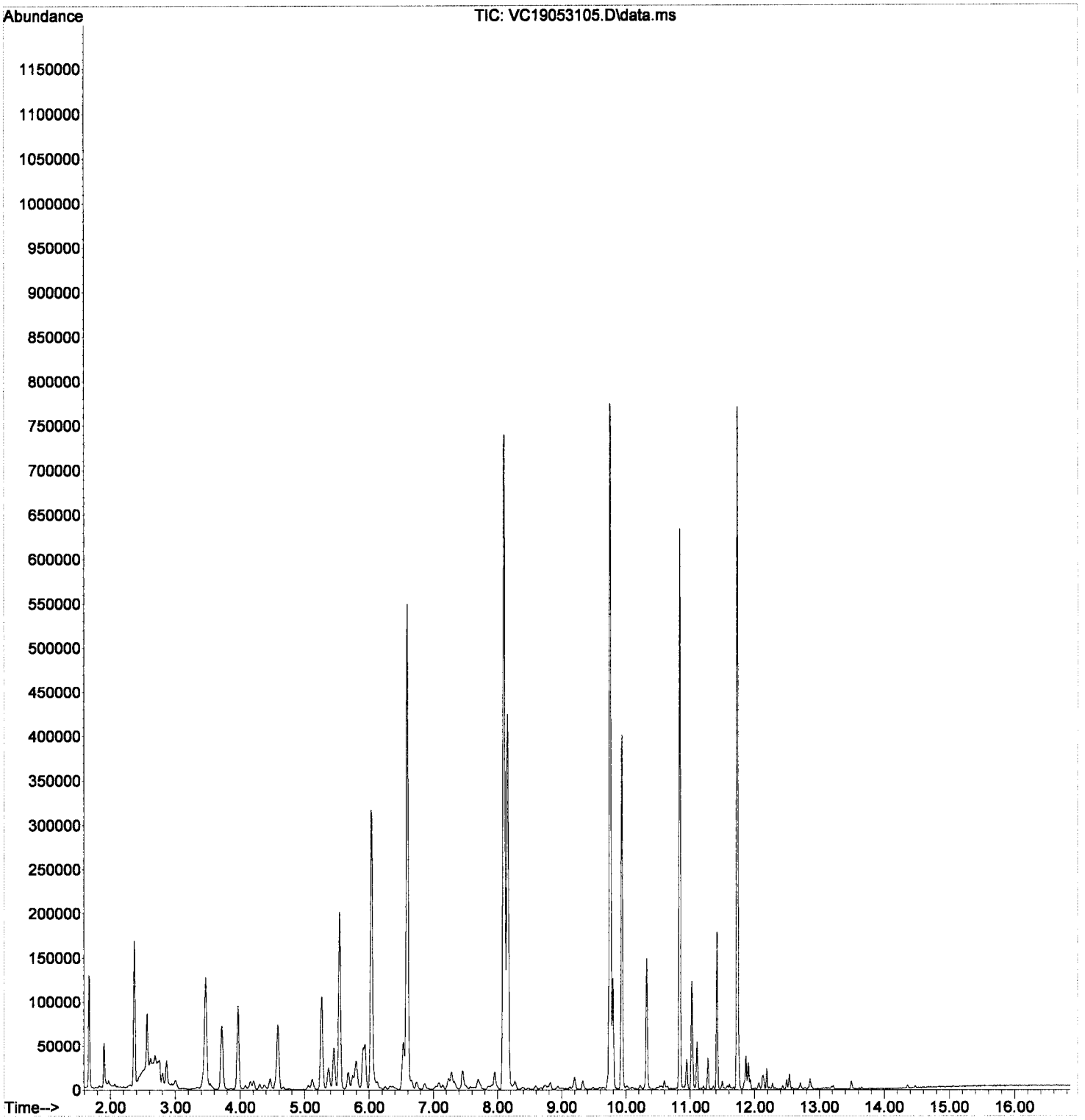
response 3680638

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.02#
0.00	0.00	0.01#
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053105.D
Acq On : 31 May 2019 2:51 pm
Operator : TB
Sample : 9051463-BS3
Misc : 50X 5g/5mLx1000uL/50mL GX+MeOH A19E311
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:23 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053106.D
Acq On : 31 May 2019 3:19 pm
Operator : TB
Sample : 9051463-BLK1
Misc : 50X 7.5g/5mLx1000uL/50mL DI+MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:46:54 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

6/3/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.028	168	262804	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.588	TIC	1138643	46.49	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.834	TIC	925823	50.60	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.752	TIC	1348408	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.097	TIC	1609803	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.729	TIC	1106407	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	704664m	13.60	ug/L	
6) TPHg (C5-C9)	9.906	TIC	698852m	19.14	ug/L	
7) TPHg (C6-C10)	9.906	TIC	441138m	10.82	ug/L	
8) NWTPH-Gx	9.906	TIC	11790m	14.10	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\OXY\
Data File : VC19053106.D
Acq On : 31 May 2019 3:19 pm
Operator : TB
Sample : 9051463-BLK1
Misc : 50X 7.5g/5mLx1000uL/50mL DI+MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

6/3/19

Quant Time: Jun 03 09:44:51 2019
Quant Method : C:\msdchem\1\METHODS\VC190531OXY.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Fri May 31 14:50:42 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (ISTD)	6.028	168	262804	50.00	ug/L		0.00
10) Chlorobenzene-d5 (ISTD)	9.752	117	457452	50.00	ug/L		0.00
12) 1,4-Dichlorobenzene-d4...	11.729	152	191483	50.00	ug/L		0.00
System Monitoring Compounds							
6) Dibromofluoromethane (...	5.536	111	137372	49.83	ug/L		0.00
8) 1,4-Difluorobenzene (S...	6.588	114	503557	49.62	ug/L		0.00
11) Toluene-d8 (Surr)	8.097	98	612876	50.23	ug/L		0.00
13) 4-Bromofluorobenzene (...	10.834	174	168712	50.21	ug/L		0.00
Target Compounds							Qvalue
2) Ethanol	3.315	45	1300	16.67	ug/L		84
3) tert-Butanol (TBA)	0.000		0	N.D.			
4) Diisopropyl ether (DIPE)	0.000		0	N.D.			
5) Ethyl-tert-butyl ether...	0.000		0	N.D.			
7) tert-Amyl methyl ether...	6.028	73	195	0.02	ug/L	#	1
9) tert-Amyl ethyl ether ...	0.000		0	N.D.			

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053106.D
Acq On : 31 May 2019 3:19 pm
Operator : TB
Sample : 9051463-BLK1
Misc : 50X 7.5g/5mLx1000uL/50mL DI+MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

6/3/19

Quant Time: Jun 03 09:12:25 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.028	168	262804	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	457452	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.729	152	191483	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.536	111	137372	48.27	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.588	114	503557	49.82	ug/L		0.00
39) Toluene-d8 (S)	8.097	98	612876	49.52	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.834	174	168712	51.03	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.861	50	764	0.20	ug/L		87
5) Bromomethane	2.305	96	1614	1.07	ug/L		86
6) Chloroethane	2.421	64	149	0.15	ug/L	#	1
11) Iodomethane	3.242	142	265	0.98	ug/L	#	47
12) Methylene Chloride	3.729	84	8728	Below Cal			95
13) Acetone	3.844	43	1629	1.38	ug/L		95
40) Toluene	8.158	91	1806	0.15	ug/L		88
52) m,p-Xylenes (2)	9.934	91	1452	0.16	ug/L		90
68) 1,2,4-Trimethylbenzene	11.418	105	862	0.11	ug/L		84
69) sec-Butylbenzene	11.497	105	783	0.08	ug/L		80
73) n-Butylbenzene	11.929	91	829	0.13	ug/L		91
77) 1,2,4-Trichlorobenzene	13.219	180	197	0.08	ug/L		77

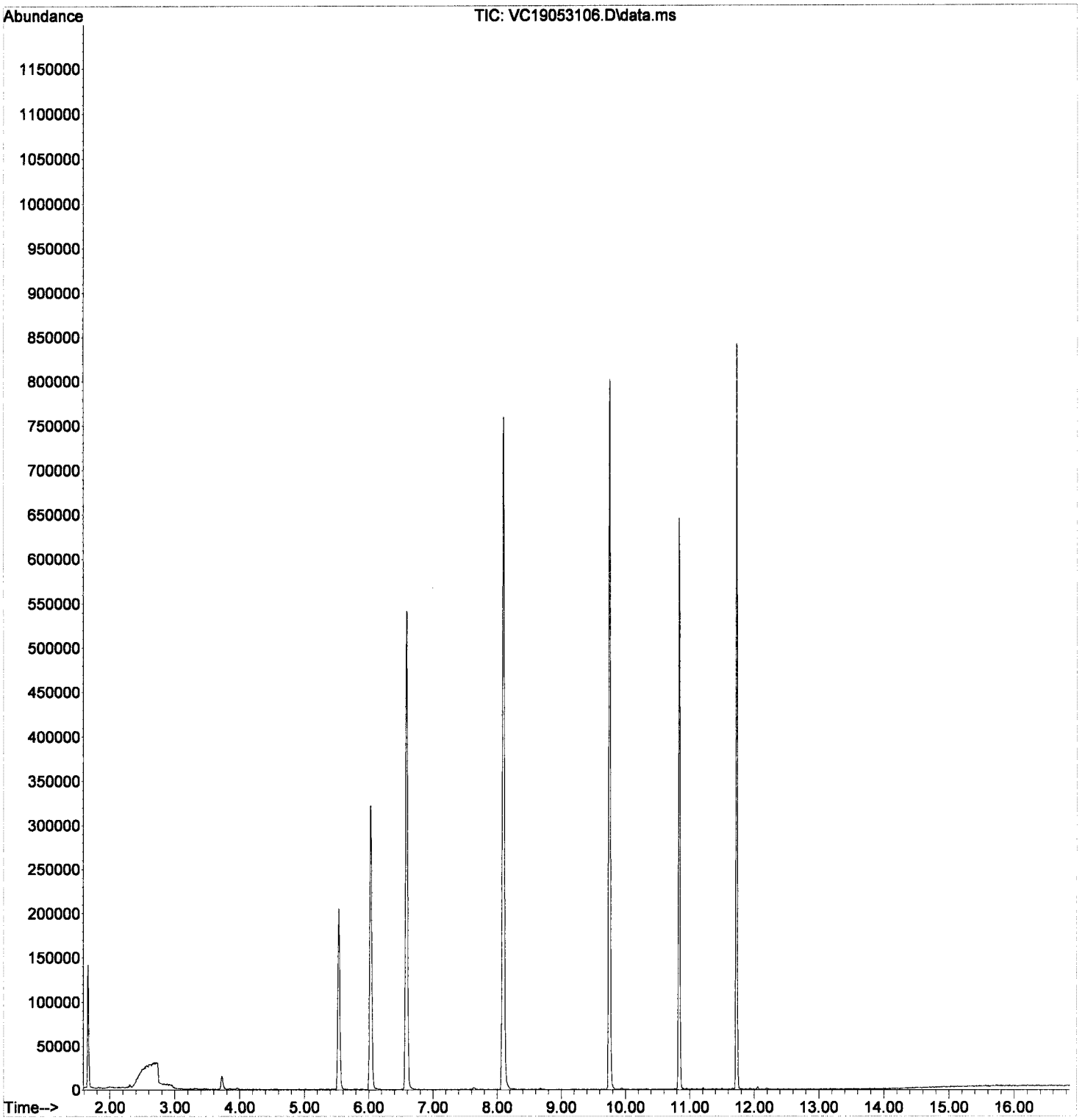
LMK

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053106.D
Acq On : 31 May 2019 3:19 pm
Operator : TB
Sample : 9051463-BLK1
Misc : 50X 7.5g/5mLx1000uL/50mL DI+MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:25 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053118.D
Acq On : 31 May 2019 8:51 pm
Operator : TB
Sample : 9051463-MS1
Misc : 50X 5g/5mLx1000uL/50mL E0895-13
ALS Vial : 18 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:49 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

6/3/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (I)	6.035	168	262813	50.00	ug/L	0.00
37) Chlorobenzene-d5 (I)	9.746	117	458747	50.00	ug/L	0.00
57) 1,4-Dichlorobenzene-d4...	11.724	152	203591	50.00	ug/L	0.00
System Monitoring Compounds						
26) Dibromofluoromethane (S)	5.531	111	152066	53.43	ug/L	0.00
32) 1,4-Difluorobenzene (S)	6.589	114	501466	49.61	ug/L	0.00
39) Toluene-d8 (S)	8.098	98	605925	48.82	ug/L	0.00
58) 4-Bromofluorobenzene (S)	10.835	174	179188	50.97	ug/L	0.00
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.661	85	51585	21.86	ug/L	97
3) Chloromethane	1.862	50	72609	18.74	ug/L	95
4) Vinyl Chloride	1.953	62	53948	20.14	ug/L	95
5) Bromomethane	2.300	96	30307	20.06	ug/L	97
6) Chloroethane	2.434	64	19909	19.78	ug/L	79
7) Trichlorofluoromethane	2.562	101	27571	18.46	ug/L	99
8) 1,1-Dichloroethene	3.103	61	57730	21.71	ug/L	89
9) Carbon Disulfide	3.115	76	85119	20.17	ug/L	97
10) Freon 113	3.152	101	44485	19.71	ug/L	87
11) Iodomethane	3.249	142	19494	17.74	ug/L	96
12) Methylene Chloride	3.730	84	50181	15.38	ug/L	93
13) Acetone	3.821	43	62037	52.37	ug/L	98
14) t-1,2-Dichloroethene	3.894	61	65038	21.09	ug/L	99
15) n-Hexane	3.973	86	10663	19.63	ug/L	96
16) Methyl-tert-butyl-ether	4.034	73	182651	20.00	ug/L	99
17) 1,1-Dichloroethane	4.521	63	88292	23.24	ug/L	98
18) Acrylonitrile	4.594	53	35121	22.85	ug/L	93
19) c-1,2-Dichloroethene	5.068	61	71851	20.88	ug/L	99
20) 2,2-Dichloropropane	5.172	77	58811	19.75	ug/L	92
21) Bromochloromethane	5.263	49	44352	21.82	ug/L	90
22) Chloroform	5.348	83	92331	20.45	ug/L	98
23) Carbon Tetrachloride	5.476	117	49512	20.30	ug/L	98
24) Tetrahydrofuran	5.531	42	36446	21.19	ug/L	93
25) 1,1,1-Trichloroethane	5.549	97	72271	20.96	ug/L	97
27) 1,1-Dichloropropene	5.677	75	70241	19.79	ug/L	99
28) 2-Butanone (MEK)	5.683	43	98295	46.53	ug/L	97
29) Benzene	5.932	78	229229	20.07	ug/L	98
30) 1,2-Dichloroethane (EDC)	6.145	62	70426	20.68	ug/L	95
31) iso-Butyl Alcohol	6.242	43	128201	490.02	ug/L	92
33) Trichloroethene (TCE)	6.547	130	61822	19.29	ug/L	97
34) Dibromomethane	6.997	93	33160	21.72	ug/L	85
35) 1,2-Dichloropropane	7.112	63	59459	20.36	ug/L	92
36) Bromodichloromethane	7.185	83	54100	21.07	ug/L	96
38) c-1,3-Dichloropropene	7.885	75	75636	20.94	ug/L	99
40) Toluene	8.153	91	239663	19.75	ug/L	98
41) Tetrachloroethene (PCE)	8.597	166	53097	18.87	ug/L	98
42) 4-Methyl-2-Pentanone (...	8.609	43	155257	41.44	ug/L	96
43) t-1,3-Dichloropropene	8.645	75	71053	21.21	ug/L	98
44) 1,1,2-Trichloroethane	8.822	97	53270	21.49	ug/L	96
45) Dibromochloromethane	9.004	129	38395	18.46	ug/L	96
46) 1,3-Dichloropropane	9.108	76	97492	21.26	ug/L	96
47) 1,2-Dibromoethane (EDB)	9.241	107	53671	22.14	ug/L	97
48) 2-Hexanone	9.497	43	110518	43.51	ug/L	98

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053118.D
Acq On : 31 May 2019 8:51 pm
Operator : TB
Sample : 9051463-MS1
Misc : 50X 5g/5mLx1000uL/50mL E0895-13
ALS Vial : 18 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:49 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

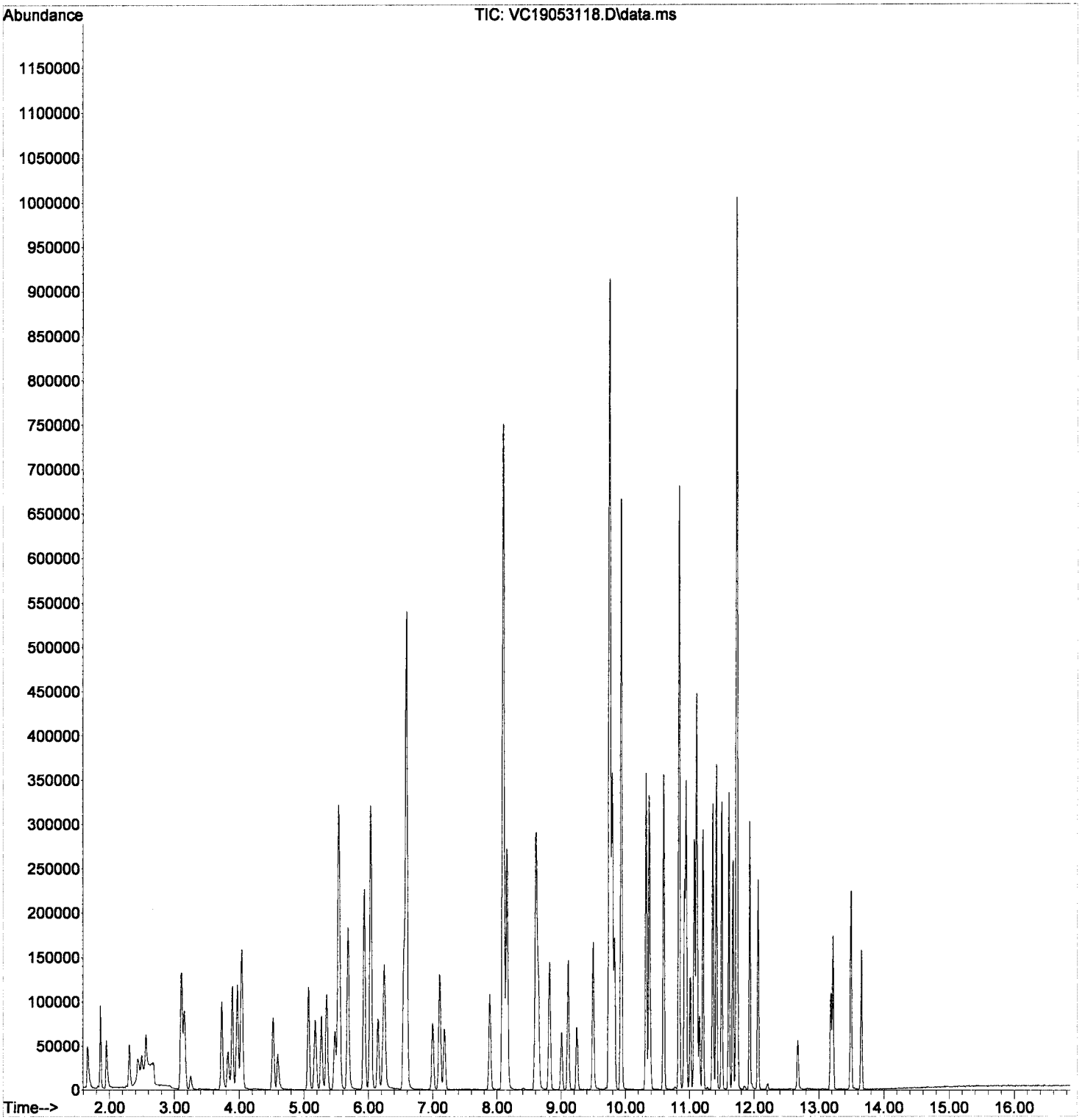
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.765	112	145902	19.82	ug/L		95
50) Ethylbenzene	9.795	91	248018	20.10	ug/L		99
51) 1,1,1,2-Tetrachloroethane	9.832	131	45148	21.74	ug/L		98
52) m,p-Xylenes (2)	9.929	91	369712	41.51	ug/L		98
53) o-Xylene	10.318	91	194519	20.78	ug/L		98
54) Styrene	10.367	104	147086	22.48	ug/L		97
55) Bromoform	10.385	173	21672	18.32	ug/L		99
56) Isopropylbenzene	10.592	105	222637	20.74	ug/L		99
59) Bromobenzene	10.921	156	58034	21.59	ug/L		93
60) n-Propylbenzene	10.945	91	245924	20.06	ug/L		99
61) 1,1,2,2-Tetrachloroethane	11.006	83	54811	20.55	ug/L		99
62) 2-Chlorotoluene	11.073	126	52772	20.80	ug/L		94
63) 1,3,5-Trimethylbenzene	11.103	105	171170	20.66	ug/L		98
64) 1,2,3-Trichloropropane	11.115	110	23050	20.96	ug/L		83
65) t-1,4-Dichloro-2-butene	11.152	88	6471	17.54	ug/L	#	91
66) 4-Chlorotoluene	11.206	91	151273	20.63	ug/L		98
67) tert-Butylbenzene	11.359	91	93027	20.03	ug/L		93
68) 1,2,4-Trimethylbenzene	11.413	105	173249	20.43	ug/L		99
69) sec-Butylbenzene	11.498	105	200277	20.40	ug/L		97
70) 4-Isopropyltoluene	11.608	119	163861	20.51	ug/L		98
71) 1,3-Dichlorobenzene	11.669	146	94665	20.07	ug/L		99
72) 1,4-Dichlorobenzene	11.736	146	95158	20.19	ug/L		98
73) n-Butylbenzene	11.930	91	139021	20.46	ug/L		96
74) 1,2-Dichlorobenzene	12.058	146	83361	19.24	ug/L		98
75) 1,2-Dibromo-3-Chloropr...	12.673	157	11826	18.70	ug/L		90
76) Hexachlorobutadiene	13.184	223	13349	21.28	ug/L		94
77) 1,2,4-Trichlorobenzene	13.214	180	51150	20.28	ug/L		98
78) Naphthalene	13.494	128	173598	20.44	ug/L		98
79) 1,2,3-Trichlorobenzene	13.652	180	48744	20.39	ug/L		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053118.D
Acq On : 31 May 2019 8:51 pm
Operator : TB
Sample : 9051463-MS1
Misc : 50X 5g/5mLx1000uL/50mL E0895-13
ALS Vial : 18 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:49 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053123.D
Acq On : 31 May 2019 11:08 pm
Operator : TB
Sample : 9051463-MS2
Misc : 50X 5g/5mLx1000uL/50mL E0929-03
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:47:02 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

NR

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.034	168	270725	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.588	TIC	1151981	45.66	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.834	TIC	921136	48.87	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.751	TIC	1349947	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.096	TIC	1605314	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.728	TIC	1106679	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	2442018m	155.71	ug/L	
6) TPHg (C5-C9)	9.906	TIC	2441425m	187.13	ug/L	
7) TPHg (C6-C10)	9.906	TIC	2155291m	221.31	ug/L	
8) NWTPH-Gx	9.906	TIC	222537m	40.83	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\OXY\
Data File : VC19053123.D
Acq On : 31 May 2019 11:08 pm
Operator : TB
Sample : 9051463-MS2
Misc : 50X 5g/5mLx1000uL/50mL E0929-03
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:45:03 2019
Quant Method : C:\msdchem\1\METHODS\VC190531OXY.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Fri May 31 14:50:42 2019
Response via : Initial Calibration

6/3/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (ISTD)	6.034	168	270725	50.00	ug/L	0.00
10) Chlorobenzene-d5 (ISTD)	9.751	117	460643	50.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.728	152	191650	50.00	ug/L	0.00
System Monitoring Compounds						
6) Dibromofluoromethane (...	5.535	111	137847	48.54	ug/L	0.00
8) 1,4-Difluorobenzene (S...	6.588	114	505784	48.38	ug/L	0.00
11) Toluene-d8 (Surr)	8.096	98	606026	49.32	ug/L	0.00
13) 4-Bromofluorobenzene (...	10.834	174	166460	49.50	ug/L	0.00
Target Compounds						Qvalue
2) Ethanol	3.339	45	86901	1081.73	ug/L	89
3) tert-Butanol (TBA)	4.288	59	697634	1220.19	ug/L	90
4) Diisopropyl ether (DIPE)	4.428	45	48427	4.70	ug/L	91
5) Ethyl-tert-butyl ether...	4.793	59	45898	4.67	ug/L	97
7) tert-Amyl methyl ether...	6.071	73	42580	4.48	ug/L	95
9) tert-Amyl ethyl ether ...	6.819	59	33233	4.72	ug/L	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053123.D
Acq On : 31 May 2019 11:08 pm
Operator : TB
Sample : 9051463-MS2
Misc : 50X 5g/5mLx1000uL/50mL E0929-03
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:59 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

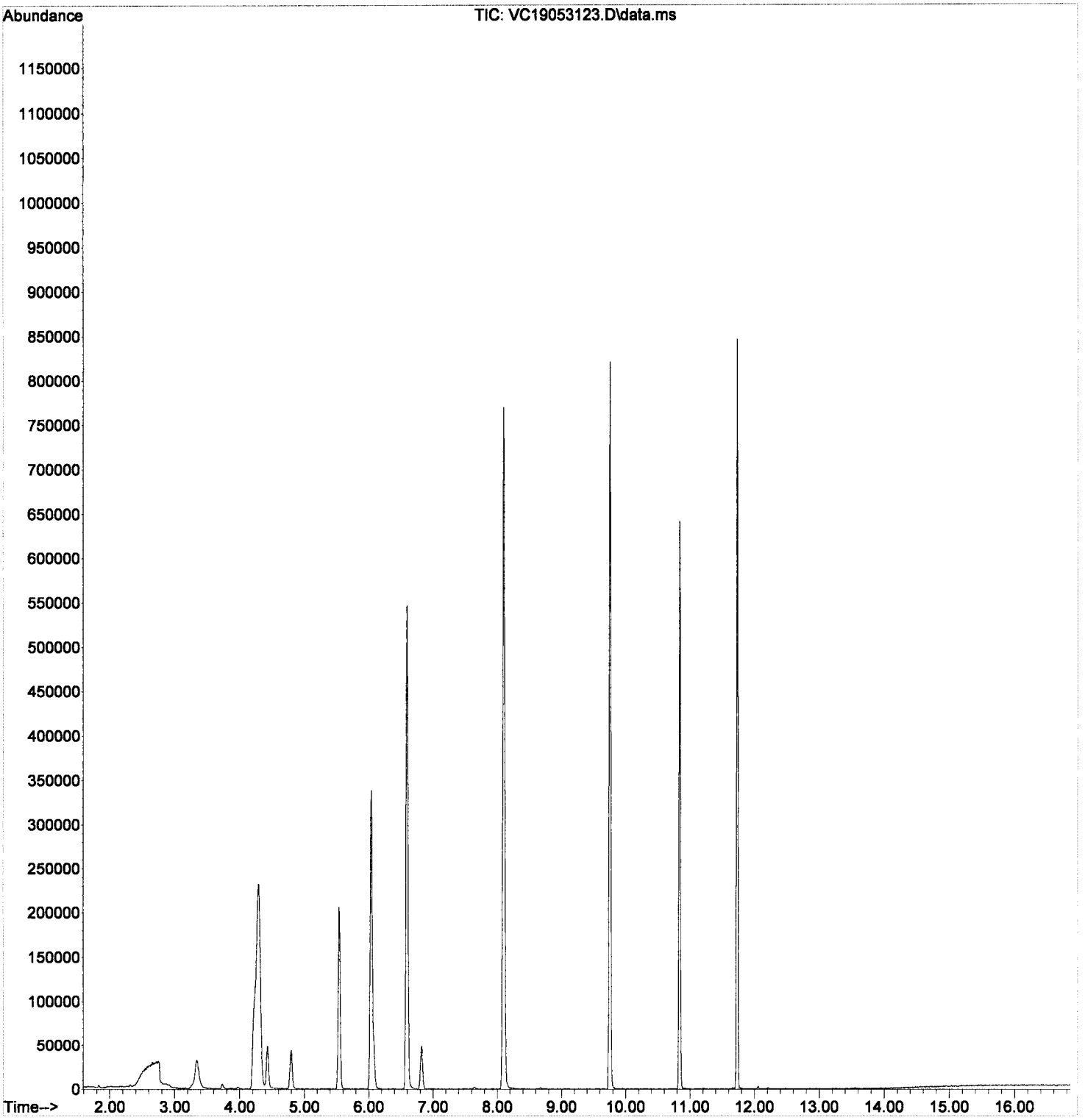
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.034	168	270725	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.751	117	460643	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.728	152	191650	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.535	111	137847	47.02	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.588	114	505784	48.57	ug/L		0.00
39) Toluene-d8 (S)	8.096	98	606026	48.63	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.834	174	166460	50.30	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.861	50	425	0.11	ug/L		73
5) Bromomethane	2.311	96	1148	0.74	ug/L		87
6) Chloroethane	2.506	64	203	0.20	ug/L	#	1
12) Methylene Chloride	3.728	84	2891	Below Cal			87
13) Acetone	3.850	43	527	0.43	ug/L	#	42
28) 2-Butanone (MEK)	5.748	43	323	0.15	ug/L		54

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053123.D
Acq On : 31 May 2019 11:08 pm
Operator : TB
Sample : 9051463-MS2
Misc : 50X 5g/5mLx1000uL/50mL E0929-03
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:59 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053124.D
Acq On : 31 May 2019 11:36 pm
Operator : TB
Sample : A9E0902-01@10000
Misc : 10000X 5g/5mLx5uL/50mL GX/8260
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

6/3/19

Quant Time: Jun 03 09:47:04 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

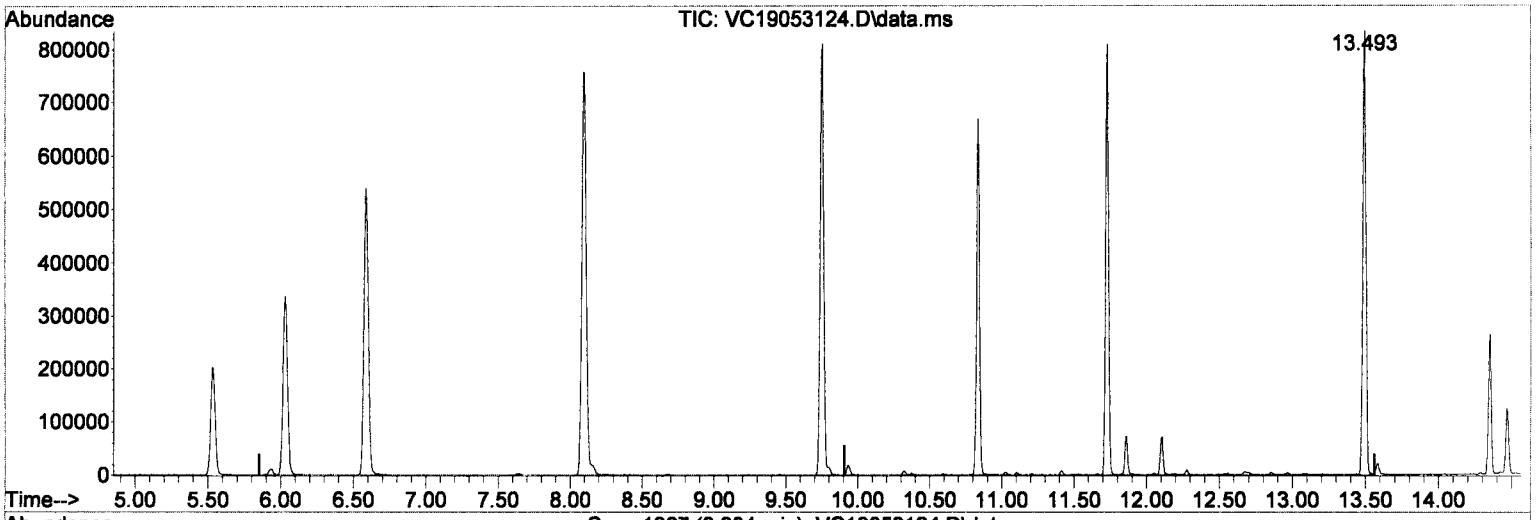
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.029	168	270110	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.589	TIC	1149156	45.65	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.835	TIC	938744	49.92	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.752	TIC	1383125	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.097	TIC	1638881	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.729	TIC	1123586	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	955924m	32.82	ug/L	
6) TPHg (C5-C9)	9.906	TIC	700508m	17.40	ug/L	
7) TPHg (C6-C10)	9.906	TIC	502523m	16.91	ug/L	
8) NWTPH-Gx	9.906	TIC	1582320m	213.99	ug/L	

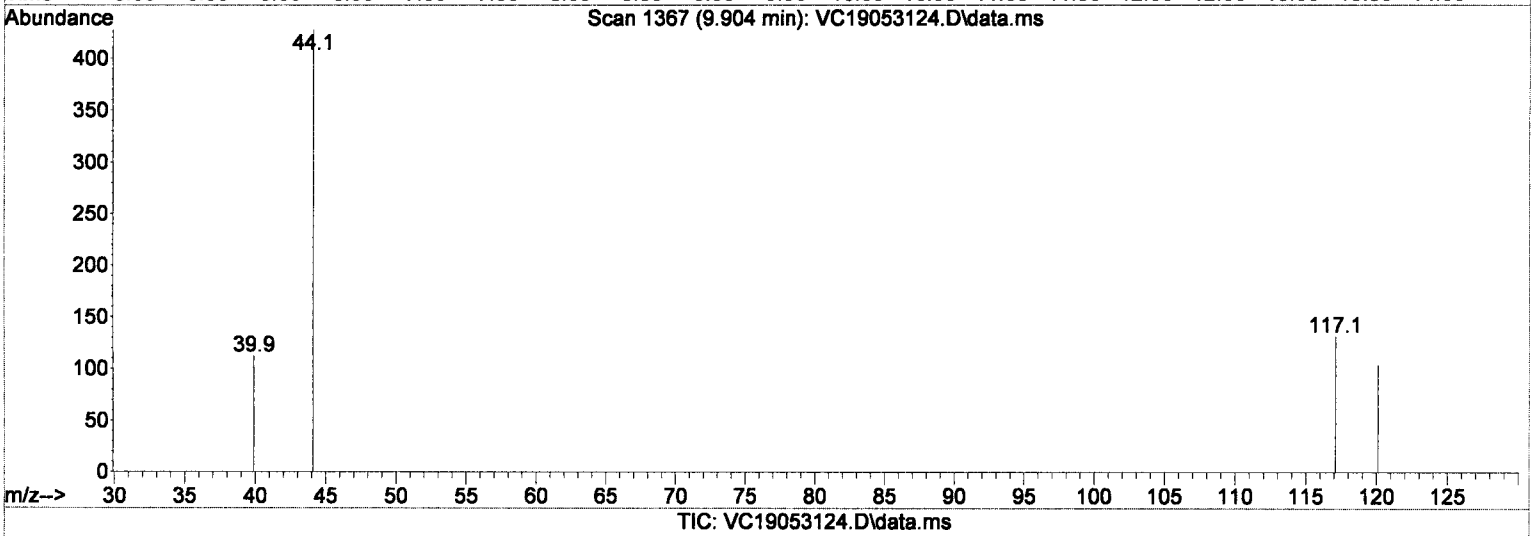
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053124.D
Acq On : 31 May 2019 11:36 pm
Operator : TB
Sample : A9E0902-01@10000
Misc : 10000X 5g/5mLx5uL/50mL GX/8260
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:47:04 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration





TIC: VC19053124.D\data.ms

(8) NWTPH-Gx (H)

9.906min (0.000) 213.99 ug/L m

response 1582320

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	3.33#
0.00	0.00	2.51#
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053124.D
Acq On : 31 May 2019 11:36 pm
Operator : TB
Sample : A9E0902-01@10000
Misc : 10000X 5g/5mLx5uL/50mL GX/8260
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

6/3/19

Quant Time: Jun 03 09:13:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

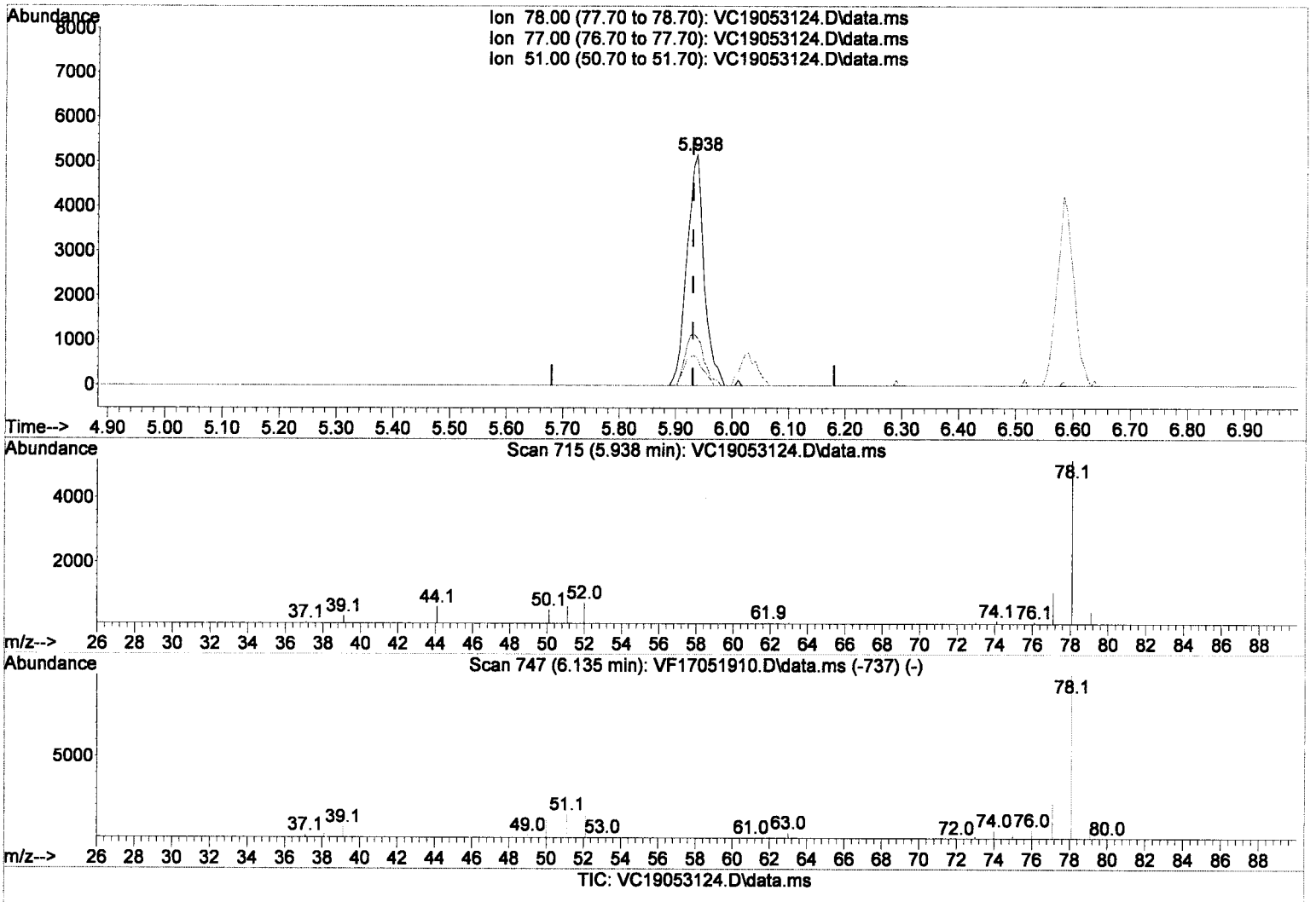
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.029	168	270110	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	462250	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.729	152	189210	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.536	111	138101	47.22	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.589	114	504901	48.60	ug/L		0.00
39) Toluene-d8 (S)	8.097	98	610144	48.79	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.835	174	169750	51.96	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.862	50	397	0.10	ug/L		77
5) Bromomethane	2.306	96	1320	0.85	ug/L		86
6) Chloroethane	2.428	64	143	0.14	ug/L	#	1
12) Methylene Chloride	3.723	84	2836	Below Cal			95
13) Acetone	3.821	43	105	0.09	ug/L	#	42
29) Benzene	5.938	78	10899	0.93	ug/L		93
40) Toluene	8.158	91	14170	1.16	ug/L		93
50) Ethylbenzene	9.801	91	9124	0.73	ug/L		97
52) m,p-Xylenes (2)	9.934	91	10576	1.18	ug/L		94
53) o-Xylene	10.324	91	4322	0.46	ug/L		94
54) Styrene	10.379	104	1575	0.24	ug/L		84
56) Isopropylbenzene	10.592	105	1159	0.11	ug/L		86
63) 1,3,5-Trimethylbenzene	11.103	105	2225	0.29	ug/L		88
67) tert-Butylbenzene	11.413	91	562	0.13	ug/L	#	28
68) 1,2,4-Trimethylbenzene	11.413	105	4182	0.53	ug/L		96
78) Naphthalene	13.493	128	612565	77.60	ug/L		100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053124.D
Acq On : 31 May 2019 11:36 pm
Operator : TB
Sample : A9E0902-01@10000
Misc : 10000X 5g/5mLx5uL/50mL GX/8260
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:13:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



TIC: VC19053124.D\data.ms

(29) Benzene

5.938min (+0.007) 0.93 ug/L

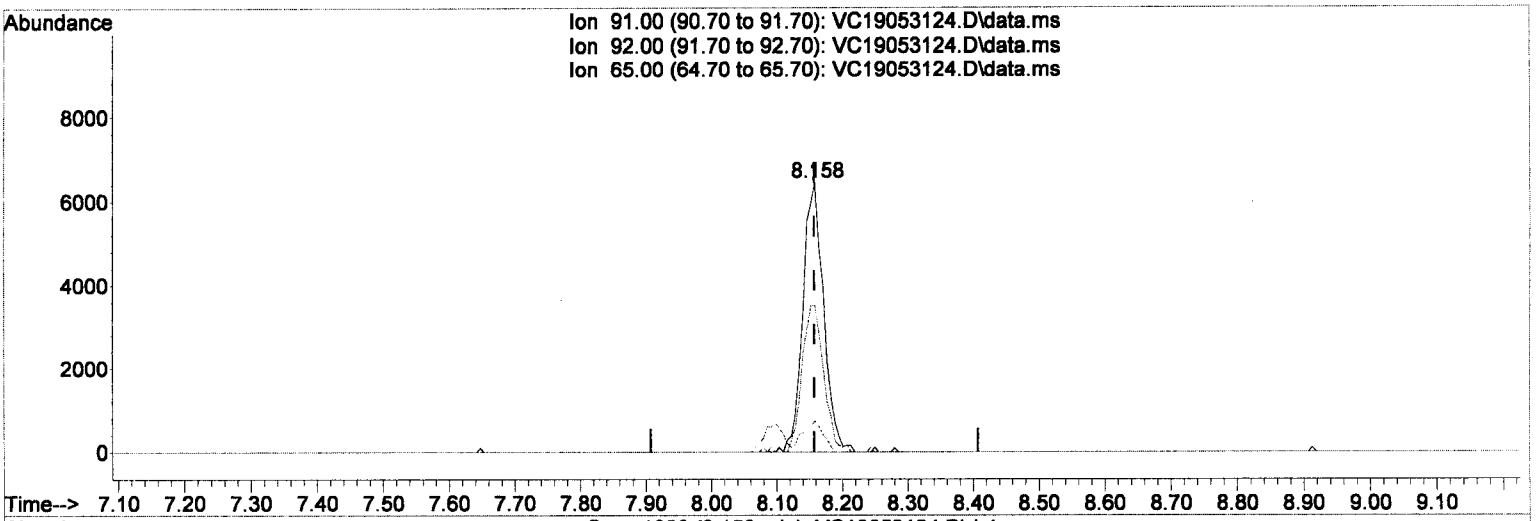
response 10899

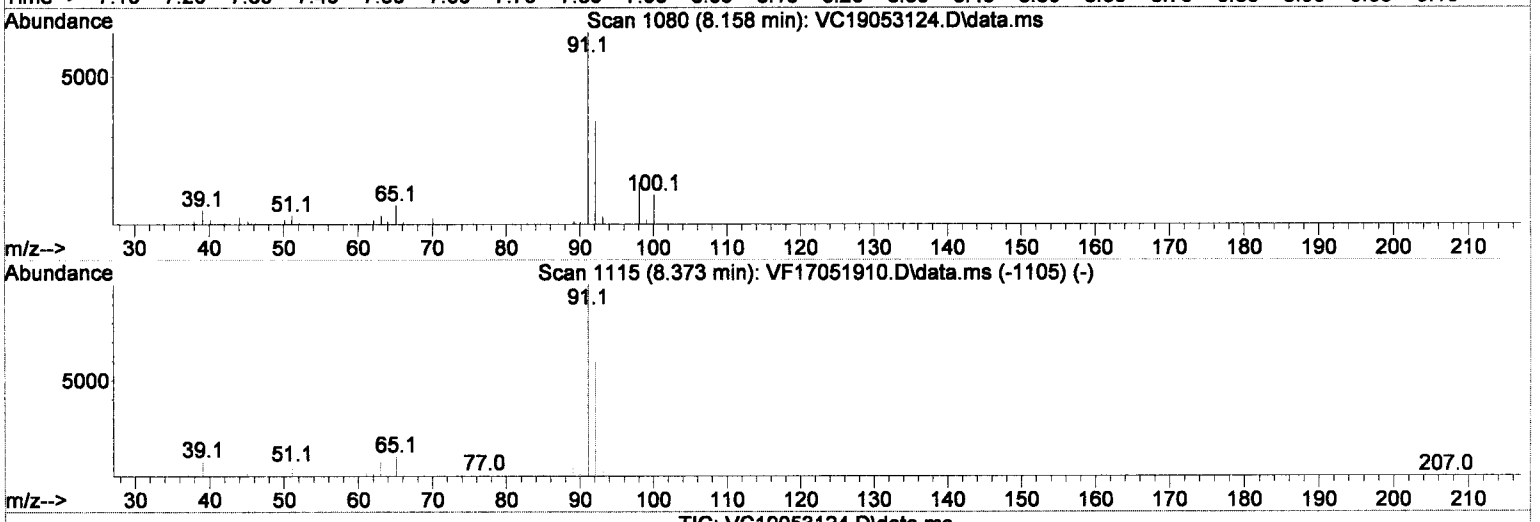
Ion	Exp%	Act%
78.00	100	100
77.00	23.20	20.58
51.00	15.50	11.98
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053124.D
Acq On : 31 May 2019 11:36 pm
Operator : TB
Sample : A9E0902-01@10000
Misc : 10000X 5g/5mLx5uL/50mL GX/8260
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:13:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration





TIC: VC19053124.D\data.ms

(40) Toluene (C)

8.158min (+0.001) 1.16 ug/L

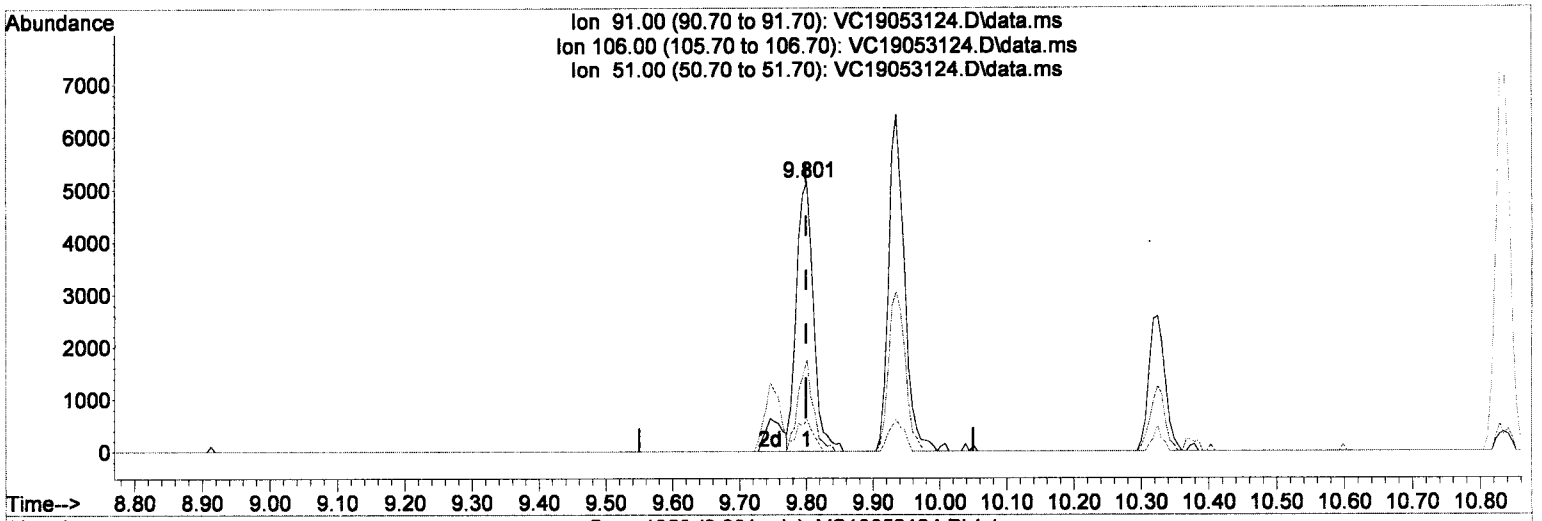
response 14170

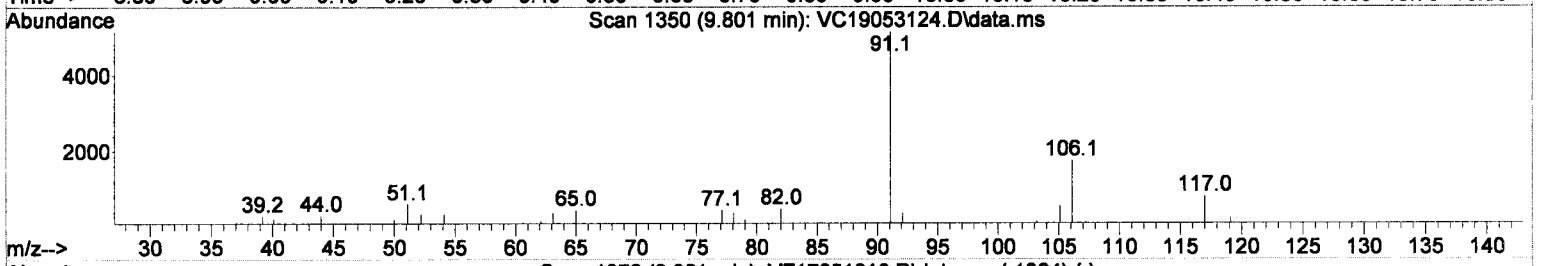
Ion	Exp%	Act%
91.00	100	100
92.00	60.20	54.33
65.00	11.90	11.41
0.00	0.00	0.00

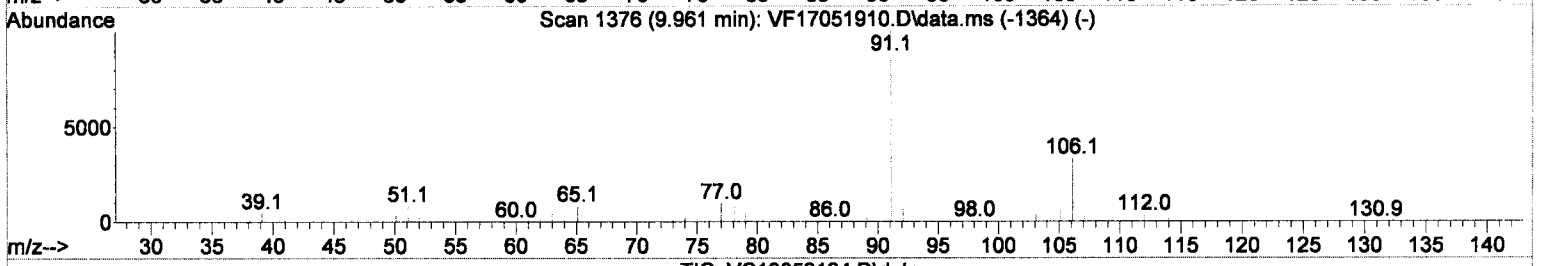
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053124.D
Acq On : 31 May 2019 11:36 pm
Operator : TB
Sample : A9E0902-01@10000
Misc : 10000X 5g/5mLx5uL/50mL GX/8260
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:13:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration







TIC: VC19053124.D\data.ms

(50) Ethylbenzene (C)

9.801min (+0.001) 0.73 ug/L

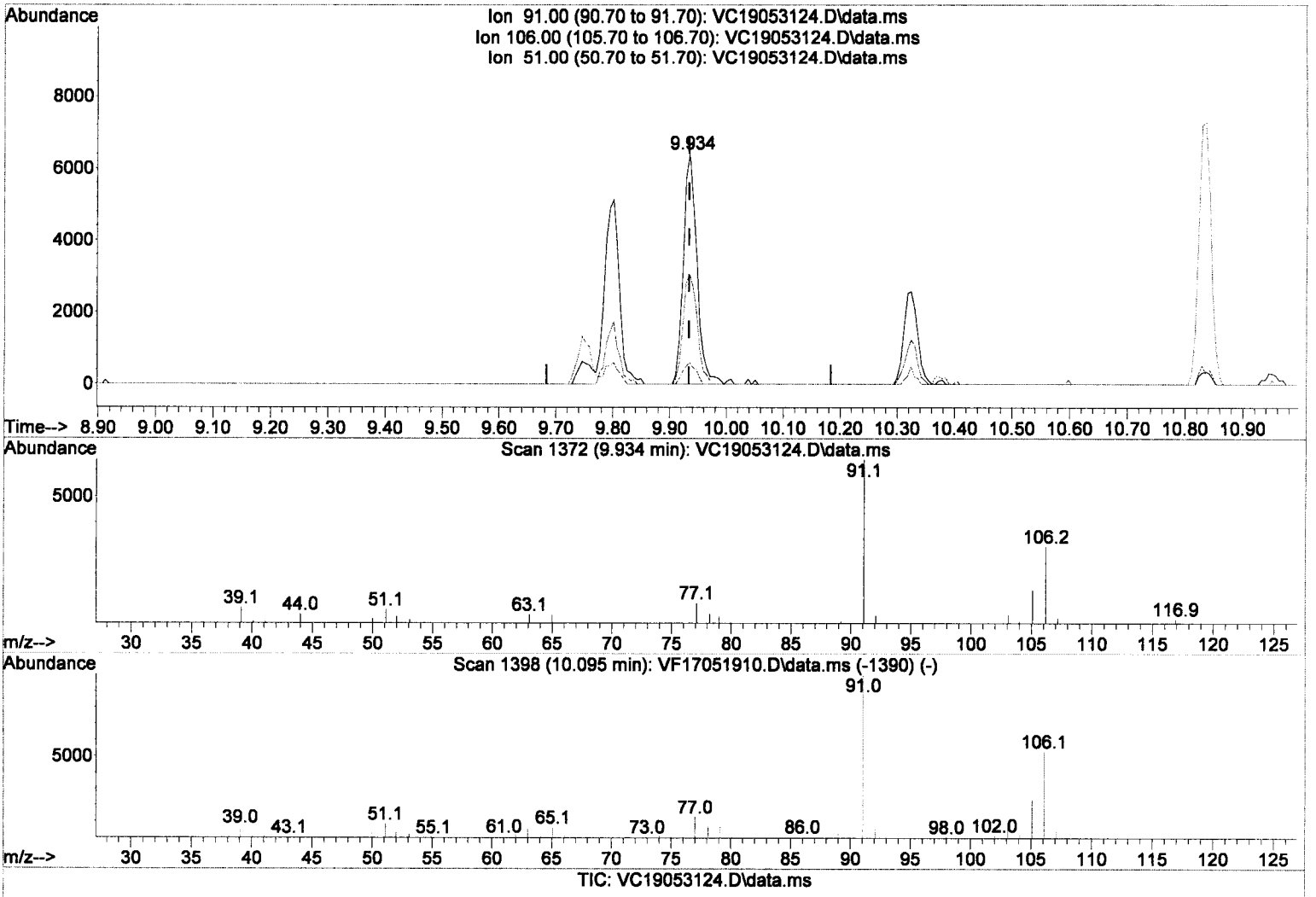
response 9124

Ion	Exp%	Act%
91.00	100	100
106.00	33.20	34.05
51.00	9.50	11.85
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053124.D
Acq On : 31 May 2019 11:36 pm
Operator : TB
Sample : A9E0902-01@10000
Misc : 10000X 5g/5mLx5uL/50mL GX/8260
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:13:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



TIC: VC19053124.D\data.ms

(52) m,p-Xylenes (2)

9.934min (+0.001) 1.18 ug/L

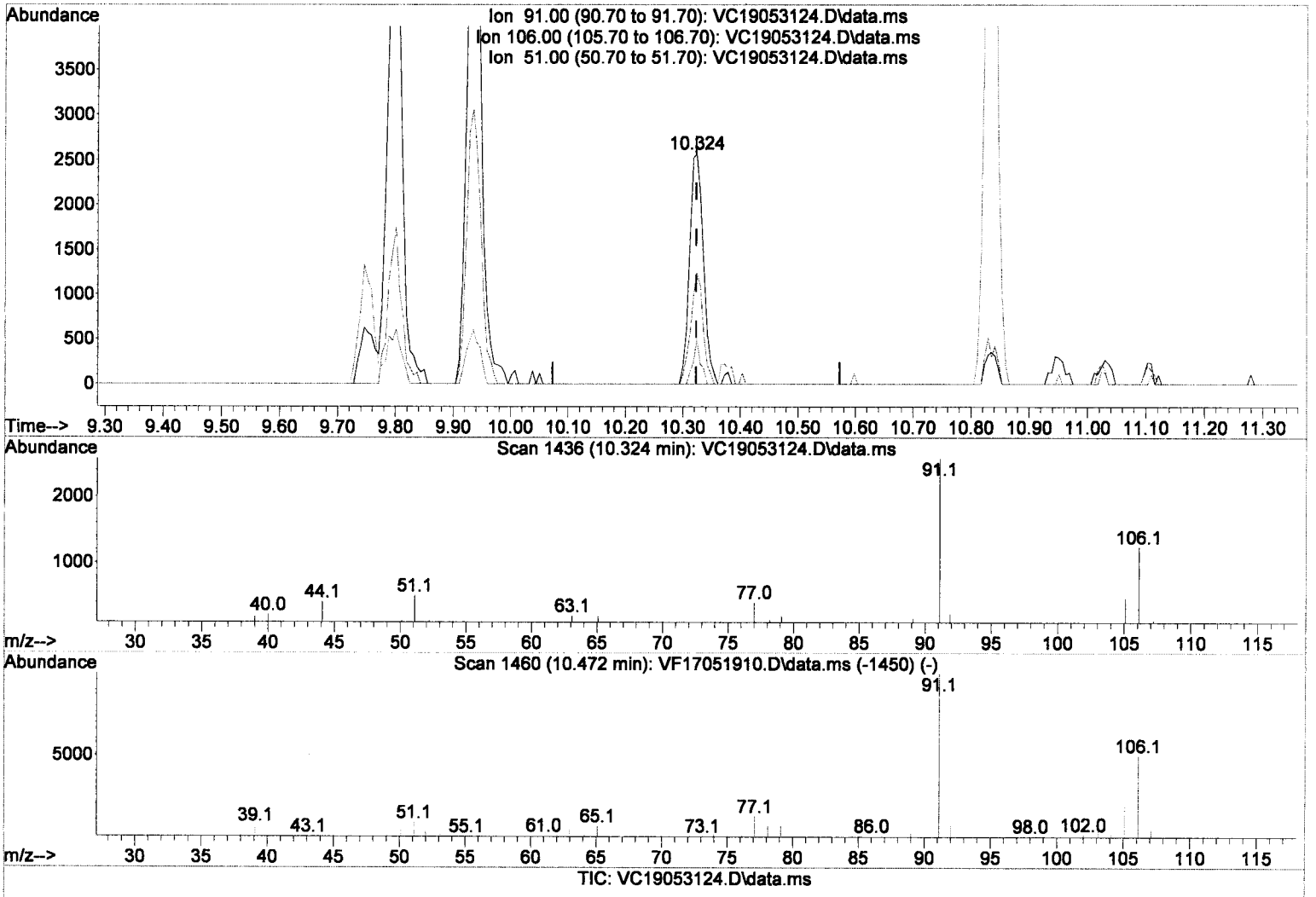
response 10576

Ion	Exp%	Act%
91.00	100	100
106.00	52.70	47.65
51.00	10.10	9.46
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053124.D
Acq On : 31 May 2019 11:36 pm
Operator : TB
Sample : A9E0902-01@10000
Misc : 10000X 5g/5mLx5uL/50mL GX/8260
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:13:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



TIC: VC19053124.D\data.ms

(53) o-Xylene

10.324min (+0.001) 0.46 ug/L

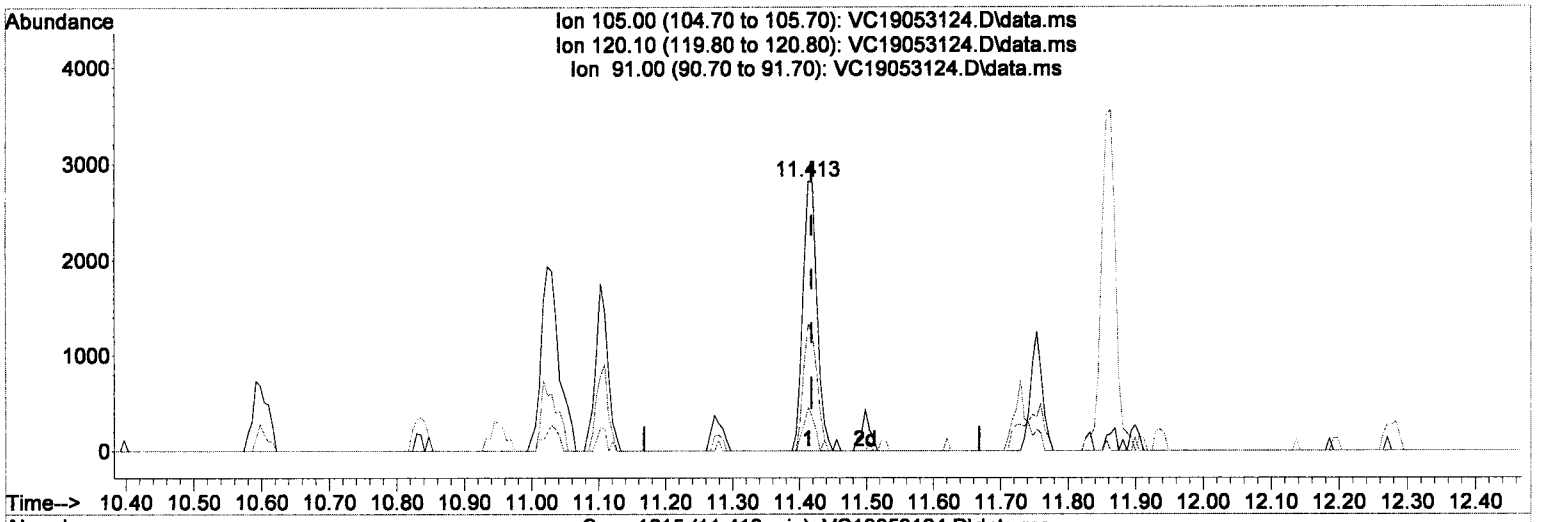
response 4322

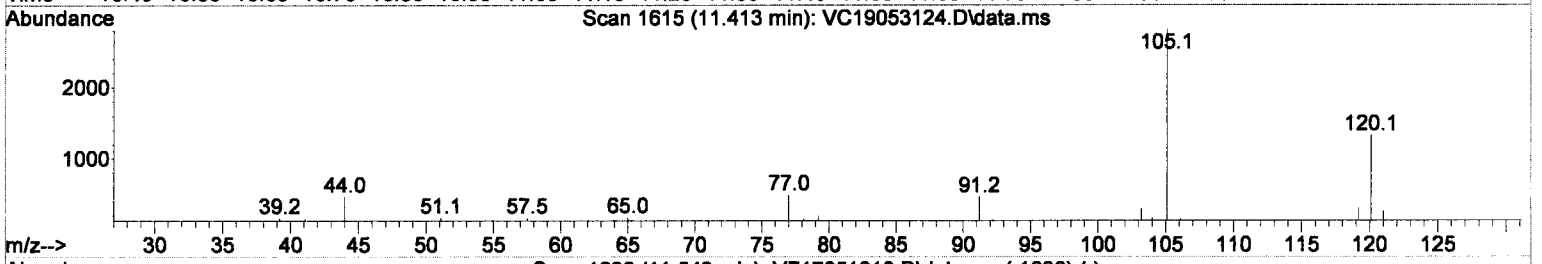
Ion	Exp%	Act%
91.00	100	100
106.00	49.40	48.15
51.00	10.00	19.29
0.00	0.00	0.00

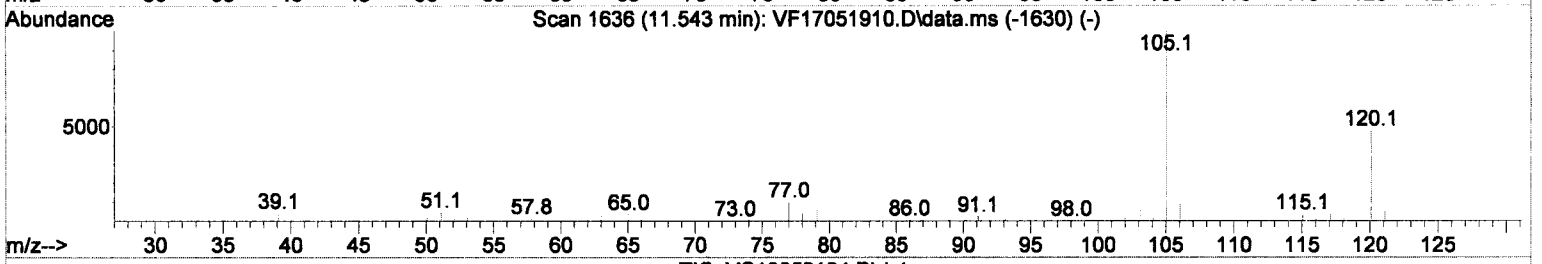
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053124.D
Acq On : 31 May 2019 11:36 pm
Operator : TB
Sample : A9E0902-01@10000
Misc : 10000X 5g/5mLx5uL/50mL GX/8260
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:13:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration







TIC: VC19053124.D\data.ms

(68) 1,2,4-Trimethylbenzene

11.413min (-0.005) 0.53 ug/L

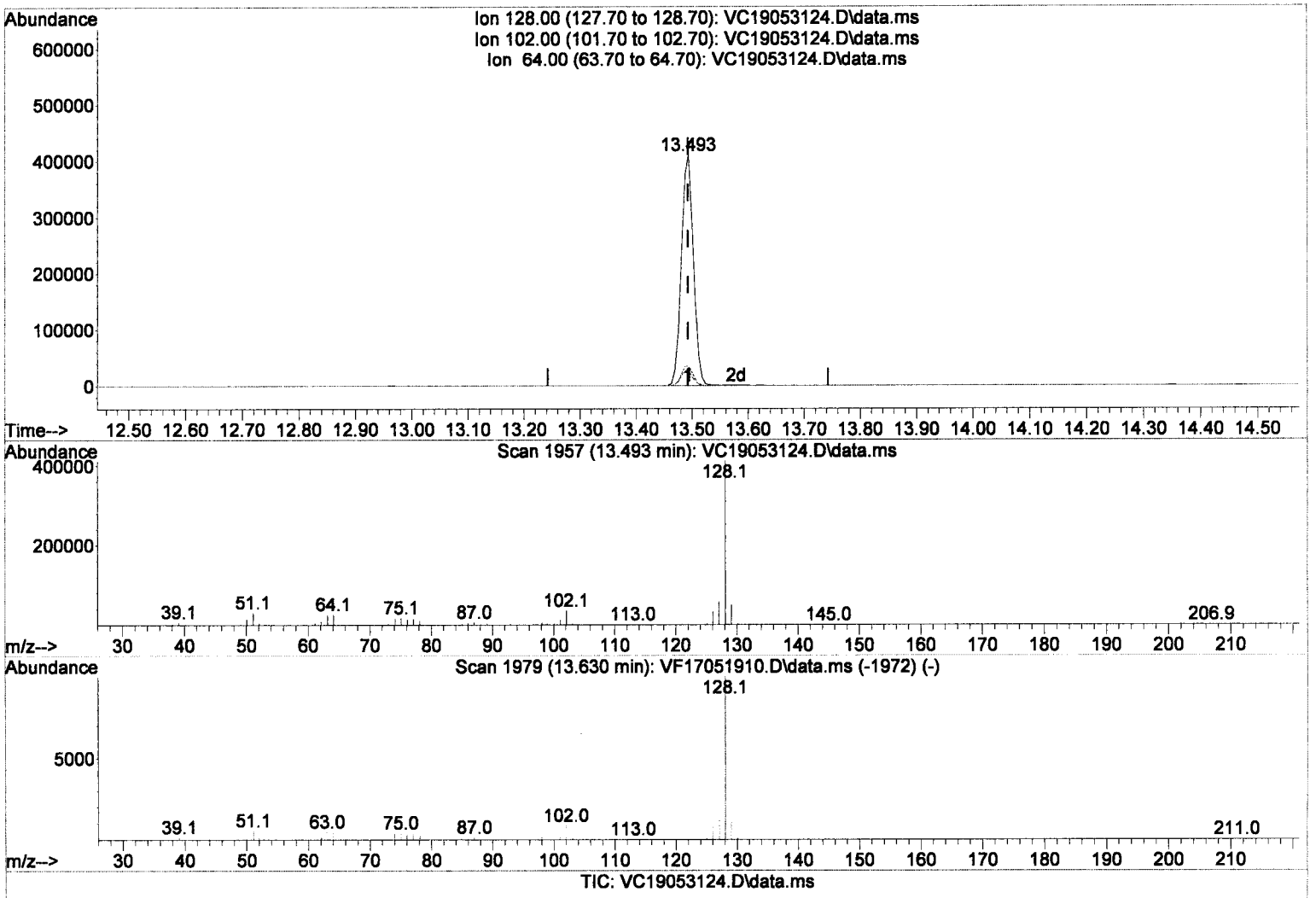
response 4182

Ion	Exp%	Act%
105.00	100	100
120.10	48.00	47.16
91.00	10.60	16.28
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053124.D
Acq On : 31 May 2019 11:36 pm
Operator : TB
Sample : A9E0902-01@10000
Misc : 10000X 5g/5mLx5uL/50mL GX/8260
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:13:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



TIC: VC19053124.D\data.ms

(78) Naphthalene

13.493min (+0.001) 77.60 ug/L

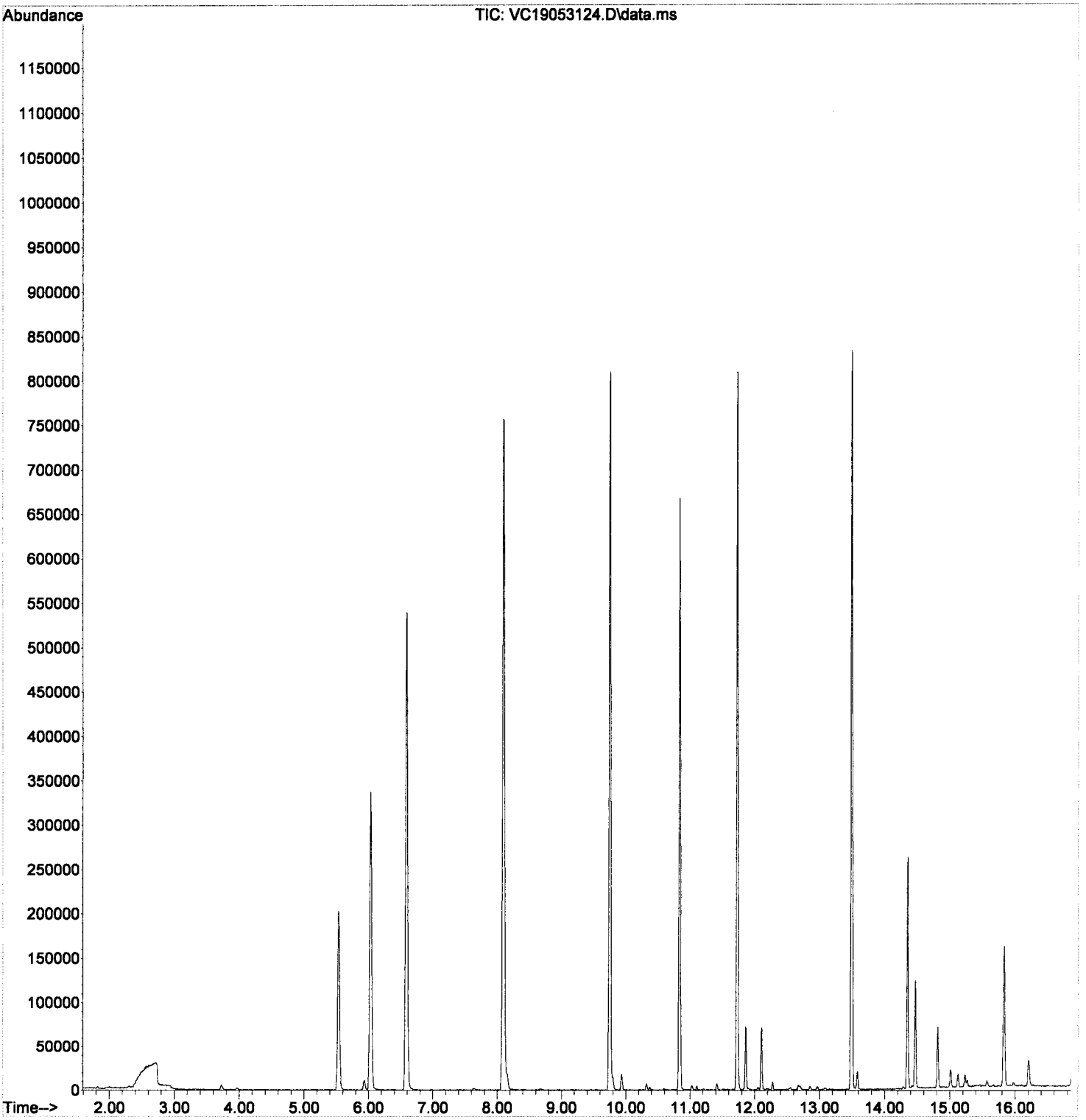
response 612565

Ion	Exp%	Act%
128.00	100	100
102.00	8.50	8.60
64.00	6.40	6.36
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053124.D
Acq On : 31 May 2019 11:36 pm
Operator : TB
Sample : A9E0902-01@10000
Misc : 10000X 5g/5mLx5uL/50mL GX/8260
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:13:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



APEX LABORATORIES, LLC
6700 SW Sandburg St. Tigard OR 97223 phone 503-718-2323

Gasoline Range Hydrocarbons (Benzene though Naphthalene) by NWTPH-Gx

Calibration Data

Sequence 9E29058 (Cal ID A9E3104) VOA-GCMS3

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence:	9E29058	Instrument:	VOA-GCMS3
Date:	05/29/19 13:56	Calibration:	A9E3104

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9E29058-IBL1	Soil	QC	QC			A19C135	
2	9E29058-TUN1	Soil	QC	QC			A19C135	
3	9E29058-ICB1	Soil	QC	QC			A19C135	
4	9E29058-CAL1	Soil	QC	QC			A19C135	A19E361
5	9E29058-CAL2	Soil	QC	QC			A19C135	A19E362
6	9E29058-CAL3	Soil	QC	QC			A19C135	A19E363
7	9E29058-CAL4	Soil	QC	QC			A19C135	A19E364
8	9E29058-CAL5	Soil	QC	QC			A19C135	A19E365
9	9E29058-CAL6	Soil	QC	QC			A19C135	A19E366
10	9E29058-CAL7	Soil	QC	QC			A19C135	A19E367
11	9E29058-CAL8	Soil	QC	QC			A19C135	A19E368
12	9E29058-CAL9	Soil	QC	QC			A19C135	A19E369
13	9E29058-IBL2	Soil	QC	QC			A19C135	
14	9E29058-CALA	Soil	QC	QC			A19C135	A19E370
15	9E29058-IBL3	Soil	QC	QC			A19C135	
16	9E29058-CALB	Soil	QC	QC			A19C135	A19E371
17	9E29058-IBL4	Soil	QC	QC			A19C135	
18	9E29058-IBL5	Soil	QC	QC			A19C135	
19	9E29058-ICV1	Soil	QC	QC			A19C135	A19D180
20	9E29058-IBL6	Soil	QC	QC			A19C135	
21	9E29058-TUN2	Soil	QC	QC			A19C135	
22	9E29058-IBL7	Soil	QC	QC			A19C135	
23	9E29058-ICB2	Soil	QC	QC			A19C135	
24	9E29058-CALC	Soil	QC	QC			A19C135	A19E372
25	9E29058-CALD	Soil	QC	QC			A19C135	A19E373
26	9E29058-CALE	Soil	QC	QC			A19C135	A19E374
27	9E29058-CALF	Soil	QC	QC			A19C135	A19E375
28	9E29058-CALG	Soil	QC	QC			A19C135	A19E183
29	9E29058-CALH	Soil	QC	QC			A19C135	A19E184
30	9E29058-CALI	Soil	QC	QC			A19C135	A19E185
31	9E29058-CALJ	Soil	QC	QC			A19C135	A19E186
32	9E29058-IBL8	Soil	QC	QC			A19C135	
33	9E29058-IBL9	Soil	QC	QC			A19C135	
34	9E29058-ICV2	Soil	QC	QC			A19C135	A19B262
35	9E29058-IBLA	Soil	QC	QC			A19C135	

Data Entered By: 5/31/19

Data Reviewed By: 5/31/19

Comments:

Calibration Status Report VOA-GCMS3

Method Path : C:\msdchem\1\METHODS\
Method File : VC190529S.M
Title : EPA 8260: Volatile Organic Compounds
Last Update : Thu May 30 14:50:00 2019
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	-1	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052904.D
2	2	0	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052905.D
3	3	0	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052906.D
4	4	1	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052907.D
5	5	2	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052908.D
6	6	5	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052909.D
7	7	10	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052910.D
8	8	20	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052911.D
9	9	50	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052912.D
10	10	100	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052914.D
11	11	200	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052916.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	May 30 12:12 2019	May 30 11:57 2019	29 May 2019 3:40 pm
2	2	May 30 12:12 2019	May 30 12:04 2019	29 May 2019 4:07 pm
3	3	May 30 12:12 2019	May 30 12:05 2019	29 May 2019 4:35 pm
4	4	May 30 12:12 2019	May 30 12:06 2019	29 May 2019 5:02 pm
5	5	May 30 12:12 2019	May 30 11:45 2019	29 May 2019 5:30 pm
6	6	May 30 12:12 2019	May 30 11:45 2019	29 May 2019 5:57 pm
7	7	May 30 12:12 2019	May 30 11:45 2019	29 May 2019 6:25 pm
8	8	May 30 12:12 2019	May 30 11:45 2019	29 May 2019 6:52 pm
9	9	May 30 12:12 2019	May 30 11:46 2019	29 May 2019 7:20 pm
10	10	May 30 12:12 2019	May 30 11:46 2019	29 May 2019 8:15 pm
11	11	May 30 12:12 2019	May 30 11:46 2019	29 May 2019 9:10 pm

VC190529S.M Thu May 30 15:32:22 2019

Response Factor Report VOA-GCMS3

Method Path : C:\msdchem\1\METHODS\
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Title : EPA 8260: Volatile Organic Compounds
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Calibration Files
1 =VC19052904.D 2 =VC19052905.D 3 =VC19052906.D 4 =VC19052907.D 5 =VC19052908.D 6 =VC19052909.D
7 =VC19052910.D 8 =VC19052911.D 9 =VC19052912.D 10 =VC19052914.D 11 =VC19052916.D

		Compound	1	2	3	4	5	6	7	8	9	10	11	Avg	%RSD
1)	I	Pentafluorobenzene...	ISTD												
2)		Dichlorodifluo...	0.462	0.413	0.416	0.448	0.479	0.453	0.441	0.488	0.463	0.426	0.449		5.63
3)	P	Chloromethane		0.919	0.788	0.748	0.751	0.710	0.710	0.715	0.683	0.612	0.737		11.42
4)	C	Vinyl Chloride	0.501	0.520	0.508	0.516	0.529	0.502	0.513	0.527	0.510	0.470	0.510		3.26
5)		Bromomethane					0.356	0.322	0.277	0.267	0.250	0.253	0.287		14.87
6)		Chloroethane				0.197	0.206	0.182	0.187	0.191	0.203	0.176	0.191		5.76
7)		Trichlorofluor...		0.276	0.289	0.290	0.302	0.272	0.291	0.291	0.293	0.252	0.284		5.30
8)	C	1,1-Dichloroet...	0.444	0.556	0.503	0.480	0.511	0.513	0.507	0.538	0.515	0.493	0.506		6.03
9)		Carbon Disulfide	0.813	0.771	0.678	0.672	0.703	0.726	0.789	0.946	0.971	0.960	0.803		14.57
10)		Freon 113	0.587	0.460	0.437	0.383	0.410	0.409	0.407	0.419	0.399	0.384	0.429		13.96
11)		Iodomethane			0.143	0.148	0.133	0.155	0.180	0.235	0.267	0.288	0.194		31.41
12)		Methylene Chlo...				1.812	0.991	0.710	0.568	0.490	0.454	0.409	0.776		64.14
13)		Acetone				0.284	0.233	0.206	0.217	0.223	0.217	0.197	0.225		12.62
14)		t-1,2-Dichloro...	0.471	0.715	0.571	0.532	0.565	0.614	0.605	0.596	0.626	0.598	0.559	0.587	10.38
15)		n-Hexane				0.173	0.137	0.111	0.098	0.102	0.093	0.092	0.115		25.96
16)		Methyl-tert-bu...	1.793	1.755	1.807	1.734	1.721	1.760	1.742	1.752	1.781	1.699	1.570	1.738	3.66
17)	P	1,1-Dichloroet...		0.716	0.697	0.709	0.734	0.744	0.724	0.738	0.749	0.744	0.674	0.723	3.33
18)		Acrylonitrile				0.267	0.250	0.301	0.301	0.298	0.318	0.308	0.295	0.292	7.65
19)		c-1,2-Dichloro...	0.702	0.595	0.694	0.629	0.630	0.672	0.675	0.660	0.679	0.659	0.607	0.655	5.35
20)		2,2-Dichloropr...			0.574	0.545	0.539	0.566	0.585	0.573	0.593	0.574	0.548	0.566	3.26
21)		Bromochloromet...		0.441	0.324	0.379	0.376	0.400	0.402	0.394	0.402	0.388	0.360	0.387	7.92
22)	C	Chloroform			1.008	0.895	0.860	0.832	0.839	0.845	0.868	0.832	0.752	0.859	7.93
23)		Carbon Tetrach...				0.393	0.370	0.429	0.451	0.465	0.528	0.535	0.542	0.464	14.21
24)		Tetrahydrofuran			0.413	0.387	0.323	0.309	0.308	0.303	0.313	0.301	0.287	0.327	13.16
25)		1,1,1-Trichlor...		0.640	0.679	0.595	0.632	0.655	0.654	0.673	0.699	0.679	0.654	0.656	4.49
26)	S	Dibromofluorom...	0.537	0.532	0.521	0.521	0.550	0.536	0.538	0.553	0.574	0.553	0.542	0.541	2.83
27)		1,1-Dichloropr...		0.800	0.644	0.744	0.635	0.652	0.656	0.658	0.688	0.651	0.624	0.675	8.20
28)		2-Butanone (MEK)				0.453	0.361	0.413	0.402	0.403	0.416	0.392	0.376	0.402	6.86
29)		Benzene	2.357	2.260	2.235	2.284	2.147	2.202	2.176	2.160	2.184	2.046	1.856	2.173	6.11
30)		1,2-Dichloroet...		0.667	0.686	0.639	0.648	0.653	0.648	0.647	0.663	0.629	0.599	0.648	3.59
31)		iso-Butyl Alcohol						0.049	0.049	0.050	0.052	0.051	0.048	0.050	2.91
32)	S	1,4-Difluorobe...	1.899	1.916	1.909	1.926	1.948	1.932	1.903	1.931	1.951	1.905	1.934	1.923	0.93
33)		Trichloroethen...	0.689	0.758	0.518	0.610	0.611	0.597	0.585	0.590	0.613	0.587	0.547	0.610	10.65
34)		Dibromomethane			0.281	0.259	0.272	0.281	0.297	0.301	0.321	0.310	0.293	0.290	6.62
35)	C	1,2-Dichloropr...		0.580	0.525	0.530	0.550	0.566	0.554	0.570	0.581	0.565	0.534	0.556	3.68
36)		Bromodichlorom...		0.420	0.429	0.423	0.395	0.464	0.473	0.516	0.591	0.605	0.598	0.491	16.46
37)		Chlorobenzene-d5 (I)	ISTD												
38)		c-1,3-Dichloro...		0.337	0.319	0.357	0.343	0.385	0.402	0.426	0.458	0.460	0.448	0.394	13.50
39)	S	Toluene-d8 (S)	1.354	1.351	1.350	1.355	1.346	1.359	1.353	1.356	1.338	1.348	1.369	1.353	0.58
40)	C	Toluene			1.620	1.480	1.319	1.334	1.306	1.285	1.262	1.203	1.095	1.323	11.49

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41)		Tetrachloroeth...		0.391	0.374	0.304	0.268	0.297	0.294	0.285	0.293	0.284	0.277	0.307	13.47
42)		4-Methyl-2-Pen...	0.483	0.474	0.444	0.408	0.366	0.382	0.399	0.389	0.403	0.385	0.358	0.408	10.15
43)		t-1,3-Dichloro...				0.310	0.285	0.325	0.360	0.382	0.419	0.424	0.416	0.365	14.76
44)		1,1,2-Trichlor...	0.255	0.283	0.258	0.261	0.251	0.278	0.275	0.278	0.285	0.278	0.269	0.270	4.39
45)		Dibromochlorom...		0.096	0.155	0.161	0.159	0.167	0.184	0.202	0.247	0.262	0.269	0.190	28.85
46)		1,3-Dichloropr...	0.488	0.553	0.528	0.476	0.473	0.501	0.501	0.508	0.508	0.496	0.465	0.500	5.06
47)		1,2-Dibromoeth...			0.225	0.248	0.231	0.259	0.274	0.277	0.295	0.289	0.280	0.264	9.51
48)		2-Hexanone				0.286	0.236	0.279	0.281	0.281	0.294	0.287	0.271	0.277	6.49
49)	P	Chlorobenzene		0.905	0.888	0.847	0.807	0.796	0.785	0.777	0.782	0.750	0.685	0.802	8.07
50)	C	Ethylbenzene		1.620	1.527	1.400	1.310	1.368	1.323	1.322	1.292	1.213	1.073	1.345	11.33
51)		1,1,1,2-Tetrac...			0.170	0.210	0.196	0.216	0.226	0.239	0.260	0.263	0.257	0.226	13.96
52)		m,p-Xylenes (2)		1.188	1.079	1.009	0.952	0.987	0.976	0.976	0.942	0.866	0.733	0.971	12.37
53)		o-Xylene		1.249	1.064	1.050	0.966	1.027	1.002	1.014	1.017	0.963	0.852	1.020	9.82
54)		Styrene				0.640	0.657	0.644	0.715	0.737	0.767	0.786	0.776	0.697	0.713	8.05
55)	P	Bromoform				0.053	0.072	0.075	0.091	0.099	0.111	0.144	0.159	0.168	0.108	37.80
56)		Isopropylbenzene	1.476	1.245	1.162	1.148	1.125	1.192	1.163	1.170	1.145	1.090	0.955	1.170	10.65
57)	I	1,4-Dichlorobenzen...	----------			ISTD	----------								
58)	S	4-Bromofluorob...	0.863	0.866	0.866	0.863	0.857	0.868	0.866	0.868	0.859	0.873	0.848	0.863	0.78
59)		Bromobenzene	0.455	0.670	0.691	0.705	0.677	0.700	0.693	0.673	0.687	0.686	0.625	0.660	10.81
60)		n-Propylbenzene	4.019	3.245	3.148	2.876	2.838	3.062	2.971	2.971	2.888	2.761	2.334	3.010	13.61
61)	P	1,1,2,2-Tetrac...	0.684	0.574	0.663	0.618	0.596	0.654	0.680	0.683	0.696	0.686	0.673	0.655	6.23
62)		2-Chlorotoluene	0.668	0.699	0.604	0.621	0.567	0.638	0.637	0.617	0.618	0.624	0.562	0.623	6.33
63)		1,3,5-Trimethy...		2.321	2.080	2.113	1.864	2.110	2.087	2.073	2.032	1.958	1.712	2.035	8.02
64)		1,2,3-Trichlor...		0.188	0.331	0.267	0.282	0.274	0.277	0.275	0.281	0.268	0.258	0.270	12.92
65)		t-1,4-Dichloro...				0.049	0.041	0.068	0.076	0.086	0.098	0.102	0.105	0.078	30.92
66)		4-Chlorotoluene		2.196	1.930	1.869	1.722	1.793	1.744	1.782	1.769	1.715	1.491	1.801	10.00
67)		tert-Butylbenzene	1.233	1.579	1.114	1.137	1.032	1.101	1.106	1.110	1.105	1.078	0.950	1.141	14.09
68)		1,2,4-Trimethy...	2.480	2.104	2.243	2.133	1.972	2.077	2.098	2.106	2.049	1.967	1.678	2.082	9.34
69)		sec-Butylbenzene	3.073	2.707	2.500	2.410	2.140	2.408	2.374	2.404	2.360	2.234	1.917	2.412	12.35
70)		4-Isopropyltol...		2.286	2.096	1.876	1.881	1.984	1.985	1.973	1.981	1.901	1.656	1.962	8.25
71)		1,3-Dichlorobe...	1.567	1.212	1.229	1.101	1.124	1.119	1.116	1.110	1.116	1.076	0.975	1.159	13.03
72)		1,4-Dichlorobe...		1.506	1.268	1.188	1.118	1.147	1.122	1.099	1.096	1.058	0.974	1.157	12.50
73)		n-Butylbenzene		2.179	1.783	1.756	1.570	1.646	1.648	1.636	1.604	1.512	1.354	1.669	12.96
74)		1,2-Dichlorobe...	1.370	1.089	1.162	1.034	0.981	1.055	1.026	1.036	1.033	0.994	0.927	1.064	11.05
75)		1,2-Dibromo-3-...				0.100	0.106	0.127	0.147	0.157	0.185	0.204	0.215	0.155	27.97
76)		Hexachlorobuta...				0.177	0.160	0.148	0.143	0.161	0.154	0.146	0.144	0.154	7.55
77)		1,2,4-Trichlor...		0.757	0.538	0.621	0.574	0.604	0.621	0.612	0.649	0.619	0.600	0.620	9.18
78)		Naphthalene				1.870	1.797	2.024	2.133	2.235	2.312	2.257	2.059	2.086	8.86
79)		1,2,3-Trichlor...			0.563	0.568	0.553	0.570	0.602	0.610	0.615	0.611	0.591	0.587	4.01

(#) = Out of Range

Compound List Report VOA-GCMS3

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Method File : VC190529S.M
Title : EPA 8260: Volatile Organic Compounds
Last Update : Thu May 30 14:50:00 2019
Response Via : Initial Calibration

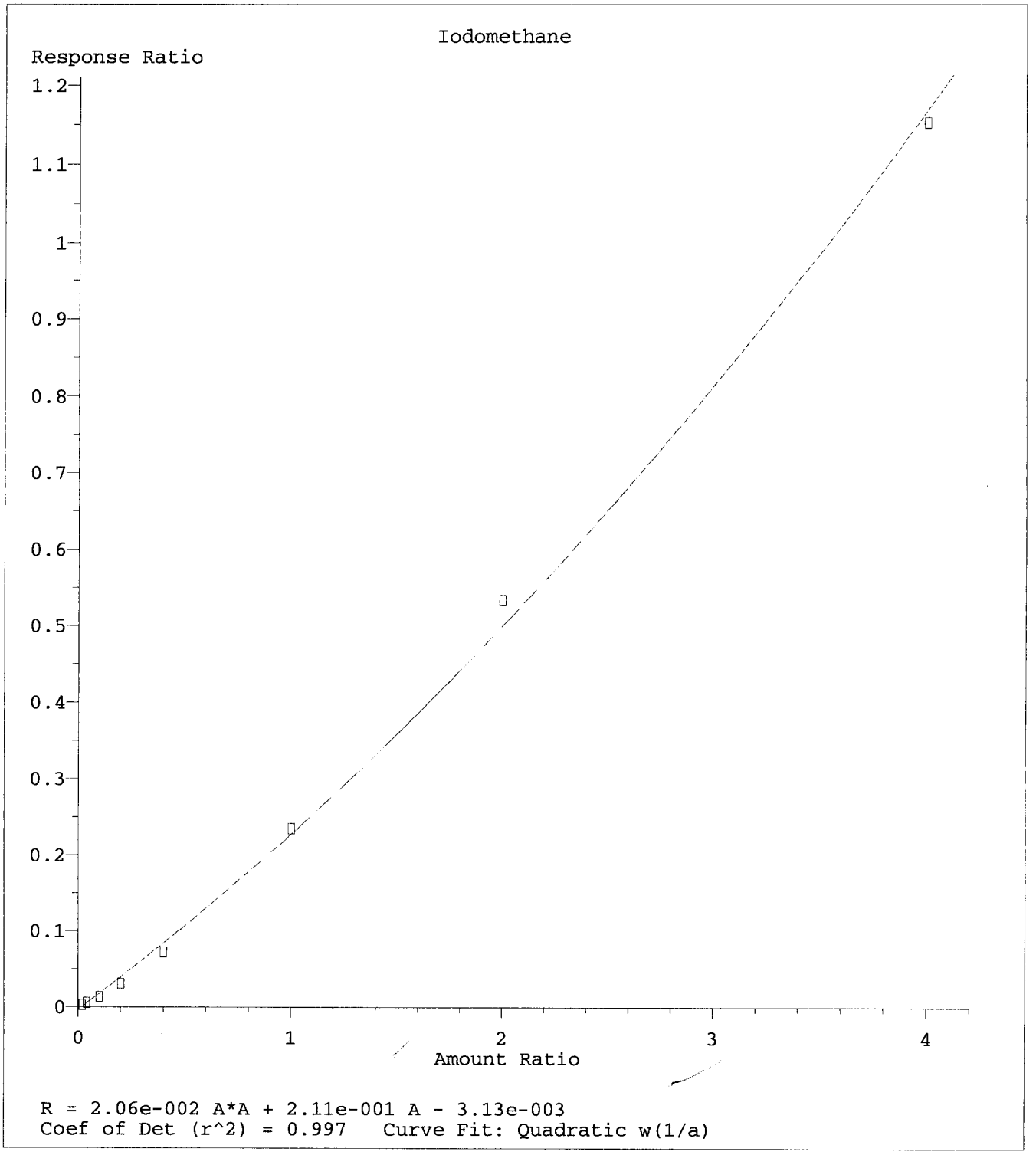
Total Cpnds : 79

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	Pentafluorobenzene (I)	168	6.034	1.000	A	2	A	R
2		Dichlorodifluoromethane	85	1.660	0.275	A	2	A	R
3	P	Chloromethane	50	1.861	0.308	A	2	A	R
4	C	Vinyl Chloride	62	1.952	0.324	A	2	A	R
5		Bromomethane	96	2.305	0.382	A	2	A	R
6		Chloroethane	64	2.438	0.404	A	2	A	R
7		Trichlorofluoromethane	101	2.567	0.425	A	2	A	R
8	C	1,1-Dichloroethene	61	3.096	0.513	A	2	A	R
9		Carbon Disulfide	76	3.107	0.515	A	2	A	R
10		Freon 113	101	3.144	0.521	A	2	A	R
11		Iodomethane	142	3.247	0.538	Q 1/a	2	A	R
12		Methylene Chloride	84	3.728	0.618	Q 1/a	2	A	R
13		Acetone	43	3.831	0.635	A	1	A	R
14		t-1,2-Dichloroethene	61	3.893	0.645	A	2	A	R
15		n-Hexane	86	3.965	0.657	Q 1/a	3	A	R
16		Methyl-tert-butyl-ether	73	4.038	0.669	A	3	A	R
17	P	1,1-Dichloroethane	63	4.519	0.749	A	2	A	R
18		Acrylonitrile	53	4.598	0.762	A	2	A	R
19		c-1,2-Dichloroethene	61	5.067	0.840	A	2	A	R
20		2,2-Dichloropropane	77	5.170	0.857	A	2	A	R
21		Bromochloromethane	49	5.268	0.873	A	2	A	R
22	C	Chloroform	83	5.353	0.887	A	2	A	R
23		Carbon Tetrachloride	117	5.480	0.908	A	2	A	R
24		Tetrahydrofuran	42	5.535	0.917	A	2	A	R
25		1,1,1-Trichloroethane	97	5.554	0.920	A	2	A	R
26	S	Dibromofluoromethane (S)	111	5.535	0.917	A	2	A	R
27		1,1-Dichloropropene	75	5.681	0.942	A	2	A	R
28		2-Butanone (MEK)	43	5.687	0.943	A	2	A	R
29		Benzene	78	5.931	0.983	A	2	A	R
30		1,2-Dichloroethane (EDC)	62	6.150	1.019	A	2	A	R
31		iso-Butyl Alcohol	43	6.265	1.038	A	2	A	R
32	S	1,4-Difluorobenzene (S)	114	6.588	1.092	A	2	A	R
33		Trichloroethene (TCE)	130	6.551	1.086	A	2	A	R
34		Dibromomethane	93	7.001	1.160	A	2	A	R
35	C	1,2-Dichloropropane	63	7.111	1.178	A	2	A	R
36		Bromodichloromethane	83	7.183	1.190	Q 1/a2	2	A	R
37	I	Chlorobenzene-d5 (I)	117	9.751	1.000	A	2	A	R
38		c-1,3-Dichloropropene	75	7.889	0.809	A	2	A	R
39	S	Toluene-d8 (S)	98	8.096	0.830	A	2	A	R
40	C	Toluene	91	8.157	0.837	A	2	A	R
41		Tetrachloroethene (PCE)	166	8.601	0.882	A	2	A	R
42		4-Methyl-2-Pentanone (MIBK)	43	8.620	0.884	A	2	A	R
43		t-1,3-Dichloropropene	75	8.643	0.886	A	2	A	R
44		1,1,2-Trichloroethane	97	8.820	0.905	A	2	A	R
45		Dibromochloromethane	129	9.008	0.924	Q 1/a	2	A	R
46		1,3-Dichloropropane	76	9.106	0.934	A	2	A	R
47		1,2-Dibromoethane (EDB)	107	9.246	0.948	A	2	A	R
48		2-Hexanone	43	9.502	0.974	A	2	A	R
49	P	Chlorobenzene	112	9.769	1.002	A	2	A	R
50	C	Ethylbenzene	91	9.800	1.005	A	2	A	R
51		1,1,1,2-Tetrachloroethane	131	9.830	1.008	A	2	A	R
52		m,p-Xylenes (2)	91	9.934	1.019	A	2	A	R
53		o-Xylene	91	10.323	1.059	A	2	A	R
54		Styrene	104	10.371	1.064	A	2	A	R
55	P	Bromoform	173	10.389	1.065	Q 1/a	2	A	R

56		Isopropylbenzene	105	10.597	1.087	A	2	A	R
57	I	1,4-Dichlorobenzene-d4 (I)	152	11.728	1.000	A	2	A	R
58	S	4-Bromofluorobenzene (S)	174	10.840	0.924	A	2	A	R
59		Bromobenzene	156	10.919	0.931	A	2	A	R
60		n-Propylbenzene	91	10.943	0.933	A	2	A	R
61	P	1,1,2,2-Tetrachloroethane	83	11.010	0.939	A	2	A	R
62		2-Chlorotoluene	126	11.071	0.944	A	2	A	R
63		1,3,5-Trimethylbenzene	105	11.108	0.947	A	2	A	R
64		1,2,3-Trichloropropane	110	11.120	0.948	A	2	A	R
65		t-1,4-Dichloro-2-butene	88	11.150	0.951	Q	3	A	R
66		4-Chlorotoluene	91	11.205	0.955	A	2	A	R
67		tert-Butylbenzene	91	11.357	0.968	A	2	A	R
68		1,2,4-Trimethylbenzene	105	11.418	0.974	A	2	A	R
69		sec-Butylbenzene	105	11.497	0.980	A	2	A	R
70		4-Isopropyltoluene	119	11.613	0.990	A	2	A	R
71		1,3-Dichlorobenzene	146	11.673	0.995	A	2	A	R
72		1,4-Dichlorobenzene	146	11.740	1.001	A	2	A	R
73		n-Butylbenzene	91	11.929	1.017	A	2	A	R
74		1,2-Dichlorobenzene	146	12.063	1.029	A	2	A	R
75		1,2-Dibromo-3-Chloropropane	157	12.677	1.081	Q	2	A	R
76		Hexachlorobutadiene	223	13.182	1.124	A	3	A	R
77		1,2,4-Trichlorobenzene	180	13.219	1.127	A	2	A	R
78		Naphthalene	128	13.492	1.150	A	2	A	R
79		1,2,3-Trichlorobenzene	180	13.656	1.164	A	2	A	R

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

VC190529S.M Thu May 30 15:32:16 2019



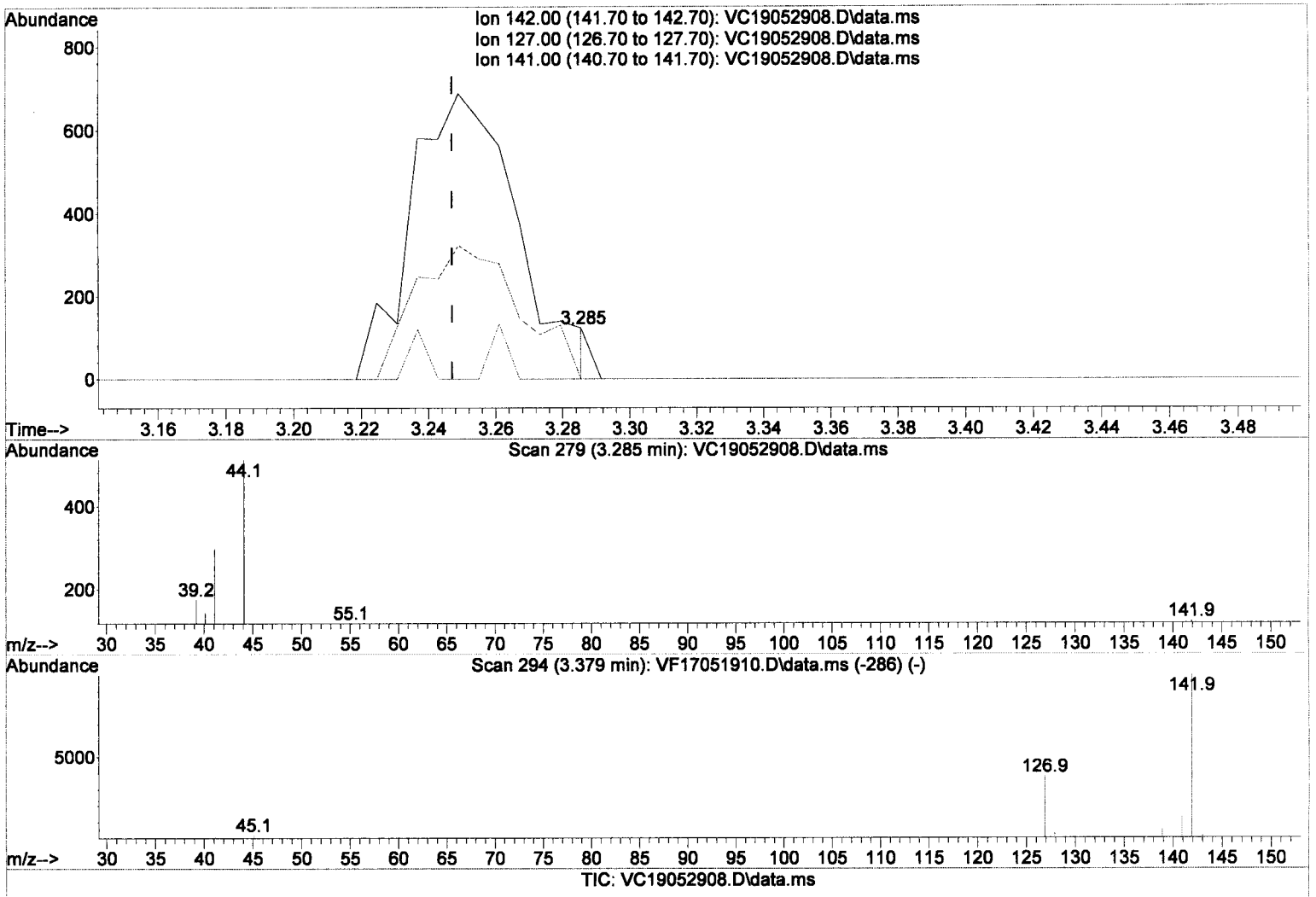
Method Name: C:\msdchem\1\METHODS\VC190529S.M
Calibration Table Last Updated: Thu May 30 14:50:00 2019

Int = 0.74 ✓

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\requant\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 14:51:31 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

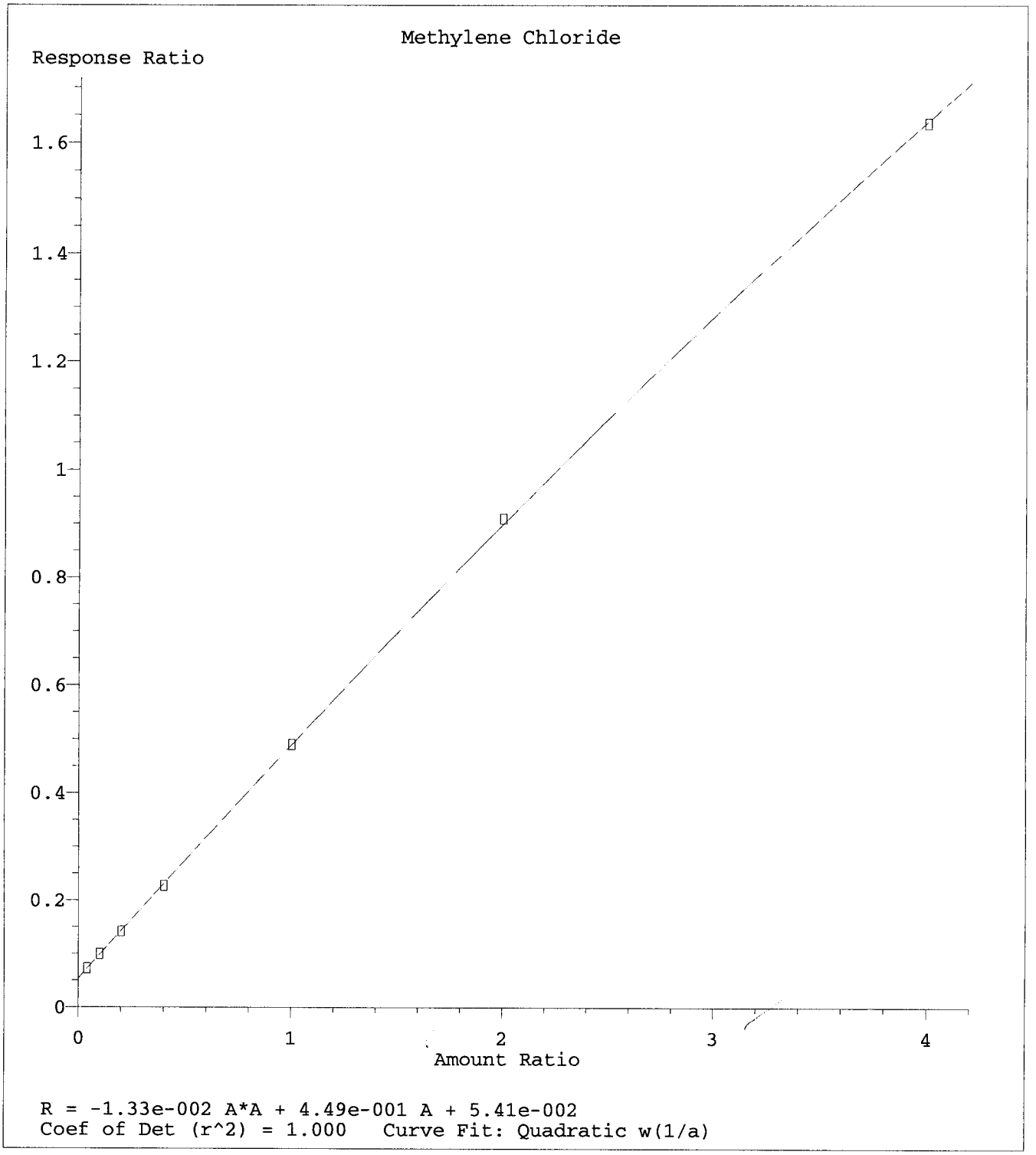


(11) Iodomethane

3.285min (+0.038) 0.74 ug/L m

response 0

Ion	Exp%	Act%
142.00	100	0.00
127.00	35.00	0.00#
141.00	15.00	0.00#
0.00	0.00	0.00



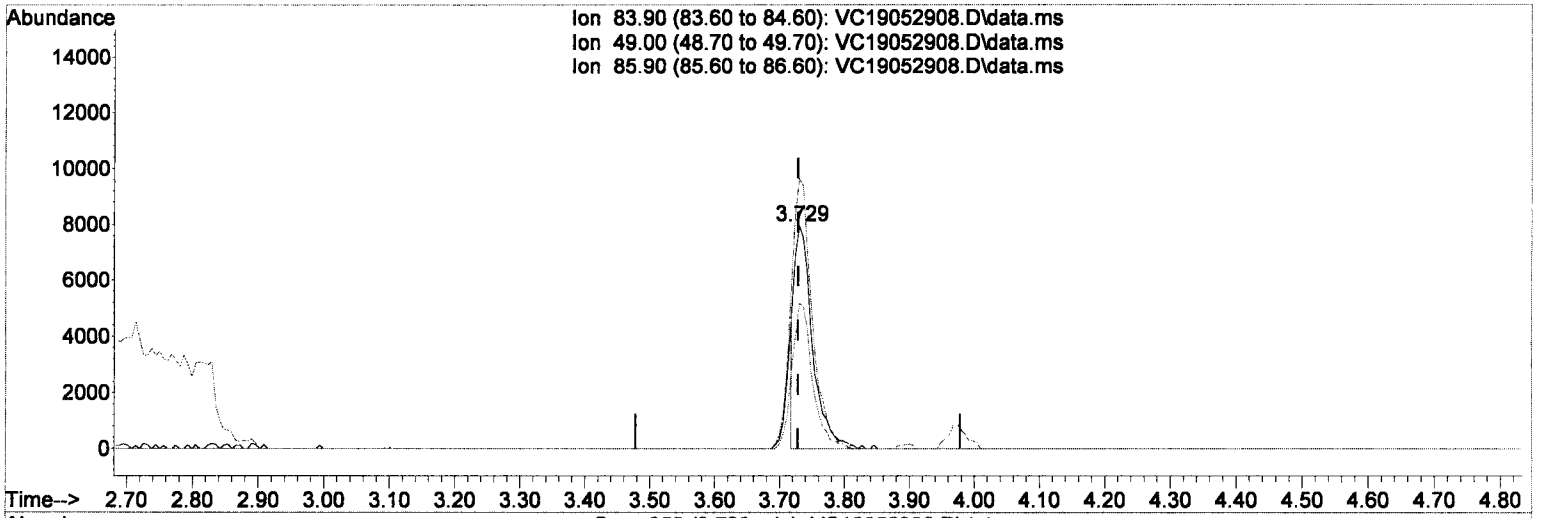
Method Name: C:\msdchem\1\METHODS\VC190529S.M
Calibration Table Last Updated: Thu May 30 14:50:00 2019

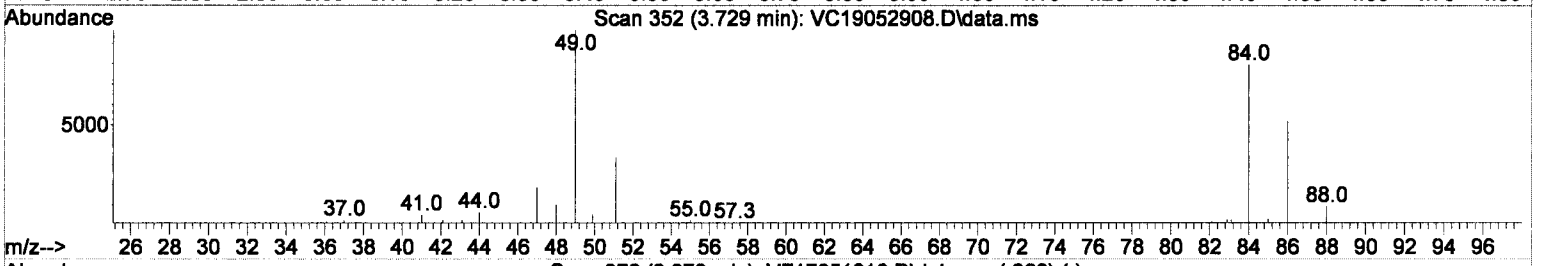
Int = (-)

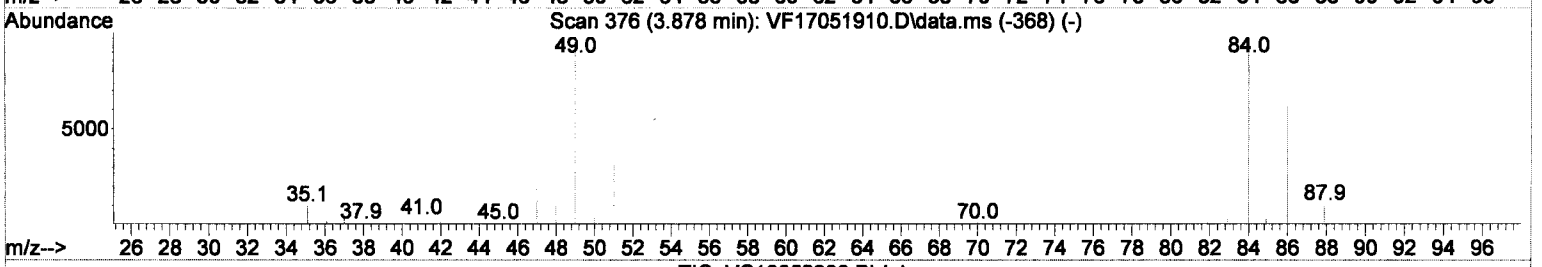
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\requant\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 14:51:31 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration







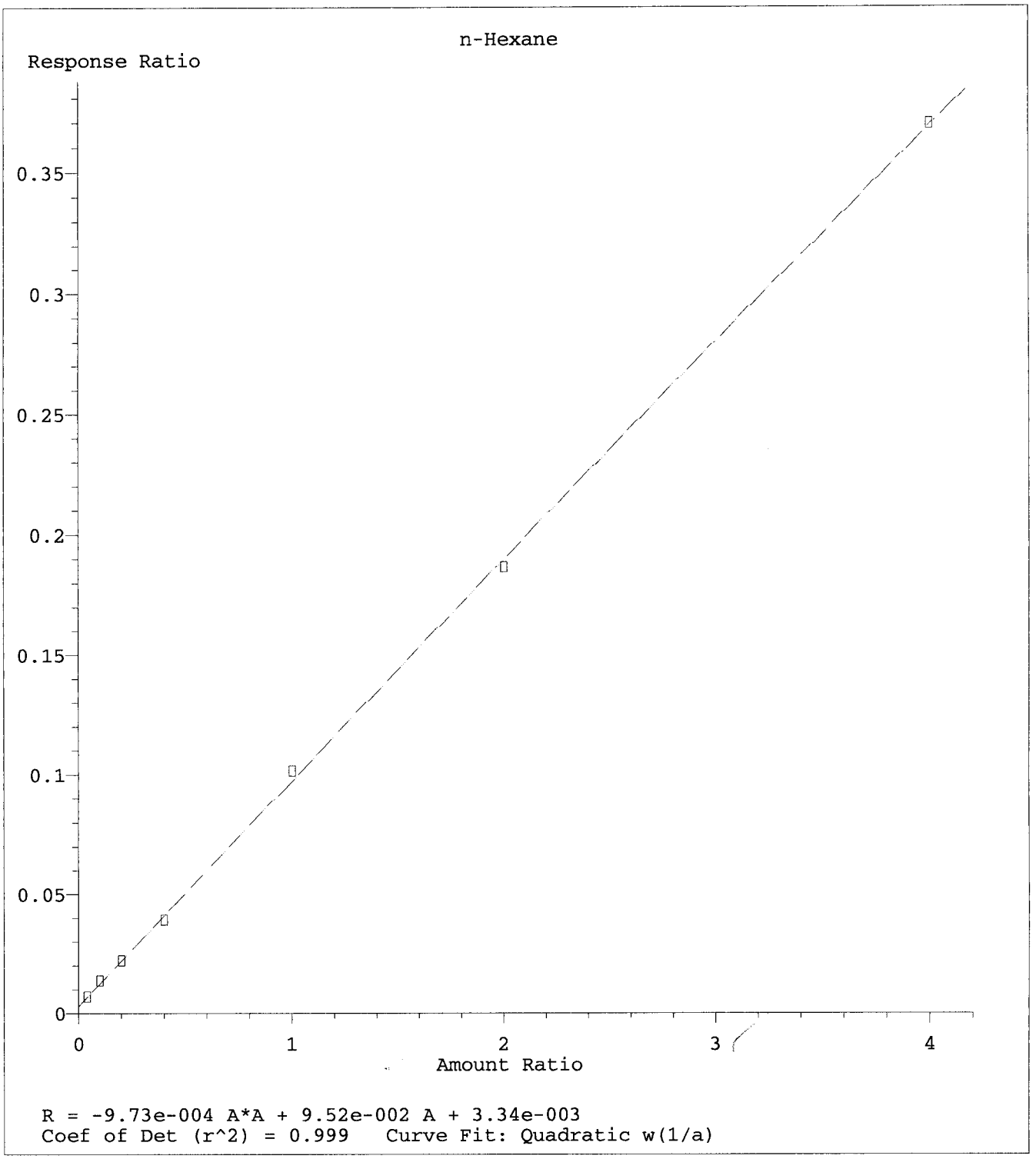
TIC: VC19052908.D\data.ms

(12) Methylene Chloride

3.729min (+0.001) 0.63 ug/L m

response 15220

Ion	Exp%	Act%
83.90	100	100
49.00	121.90	121.44
85.90	60.10	65.11
0.00	0.00	0.00



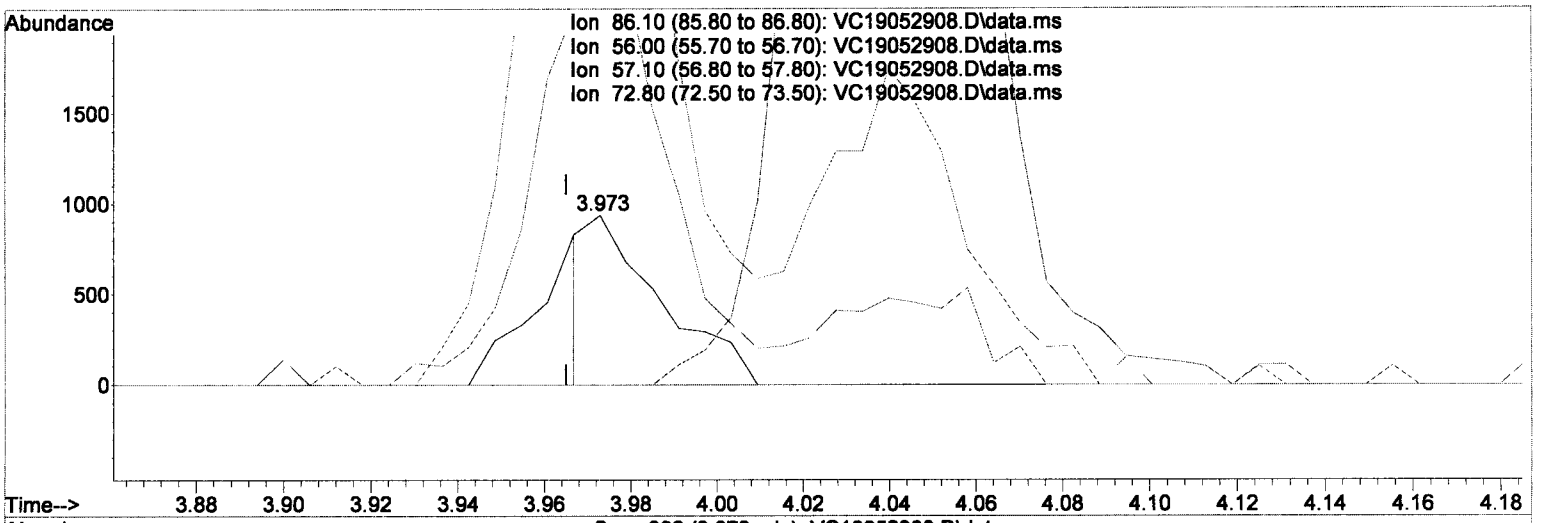
Method Name: C:\msdchem\1\METHODS\VC190529S.M
Calibration Table Last Updated: Thu May 30 14:50:00 2019

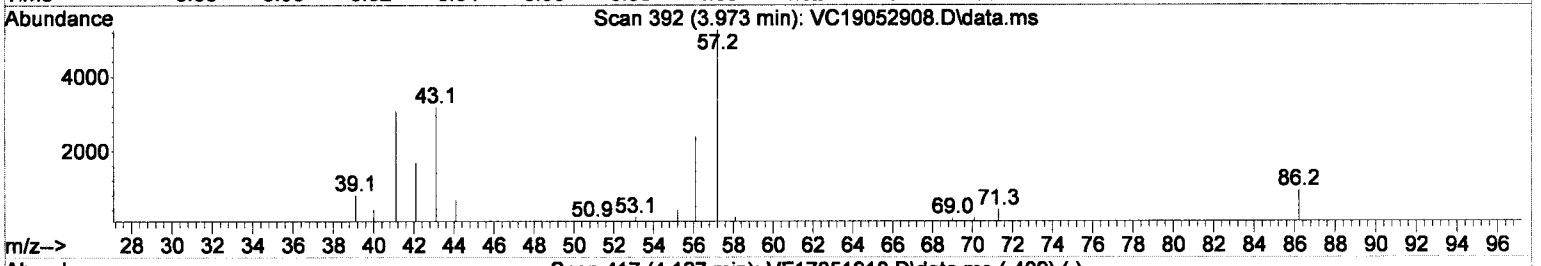
Int = (-)

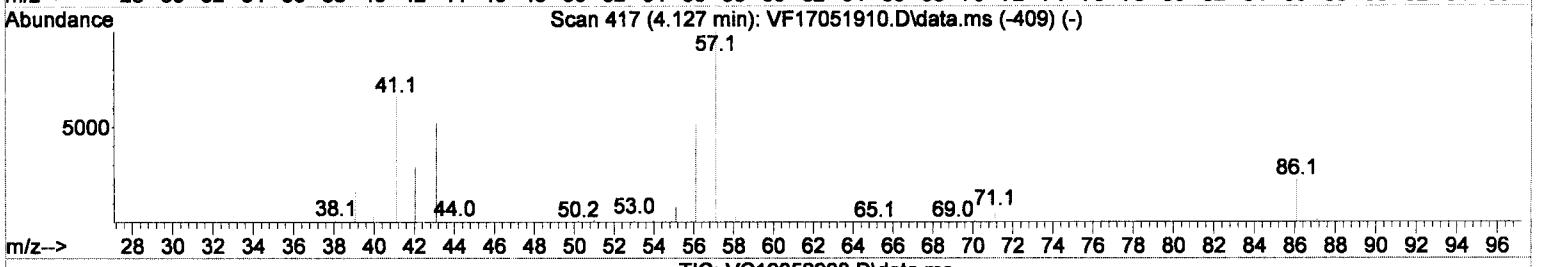
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\requant\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 14:51:31 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration







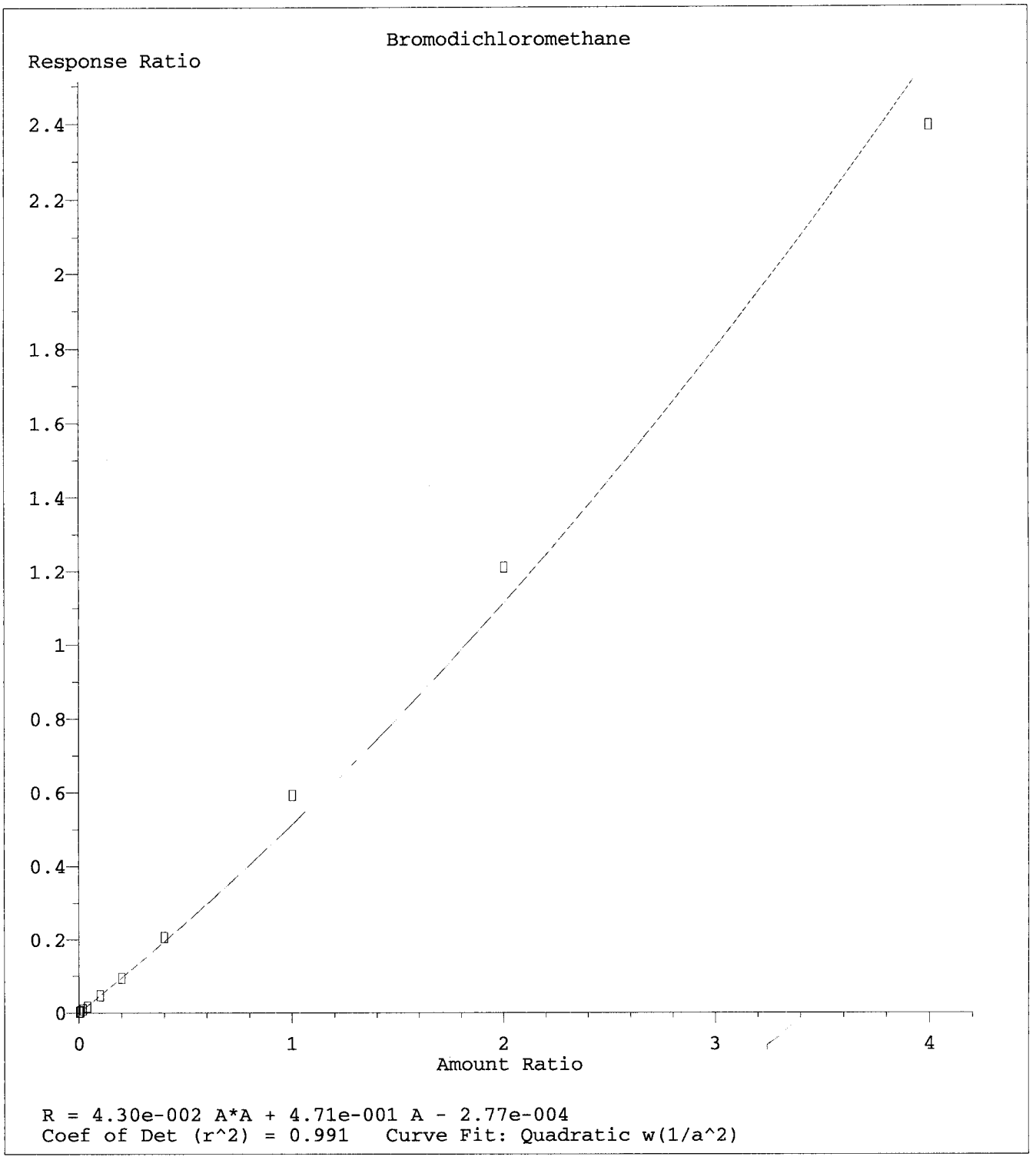
TIC: VC19052908.D\data.ms

(15) n-Hexane

3.973min (+0.008) 0.49 ug/L m

response 1088

Ion	Exp%	Act%
86.10	100	100
56.00	275.70	255.13#
57.10	523.30	562.18#
72.80	1.70	0.00



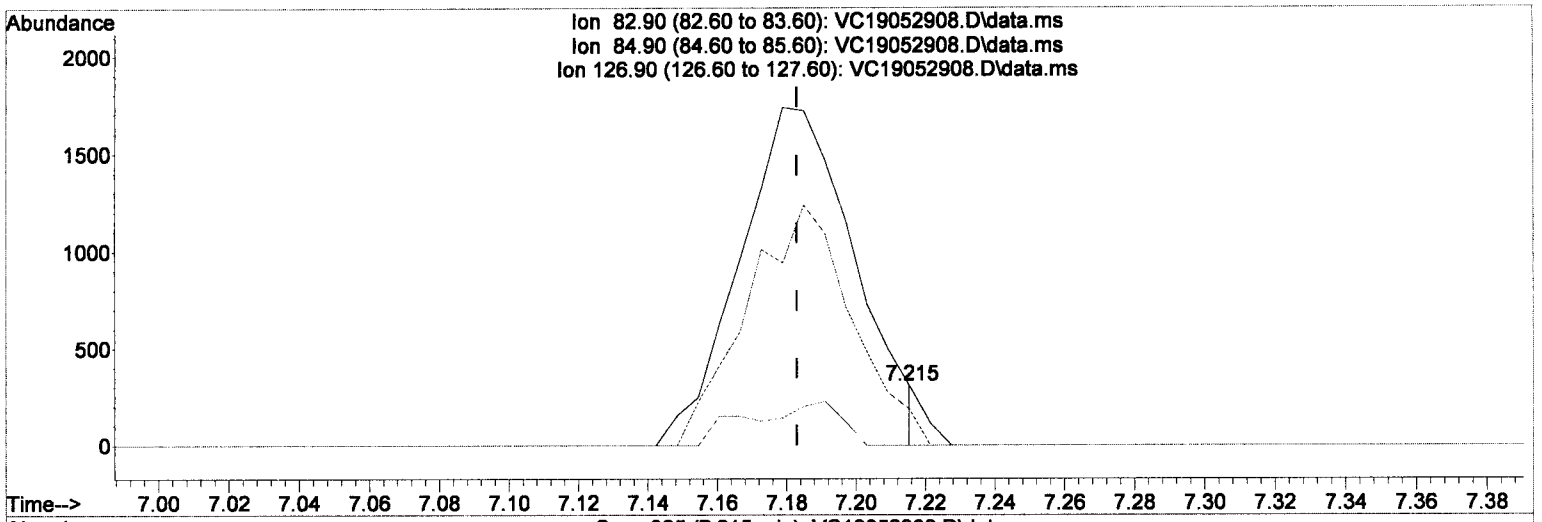
Method Name: C:\msdchem\1\METHODS\VC190529S.M
Calibration Table Last Updated: Thu May 30 14:50:00 2019

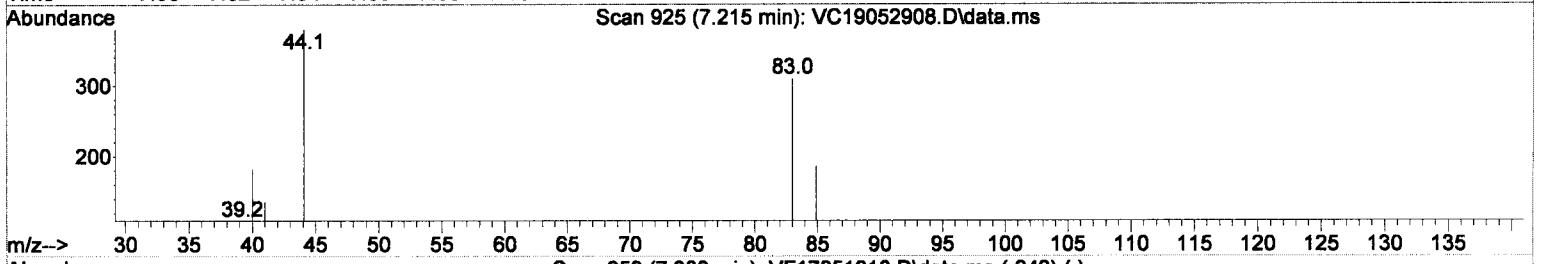
INT= 0.05

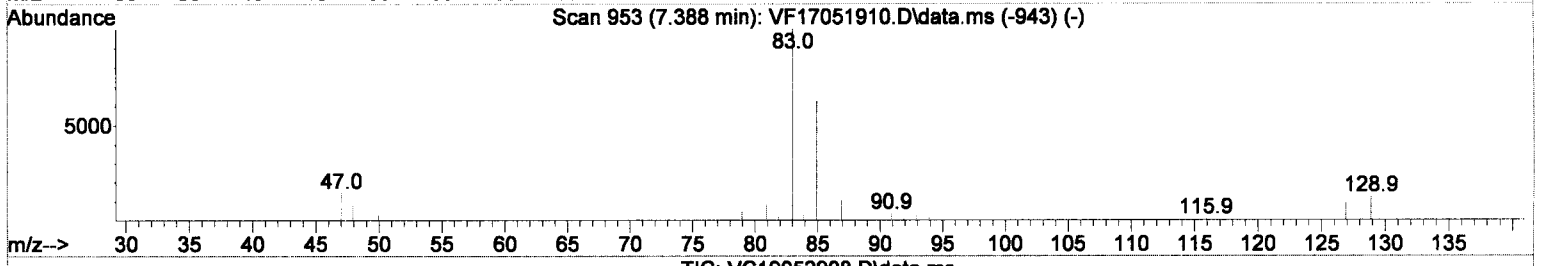
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\requant\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 14:51:31 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration







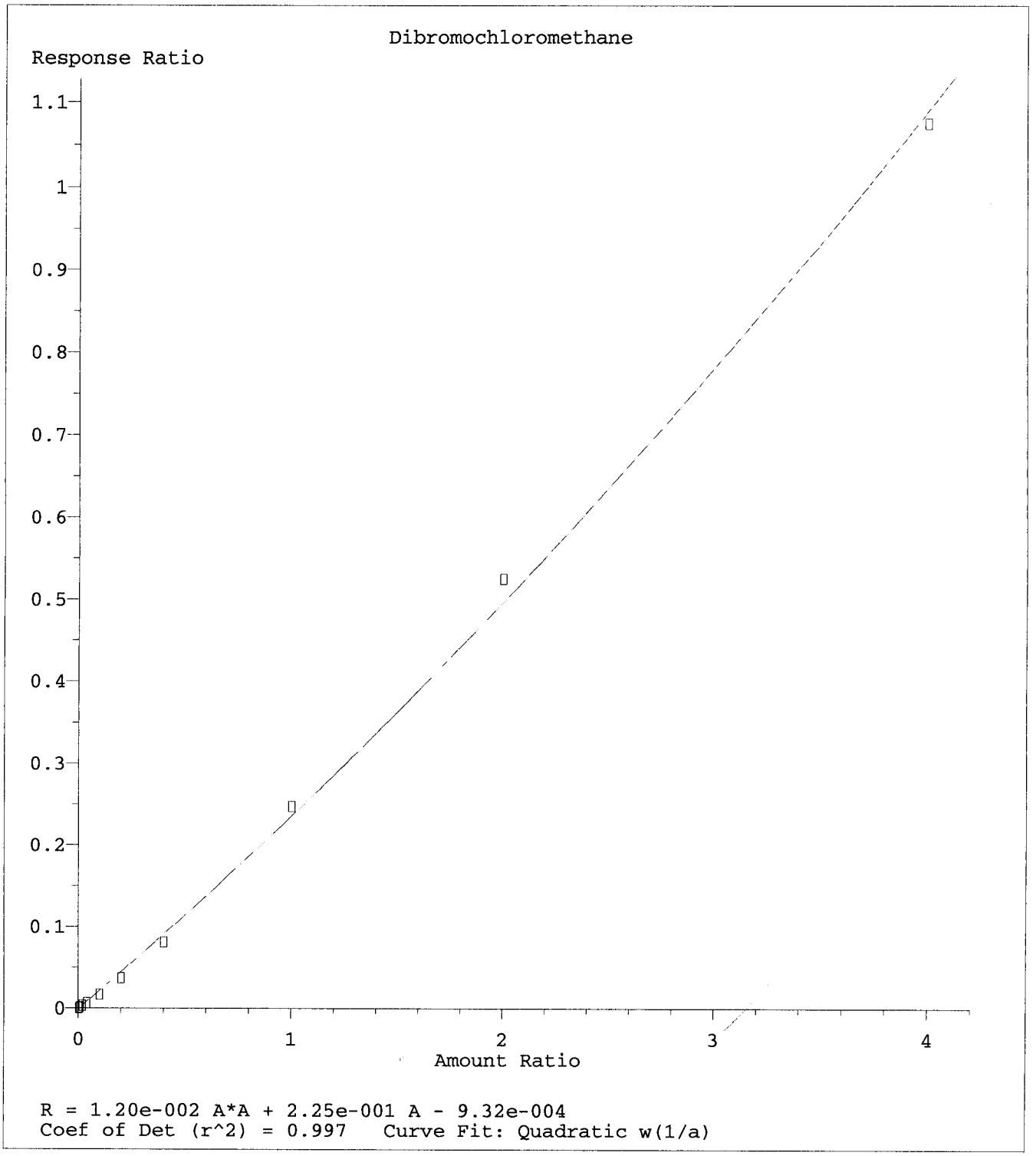
TIC: VC19052908.D\data.ms

(36) Bromodichloromethane

7.215min (+0.032) 0.05 ug/L m

response 41

Ion	Exp%	Act%
82.90	100	100
84.90	63.00	60.00
126.90	9.30	0.00
0.00	0.00	0.00



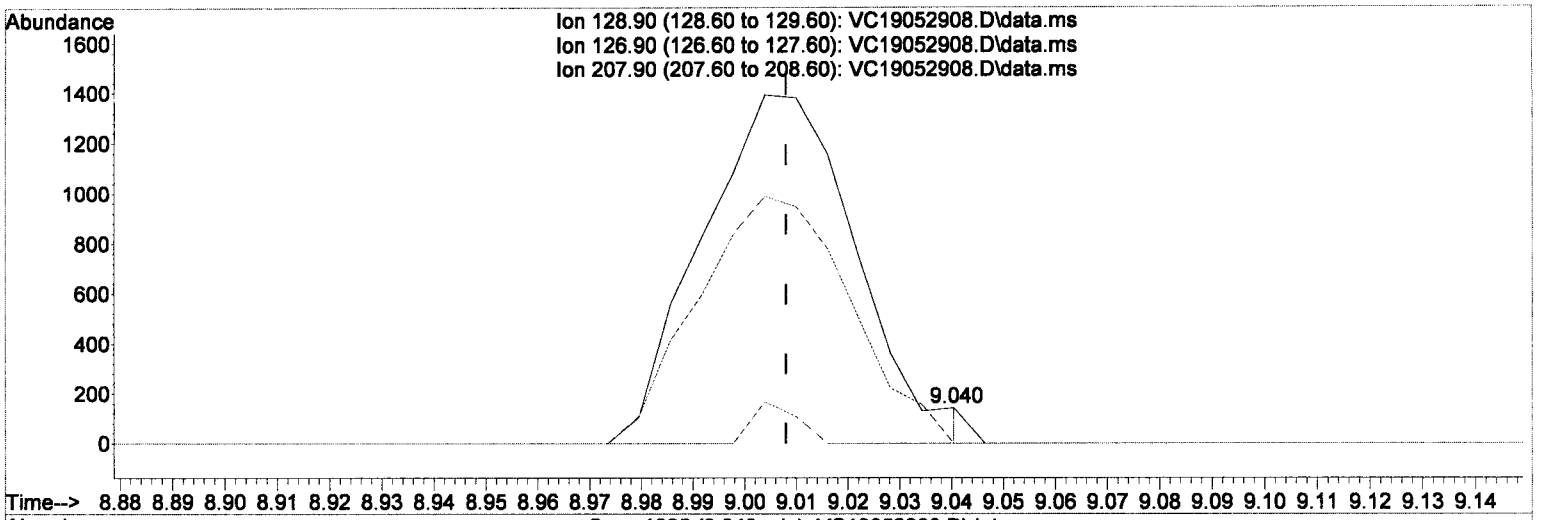
Method Name: C:\msdchem\1\METHODS\VC190529S.M
Calibration Table Last Updated: Thu May 30 14:50:00 2019

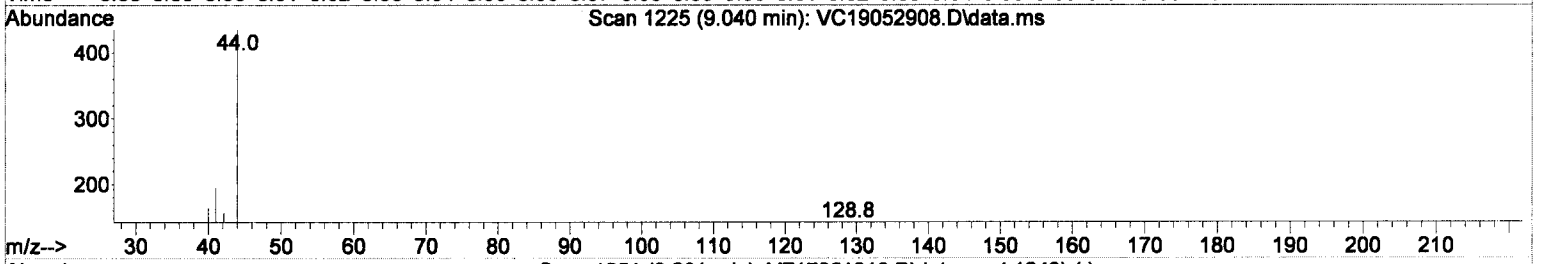
Int = 0.21

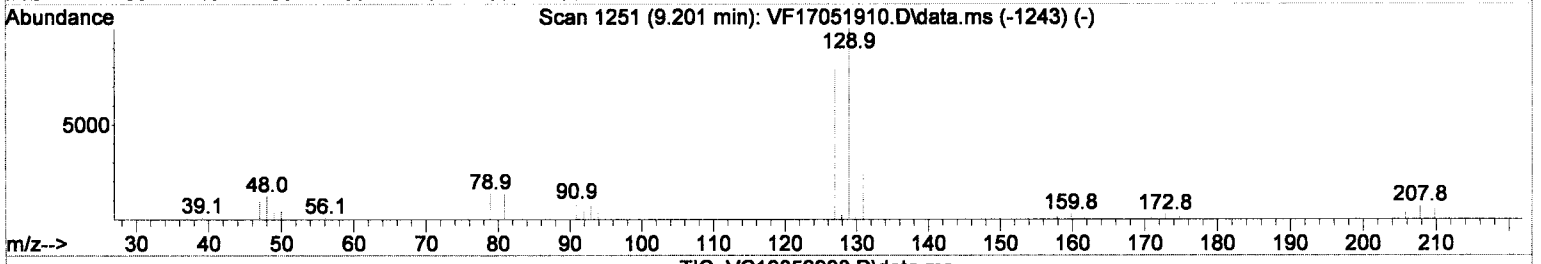
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\requant\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 14:51:31 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration







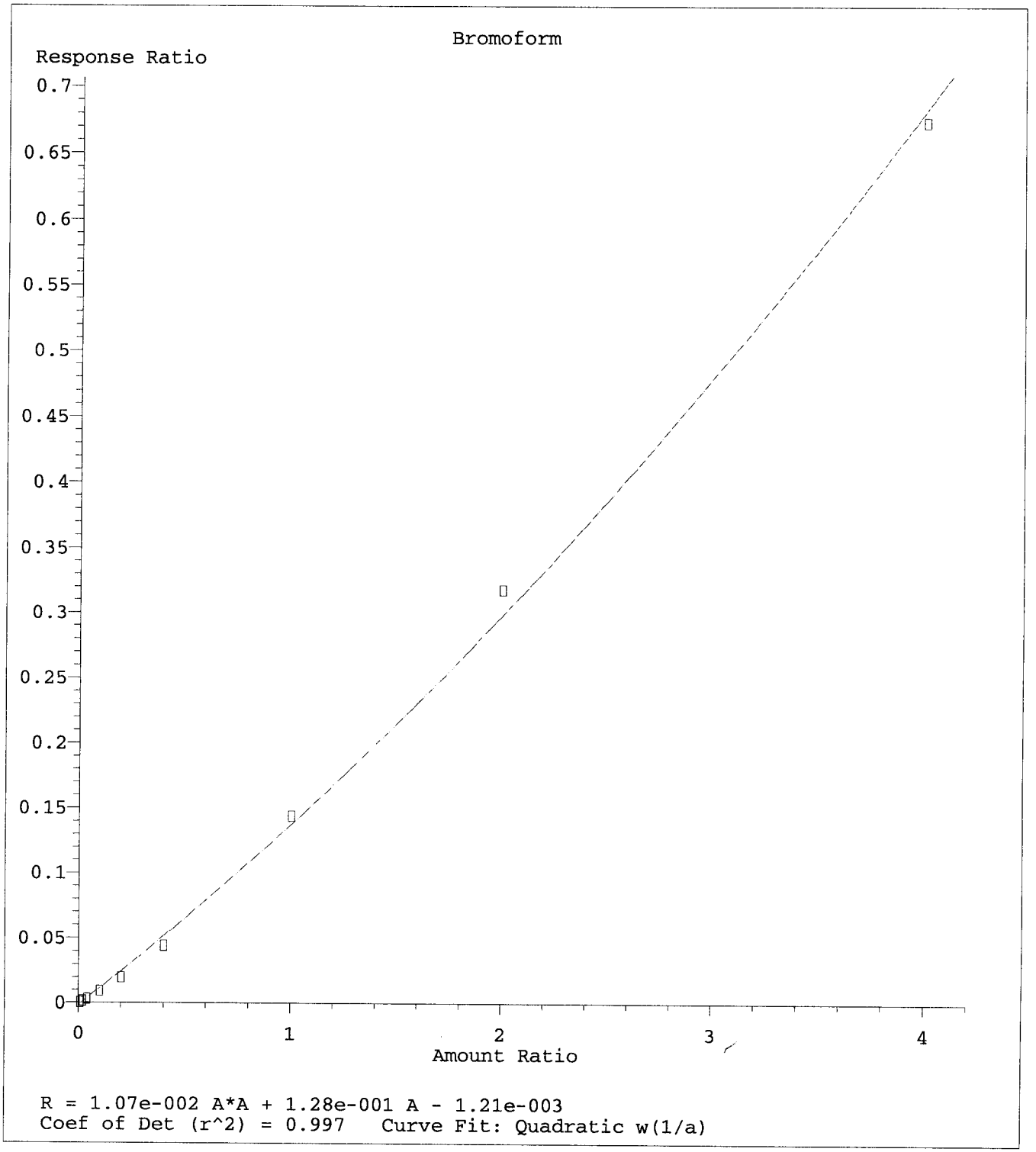
TIC: VC19052908.D\data.ms

(45) Dibromochloromethane

9.040min (+0.032) 0.21 ug/L m

response 0

Ion	Exp%	Act%
128.90	100	0.00
126.90	81.20	0.00#
207.90	7.40	0.00
0.00	0.00	0.00



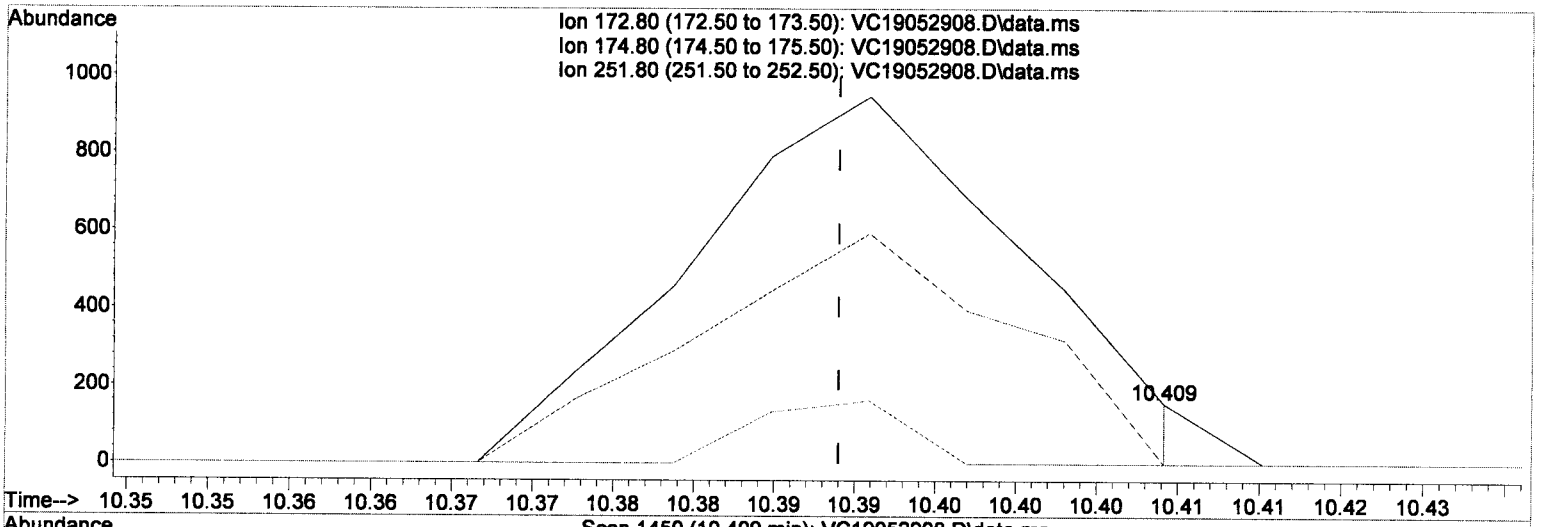
Method Name: C:\msdchem\1\METHODS\VC190529S.M
Calibration Table Last Updated: Thu May 30 14:50:00 2019

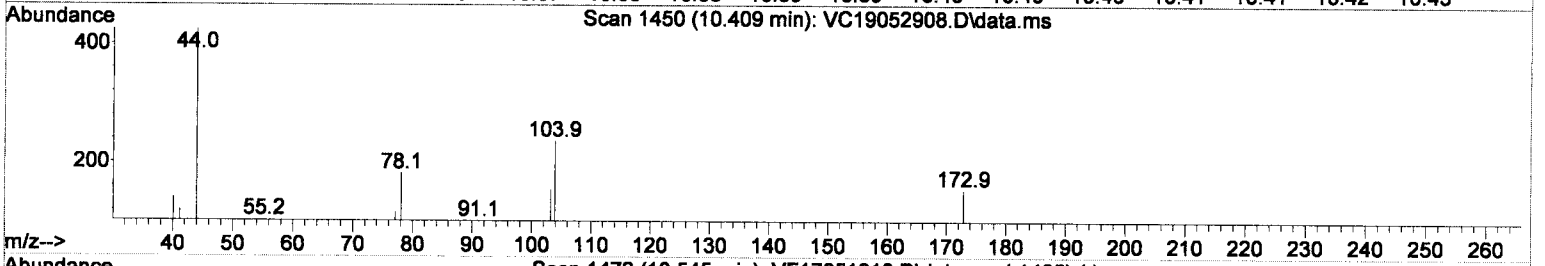
Int = 0.47

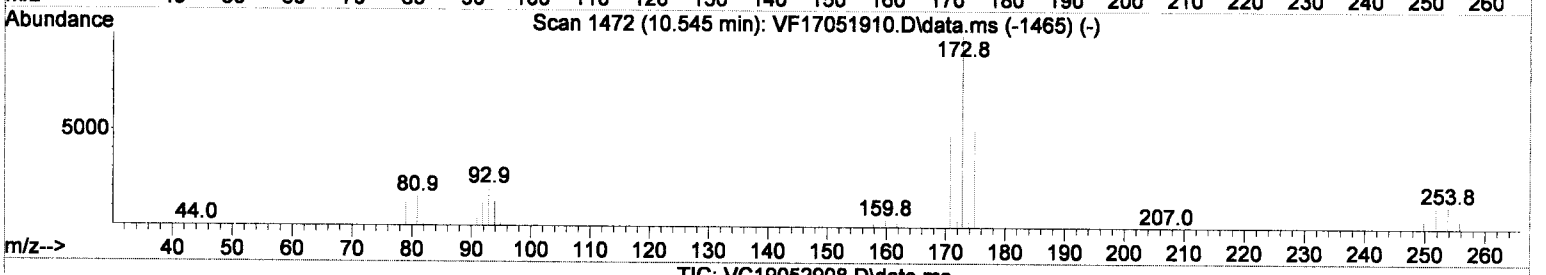
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\requant\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 14:51:31 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration







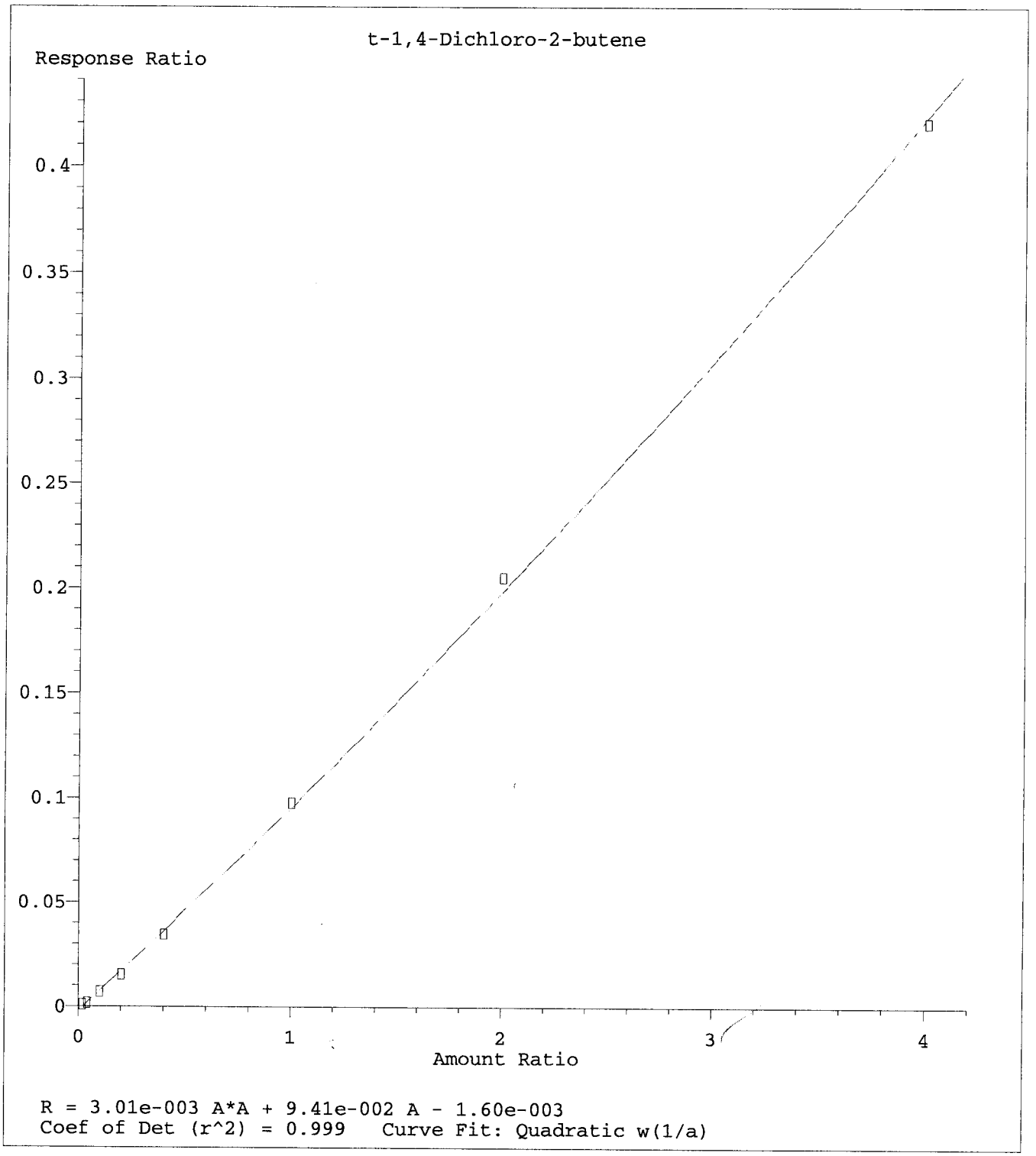
TIC: VC19052908.D\data.ms

(55) Bromoform (P)

10.409min (+0.020) 0.47 ug/L m

response 0

Ion	Exp%	Act%
172.80	100	0.00
174.80	49.10	0.00#
251.80	12.50	0.00
0.00	0.00	0.00



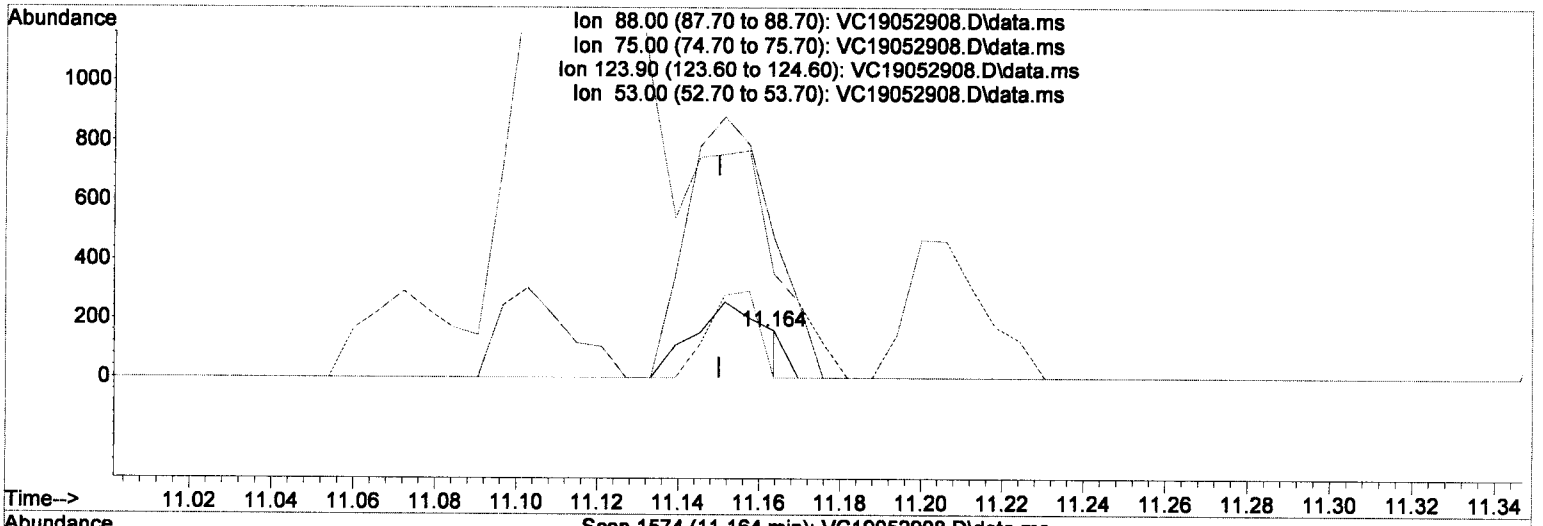
Method Name: C:\msdchem\1\METHODS\VC190529S.M
Calibration Table Last Updated: Thu May 30 14:50:00 2019

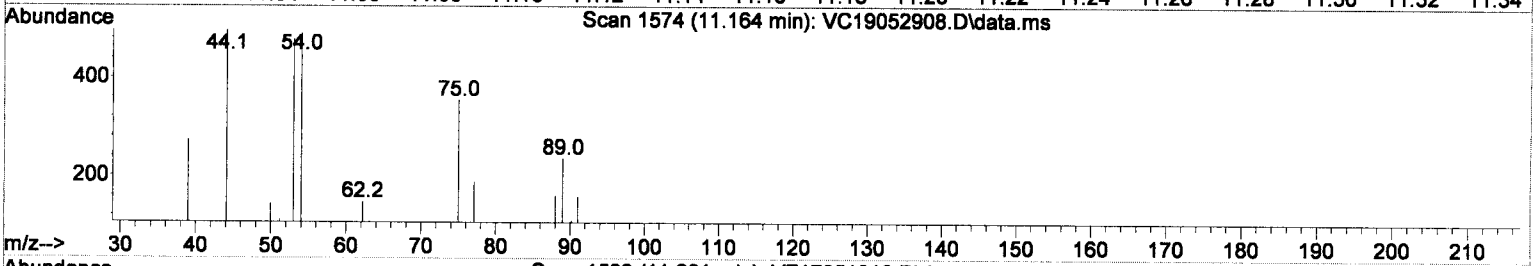
Int=0.85

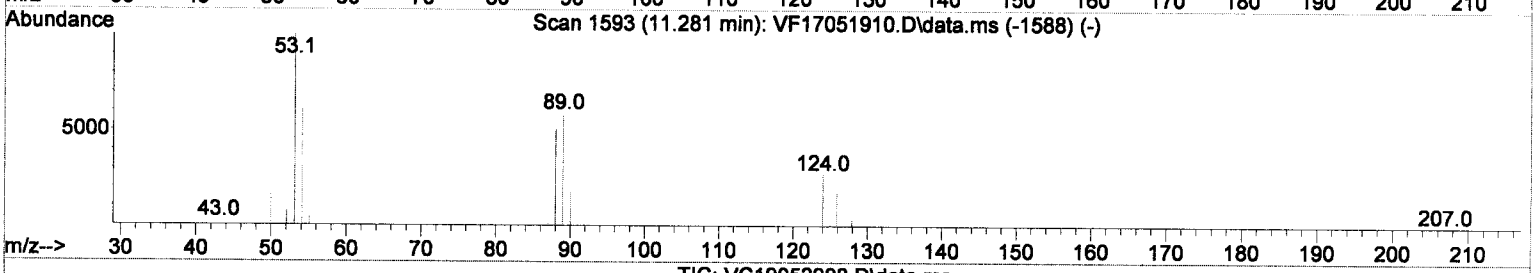
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\requant\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 14:51:31 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration







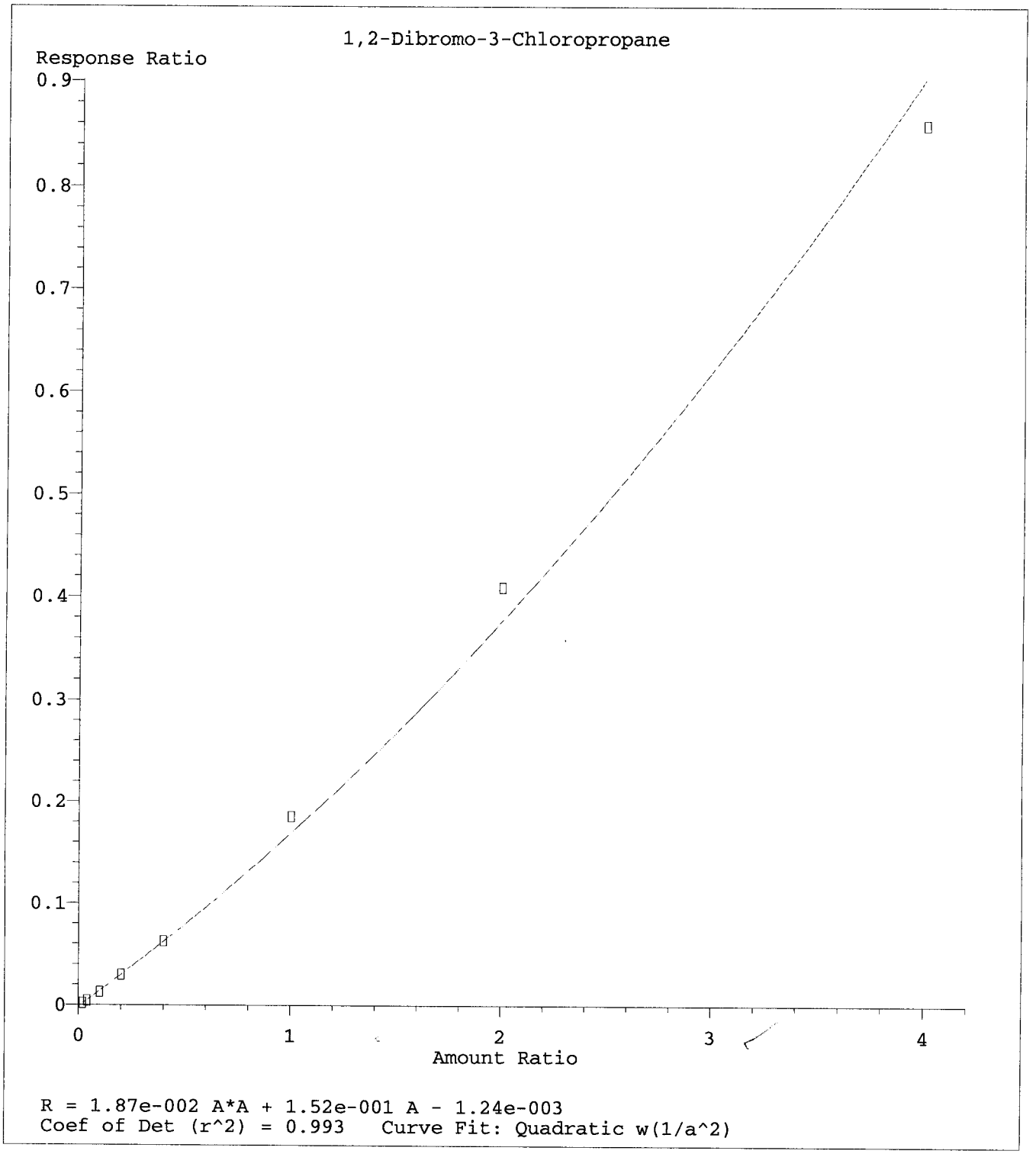
TIC: VC19052908.D\data.ms

(65) t-1,4-Dichloro-2-butene

11.164min (+0.014) 0.85 ug/L m

response 0

Ion	Exp%	Act%
88.00	100	0.00
75.00	240.20	0.00#
123.90	48.30	0.00#
53.00	249.20	0.00#



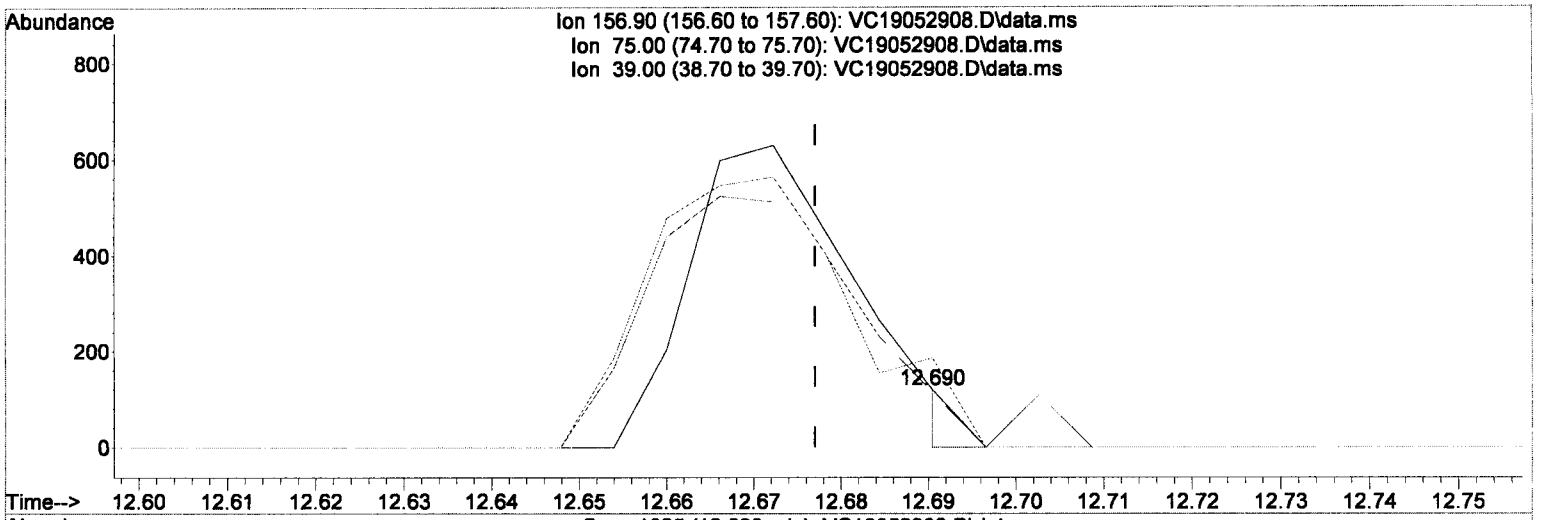
Method Name: C:\msdchem\1\METHODS\VC190529S.M
Calibration Table Last Updated: Thu May 30 14:50:00 2019

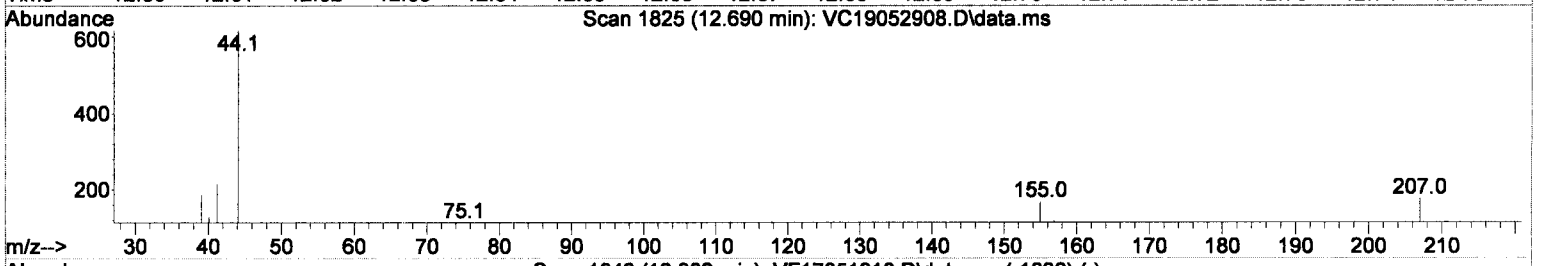
Int- 0.41

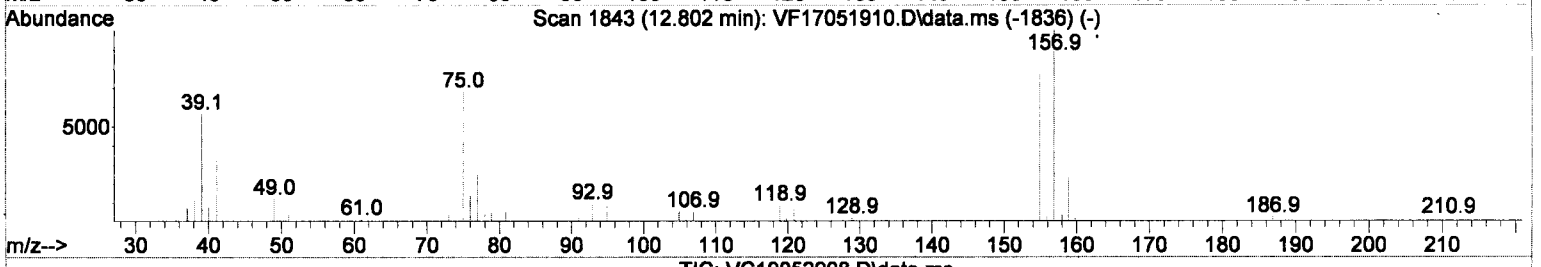
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\requant\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 14:51:31 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration







TIC: VC19052908.D\data.ms

(75) 1,2-Dibromo-3-Chloropropane

12.690min (+0.013) 0.41 ug/L m

response 0

Ion	Exp%	Act%
156.90	100	0.00
75.00	79.00	0.00#
39.00	63.10	0.00#
0.00	0.00	0.00

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9E29058

Analysis Included
8260C Full List
8260C Iodomethane Add On

INSTRUMENT SEQUENCE LOG

SampleID	SampleName	Matrix	STDID	ISTD_ID	Analyzed	
9E29058-TUN1	MS Tune	Soil		A19C135	5/29/2019	2:45:00PM
9E29058-ICB1	Initial Cal Blank	Soil		A19C135	5/29/2019	3:12:00PM
9E29058-CAL1	Cal Standard	Soil	A19E361	"	5/29/2019	3:40:00PM
9E29058-CAL2	Cal Standard	Soil	A19E362	"	5/29/2019	4:07:00PM
9E29058-CAL3	Cal Standard	Soil	A19E363	"	5/29/2019	4:35:00PM
9E29058-CAL4	Cal Standard	Soil	A19E364	"	5/29/2019	5:02:00PM
9E29058-CAL5	Cal Standard	Soil	A19E365	"	5/29/2019	5:30:00PM
9E29058-CAL6	Cal Standard	Soil	A19E366	"	5/29/2019	5:57:00PM
9E29058-CAL7	Cal Standard	Soil	A19E367	"	5/29/2019	6:25:00PM
9E29058-CAL8	Cal Standard	Soil	A19E368	"	5/29/2019	6:52:00PM
9E29058-CAL9	Cal Standard	Soil	A19E369	"	5/29/2019	7:20:00PM
9E29058-CALA	Cal Standard	Soil	A19E370	"	5/29/2019	8:15:00PM
9E29058-CALB	Cal Standard	Soil	A19E371	"	5/29/2019	9:10:00PM
9E29058-ICV1	Initial Cal Check	Soil	A19D180	"	5/29/2019	10:32:00PM

CALIBRATION STANDARD RECOVERIES

Calibration: **A9E3104** Instrument: **VOA-GCMS3**

8260C Full List Sequence: **9E29058** Matrix: **Soil**

9E29058-CAL1	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E29058-CAL2	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E29058-CAL3	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E29058-CAL4	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E29058-CAL5	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E29058-CAL6	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E29058-CAL7	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E29058-CAL8	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E29058-CAL9	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E29058-CALA	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E29058-CALB	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9E29058

Compounds listed above have recalculated recoveries outside 70-130% of the true values, and the calibration levels are above the reporting level. If no compounds are listed, all are OK. Please see the next section for quadatic fit compounds.

Analytes With Quadratic Curve Fits

Qualifier	iMDL	iMRL	Spike Amt	%Difference	OK?	Raise MRL to ?
				———	☐	☐ ———

Analytes listed above have quadratic curve fits. If they are using a weighting otpion, they must be checked against the requanted curve points to determine if the recalculated results are within limits (70-130 or as specified).

ICV RECOVERIES

Calibration: **A9E3104** Instrument: **VOA-GCMS3**

8260C Full List Sequence: **9E29058** Matrix: **Soil**

9E29058-ICV1	Inst. MRL	ICV Level	Result	%Rec.	Qual

Compounds listed above have Initial Calibration Verification standard recoveries outside 70-130% of the true values. If no compounds are listed, all have passing recoveries.

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052919.D
Acq On : 29 May 2019 10:32 pm
Operator : TB
Sample : 9E29058-ICV1
Misc : 1X 5mL 20ppb VOC DI+MeOH
ALS Vial : 19 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:45 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

5/30/19

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Pentafluorobenzene (I)	50.000	50.000	0.0	104	0.00
2		Dichlorodifluoromethane	20.000	16.601	17.0	88	0.00
3	P	Chloromethane	20.000	18.769	6.2	102	0.00
4	C	Vinyl Chloride	20.000	19.402	3.0	100	0.00
5		Bromomethane	20.000	20.910	-4.6	113	0.00
6		Chloroethane	20.000	21.410	-7.1	114	0.00
7		Trichlorofluoromethane	20.000	18.012	9.9	91	0.00
8	C	1,1-Dichloroethene	20.000	25.349	-26.7#	132	0.00
9		Carbon Disulfide	20.000	19.569	2.2	104	0.00
10		Freon 113	20.000	19.526	2.4	107	0.00
11		Iodomethane	20.000	15.925	20.4	95	0.00
12		Methylene Chloride	20.000	18.268	8.7	99	0.00
13		Acetone	40.000	40.374	-0.9	109	0.00
14		t-1,2-Dichloroethene	20.000	24.328	-21.6	125	0.00
15		n-Hexane	20.000	21.522	-7.6	117	0.00
16		Methyl-tert-butyl-ether	20.000	20.311	-1.6	105	0.00
17	P	1,1-Dichloroethane	20.000	24.105	-20.5	123	0.00
18		Acrylonitrile	20.000	20.919	-4.6	107	0.00
19		c-1,2-Dichloroethene	20.000	21.549	-7.7	111	0.00
20		2,2-Dichloropropane	20.000	19.541	2.3	101	0.00
21		Bromochloromethane	20.000	21.674	-8.4	111	0.00
22	C	Chloroform	20.000	20.682	-3.4	109	0.00
23		Carbon Tetrachloride	20.000	21.742	-8.7	113	0.00
24		Tetrahydrofuran	20.000	18.311	8.4	103	0.00
25		1,1,1-Trichloroethane	20.000	22.507	-12.5	114	0.00
26	S	Dibromofluoromethane (S)	50.000	52.205	-4.4	107	0.00
27		1,1-Dichloropropene	20.000	20.651	-3.3	110	0.00
28		2-Butanone (MEK)	40.000	40.499	-1.2	105	0.00
29		Benzene	20.000	21.213	-6.1	111	0.00
30		1,2-Dichloroethane (EDC)	20.000	21.381	-6.9	111	0.00
31		iso-Butyl Alcohol	500.000	505.534	-1.1	106	0.00
32	S	1,4-Difluorobenzene (S)	50.000	50.316	-0.6	104	0.00
33		Trichloroethene (TCE)	20.000	20.429	-2.1	110	0.00
34		Dibromomethane	20.000	21.333	-6.7	107	0.00
35	C	1,2-Dichloropropane	20.000	21.040	-5.2	107	0.00
36		Bromodichloromethane	20.000	21.954	-9.8	108	0.00
37		Chlorobenzene-d5 (I)	50.000	50.000	0.0	104	0.00
38		c-1,3-Dichloropropene	20.000	21.998	-10.0	106	0.00
39	S	Toluene-d8 (S)	50.000	49.494	1.0	103	0.00
40	C	Toluene	20.000	19.867	0.7	107	0.00
41		Tetrachloroethene (PCE)	20.000	19.350	3.2	108	0.00
42		4-Methyl-2-Pentanone (MIBK)	40.000	38.786	3.0	106	0.00
43		t-1,3-Dichloropropene	20.000	21.766	-8.8	108	0.00
44		1,1,2-Trichloroethane	20.000	21.448	-7.2	109	0.00
45		Dibromochloromethane	20.000	18.920	5.4	111	0.00
46		1,3-Dichloropropane	20.000	20.691	-3.5	106	0.00
47		1,2-Dibromoethane (EDB)	20.000	21.849	-9.2	109	0.00
48		2-Hexanone	40.000	40.703	-1.8	105	0.00
49	P	Chlorobenzene	20.000	20.140	-0.7	108	0.00
50	C	Ethylbenzene	20.000	19.824	0.9	105	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052919.D
Acq On : 29 May 2019 10:32 pm
Operator : TB
Sample : 9E29058-ICV1
Misc : 1X 5mL 20ppb VOC DI+MeOH
ALS Vial : 19 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:45 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
51		1,1,1,2-Tetrachloroethane	20.000	22.006	-10.0	109	0.00
52		m,p-Xylenes (2)	40.000	40.543	-1.4	105	0.00
53		o-Xylene	20.000	20.062	-0.3	105	0.00
54		Styrene	20.000	21.470	-7.3	104	0.00
55	P	Bromoform	20.000	18.669	6.7	114	0.00
56		Isopropylbenzene	20.000	19.716	1.4	103	0.00
57	I	1,4-Dichlorobenzene-d4 (I)	50.000	50.000	0.0	104	0.00
58	S	4-Bromofluorobenzene (S)	50.000	50.070	-0.1	104	0.00
59		Bromobenzene	20.000	21.439	-7.2	110	0.00
60		n-Propylbenzene	20.000	19.707	1.5	104	0.00
61	P	1,1,2,2-Tetrachloroethane	20.000	21.542	-7.7	108	0.00
62		2-Chlorotoluene	20.000	20.119	-0.6	106	0.00
63		1,3,5-Trimethylbenzene	20.000	20.761	-3.8	106	0.00
64		1,2,3-Trichloropropane	20.000	20.337	-1.7	104	0.00
65		t-1,4-Dichloro-2-butene	20.000	19.171	4.1	106	0.00
66		4-Chlorotoluene	20.000	20.304	-1.5	107	0.00
67		tert-Butylbenzene	20.000	19.432	2.8	104	0.00
68		1,2,4-Trimethylbenzene	20.000	20.219	-1.1	104	0.00
69		sec-Butylbenzene	20.000	20.188	-0.9	106	0.00
70		4-Isopropyltoluene	20.000	21.024	-5.1	109	0.00
71		1,3-Dichlorobenzene	20.000	19.621	1.9	107	0.00
72		1,4-Dichlorobenzene	20.000	19.523	2.4	107	0.00
73		n-Butylbenzene	20.000	20.206	-1.0	108	0.00
74		1,2-Dichlorobenzene	20.000	19.718	1.4	106	0.00
75		1,2-Dibromo-3-Chloropropane	20.000	20.020	-0.1	104	0.00
76		Hexachlorobutadiene	20.000	21.571	-7.9	108	0.00
77		1,2,4-Trichlorobenzene	20.000	20.935	-4.7	111	0.00
78		Naphthalene	20.000	21.666	-8.3	106	0.00
79		1,2,3-Trichlorobenzene	20.000	20.922	-4.6	105	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1

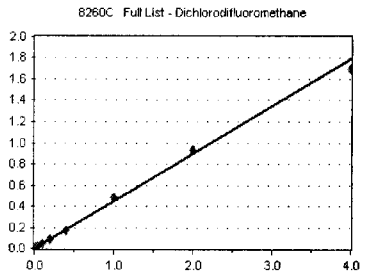
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

Dichlorodifluoromethane

Curve Fit: **AVERAGE RF**

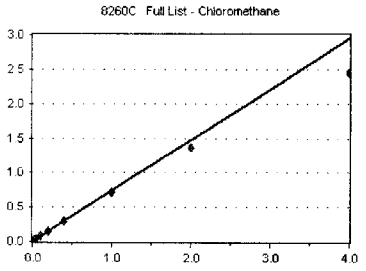


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	475	0.462	1.67
9E29058-CAL3	0.4	840	0.413	1.66
9E29058-CAL4	1	2045	0.416	1.66
9E29058-CAL5	2	4563	0.448	1.67
9E29058-CAL6	5	12196	0.479	1.67
9E29058-CAL7	10	22760	0.453	1.66
9E29058-CAL8	20	45253	0.441	1.66
9E29058-CAL9	50	122313	0.488	1.66
9E29058-CALA	100	241195	0.463	1.65
9E29058-CALB	200	453681	0.426	1.66

AVE RF **0.449** RF RSD **5.63** AVE RT **1.66**

Chloromethane

Curve Fit: **AVERAGE RF**

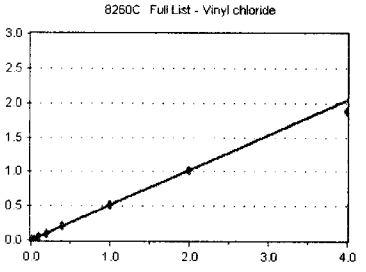


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~835~~	~~1.607~~	~~1.86~~
~~9E29058-CAL2~~	~~0.2~~	~~1572~~	~~1.531~~	~~1.87~~
9E29058-CAL3	0.4	1870	0.919	1.86
9E29058-CAL4	1	3872	0.788	1.86
9E29058-CAL5	2	7629	0.748	1.86
9E29058-CAL6	5	19122	0.751	1.86
9E29058-CAL7	10	35625	0.710	1.86
9E29058-CAL8	20	72826	0.710	1.86
9E29058-CAL9	50	179217	0.715	1.86
9E29058-CALA	100	355923	0.683	1.85
9E29058-CALB	200	652609	0.612	1.86

AVE RF **0.737** RF RSD **11.42** AVE RT **1.86**

Vinyl chloride

Curve Fit: **AVERAGE RF**

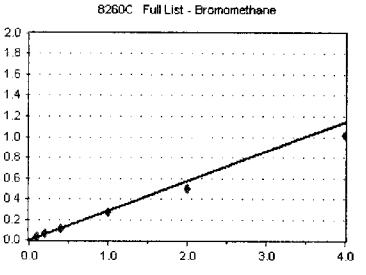


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	515	0.501	1.95
9E29058-CAL3	0.4	1058	0.520	1.96
9E29058-CAL4	1	2495	0.508	1.95
9E29058-CAL5	2	5260	0.516	1.95
9E29058-CAL6	5	13474	0.529	1.95
9E29058-CAL7	10	25219	0.502	1.94
9E29058-CAL8	20	52612	0.513	1.95
9E29058-CAL9	50	132089	0.527	1.95
9E29058-CALA	100	265790	0.510	1.94
9E29058-CALB	200	501566	0.470	1.94

AVE RF **0.510** RF RSD **3.26** AVE RT **1.95**

Bromomethane

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~1488~~	~~2.863~~	~~2.31~~
~~9E29058-CAL2~~	~~0.2~~	~~1803~~	~~1.756~~	~~2.31~~
~~9E29058-CAL3~~	~~0.4~~	~~2178~~	~~1.071~~	~~2.31~~
~~9E29058-CAL4~~	~~1~~	~~2456~~	~~0.500~~	~~2.30~~
~~9E29058-CAL5~~	~~2~~	~~4475~~	~~0.439~~	~~2.31~~
9E29058-CAL6	5	9080	0.356	2.31
9E29058-CAL7	10	16179	0.322	2.30
9E29058-CAL8	20	28393	0.277	2.30
9E29058-CAL9	50	66982	0.267	2.30
9E29058-CALA	100	130087	0.250	2.30
9E29058-CALB	200	269576	0.253	2.29

AVE RF **0.287** RF RSD **14.87** AVE RT **2.30**

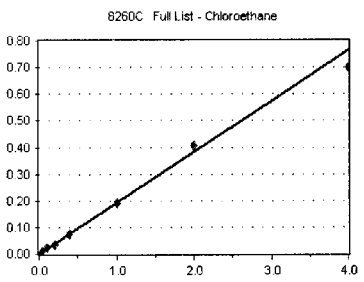
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

Chloroethane

Curve Fit: **AVERAGE RF**

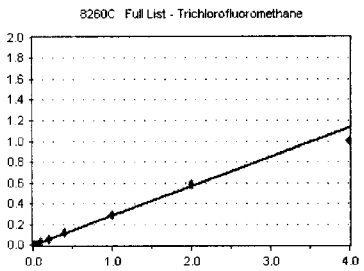


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL4~~	~~1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL5	2	2003	0.197	2.44
9E29058-CAL6	5	5245	0.206	2.45
9E29058-CAL7	10	9117	0.182	2.44
9E29058-CAL8	20	19192	0.187	2.45
9E29058-CAL9	50	47938	0.191	2.45
9E29058-CALA	100	105670	0.203	2.44
9E29058-CALB	200	187116	0.176	2.43

AVE RF **0.191** RF RSD **5.76** AVE RT **2.44**

Trichlorofluoromethane

Curve Fit: **AVERAGE RF**

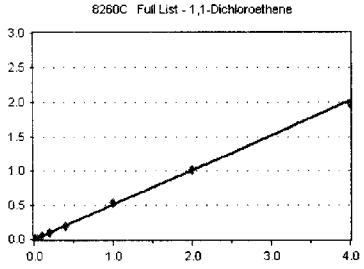


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL3	0.4	561	0.276	2.58
9E29058-CAL4	1	1421	0.289	2.57
9E29058-CAL5	2	2958	0.290	2.58
9E29058-CAL6	5	7697	0.302	2.58
9E29058-CAL7	10	13672	0.272	2.57
9E29058-CAL8	20	29898	0.291	2.58
9E29058-CAL9	50	73023	0.291	2.58
9E29058-CALA	100	152590	0.293	2.57
9E29058-CALB	200	268497	0.252	2.57

AVE RF **0.284** RF RSD **5.30** AVE RT **2.57**

1,1-Dichloroethene

Curve Fit: **AVERAGE RF**

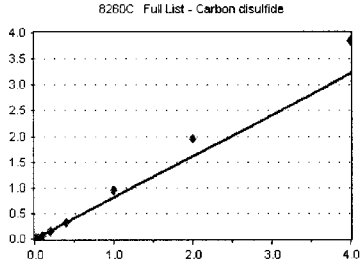


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	456	0.444	3.10
9E29058-CAL3	0.4	1130	0.556	3.11
9E29058-CAL4	1	2472	0.503	3.10
9E29058-CAL5	2	4891	0.480	3.10
9E29058-CAL6	5	13008	0.511	3.10
9E29058-CAL7	10	25751	0.513	3.09
9E29058-CAL8	20	51985	0.507	3.09
9E29058-CAL9	50	135031	0.538	3.10
9E29058-CALA	100	268375	0.515	3.09
9E29058-CALB	200	525278	0.493	3.09

AVE RF **0.506** RF RSD **6.03** AVE RT **3.10**

Carbon disulfide

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	835	0.813	3.12
9E29058-CAL3	0.4	1568	0.771	3.12
9E29058-CAL4	1	3330	0.678	3.11
9E29058-CAL5	2	6854	0.672	3.12
9E29058-CAL6	5	17910	0.703	3.11
9E29058-CAL7	10	36451	0.726	3.11
9E29058-CAL8	20	80999	0.789	3.11
9E29058-CAL9	50	237187	0.946	3.11
9E29058-CALA	100	506056	0.971	3.10
9E29058-CALB	200	1024014	0.960	3.10

AVE RF **0.803** RF RSD **14.57** AVE RT **3.11**

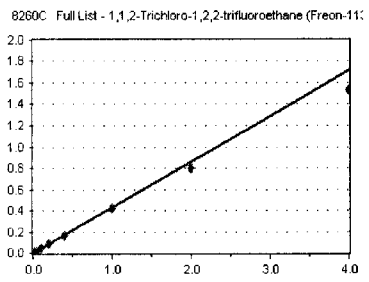
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

1,1,2-Trichloro-1,2,2-trifluoroetha

Curve Fit: **AVERAGE RF**

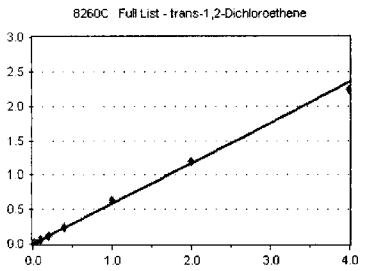


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	603	0.587	3.16
9E29058-CAL3	0.4	935	0.460	3.17
9E29058-CAL4	1	2147	0.437	3.14
9E29058-CAL5	2	3908	0.383	3.15
9E29058-CAL6	5	10435	0.410	3.15
9E29058-CAL7	10	20551	0.409	3.15
9E29058-CAL8	20	41761	0.407	3.15
9E29058-CAL9	50	104970	0.419	3.15
9E29058-CALA	100	207803	0.399	3.14
9E29058-CALB	200	409831	0.384	3.14

AVE RF **0.429** RF RSD **13.96** AVE RT **3.15**

trans-1,2-Dichloroethene

Curve Fit: **AVERAGE RF**

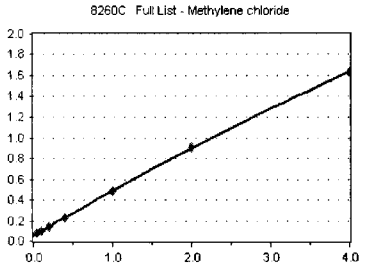


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	245	0.471	0.00
9E29058-CAL2	0.2	734	0.715	3.89
9E29058-CAL3	0.4	1162	0.571	3.90
9E29058-CAL4	1	2611	0.532	3.89
9E29058-CAL5	2	5764	0.565	3.89
9E29058-CAL6	5	15650	0.614	3.89
9E29058-CAL7	10	30362	0.605	3.88
9E29058-CAL8	20	61167	0.596	3.88
9E29058-CAL9	50	157053	0.626	3.89
9E29058-CALA	100	311743	0.598	3.88
9E29058-CALB	200	595457	0.559	3.88

AVE RF **0.587** RF RSD **10.38** AVE RT **3.54**

Methylene chloride

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

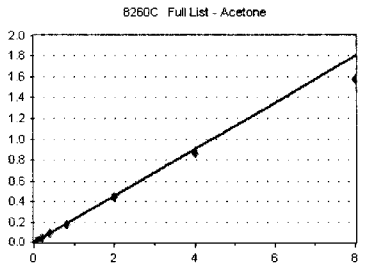


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~5028~~	~~9.674~~	~~3.72~~
~~9E29058-CAL2~~	~~0.2~~	~~14589~~	~~14.205~~	~~3.73~~
~~9E29058-CAL3~~	~~0.4~~	~~15095~~	~~7.421~~	~~3.73~~
~~9E29058-CAL4~~	~~1~~	~~15763~~	~~3.210~~	~~3.73~~
9E29058-CAL5	2	18469	1.812	3.73
9E29058-CAL6	5	25250	0.991	3.74
9E29058-CAL7	10	35620	0.710	3.72
9E29058-CAL8	20	58329	0.568	3.73
9E29058-CAL9	50	122804	0.490	3.73
9E29058-CALA	100	236890	0.454	3.72
9E29058-CALB	200	435629	0.409	3.72

AVE RF **0.776** RF RSD **64.14** AVE RT **3.73**

Acetone

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL3~~	~~0.8~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL4~~	~~2~~	~~3386~~	~~0.345~~	~~3.86~~
9E29058-CAL5	4	5795	0.284	3.85
9E29058-CAL6	10	11897	0.233	3.85
9E29058-CAL7	20	20645	0.206	3.84
9E29058-CAL8	40	44627	0.217	3.84
9E29058-CAL9	100	111792	0.223	3.84
9E29058-CALA	200	225817	0.217	3.83
9E29058-CALB	400	420741	0.197	3.83

AVE RF **0.225** RF RSD **12.62** AVE RT **3.84**

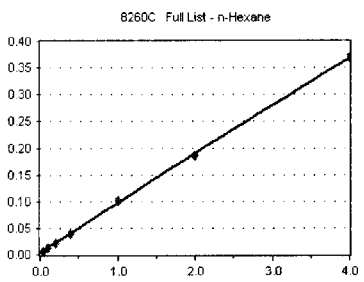
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

n-Hexane

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

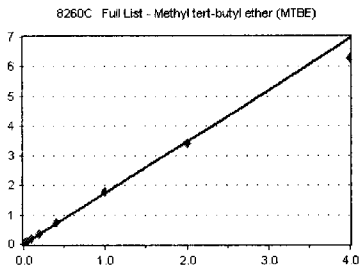


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~856~~	~~1.647~~	~~3.97~~
~~9E29058-CAL2~~	~~0.2~~	~~874~~	~~0.851~~	~~3.97~~
~~9E29058-CAL3~~	~~0.4~~	~~1123~~	~~0.552~~	~~3.98~~
~~9E29058-CAL4~~	~~1~~	~~1382~~	~~0.281~~	~~3.97~~
9E29058-CAL5	2	1767	0.173	3.97
9E29058-CAL6	5	3499	0.137	3.97
9E29058-CAL7	10	5559	0.111	3.96
9E29058-CAL8	20	10080	9.824	3.96
9E29058-CAL9	50	25466	0.102	3.97
9E29058-CALA	100	48610	9.325	3.96
9E29058-CALB	200	98461	9.235	3.96

AVE RF **0.115** RF RSD **25.96** AVE RT **3.97**

Methyl tert-butyl ether (MTBE)

Curve Fit: **AVERAGE RF**

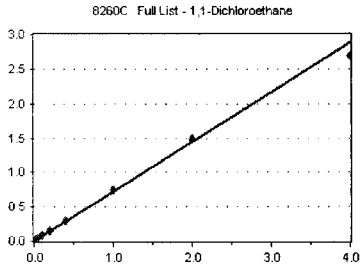


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	932	1.793	4.03
9E29058-CAL2	0.2	1802	1.755	4.03
9E29058-CAL3	0.4	3675	1.807	4.04
9E29058-CAL4	1	8517	1.734	4.03
9E29058-CAL5	2	17541	1.721	4.03
9E29058-CAL6	5	44834	1.760	4.04
9E29058-CAL7	10	87421	1.742	4.04
9E29058-CAL8	20	179725	1.752	4.04
9E29058-CAL9	50	446710	1.781	4.04
9E29058-CALA	100	885758	1.699	4.03
9E29058-CALB	200	1674237	1.570	4.03

AVE RF **1.738** RF RSD **3.66** AVE RT **4.03**

1,1-Dichloroethane

Curve Fit: **AVERAGE RF**

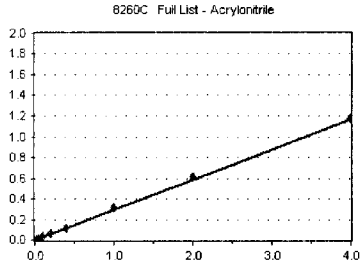


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	735	0.716	4.53
9E29058-CAL3	0.4	1418	0.697	4.53
9E29058-CAL4	1	3481	0.709	4.52
9E29058-CAL5	2	7479	0.734	4.52
9E29058-CAL6	5	18960	0.744	4.53
9E29058-CAL7	10	36342	0.724	4.52
9E29058-CAL8	20	75709	0.738	4.52
9E29058-CAL9	50	187888	0.749	4.52
9E29058-CALA	100	388015	0.744	4.52
9E29058-CALB	200	718862	0.674	4.51

AVE RF **0.723** RF RSD **3.33** AVE RT **4.52**

Acrylonitrile

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL3~~	~~0.4~~	~~342~~	~~0.168~~	~~4.62~~
9E29058-CAL4	1	1313	0.267	4.61
9E29058-CAL5	2	2550	0.250	4.61
9E29058-CAL6	5	7679	0.301	4.61
9E29058-CAL7	10	15131	0.301	4.60
9E29058-CAL8	20	30627	0.298	4.60
9E29058-CAL9	50	79642	0.318	4.60
9E29058-CALA	100	160664	0.308	4.59
9E29058-CALB	200	314097	0.295	4.59

AVE RF **0.292** RF RSD **7.65** AVE RT **4.60**

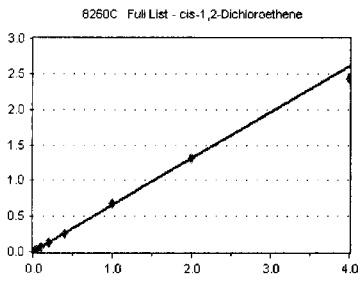
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

cis-1,2-Dichloroethene

Curve Fit: **AVERAGE RF**

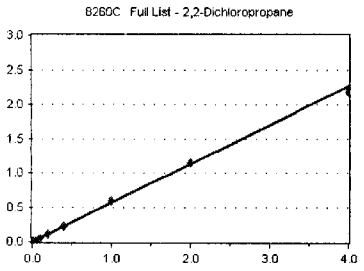


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	365	0.702	5.07
9E29058-CAL2	0.2	611	0.595	5.07
9E29058-CAL3	0.4	1412	0.694	5.08
9E29058-CAL4	1	3087	0.629	5.07
9E29058-CAL5	2	6425	0.630	5.07
9E29058-CAL6	5	17123	0.672	5.07
9E29058-CAL7	10	33881	0.675	5.07
9E29058-CAL8	20	67717	0.660	5.07
9E29058-CAL9	50	170168	0.679	5.07
9E29058-CALA	100	343281	0.659	5.06
9E29058-CALB	200	647004	0.607	5.06

AVE RF **0.655** RF RSD **5.35** AVE RT **5.07**

2,2-Dichloropropane

Curve Fit: **AVERAGE RF**

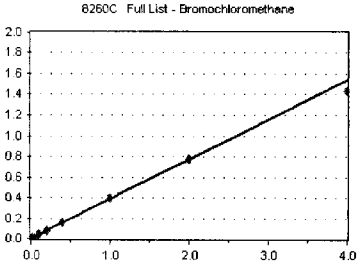


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL3	0.4	1168	0.574	5.18
9E29058-CAL4	1	2678	0.545	5.18
9E29058-CAL5	2	5498	0.539	5.18
9E29058-CAL6	5	14424	0.566	5.18
9E29058-CAL7	10	29348	0.585	5.17
9E29058-CAL8	20	58827	0.573	5.17
9E29058-CAL9	50	148829	0.593	5.17
9E29058-CALA	100	299040	0.574	5.17
9E29058-CALB	200	584639	0.548	5.17

AVE RF **0.566** RF RSD **3.26** AVE RT **5.17**

Bromochloromethane

Curve Fit: **AVERAGE RF**

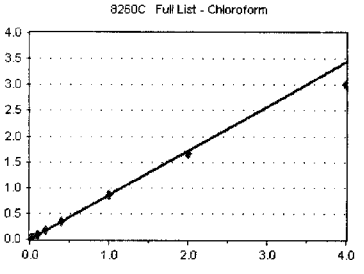


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	453	0.441	5.27
9E29058-CAL3	0.4	660	0.324	5.27
9E29058-CAL4	1	1861	0.379	5.27
9E29058-CAL5	2	3833	0.376	5.27
9E29058-CAL6	5	10200	0.400	5.27
9E29058-CAL7	10	20180	0.402	5.26
9E29058-CAL8	20	40396	0.394	5.26
9E29058-CAL9	50	100930	0.402	5.27
9E29058-CALA	100	202481	0.388	5.26
9E29058-CALB	200	383923	0.360	5.26

AVE RF **0.387** RF RSD **7.92** AVE RT **5.27**

Chloroform

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~862~~	~~1.659~~	~~5.35~~
~~9E29058-CAL2~~	~~0.2~~	~~1314~~	~~1.279~~	~~5.35~~
9E29058-CAL3	0.4	2051	1.008	5.36
9E29058-CAL4	1	4395	0.895	5.35
9E29058-CAL5	2	8763	0.860	5.35
9E29058-CAL6	5	21196	0.832	5.35
9E29058-CAL7	10	42125	0.839	5.34
9E29058-CAL8	20	86712	0.845	5.35
9E29058-CAL9	50	217722	0.868	5.35
9E29058-CALA	100	433579	0.832	5.34
9E29058-CALB	200	802076	0.752	5.35

AVE RF **0.859** RF RSD **7.93** AVE RT **5.35**

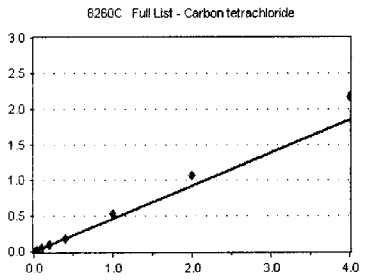
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

Carbon tetrachloride

Curve Fit: **AVERAGE RF**

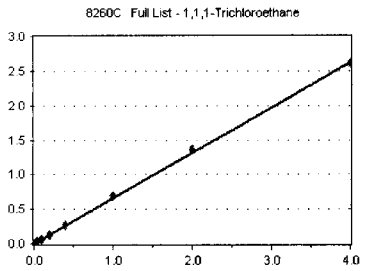


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~416~~	~~0.405~~	~~5.49~~
~~9E29058-CAL3~~	~~0.4~~	~~700~~	~~0.344~~	~~5.47~~
9E29058-CAL4	1	1931	0.393	5.47
9E29058-CAL5	2	3774	0.370	5.48
9E29058-CAL6	5	10919	0.429	5.48
9E29058-CAL7	10	22616	0.451	5.48
9E29058-CAL8	20	47689	0.465	5.48
9E29058-CAL9	50	132426	0.528	5.48
9E29058-CALA	100	278862	0.535	5.47
9E29058-CALB	200	577566	0.542	5.48

AVE RF **0.464** RF RSD **14.21** AVE RT **5.48**

1,1,1-Trichloroethane

Curve Fit: **AVERAGE RF**

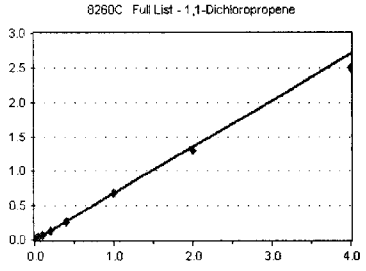


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~303~~	~~0.583~~	~~5.54~~
9E29058-CAL2	0.2	657	0.640	5.54
9E29058-CAL3	0.4	1382	0.679	5.55
9E29058-CAL4	1	2923	0.595	5.55
9E29058-CAL5	2	6438	0.632	5.55
9E29058-CAL6	5	16696	0.655	5.56
9E29058-CAL7	10	32805	0.654	5.54
9E29058-CAL8	20	69031	0.673	5.55
9E29058-CAL9	50	175402	0.699	5.55
9E29058-CALA	100	353917	0.679	5.54
9E29058-CALB	200	697341	0.654	5.54

AVE RF **0.656** RF RSD **4.49** AVE RT **5.55**

1,1-Dichloropropene

Curve Fit: **AVERAGE RF**

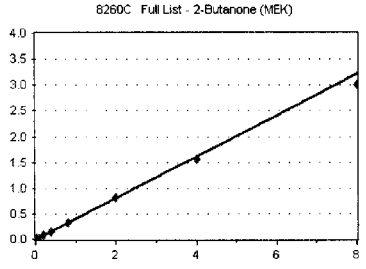


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	822	0.800	5.69
9E29058-CAL3	0.4	1310	0.644	5.69
9E29058-CAL4	1	3655	0.744	5.68
9E29058-CAL5	2	6475	0.635	5.68
9E29058-CAL6	5	16613	0.652	5.68
9E29058-CAL7	10	32947	0.656	5.67
9E29058-CAL8	20	67566	0.658	5.68
9E29058-CAL9	50	172418	0.688	5.68
9E29058-CALA	100	339212	0.651	5.67
9E29058-CALB	200	664805	0.624	5.67

AVE RF **0.675** RF RSD **8.20** AVE RT **5.68**

2-Butanone (MEK)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL3~~	~~0.8~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL4	2	4450	0.453	5.71
9E29058-CAL5	4	7369	0.361	5.70
9E29058-CAL6	10	21043	0.413	5.70
9E29058-CAL7	20	40332	0.402	5.69
9E29058-CAL8	40	82660	0.403	5.69
9E29058-CAL9	100	208404	0.416	5.68
9E29058-CALA	200	408448	0.392	5.68
9E29058-CALB	400	802082	0.376	5.68

AVE RF **0.402** RF RSD **6.86** AVE RT **5.69**

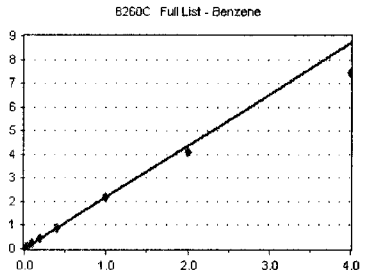
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

Benzene

Curve Fit: **AVERAGE RF**

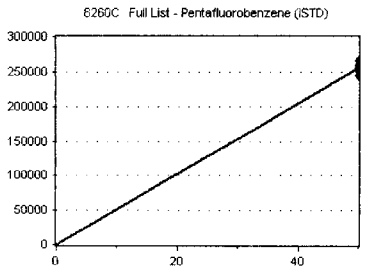


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	1225	2.357	5.94
9E29058-CAL2	0.2	2321	2.260	5.93
9E29058-CAL3	0.4	4546	2.235	5.93
9E29058-CAL4	1	11217	2.284	5.94
9E29058-CAL5	2	21880	2.147	5.94
9E29058-CAL6	5	56100	2.202	5.93
9E29058-CAL7	10	109245	2.176	5.93
9E29058-CAL8	20	221601	2.160	5.93
9E29058-CAL9	50	547822	2.184	5.93
9E29058-CALA	100	1066556	2.046	5.93
9E29058-CALB	200	1978560	1.856	5.93

AVE RF **2.173** RF RSD **6.11** AVE RT **5.93**

Pentafluorobenzene (ISTD)

Curve Fit: **AVERAGE RF**

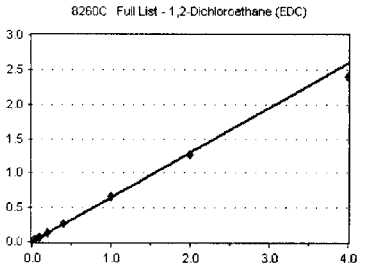


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	50	259869	5197.380	6.03
9E29058-CAL2	50	256759	5135.180	6.04
9E29058-CAL3	50	254275	5085.500	6.03
9E29058-CAL4	50	245560	4911.200	6.03
9E29058-CAL5	50	254825	5096.500	6.04
9E29058-CAL6	50	254773	5095.460	6.04
9E29058-CAL7	50	250992	5019.840	6.03
9E29058-CAL8	50	256524	5130.480	6.03
9E29058-CAL9	50	250786	5015.720	6.03
9E29058-CALA	50	260650	5213.000	6.03
9E29058-CALB	50	266542	5330.840	6.03

AVE RF **5111.918** RF RSD **2.19** AVE RT **6.03**

1,2-Dichloroethane (EDC)

Curve Fit: **AVERAGE RF**

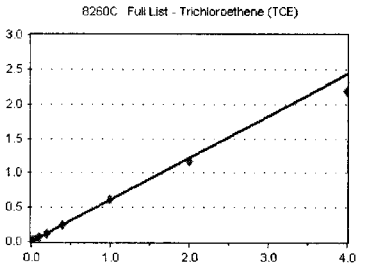


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	685	0.667	6.15
9E29058-CAL3	0.4	1395	0.686	6.15
9E29058-CAL4	1	3138	0.639	6.16
9E29058-CAL5	2	6601	0.648	6.15
9E29058-CAL6	5	16641	0.653	6.15
9E29058-CAL7	10	32514	0.648	6.15
9E29058-CAL8	20	66416	0.647	6.15
9E29058-CAL9	50	166385	0.663	6.15
9E29058-CALA	100	327724	0.629	6.15
9E29058-CALB	200	639082	0.599	6.14

AVE RF **0.648** RF RSD **3.59** AVE RT **6.15**

Trichloroethene (TCE)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	358	0.689	6.56
9E29058-CAL2	0.2	778	0.758	6.55
9E29058-CAL3	0.4	1054	0.518	6.56
9E29058-CAL4	1	2995	0.610	6.55
9E29058-CAL5	2	6232	0.611	6.55
9E29058-CAL6	5	15220	0.597	6.55
9E29058-CAL7	10	29345	0.585	6.55
9E29058-CAL8	20	60590	0.590	6.55
9E29058-CAL9	50	153840	0.613	6.55
9E29058-CALA	100	306069	0.587	6.55
9E29058-CALB	200	582863	0.547	6.55

AVE RF **0.610** RF RSD **10.65** AVE RT **6.55**

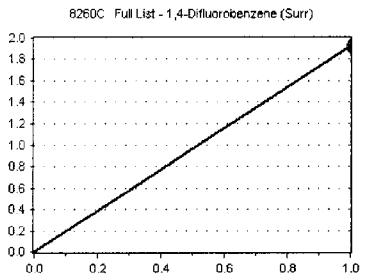
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

1,4-Difluorobenzene (Surr)

Curve Fit: **AVERAGE RF**

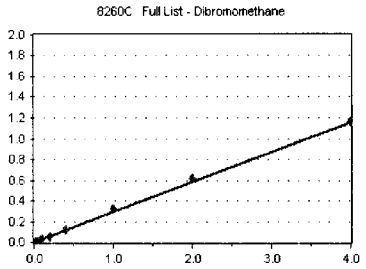


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	50	493490	1.899	6.59
9E29058-CAL2	50	491851	1.916	6.59
9E29058-CAL3	50	485518	1.909	6.59
9E29058-CAL4	50	472967	1.926	6.59
9E29058-CAL5	50	496387	1.948	6.59
9E29058-CAL6	50	492217	1.932	6.59
9E29058-CAL7	50	477661	1.903	6.58
9E29058-CAL8	50	495460	1.931	6.58
9E29058-CAL9	50	489311	1.951	6.59
9E29058-CALA	50	496661	1.905	6.58
9E29058-CALB	50	515449	1.934	6.58

AVE RF **1.923** RF RSD **0.93** AVE RT **6.59**

Dibromomethane

Curve Fit: **AVERAGE RF**

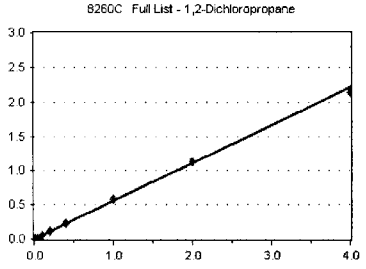


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~150~~	~~0.146~~	~~7.00~~
9E29058-CAL3	0.4	572	0.281	7.00
9E29058-CAL4	1	1272	0.259	7.00
9E29058-CAL5	2	2771	0.272	7.00
9E29058-CAL6	5	7159	0.281	7.00
9E29058-CAL7	10	14902	0.297	7.00
9E29058-CAL8	20	30886	0.301	7.00
9E29058-CAL9	50	80383	0.321	7.00
9E29058-CALA	100	161634	0.310	6.99
9E29058-CALB	200	312313	0.293	7.00

AVE RF **0.290** RF RSD **6.62** AVE RT **7.00**

1,2-Dichloropropane

Curve Fit: **AVERAGE RF**

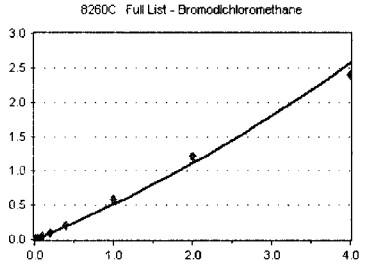


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	596	0.580	7.11
9E29058-CAL3	0.4	1068	0.525	7.11
9E29058-CAL4	1	2601	0.530	7.11
9E29058-CAL5	2	5608	0.550	7.11
9E29058-CAL6	5	14430	0.566	7.11
9E29058-CAL7	10	27791	0.554	7.11
9E29058-CAL8	20	58485	0.570	7.11
9E29058-CAL9	50	145741	0.581	7.11
9E29058-CALA	100	294477	0.565	7.10
9E29058-CALB	200	569634	0.534	7.11

AVE RF **0.556** RF RSD **3.68** AVE RT **7.11**

Bromodichloromethane

Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	431	0.420	7.19
9E29058-CAL3	0.4	872	0.429	7.18
9E29058-CAL4	1	2077	0.423	7.18
9E29058-CAL5	2	4030	0.395	7.18
9E29058-CAL6	5	11827	0.464	7.19
9E29058-CAL7	10	23755	0.473	7.17
9E29058-CAL8	20	52937	0.516	7.18
9E29058-CAL9	50	148293	0.591	7.18
9E29058-CALA	100	315200	0.605	7.18
9E29058-CALB	200	637695	0.598	7.18

AVE RF **0.491** RF RSD **16.46** AVE RT **7.18**

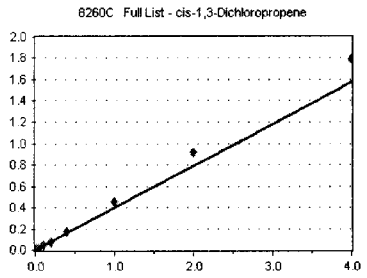
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

cis-1,3-Dichloropropene

Curve Fit: **AVERAGE RF**

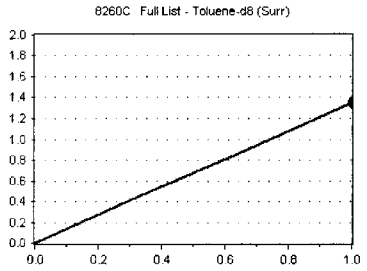


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	602	0.337	7.89
9E29058-CAL3	0.4	1128	0.319	7.90
9E29058-CAL4	1	3081	0.357	7.89
9E29058-CAL5	2	6187	0.343	7.89
9E29058-CAL6	5	17156	0.385	7.89
9E29058-CAL7	10	35060	0.402	7.89
9E29058-CAL8	20	76771	0.426	7.89
9E29058-CAL9	50	206054	0.458	7.89
9E29058-CALA	100	423217	0.460	7.89
9E29058-CALB	200	831235	0.448	7.88

AVE RF **0.394** RF RSD **13.50** AVE RT **7.89**

Toluene-d8 (Surr)

Curve Fit: **AVERAGE RF**

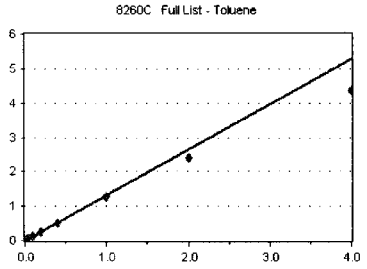


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	50	607580	1.354	8.10
9E29058-CAL2	50	603494	1.351	8.10
9E29058-CAL3	50	596173	1.350	8.09
9E29058-CAL4	50	583864	1.355	8.10
9E29058-CAL5	50	607810	1.346	8.10
9E29058-CAL6	50	604964	1.359	8.10
9E29058-CAL7	50	590419	1.353	8.09
9E29058-CAL8	50	610484	1.356	8.09
9E29058-CAL9	50	601358	1.338	8.09
9E29058-CALA	50	619571	1.348	8.09
9E29058-CALB	50	635623	1.369	8.09

AVE RF **1.353** RF RSD **0.58** AVE RT **8.09**

Toluene

Curve Fit: **AVERAGE RF**

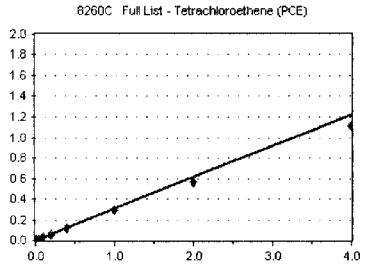


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~2496~~	~~2.781~~	~~8.15~~
~~9E29058-CAL2~~	~~0.2~~	~~3425~~	~~1.917~~	~~8.15~~
9E29058-CAL3	0.4	5721	1.620	8.16
9E29058-CAL4	1	12756	1.480	8.16
9E29058-CAL5	2	23832	1.319	8.15
9E29058-CAL6	5	59374	1.334	8.15
9E29058-CAL7	10	113987	1.306	8.15
9E29058-CAL8	20	231426	1.285	8.15
9E29058-CAL9	50	567186	1.262	8.15
9E29058-CALA	100	1105825	1.203	8.15
9E29058-CALB	200	2033618	1.095	8.15

AVE RF **1.323** RF RSD **11.49** AVE RT **8.15**

Tetrachloroethene (PCE)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~338~~	~~0.377~~	~~8.60~~
9E29058-CAL2	0.2	698	0.391	8.60
9E29058-CAL3	0.4	1321	0.374	8.61
9E29058-CAL4	1	2616	0.304	8.60
9E29058-CAL5	2	4849	0.268	8.60
9E29058-CAL6	5	13201	0.297	8.60
9E29058-CAL7	10	25684	0.294	8.60
9E29058-CAL8	20	51386	0.285	8.60
9E29058-CAL9	50	131806	0.293	8.60
9E29058-CALA	100	260817	0.284	8.60
9E29058-CALB	200	514549	0.277	8.60

AVE RF **0.307** RF RSD **13.47** AVE RT **8.60**

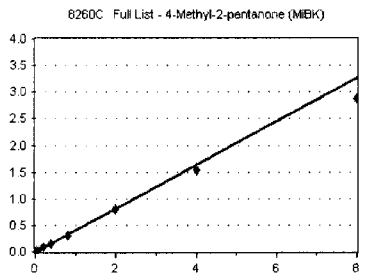
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

4-Methyl-2-pentanone (MiBK)

Curve Fit: **AVERAGE RF**

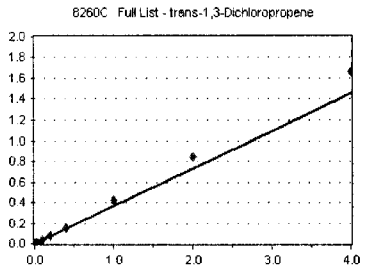


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.2	867	0.483	8.62
9E29058-CAL2	0.4	1694	0.474	8.62
9E29058-CAL3	0.8	3139	0.444	8.62
9E29058-CAL4	2	7035	0.408	8.63
9E29058-CAL5	4	13222	0.366	8.62
9E29058-CAL6	10	34042	0.382	8.62
9E29058-CAL7	20	69619	0.399	8.62
9E29058-CAL8	40	140164	0.389	8.62
9E29058-CAL9	100	362001	0.403	8.62
9E29058-CALA	200	707759	0.385	8.62
9E29058-CALB	400	1330786	0.358	8.61

AVE RF **0.408** RF RSD **10.15** AVE RT **8.62**

trans-1,3-Dichloropropene

Curve Fit: **AVERAGE RF**

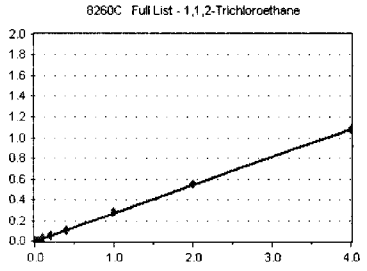


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~268~~	~~0.299~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~575~~	~~0.322~~	~~8.66~~
~~9E29058-CAL3~~	~~0.4~~	~~908~~	~~0.257~~	~~8.65~~
9E29058-CAL4	1	2671	0.310	8.64
9E29058-CAL5	2	5147	0.285	8.65
9E29058-CAL6	5	14478	0.325	8.65
9E29058-CAL7	10	31437	0.360	8.65
9E29058-CAL8	20	68797	0.382	8.64
9E29058-CAL9	50	188244	0.419	8.64
9E29058-CALA	100	389918	0.424	8.64
9E29058-CALB	200	772812	0.416	8.64

AVE RF **0.365** RF RSD **14.76** AVE RT **8.64**

1,1,2-Trichloroethane

Curve Fit: **AVERAGE RF**

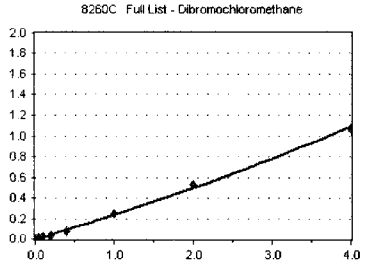


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	229	0.255	8.82
9E29058-CAL2	0.2	506	0.283	8.83
9E29058-CAL3	0.4	911	0.258	8.82
9E29058-CAL4	1	2251	0.261	8.83
9E29058-CAL5	2	4541	0.251	8.82
9E29058-CAL6	5	12374	0.278	8.82
9E29058-CAL7	10	24039	0.275	8.82
9E29058-CAL8	20	50104	0.278	8.82
9E29058-CAL9	50	128045	0.285	8.82
9E29058-CALA	100	255240	0.278	8.82
9E29058-CALB	200	500164	0.269	8.82

AVE RF **0.270** RF RSD **4.39** AVE RT **8.82**

Dibromochloromethane

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	172	9.626	9.03
9E29058-CAL3	0.4	549	0.155	9.01
9E29058-CAL4	1	1390	0.161	9.01
9E29058-CAL5	2	2873	0.159	9.00
9E29058-CAL6	5	7443	0.167	9.00
9E29058-CAL7	10	16078	0.184	9.01
9E29058-CAL8	20	36395	0.202	9.01
9E29058-CAL9	50	110966	0.247	9.01
9E29058-CALA	100	241274	0.262	9.01
9E29058-CALB	200	499033	0.269	9.00

AVE RF **0.190** RF RSD **28.85** AVE RT **9.01**

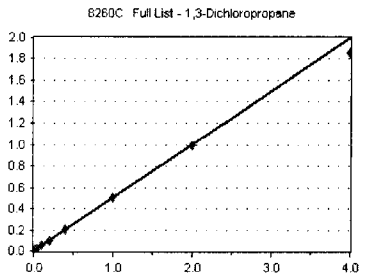
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

1,3-Dichloropropane

Curve Fit: **AVERAGE RF**

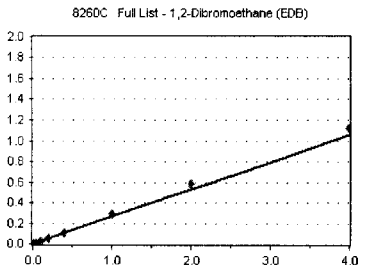


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	438	0.488	9.11
9E29058-CAL2	0.2	988	0.553	9.12
9E29058-CAL3	0.4	1866	0.528	9.12
9E29058-CAL4	1	4104	0.476	9.11
9E29058-CAL5	2	8546	0.473	9.11
9E29058-CAL6	5	22298	0.501	9.11
9E29058-CAL7	10	43756	0.501	9.10
9E29058-CAL8	20	91532	0.508	9.11
9E29058-CAL9	50	228171	0.508	9.11
9E29058-CALA	100	456442	0.496	9.10
9E29058-CALB	200	863655	0.465	9.11

AVE RF **0.500** RF RSD **5.06** AVE RT **9.11**

1,2-Dibromoethane (EDB)

Curve Fit: **AVERAGE RF**

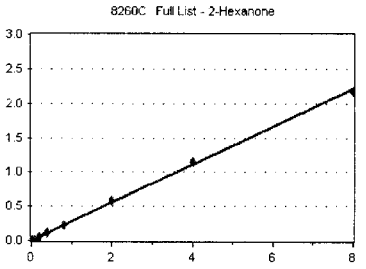


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~186~~	~~0.207~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~298~~	~~0.167~~	~~9.25~~
9E29058-CAL3	0.4	794	0.225	9.26
9E29058-CAL4	1	2135	0.248	9.24
9E29058-CAL5	2	4166	0.231	9.24
9E29058-CAL6	5	11552	0.259	9.25
9E29058-CAL7	10	23883	0.274	9.24
9E29058-CAL8	20	49836	0.277	9.24
9E29058-CAL9	50	132585	0.295	9.24
9E29058-CALA	100	266180	0.289	9.24
9E29058-CALB	200	519720	0.280	9.24

AVE RF **0.264** RF RSD **9.51** AVE RT **9.24**

2-Hexanone

Curve Fit: **AVERAGE RF**

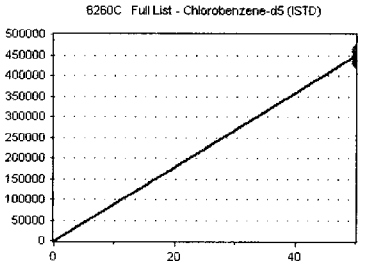


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.2~~	~~443~~	~~0.247~~	~~9.51~~
~~9E29058-CAL2~~	~~0.4~~	~~765~~	~~0.214~~	~~9.51~~
~~9E29058-CAL3~~	~~0.8~~	~~1839~~	~~0.260~~	~~9.51~~
9E29058-CAL4	2	4936	0.286	9.51
9E29058-CAL5	4	8511	0.236	9.51
9E29058-CAL6	10	24821	0.279	9.50
9E29058-CAL7	20	49008	0.281	9.50
9E29058-CAL8	40	101065	0.281	9.50
9E29058-CAL9	100	264271	0.294	9.50
9E29058-CALA	200	528430	0.287	9.50
9E29058-CALB	400	1007307	0.271	9.50

AVE RF **0.277** RF RSD **6.49** AVE RT **9.50**

Chlorobenzene-d5 (ISTD)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	50	448840	8976.800	9.75
9E29058-CAL2	50	446684	8933.680	9.75
9E29058-CAL3	50	441530	8830.600	9.75
9E29058-CAL4	50	430913	8618.260	9.75
9E29058-CAL5	50	451536	9030.720	9.75
9E29058-CAL6	50	445170	8903.400	9.75
9E29058-CAL7	50	436340	8726.800	9.75
9E29058-CAL8	50	450201	9004.020	9.75
9E29058-CAL9	50	449432	8988.640	9.75
9E29058-CALA	50	459775	9195.500	9.75
9E29058-CALB	50	464260	9285.200	9.75

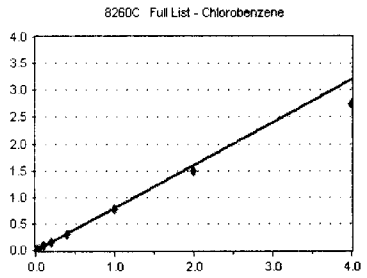
AVE RF **8953.965** RF RSD **2.12** AVE RT **9.75**

Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

Chlorobenzene

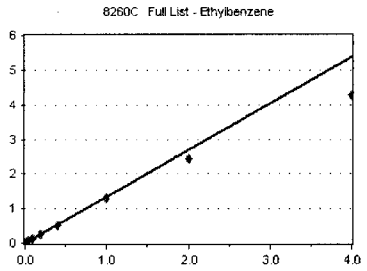


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~1131~~	~~1.260~~	~~9.76~~
9E29058-CAL2	0.2	1617	0.905	9.77
9E29058-CAL3	0.4	3136	0.888	9.77
9E29058-CAL4	1	7300	0.847	9.77
9E29058-CAL5	2	14584	0.807	9.76
9E29058-CAL6	5	35456	0.796	9.77
9E29058-CAL7	10	68508	0.785	9.77
9E29058-CAL8	20	139988	0.777	9.77
9E29058-CAL9	50	351235	0.782	9.77
9E29058-CALA	100	689400	0.750	9.77
9E29058-CALB	200	1272416	0.685	9.76

AVE RF **0.802** RF RSD **8.07** AVE RT **9.77**

Ethylbenzene

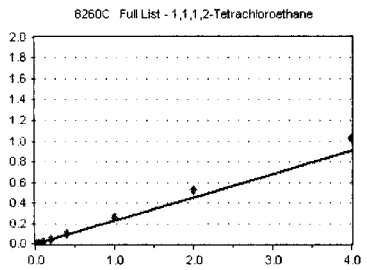


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~1694~~	~~1.887~~	~~9.80~~
9E29058-CAL2	0.2	2895	1.620	9.80
9E29058-CAL3	0.4	5392	1.527	9.80
9E29058-CAL4	1	12069	1.400	9.80
9E29058-CAL5	2	23660	1.310	9.80
9E29058-CAL6	5	60912	1.368	9.80
9E29058-CAL7	10	115497	1.323	9.80
9E29058-CAL8	20	238085	1.322	9.80
9E29058-CAL9	50	580649	1.292	9.80
9E29058-CALA	100	1114972	1.213	9.79
9E29058-CALB	200	1992124	1.073	9.79

AVE RF **1.345** RF RSD **11.33** AVE RT **9.80**

1,1,1,2-Tetrachloroethane

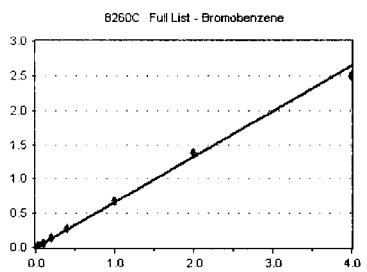


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~318~~	~~0.178~~	~~9.84~~
9E29058-CAL3	0.4	602	0.170	9.83
9E29058-CAL4	1	1810	0.210	9.82
9E29058-CAL5	2	3542	0.196	9.83
9E29058-CAL6	5	9596	0.216	9.83
9E29058-CAL7	10	19728	0.226	9.83
9E29058-CAL8	20	42996	0.239	9.83
9E29058-CAL9	50	116780	0.260	9.83
9E29058-CALA	100	242014	0.263	9.83
9E29058-CALB	200	477013	0.257	9.83

AVE RF **0.226** RF RSD **13.96** AVE RT **9.83**

Bromobenzene



Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	177	0.455	0.00
9E29058-CAL2	0.2	513	0.670	10.92
9E29058-CAL3	0.4	1043	0.691	10.92
9E29058-CAL4	1	2592	0.705	10.92
9E29058-CAL5	2	5277	0.677	10.92
9E29058-CAL6	5	13190	0.700	10.92
9E29058-CAL7	10	25871	0.693	10.92
9E29058-CAL8	20	51348	0.673	10.92
9E29058-CAL9	50	134239	0.687	10.92
9E29058-CALA	100	271067	0.686	10.92
9E29058-CALB	200	503576	0.625	10.92

AVE RF **0.660** RF RSD **10.81** AVE RT **9.93**

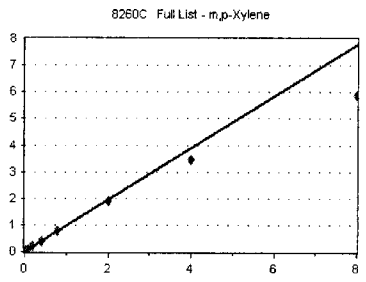
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

m,p-Xylene

Curve Fit: **AVERAGE RF**

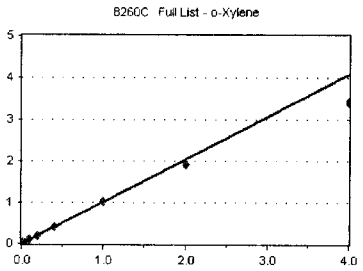


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.2~~	~~2487~~	~~1.385~~	~~9.94~~
9E29058-CAL2	0.4	4246	1.188	9.94
9E29058-CAL3	0.8	7624	1.079	9.94
9E29058-CAL4	2	17400	1.009	9.93
9E29058-CAL5	4	34407	0.952	9.94
9E29058-CAL6	10	87900	0.987	9.94
9E29058-CAL7	20	170308	0.976	9.93
9E29058-CAL8	40	351394	0.976	9.93
9E29058-CAL9	100	846663	0.942	9.93
9E29058-CALA	200	1592559	0.866	9.93
9E29058-CALB	400	2720941	0.733	9.93

AVE RF **0.971** RF RSD **12.37** AVE RT **9.93**

o-Xylene

Curve Fit: **AVERAGE RF**

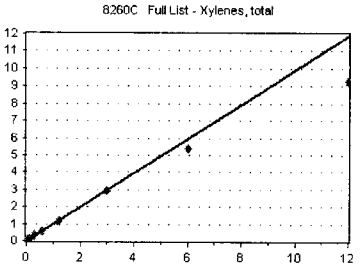


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~1273~~	~~1.418~~	~~10.32~~
9E29058-CAL2	0.2	2232	1.249	10.33
9E29058-CAL3	0.4	3760	1.064	10.33
9E29058-CAL4	1	9051	1.050	10.32
9E29058-CAL5	2	17445	0.966	10.32
9E29058-CAL6	5	45708	1.027	10.32
9E29058-CAL7	10	87450	1.002	10.32
9E29058-CAL8	20	182582	1.014	10.32
9E29058-CAL9	50	457250	1.017	10.32
9E29058-CALA	100	885817	0.963	10.32
9E29058-CALB	200	1581408	0.852	10.32

AVE RF **1.020** RF RSD **9.82** AVE RT **10.32**

Xylenes, total

Curve Fit: **AVERAGE RF**

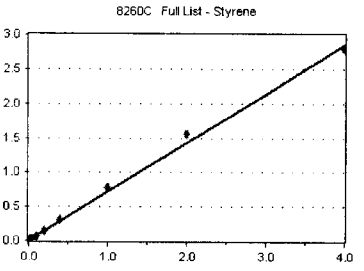


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.3~~	~~3760~~	~~1.396~~	~~10.32~~
9E29058-CAL2	0.6	6478	1.209	10.33
9E29058-CAL3	1.2	11384	1.074	10.33
9E29058-CAL4	3	26451	1.023	10.32
9E29058-CAL5	6	51852	0.957	10.32
9E29058-CAL6	15	133608	1.000	10.32
9E29058-CAL7	30	257758	0.985	10.32
9E29058-CAL8	60	533976	0.988	10.32
9E29058-CAL9	150	1303913	0.967	10.32
9E29058-CALA	300	2478376	0.898	10.32
9E29058-CALB	600	4302349	0.772	10.32

AVE RF **0.987** RF RSD **11.37** AVE RT **10.32**

Styrene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~585~~	~~0.652~~	~~10.38~~
~~9E29058-CAL2~~	~~0.2~~	~~1051~~	~~0.588~~	~~10.37~~
9E29058-CAL3	0.4	2262	0.640	10.38
9E29058-CAL4	1	5658	0.657	10.38
9E29058-CAL5	2	11631	0.644	10.37
9E29058-CAL6	5	31844	0.715	10.37
9E29058-CAL7	10	64308	0.737	10.37
9E29058-CAL8	20	138152	0.767	10.37
9E29058-CAL9	50	353430	0.786	10.37
9E29058-CALA	100	713586	0.776	10.37
9E29058-CALB	200	1293977	0.697	10.37

AVE RF **0.713** RF RSD **8.05** AVE RT **10.37**

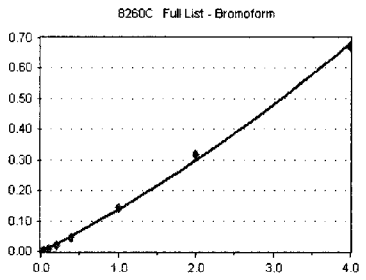
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

Bromoform

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

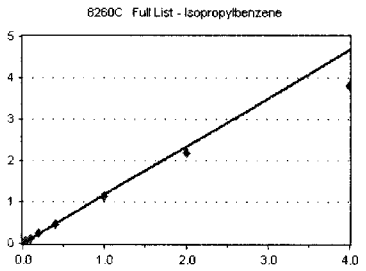


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL3	0.4	186	0.053	10.39
9E29058-CAL4	1	619	7.182	10.38
9E29058-CAL5	2	1354	7.497	10.39
9E29058-CAL6	5	4070	9.143	10.39
9E29058-CAL7	10	8679	9.945	10.39
9E29058-CAL8	20	19903	0.111	10.39
9E29058-CAL9	50	64724	0.144	10.39
9E29058-CALA	100	146040	0.159	10.39
9E29058-CALB	200	312567	0.168	10.39

AVE RF **0.108** RF RSD **37.80** AVE RT **10.39**

Isopropylbenzene

Curve Fit: **AVERAGE RF**

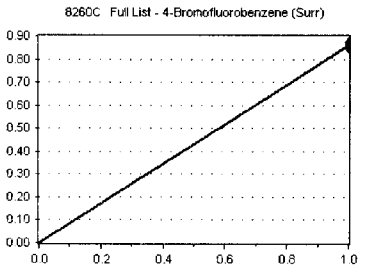


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	1325	1.476	10.60
9E29058-CAL2	0.2	2225	1.245	10.59
9E29058-CAL3	0.4	4105	1.162	10.59
9E29058-CAL4	1	9890	1.148	10.60
9E29058-CAL5	2	20325	1.125	10.60
9E29058-CAL6	5	53051	1.192	10.60
9E29058-CAL7	10	101485	1.163	10.59
9E29058-CAL8	20	210609	1.170	10.59
9E29058-CAL9	50	514735	1.145	10.59
9E29058-CALA	100	1002570	1.090	10.59
9E29058-CALB	200	1774164	0.955	10.60

AVE RF **1.170** RF RSD **10.65** AVE RT **10.60**

4-Bromofluorobenzene (Surr)

Curve Fit: **AVERAGE RF**

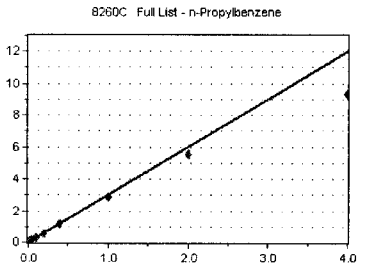


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	50	167905	0.863	10.84
9E29058-CAL2	50	165726	0.866	10.84
9E29058-CAL3	50	163321	0.866	10.84
9E29058-CAL4	50	158686	0.863	10.83
9E29058-CAL5	50	166852	0.857	10.84
9E29058-CAL6	50	163573	0.868	10.84
9E29058-CAL7	50	161677	0.866	10.84
9E29058-CAL8	50	165674	0.868	10.84
9E29058-CAL9	50	167723	0.859	10.84
9E29058-CALA	50	172526	0.873	10.84
9E29058-CALB	50	170853	0.848	10.83

AVE RF **0.863** RF RSD **0.78** AVE RT **10.84**

n-Propylbenzene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	1564	4.019	10.94
9E29058-CAL2	0.2	2483	3.245	10.95
9E29058-CAL3	0.4	4750	3.148	10.95
9E29058-CAL4	1	10579	2.876	10.94
9E29058-CAL5	2	22107	2.838	10.95
9E29058-CAL6	5	57721	3.062	10.95
9E29058-CAL7	10	110989	2.971	10.94
9E29058-CAL8	20	226710	2.971	10.94
9E29058-CAL9	50	564190	2.888	10.94
9E29058-CALA	100	1090767	2.761	10.94
9E29058-CALB	200	1879841	2.334	10.94

AVE RF **3.010** RF RSD **13.61** AVE RT **10.94**

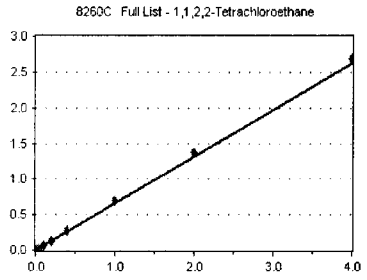
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

1,1,2,2-Tetrachloroethane

Curve Fit: **AVERAGE RF**

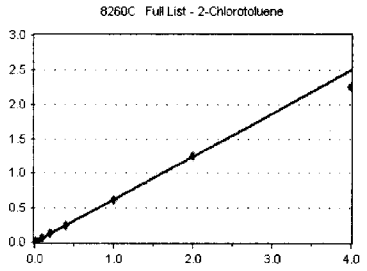


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	266	0.684	11.01
9E29058-CAL2	0.2	439	0.574	11.01
9E29058-CAL3	0.4	1001	0.663	11.01
9E29058-CAL4	1	2272	0.618	11.01
9E29058-CAL5	2	4646	0.596	11.01
9E29058-CAL6	5	12322	0.654	11.01
9E29058-CAL7	10	25383	0.680	11.01
9E29058-CAL8	20	52097	0.683	11.01
9E29058-CAL9	50	135917	0.696	11.01
9E29058-CALA	100	271157	0.686	11.01
9E29058-CALB	200	542178	0.673	11.01

AVE RF **0.655** RF RSD **6.23** AVE RT **11.01**

2-Chlorotoluene

Curve Fit: **AVERAGE RF**

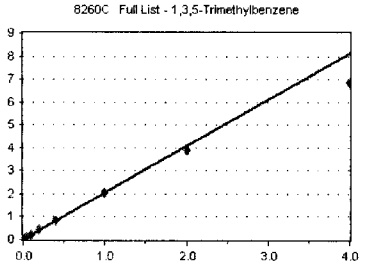


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	260	0.668	11.07
9E29058-CAL2	0.2	535	0.699	11.09
9E29058-CAL3	0.4	911	0.604	11.07
9E29058-CAL4	1	2285	0.621	11.07
9E29058-CAL5	2	4419	0.567	11.07
9E29058-CAL6	5	12024	0.638	11.07
9E29058-CAL7	10	23789	0.637	11.07
9E29058-CAL8	20	47080	0.617	11.07
9E29058-CAL9	50	120765	0.618	11.07
9E29058-CALA	100	246373	0.624	11.07
9E29058-CALB	200	452526	0.562	11.07

AVE RF **0.623** RF RSD **6.33** AVE RT **11.07**

1,3,5-Trimethylbenzene

Curve Fit: **AVERAGE RF**

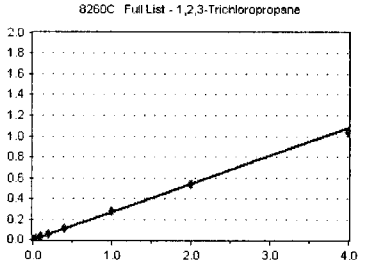


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~1305~~	~~3.353~~	~~11.11~~
9E29058-CAL2	0.2	1776	2.321	11.10
9E29058-CAL3	0.4	3139	2.080	11.11
9E29058-CAL4	1	7772	2.113	11.11
9E29058-CAL5	2	14521	1.864	11.10
9E29058-CAL6	5	39774	2.110	11.10
9E29058-CAL7	10	77961	2.087	11.10
9E29058-CAL8	20	158194	2.073	11.10
9E29058-CAL9	50	396913	2.032	11.11
9E29058-CALA	100	773425	1.958	11.10
9E29058-CALB	200	1378879	1.712	11.10

AVE RF **2.035** RF RSD **8.02** AVE RT **11.10**

1,2,3-Trichloropropane

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	144	0.188	11.12
9E29058-CAL3	0.4	500	0.331	11.12
9E29058-CAL4	1	983	0.267	11.11
9E29058-CAL5	2	2200	0.282	11.12
9E29058-CAL6	5	5164	0.274	11.12
9E29058-CAL7	10	10336	0.277	11.12
9E29058-CAL8	20	20960	0.275	11.12
9E29058-CAL9	50	54793	0.281	11.12
9E29058-CALA	100	105916	0.268	11.12
9E29058-CALB	200	207925	0.258	11.11

AVE RF **0.270** RF RSD **12.92** AVE RT **11.12**

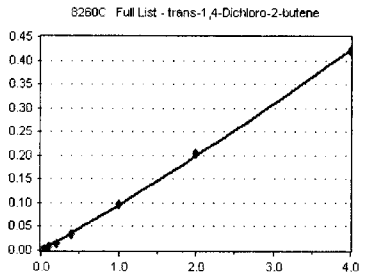
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

trans-1,4-Dichloro-2-butene

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

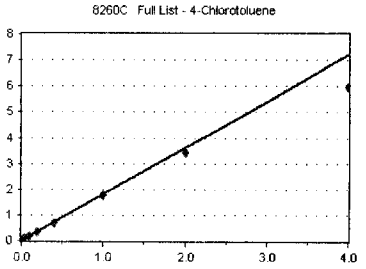


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL4	1	180	4.894	11.15
9E29058-CAL5	2	320	4.108	11.15
9E29058-CAL6	5	1285	6.817	11.15
9E29058-CAL7	10	2829	7.573	11.15
9E29058-CAL8	20	6571	8.611	11.15
9E29058-CAL9	50	19084	9.770	11.15
9E29058-CALA	100	40488	0.102	11.15
9E29058-CALB	200	84511	0.105	11.15

AVE RF **7.814** RF RSD **30.92** AVE RT **11.15**

4-Chlorotoluene

Curve Fit: **AVERAGE RF**

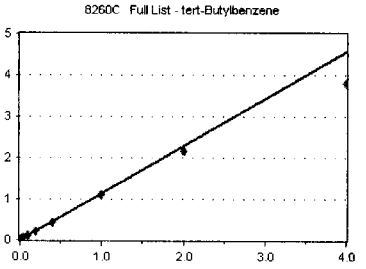


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~1133~~	~~2.911~~	~~11.21~~
9E29058-CAL2	0.2	1680	2.196	11.21
9E29058-CAL3	0.4	2912	1.930	11.21
9E29058-CAL4	1	6874	1.869	11.21
9E29058-CAL5	2	13410	1.722	11.21
9E29058-CAL6	5	33806	1.793	11.21
9E29058-CAL7	10	65138	1.744	11.21
9E29058-CAL8	20	135968	1.782	11.20
9E29058-CAL9	50	345630	1.769	11.20
9E29058-CALA	100	677786	1.715	11.21
9E29058-CALB	200	1200687	1.491	11.21

AVE RF **1.801** RF RSD **10.00** AVE RT **11.21**

tert-Butylbenzene

Curve Fit: **AVERAGE RF**

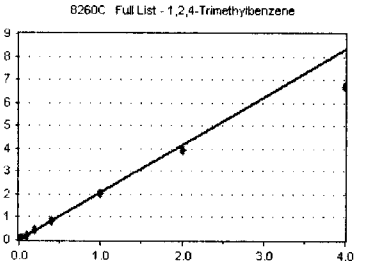


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	480	1.233	11.36
9E29058-CAL2	0.2	1208	1.579	11.36
9E29058-CAL3	0.4	1681	1.114	11.36
9E29058-CAL4	1	4182	1.137	11.36
9E29058-CAL5	2	8037	1.032	11.36
9E29058-CAL6	5	20763	1.101	11.36
9E29058-CAL7	10	41310	1.106	11.35
9E29058-CAL8	20	84715	1.110	11.35
9E29058-CAL9	50	215868	1.105	11.36
9E29058-CALA	100	425964	1.078	11.35
9E29058-CALB	200	765557	0.950	11.36

AVE RF **1.141** RF RSD **14.09** AVE RT **11.36**

1,2,4-Trimethylbenzene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	965	2.480	11.41
9E29058-CAL2	0.2	1610	2.104	11.41
9E29058-CAL3	0.4	3385	2.243	11.42
9E29058-CAL4	1	7847	2.133	11.41
9E29058-CAL5	2	15360	1.972	11.41
9E29058-CAL6	5	39159	2.077	11.41
9E29058-CAL7	10	78362	2.098	11.42
9E29058-CAL8	20	160708	2.106	11.42
9E29058-CAL9	50	400305	2.049	11.42
9E29058-CALA	100	777007	1.967	11.41
9E29058-CALB	200	1351532	1.678	11.41

AVE RF **2.082** RF RSD **9.34** AVE RT **11.41**

Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

sec-Butylbenzene

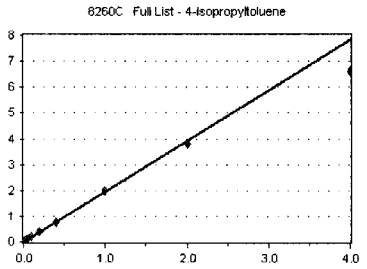
Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	1196	3.073	11.50
9E29058-CAL2	0.2	2071	2.707	11.50
9E29058-CAL3	0.4	3773	2.500	11.50
9E29058-CAL4	1	8865	2.410	11.50
9E29058-CAL5	2	16671	2.140	11.50
9E29058-CAL6	5	45399	2.408	11.50
9E29058-CAL7	10	88679	2.374	11.50
9E29058-CAL8	20	183450	2.404	11.49
9E29058-CAL9	50	461029	2.360	11.49
9E29058-CALA	100	882609	2.234	11.50
9E29058-CALB	200	1543796	1.917	11.50

AVE RF **2.412** RF RSD **12.35** AVE RT **11.50**

4-Isopropyltoluene

Curve Fit: **AVERAGE RF**

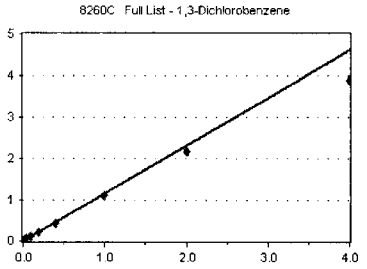


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~1072~~	~~2.755~~	~~11.61~~
9E29058-CAL2	0.2	1749	2.286	11.61
9E29058-CAL3	0.4	3163	2.096	11.61
9E29058-CAL4	1	6901	1.876	11.61
9E29058-CAL5	2	14651	1.881	11.61
9E29058-CAL6	5	37395	1.984	11.61
9E29058-CAL7	10	74162	1.985	11.61
9E29058-CAL8	20	150593	1.973	11.61
9E29058-CAL9	50	386921	1.981	11.61
9E29058-CALA	100	751233	1.901	11.61
9E29058-CALB	200	1333607	1.656	11.61

AVE RF **1.962** RF RSD **8.25** AVE RT **11.61**

1,3-Dichlorobenzene

Curve Fit: **AVERAGE RF**

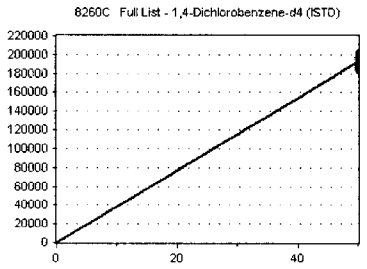


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	610	1.567	11.67
9E29058-CAL2	0.2	927	1.212	11.68
9E29058-CAL3	0.4	1855	1.229	11.68
9E29058-CAL4	1	4049	1.101	11.67
9E29058-CAL5	2	8756	1.124	11.68
9E29058-CAL6	5	21090	1.119	11.67
9E29058-CAL7	10	41681	1.116	11.67
9E29058-CAL8	20	84703	1.110	11.67
9E29058-CAL9	50	218010	1.116	11.67
9E29058-CALA	100	425300	1.076	11.67
9E29058-CALB	200	784949	0.975	11.67

AVE RF **1.159** RF RSD **13.03** AVE RT **11.67**

1,4-Dichlorobenzene-d4 (ISTD)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	50	194580	3891.600	11.73
9E29058-CAL2	50	191276	3825.520	11.73
9E29058-CAL3	50	188614	3772.280	11.73
9E29058-CAL4	50	183911	3678.220	11.73
9E29058-CAL5	50	194740	3894.800	11.73
9E29058-CAL6	50	188506	3770.120	11.73
9E29058-CAL7	50	186773	3735.460	11.73
9E29058-CAL8	50	190782	3815.640	11.73
9E29058-CAL9	50	195329	3906.580	11.73
9E29058-CALA	50	197554	3951.080	11.73
9E29058-CALB	50	201371	4027.420	11.73

AVE RF **3842.611** RF RSD **2.66** AVE RT **11.73**

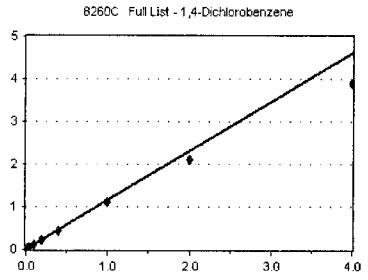
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

1,4-Dichlorobenzene

Curve Fit: **AVERAGE RF**

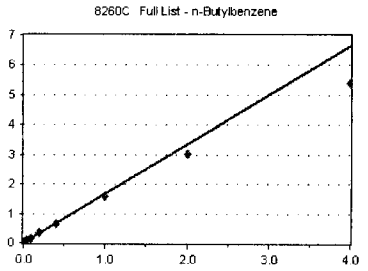


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~690~~	~~1.773~~	~~11.74~~
9E29058-CAL2	0.2	1152	1.506	11.74
9E29058-CAL3	0.4	1914	1.268	11.74
9E29058-CAL4	1	4368	1.188	11.74
9E29058-CAL5	2	8705	1.118	11.74
9E29058-CAL6	5	21623	1.147	11.74
9E29058-CAL7	10	41926	1.122	11.74
9E29058-CAL8	20	83842	1.099	11.74
9E29058-CAL9	50	214078	1.096	11.74
9E29058-CALA	100	418076	1.058	11.74
9E29058-CALB	200	784148	0.974	11.74

AVE RF **1.157** RF RSD **12.50** AVE RT **11.74**

n-Butylbenzene

Curve Fit: **AVERAGE RF**

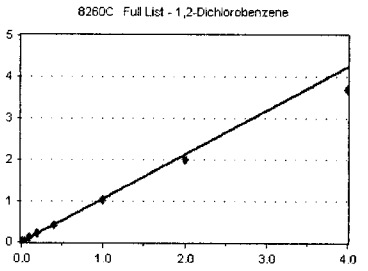


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~1118~~	~~2.873~~	~~11.93~~
9E29058-CAL2	0.2	1667	2.179	11.94
9E29058-CAL3	0.4	2690	1.783	11.93
9E29058-CAL4	1	6459	1.756	11.93
9E29058-CAL5	2	12230	1.570	11.93
9E29058-CAL6	5	31024	1.646	11.93
9E29058-CAL7	10	61550	1.648	11.93
9E29058-CAL8	20	124826	1.636	11.93
9E29058-CAL9	50	313322	1.604	11.93
9E29058-CALA	100	597386	1.512	11.93
9E29058-CALB	200	1090372	1.354	11.93

AVE RF **1.669** RF RSD **12.96** AVE RT **11.93**

1,2-Dichlorobenzene

Curve Fit: **AVERAGE RF**

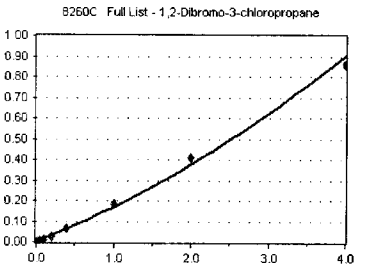


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	533	1.370	12.06
9E29058-CAL2	0.2	833	1.089	12.06
9E29058-CAL3	0.4	1753	1.162	12.06
9E29058-CAL4	1	3804	1.034	12.06
9E29058-CAL5	2	7643	0.981	12.06
9E29058-CAL6	5	19883	1.055	12.06
9E29058-CAL7	10	38321	1.026	12.06
9E29058-CAL8	20	79024	1.036	12.06
9E29058-CAL9	50	201831	1.033	12.06
9E29058-CALA	100	392931	0.994	12.06
9E29058-CALB	200	746324	0.927	12.06

AVE RF **1.064** RF RSD **11.05** AVE RT **12.06**

1,2-Dibromo-3-chloropropane

Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL4	1	368	0.100	12.67
9E29058-CAL5	2	826	0.106	12.67
9E29058-CAL6	5	2389	0.127	12.67
9E29058-CAL7	10	5509	0.147	12.67
9E29058-CAL8	20	11948	0.157	12.67
9E29058-CAL9	50	36171	0.185	12.67
9E29058-CALA	100	80792	0.204	12.67
9E29058-CALB	200	172847	0.215	12.67

AVE RF **0.155** RF RSD **27.97** AVE RT **12.67**

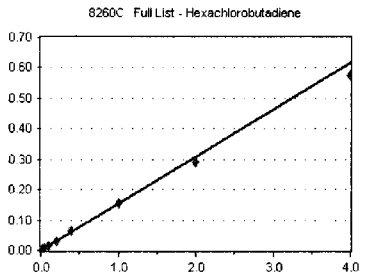
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

Hexachlorobutadiene

Curve Fit: **AVERAGE RF**

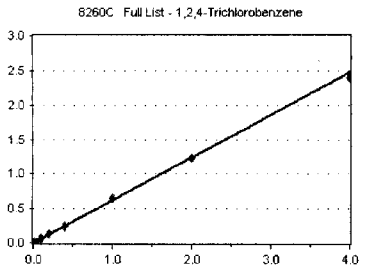


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~235~~	~~0.604~~	~~13.18~~
~~9E29058-CAL2~~	~~0.2~~	~~296~~	~~0.387~~	~~13.18~~
~~9E29058-CAL3~~	~~0.4~~	~~375~~	~~0.249~~	~~13.19~~
9E29058-CAL4	1	652	0.177	13.18
9E29058-CAL5	2	1244	0.160	13.18
9E29058-CAL6	5	2782	0.148	13.18
9E29058-CAL7	10	5351	0.143	13.18
9E29058-CAL8	20	12267	0.161	13.19
9E29058-CAL9	50	30150	0.154	13.18
9E29058-CALA	100	57553	0.146	13.19
9E29058-CALB	200	115944	0.144	13.18

AVE RF **0.154** RF RSD **7.55** AVE RT **13.18**

1,2,4-Trichlorobenzene

Curve Fit: **AVERAGE RF**

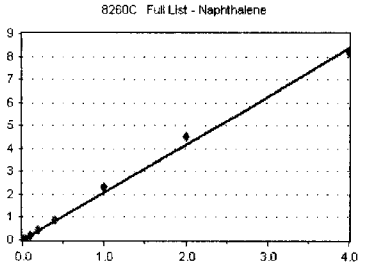


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~358~~	~~0.920~~	~~13.21~~
9E29058-CAL2	0.2	579	0.757	13.22
9E29058-CAL3	0.4	812	0.538	13.22
9E29058-CAL4	1	2286	0.621	13.22
9E29058-CAL5	2	4471	0.574	13.21
9E29058-CAL6	5	11381	0.604	13.21
9E29058-CAL7	10	23206	0.621	13.22
9E29058-CAL8	20	46713	0.612	13.22
9E29058-CAL9	50	126759	0.649	13.22
9E29058-CALA	100	244685	0.619	13.22
9E29058-CALB	200	483143	0.600	13.21

AVE RF **0.620** RF RSD **9.18** AVE RT **13.22**

Naphthalene

Curve Fit: **AVERAGE RF**

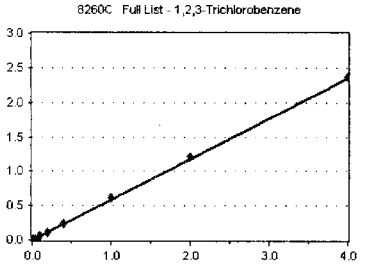


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~706~~	~~1.814~~	~~13.49~~
~~9E29058-CAL2~~	~~0.2~~	~~1368~~	~~1.788~~	~~13.50~~
~~9E29058-CAL3~~	~~0.4~~	~~2785~~	~~1.846~~	~~13.50~~
9E29058-CAL4	1	6879	1.870	13.49
9E29058-CAL5	2	14001	1.797	13.49
9E29058-CAL6	5	38161	2.024	13.49
9E29058-CAL7	10	79664	2.133	13.50
9E29058-CAL8	20	170582	2.235	13.49
9E29058-CAL9	50	451629	2.312	13.49
9E29058-CALA	100	891724	2.257	13.49
9E29058-CALB	200	1658112	2.059	13.49

AVE RF **2.086** RF RSD **8.86** AVE RT **13.49**

1,2,3-Trichlorobenzene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~105~~	~~0.270~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~532~~	~~0.695~~	~~13.66~~
9E29058-CAL3	0.4	850	0.563	13.66
9E29058-CAL4	1	2090	0.568	13.66
9E29058-CAL5	2	4310	0.553	13.65
9E29058-CAL6	5	10740	0.570	13.65
9E29058-CAL7	10	22472	0.602	13.65
9E29058-CAL8	20	46516	0.610	13.65
9E29058-CAL9	50	120109	0.615	13.65
9E29058-CALA	100	241375	0.611	13.65
9E29058-CALB	200	476195	0.591	13.65

AVE RF **0.587** RF RSD **4.01** AVE RT **13.65**

Calibration Status Report VOA-GCMS3

Method Path : C:\msdchem\1\METHODS\
Method File : VC190529G.M
Title : NWTPH-Gx by GC/MS
Last Update : Thu May 30 15:52:54 2019
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	50	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052924.D
2	2	100	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052925.D
3	3	250	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052926.D
4	4	500	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052927.D
5	5	1000	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052928.D
6	6	2500	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052929.D
7	7	5000	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052930.D
8	8	10000	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052931.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	May 30 15:51 2019	May 30 15:47 2019	30 May 2019 12:49 am
2	2	May 30 15:51 2019	May 30 15:47 2019	30 May 2019 1:17 am
3	3	May 30 15:51 2019	May 30 15:47 2019	30 May 2019 1:44 am
4	4	May 30 15:51 2019	May 30 15:47 2019	30 May 2019 2:12 am
5	5	May 30 15:51 2019	May 30 15:47 2019	30 May 2019 2:39 am
6	6	May 30 15:51 2019	May 30 15:47 2019	30 May 2019 3:07 am
7	7	May 30 15:51 2019	May 30 15:50 2019	30 May 2019 3:34 am
8	8	May 30 15:51 2019	May 30 15:47 2019	30 May 2019 4:02 am

VC190529G.M Thu May 30 16:04:30 2019

Method Path : C:\msdchem\1\METHODS\
Method File : VC190529G.M
Title : NWTPH-Gx by GC/MS
Last Update : Thu May 30 15:52:54 2019
Response Via : Initial Calibration

Calibration Files
1 =VC19052924.D 2 =VC19052925.D 3 =VC19052926.D 4 =VC19052927.D 5 =VC19052928.D 6 =VC19052929.D
7 =VC19052930.D 8 =VC19052931.D

		Compound	1	2	3	4	5	6	7	8	Avg	%RSD
1)	I	Pentafluorobenzene...	----------	----------	ISTD	----------	----------	----------	----------	----------		
2)	S	1,4-Difluorobe...	4.431	4.451	4.465	4.507	4.485	4.512	4.962	5.466	4.660	7.91
3)	S	4-Bromofluorob...	3.476	3.515	3.488	3.444	3.505	3.487	3.469	3.464	3.481	0.65
4)	S	Chlorobenzene-...									0.000	-1.00
5)	H	CA-LUFT (C5-C12)	4.380	3.196	2.608	2.520	2.348	2.108	2.313	2.163	2.705	28.02
6)	H	TPHg (C5-C9)	3.731	2.910	2.274	2.172	2.014	1.781	1.924	1.785	2.324	29.06
7)	H	TPHg (C6-C10)	2.853	2.200	1.709	1.673	1.577	1.412	1.544	1.443	1.801	27.25
8)	H	NWTPH-Gx	1.312	1.169	1.303	1.417	1.416	1.369	1.544	1.467	1.375	8.34
9)		Benzene (NR)									0.000	-1.00
10)	S	Toluene-d8 (NR)									0.000	-1.00
11)	C	Toluene (NR)									0.000	-1.00
12)	S	1,4-Dichlorobe...									0.000	-1.00
13)		Naphthalene (NR)									0.000	-1.00

(#) = Out of Range

Compound List Report VOA-GCMS3

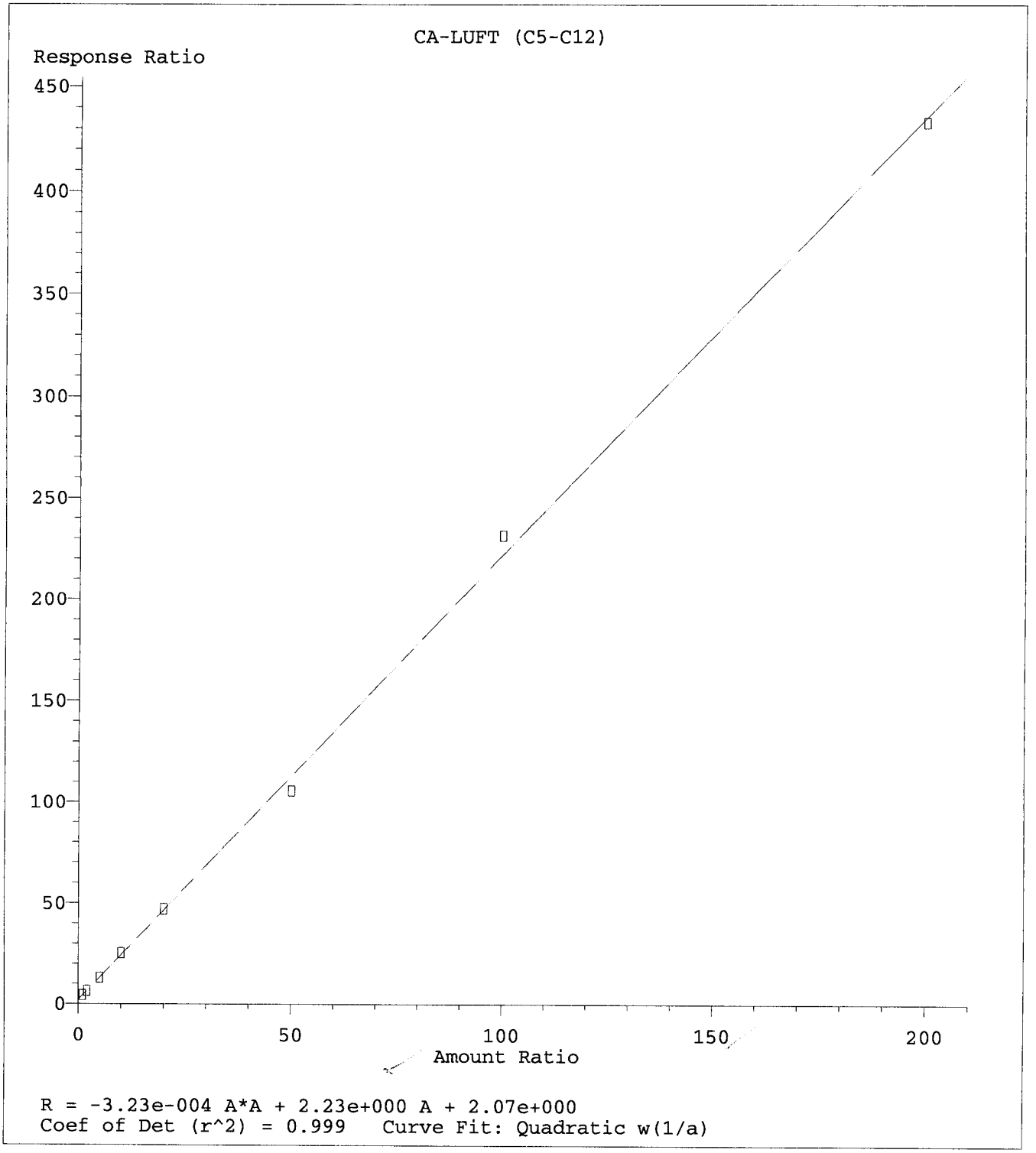
Method Path : C:\msdchem\1\METHODS\
Method File : VC190529G.M
Title : NWTPH-Gx by GC/MS
Last Update : Thu May 30 15:52:54 2019
Response Via : Initial Calibration

Total Cpnds : 13

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	Pentafluorobenzene (IS)	168	6.030	1.000	A	2	A	A
2	S	1,4-Difluorobenzene (Sur)	TIC	6.583	1.092	A	2	A	A
3	S	4-Bromofluorobenzene (Sur)	TIC	10.834	1.797	A	2	A	A
4	S	Chlorobenzene-d5 (NR)	TIC	9.751	1.617	A	2	A	A
5	H	CA-LUFT (C5-C12)	TIC	9.906	1.643	Q1/a	0	A	A
6	H	TPHg (C5-C9)	TIC	9.906	1.643	Q1/a	0	A	A
7	H	TPHg (C6-C10)	TIC	9.906	1.643	Q1/a	0	A	A
8	H	NWTPH-Gx	TIC	9.906	1.643	Q1/a	0	A	A
9		Benzene (NR)	78	5.932	0.984	A	2	A	A
10	S	Toluene-d8 (NR)	TIC	8.091	1.342	A	2	A	A
11	C	Toluene (NR)	91	8.152	1.352	A	2	A	A
12	S	1,4-Dichlorobenzene-d4 (NR)	TIC	11.728	1.945	A	2	A	A
13		Naphthalene (NR)	128	13.491	2.238	A	2	A	A

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

VC190529G.M Thu May 30 16:04:34 2019



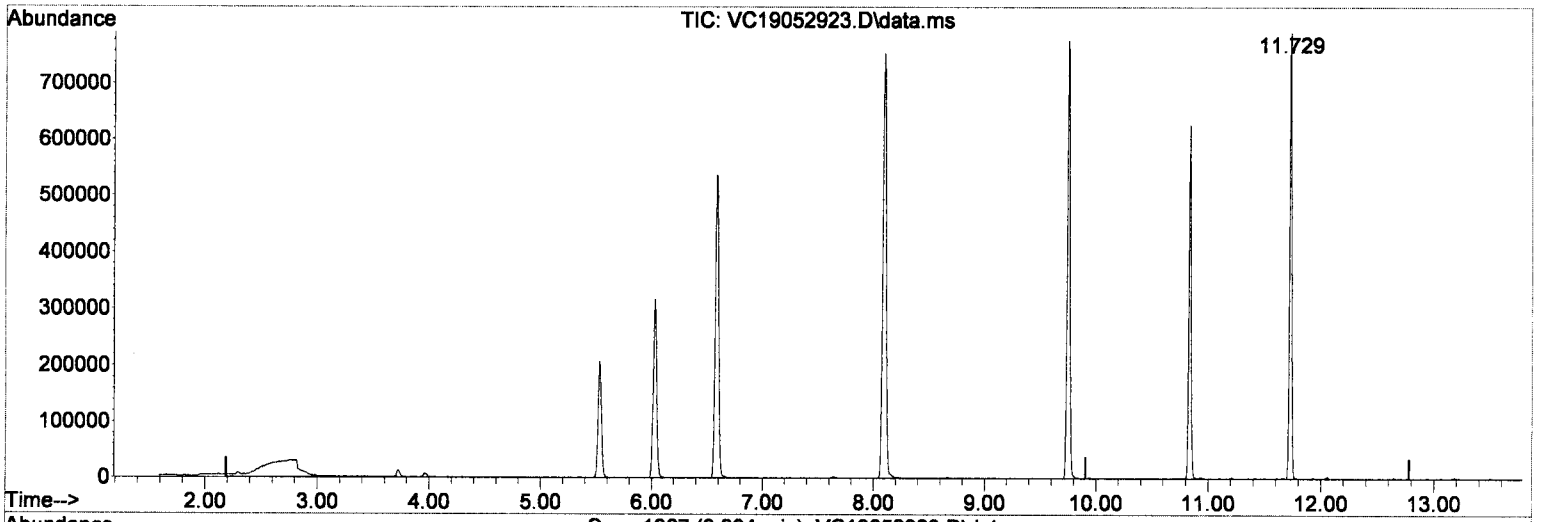
Method Name: C:\msdchem\1\METHODS\VC190529G.M
Calibration Table Last Updated: Thu May 30 15:52:54 2019

IWT= 9.28

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052923.D
Acq On : 30 May 2019 12:22 am
Operator : TB
Sample : 9E29058-ICB2
Misc : 1X 5mL DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:56 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration



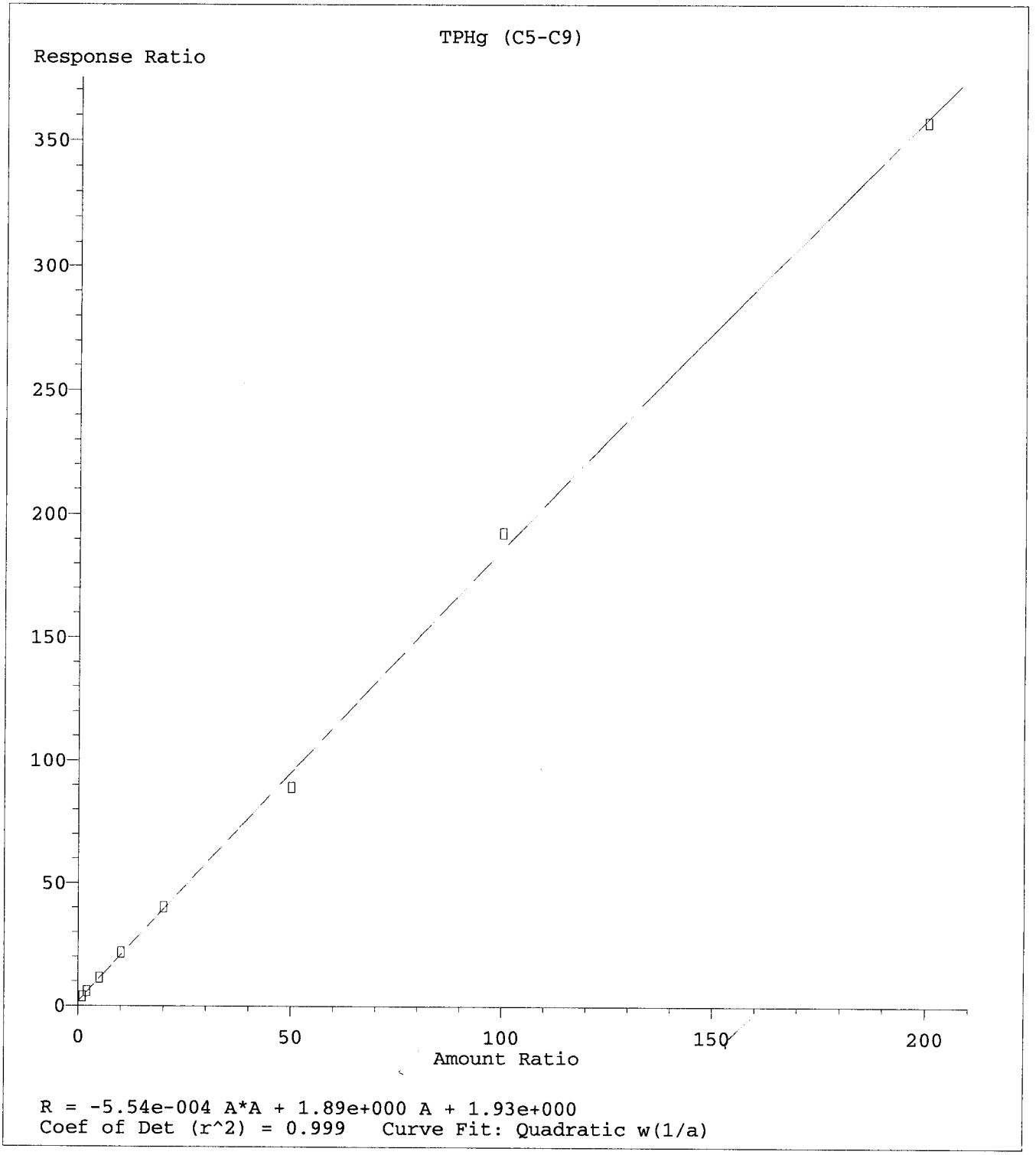
TIC: VC19052923.D\data.ms

(5) CA-LUFT (C5-C12) (H)

9.906min (0.000) 9.28 ug/L m

response 651712

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00



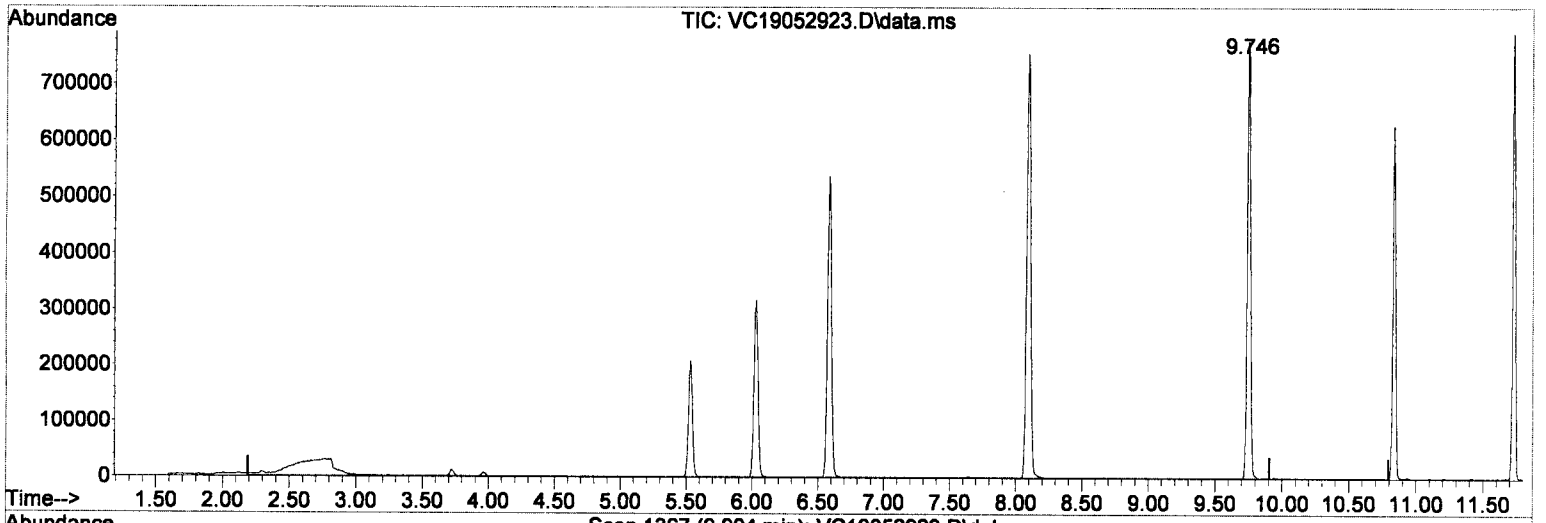
Method Name: C:\msdchem\1\METHODS\VC190529G.M
Calibration Table Last Updated: Thu May 30 15:52:54 2019

INT = 14.63

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052923.D
Acq On : 30 May 2019 12:22 am
Operator : TB
Sample : 9E29058-ICB2
Misc : 1X 5mL DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:56 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration



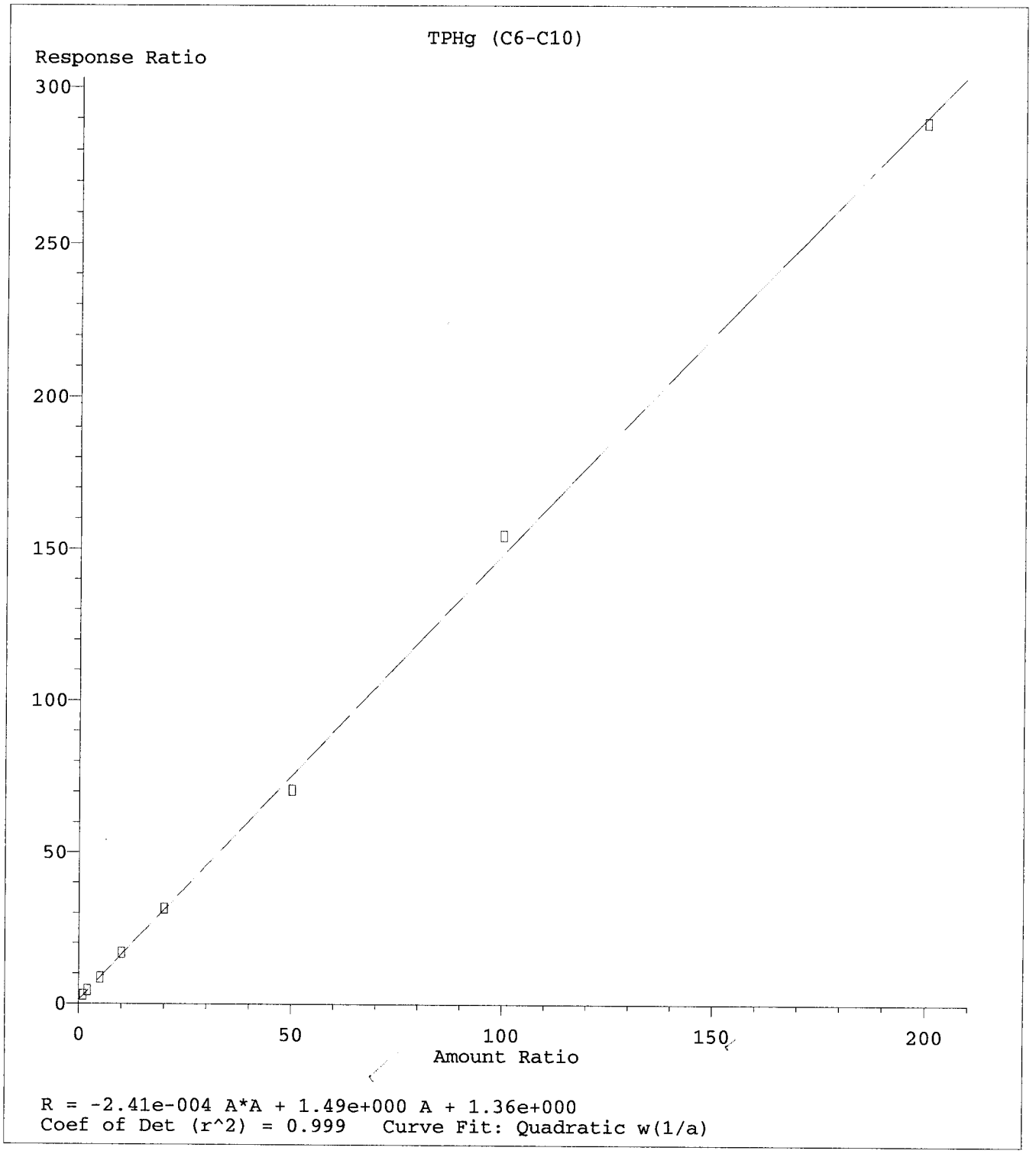
TIC: VC19052923.D\data.ms

(6) TPHg (C5-C9) (H)

9.906min (0.000) 14.63 ug/L m

response 651712

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00



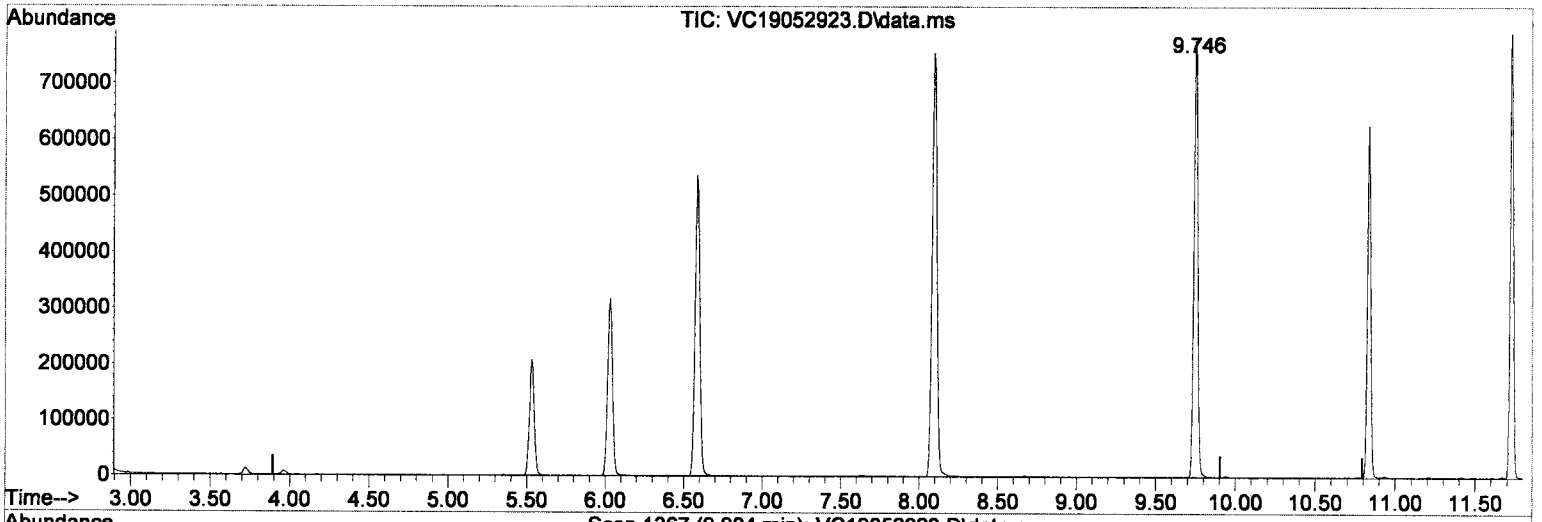
Method Name: C:\msdchem\1\METHODS\VC190529G.M
Calibration Table Last Updated: Thu May 30 15:52:54 2019

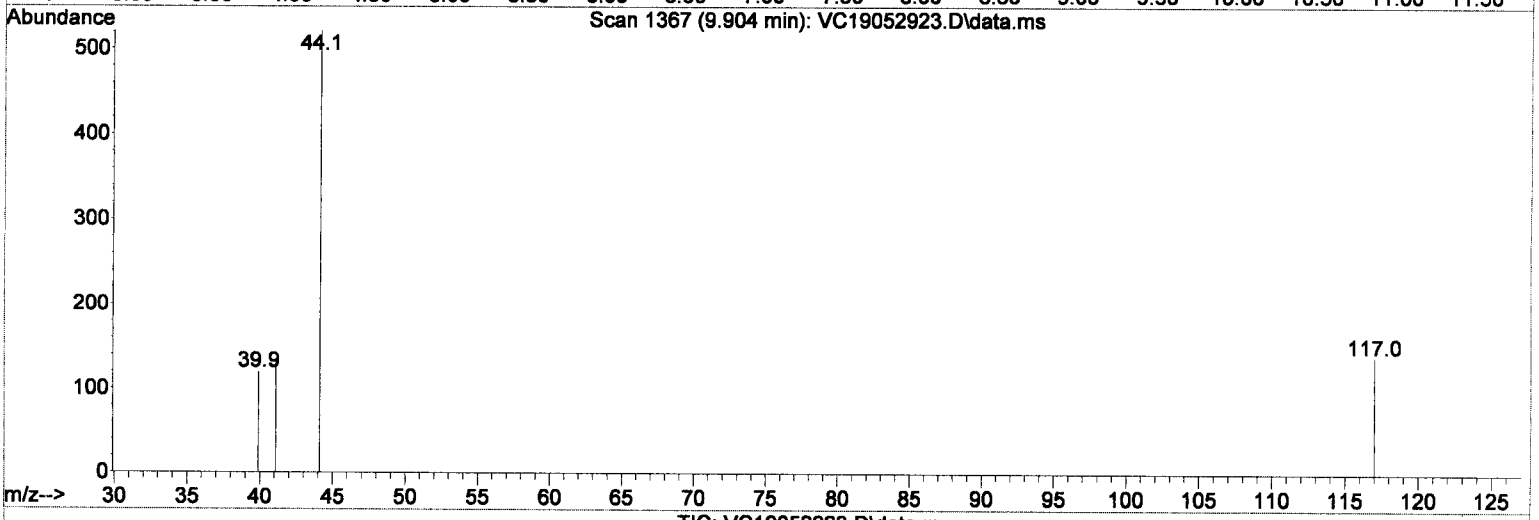
Int = 14.02

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052923.D
Acq On : 30 May 2019 12:22 am
Operator : TB
Sample : 9E29058-ICB2
Misc : 1X 5mL DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:56 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration





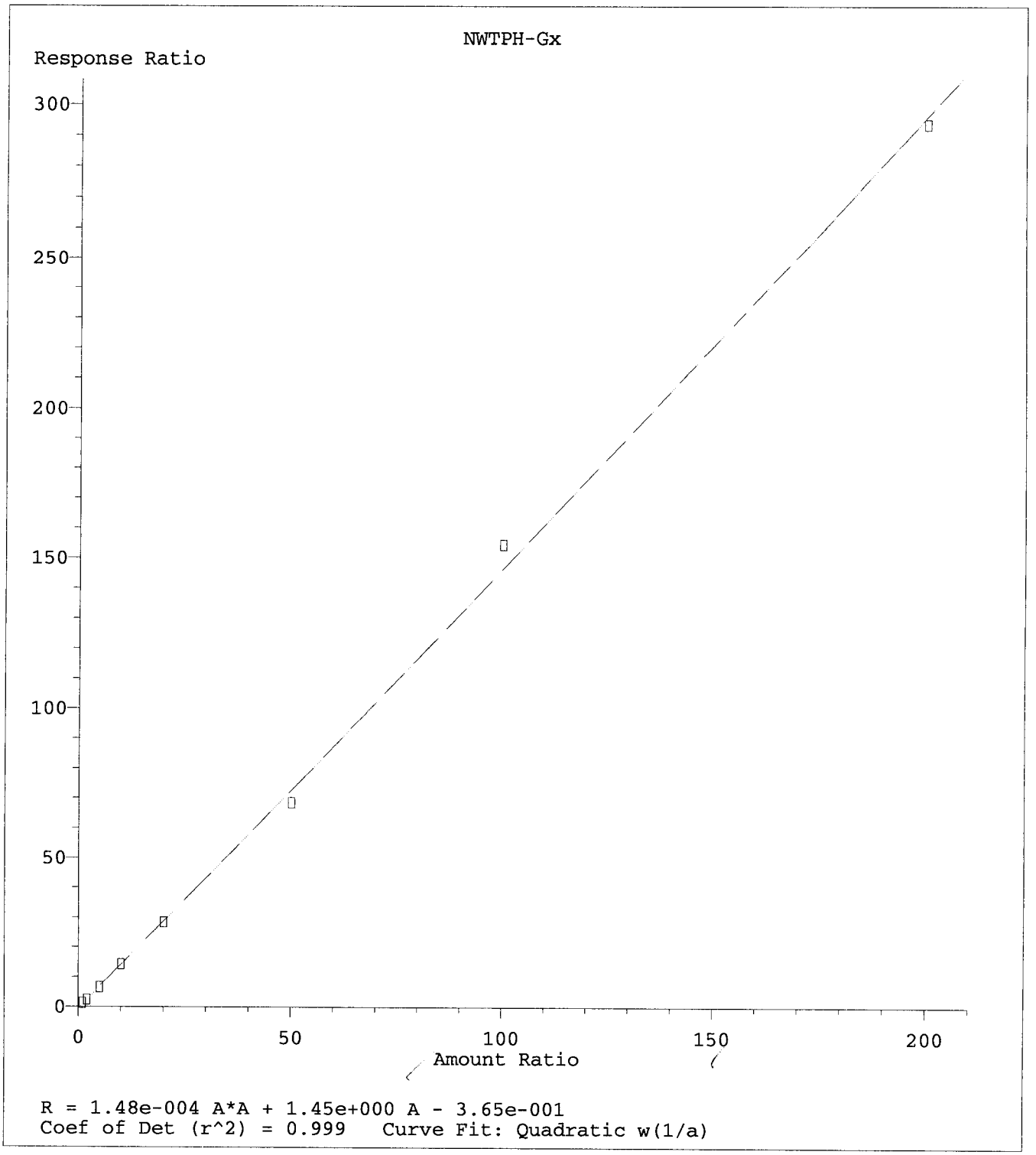
TIC: VC19052923.D\data.ms

(7) TPHg (C6-C10) (H)

9.906min (0.000) 14.02 ug/L m

response 464649

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00



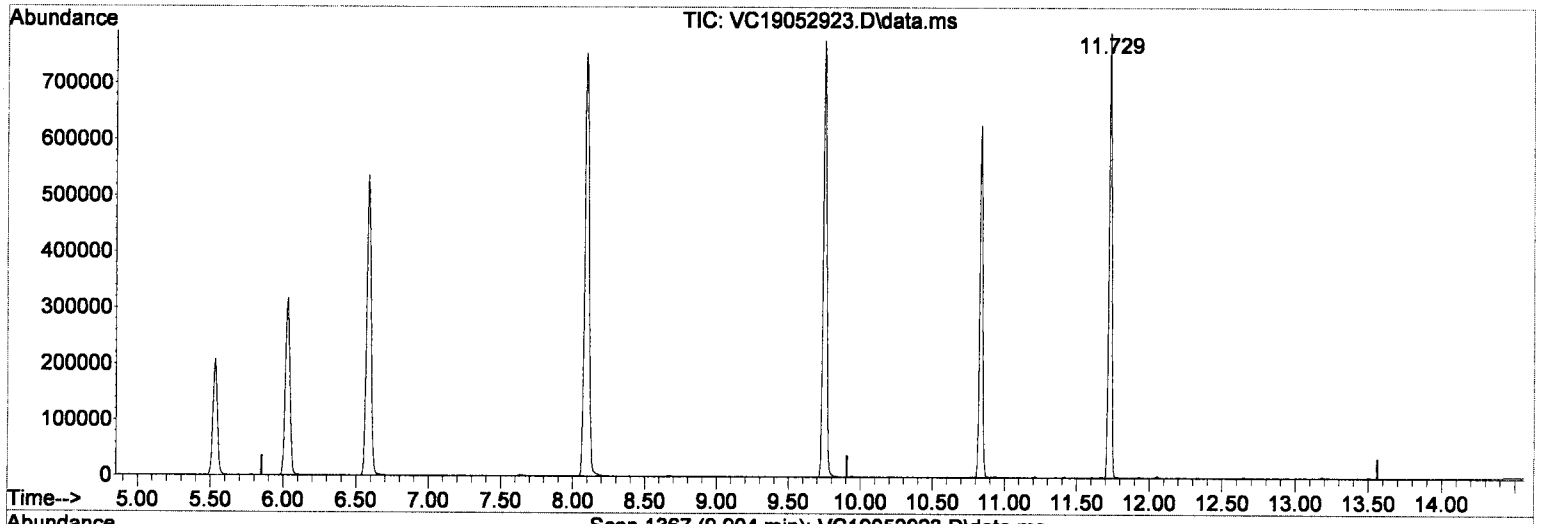
Method Name: C:\msdchem\1\METHODS\VC190529G.M
Calibration Table Last Updated: Thu May 30 15:52:54 2019

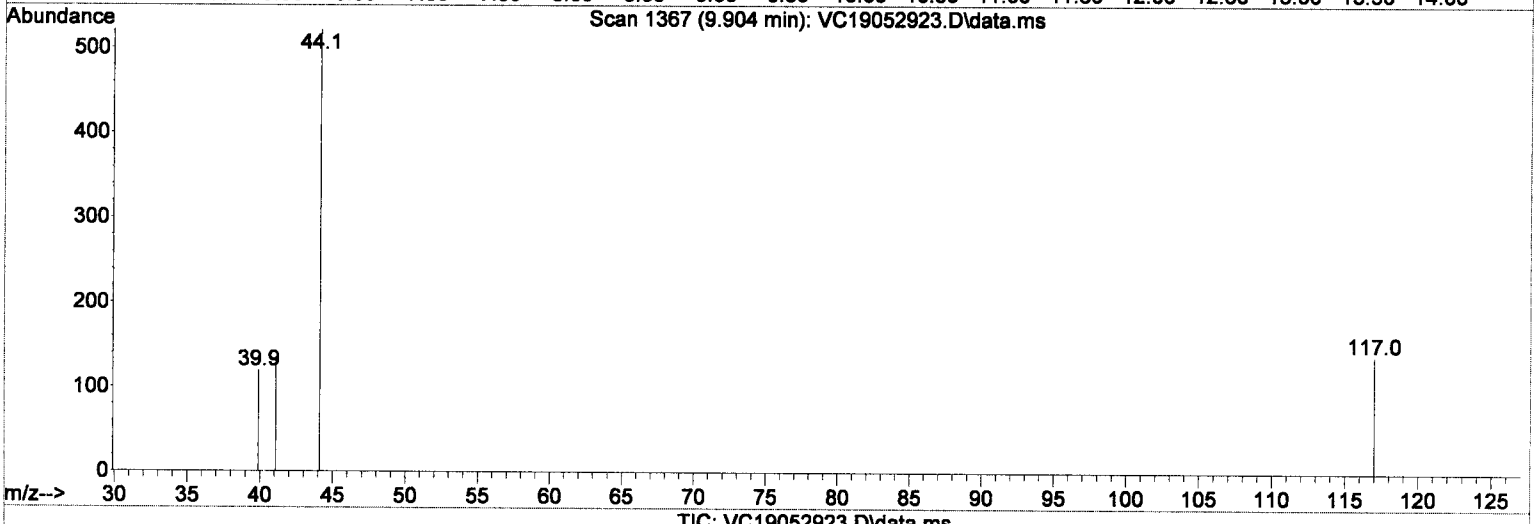
Int = 13.72

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052923.D
Acq On : 30 May 2019 12:22 am
Operator : TB
Sample : 9E29058-ICB2
Misc : 1X 5mL DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:56 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration





TIC: VC19052923.D\data.ms

(8) NWTPH-Gx (H)

9.906min (0.000) 13.72 ug/L m

response 8855

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9E29058

Analysis Included
8015D-Mod Gasoline (C6-C10) by GC/MS
CA LUFT GRO
NWTPH-Gx

INSTRUMENT SEQUENCE LOG

SampleID	SampleName	Matrix	STDID	ISTD_ID	Analyzed
9E29058-TUN2	MS Tune	Soil		A19C135	5/29/2019 11:27:00PM
9E29058-ICB2	Initial Cal Blank	Soil		A19C135	5/30/2019 12:22:00AM
9E29058-CALC	Cal Standard	Soil	A19E372	"	5/30/2019 12:49:00AM
9E29058-CALD	Cal Standard	Soil	A19E373	"	5/30/2019 1:17:00AM
9E29058-CALE	Cal Standard	Soil	A19E374	"	5/30/2019 1:44:00AM
9E29058-CALF	Cal Standard	Soil	A19E375	"	5/30/2019 2:12:00AM
9E29058-CALG	Cal Standard	Soil	A19E183	"	5/30/2019 2:39:00AM
9E29058-CALH	Cal Standard	Soil	A19E184	"	5/30/2019 3:07:00AM
9E29058-CALI	Cal Standard	Soil	A19E185	"	5/30/2019 3:34:00AM
9E29058-CALJ	Cal Standard	Soil	A19E186	"	5/30/2019 4:02:00AM
9E29058-ICV2	Initial Cal Check	Soil	A19B262	"	5/30/2019 5:25:00AM

CALIBRATION STANDARD RECOVERIES

Calibration: **A9E3104** Instrument: **VOA-GCMS3**

8015D-Mod Gasoline (C6-C10 Sequence: **9E29058** Matrix: **Soil**

9E29058-CALC	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E29058-CALD	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E29058-CALE	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E29058-CALF	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E29058-CALG	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E29058-CALH	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E29058-CALI	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E29058-CALJ	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**

Compounds listed above have recalculated recoveries outside 70-130% of the true values, and the calibration levels are above the reporting level. If no compounds are listed, all are OK. Please see the next section for quadatic fit compounds.

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9E29058

Analytes With Quadratic Curve Fits

Qualifier	iMDL	iMRL	Spike Amt	%Difference	OK?	Raise MRL to ?
				———	☐	☐ ———

Analytes listed above have quadratic curve fits. If they are using a weighting otpion, they must be checked against the requanted curve points to determine if the recalculated results are within limits (70-130 or as specified).

ICV RECOVERIES

Calibration: **A9E3104** Instrument: **VOA-GCMS3**

CA LUFT GRO Sequence: **9E29058** Matrix: **Soil**

9E29058-ICV2	Inst. MRL	ICV Level	Result	%Rec.	Qual

Compounds listed above have Initial Calibration Verification standard recoveries outside 70-130% of the true values. If no compounds are listed, all have passing recoveries.

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052934.D
Acq On : 30 May 2019 5:25 am
Operator : TB
Sample : 9E29058-ICV2
Misc : 1X 5mL 500ppb GX DI+MeOH
ALS Vial : 34 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 16:00:02 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

5/30/19

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Pentafluorobenzene (IS)	50.000	50.000	0.0	108	0.00
2	S	1,4-Difluorobenzene (Sur)	50.000	46.602	6.8	104	0.00
3	S	4-Bromofluorobenzene (Sur)	50.000	49.352	1.3	108	0.00
4	S	Chlorobenzene-d5 (NR)	-1.000	0.000	0.0	106	0.00
5	H	CA-LUFT (C5-C12)	500.000	529.625	-5.9	110	0.00
6	H	TPHg (C5-C9)	500.000	526.029	-5.2	108	0.00
7	H	TPHg (C6-C10)	500.000	535.493	-7.1	112	0.00
8	H	NWTPH-Gx	500.000	533.680	-6.7	115	0.00
9		Benzene (NR)	-1.000	0.000	0.0	113	0.00
10	S	Toluene-d8 (NR)	-1.000	0.000	0.0	106	0.00
11	C	Toluene (NR)	-1.000	0.000	0.0	114	0.00
12	S	1,4-Dichlorobenzene-d4 (NR)	-1.000	0.000	0.0	108	0.00
13		Naphthalene (NR)	-1.000	0.000	0.0	119	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

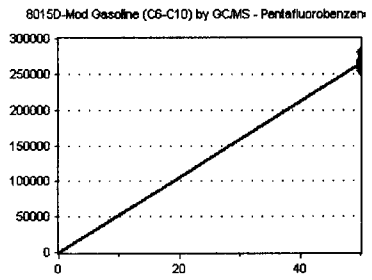
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8015D-Mod Gasoline (C6-C1** Instrument Cal ID: **A9E3104**

Pentafluorobenzene (IS)

Curve Fit: **AVERAGE RF**

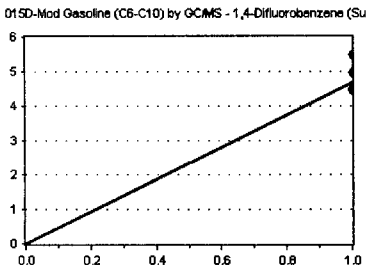


Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	257140	5142.800	6.03
9E29058-CALD	50	254092	5081.840	6.03
9E29058-CALE	50	264662	5293.240	6.03
9E29058-CALF	50	261529	5230.580	6.03
9E29058-CALG	50	261111	5222.220	6.03
9E29058-CALH	50	268653	5373.060	6.03
9E29058-CALI	50	266073	5321.460	6.04
9E29058-CALJ	50	280943	5618.860	6.03

AVE RF **5285.508** RF RSD **3.11** AVE RT **6.03**

1,4-Difluorobenzene (Sur)

Curve Fit: **AVERAGE RF**

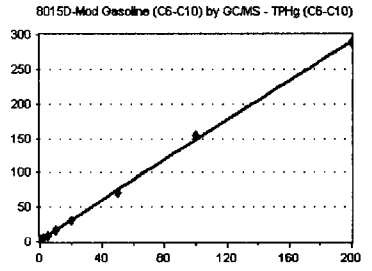


Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	1139443	4.431	6.59
9E29058-CALD	50	1130909	4.451	6.59
9E29058-CALE	50	1181697	4.465	6.59
9E29058-CALF	50	1178596	4.507	6.59
9E29058-CALG	50	1170992	4.485	6.59
9E29058-CALH	50	1212113	4.512	6.59
9E29058-CALI	50	1320230	4.962	6.59
9E29058-CALJ	50	1535644	5.466	6.58

AVE RF **4.660** RF RSD **7.91** AVE RT **6.59**

TPHg (C6-C10)

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

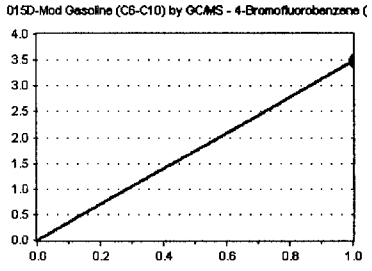


Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	733539	2.853	9.91
9E29058-CALD	100	1118241	2.200	9.91
9E29058-CALE	250	2261282	1.709	9.91
9E29058-CALF	500	4374724	1.673	9.91
9E29058-CALG	1000	8234768	1.577	9.91
9E29058-CALH	2500	1.896308E+07	1.412	9.91
9E29058-CALI	5000	4.107088E+07	1.544	9.91
9E29058-CALJ	10000	8.10639E+07	1.443	9.91

AVE RF **1.801** RF RSD **27.25** AVE RT **9.91**

4-Bromofluorobenzene (Sur)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	893711	3.476	10.84
9E29058-CALD	50	893010	3.515	10.84
9E29058-CALE	50	923159	3.488	10.83
9E29058-CALF	50	900724	3.444	10.84
9E29058-CALG	50	915240	3.505	10.84
9E29058-CALH	50	936867	3.487	10.83
9E29058-CALI	50	922982	3.469	10.84
9E29058-CALJ	50	973205	3.464	10.84

AVE RF **3.481** RF RSD **0.65** AVE RT **10.84**

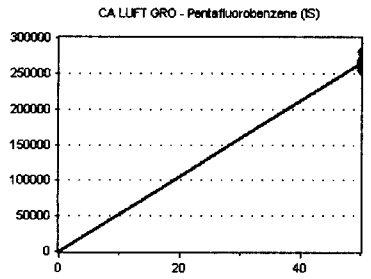
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **CA LUFT GRO** Instrument Cal ID: **A9E3104**

Pentafluorobenzene (IS)

Curve Fit: **AVERAGE RF**

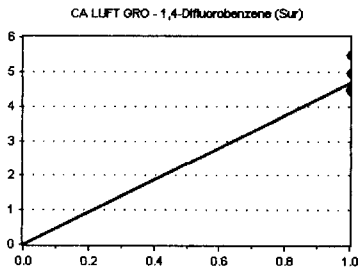


Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	257140	5142.800	6.03
9E29058-CALD	50	254092	5081.840	6.03
9E29058-CALE	50	264662	5293.240	6.03
9E29058-CALF	50	261529	5230.580	6.03
9E29058-CALG	50	261111	5222.220	6.03
9E29058-CALH	50	268653	5373.060	6.03
9E29058-CALI	50	266073	5321.460	6.04
9E29058-CALJ	50	280943	5618.860	6.03

AVE RF **5285.508** RF RSD **3.11** AVE RT **6.03**

1,4-Difluorobenzene (Sur)

Curve Fit: **AVERAGE RF**

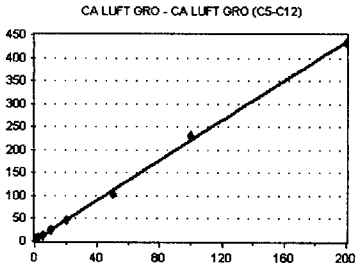


Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	1139443	4.431	6.59
9E29058-CALD	50	1130909	4.451	6.59
9E29058-CALE	50	1181697	4.465	6.59
9E29058-CALF	50	1178596	4.507	6.59
9E29058-CALG	50	1170992	4.485	6.59
9E29058-CALH	50	1212113	4.512	6.59
9E29058-CALI	50	1320230	4.962	6.59
9E29058-CALJ	50	1535644	5.466	6.58

AVE RF **4.660** RF RSD **7.91** AVE RT **6.59**

CA LUFT GRO (C5-C12)

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

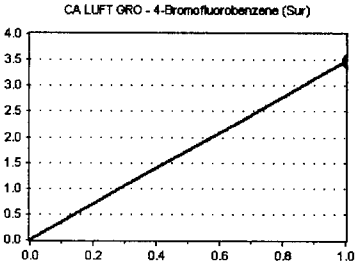


Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	1126234	4.380	9.91
9E29058-CALD	100	1624353	3.196	9.91
9E29058-CALE	250	3450881	2.608	9.91
9E29058-CALF	500	6589983	2.520	9.91
9E29058-CALG	1000	1.2264E+07	2.348	9.91
9E29058-CALH	2500	2.832011E+07	2.108	9.91
9E29058-CALI	5000	6.154367E+07	2.313	9.91
9E29058-CALJ	10000	1.215222E+08	2.163	9.91

AVE RF **2.705** RF RSD **28.02** AVE RT **9.91**

4-Bromofluorobenzene (Sur)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	893711	3.476	10.84
9E29058-CALD	50	893010	3.515	10.84
9E29058-CALE	50	923159	3.488	10.83
9E29058-CALF	50	900724	3.444	10.84
9E29058-CALG	50	915240	3.505	10.84
9E29058-CALH	50	936867	3.487	10.83
9E29058-CALI	50	922982	3.469	10.84
9E29058-CALJ	50	973205	3.464	10.84

AVE RF **3.481** RF RSD **0.65** AVE RT **10.84**

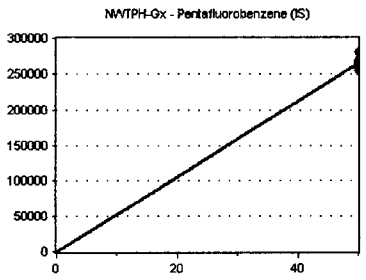
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **NWTPH-Gx** Instrument Cal ID: **A9E3104**

Pentafluorobenzene (IS)

Curve Fit: **AVERAGE RF**

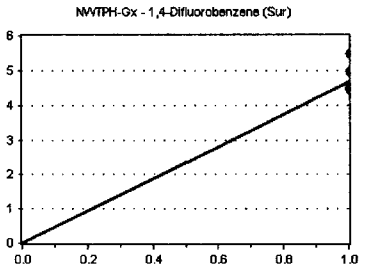


Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	257140	5142.800	6.03
9E29058-CALD	50	254092	5081.840	6.03
9E29058-CALE	50	264662	5293.240	6.03
9E29058-CALF	50	261529	5230.580	6.03
9E29058-CALG	50	261111	5222.220	6.03
9E29058-CALH	50	268653	5373.060	6.03
9E29058-CALI	50	266073	5321.460	6.04
9E29058-CALJ	50	280943	5618.860	6.03

AVE RF **5285.508** RF RSD **3.11** AVE RT **6.03**

1,4-Difluorobenzene (Sur)

Curve Fit: **AVERAGE RF**

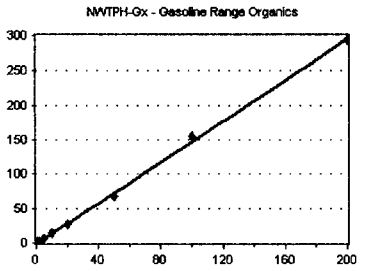


Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	1139443	4.431	6.59
9E29058-CALD	50	1130909	4.451	6.59
9E29058-CALE	50	1181697	4.465	6.59
9E29058-CALF	50	1178596	4.507	6.59
9E29058-CALG	50	1170992	4.485	6.59
9E29058-CALH	50	1212113	4.512	6.59
9E29058-CALI	50	1320230	4.962	6.59
9E29058-CALJ	50	1535644	5.466	6.58

AVE RF **4.660** RF RSD **7.91** AVE RT **6.59**

Gasoline Range Organics

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

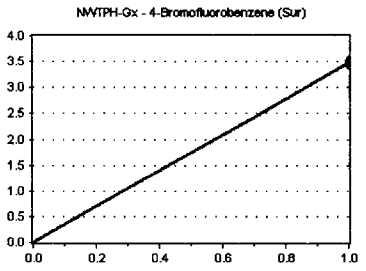


Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	337341	1.312	9.91
9E29058-CALD	100	594153	1.169	9.91
9E29058-CALE	250	1724074	1.303	9.91
9E29058-CALF	500	3706703	1.417	9.91
9E29058-CALG	1000	7396048	1.416	9.91
9E29058-CALH	2500	1.838528E+07	1.369	9.91
9E29058-CALI	5000	4.106911E+07	1.544	9.91
9E29058-CALJ	10000	8.243122E+07	1.467	9.91

AVE RF **1.375** RF RSD **8.34** AVE RT **9.91**

4-Bromofluorobenzene (Sur)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	893711	3.476	10.84
9E29058-CALD	50	893010	3.515	10.84
9E29058-CALE	50	923159	3.488	10.83
9E29058-CALF	50	900724	3.444	10.84
9E29058-CALG	50	915240	3.505	10.84
9E29058-CALH	50	936867	3.487	10.83
9E29058-CALI	50	922982	3.469	10.84
9E29058-CALJ	50	973205	3.464	10.84

AVE RF **3.481** RF RSD **0.65** AVE RT **10.84**

Injection Log

Directory: j:\DATA\2019-05\9E29058

Line	Vial	FileName	Multiplier	SampleName		Misc Info	Injected
1	1	Vc19052901.d	1.	9E29058-IBL1		1X 5mL DI+MeOH	29 May 2019 14:17
2	2	Vc19052902.d	1.	9E29058-TUN1		A19C135 BFB (IS/...	29 May 2019 14:45
3	3	Vc19052903.d	1.	9E29058-ICB1		1X 5mL DI+MeOH	29 May 2019 15:12
4	4	Vc19052904.d	1.	9E29058-CAL1		1X 5mL 0.1ppb VO...	29 May 2019 15:40
5	5	Vc19052905.d	1.	9E29058-CAL2		1X 5mL 0.2ppb VO...	29 May 2019 16:07
6	6	Vc19052906.d	1.	9E29058-CAL3		1X 5mL 0.4ppb VO...	29 May 2019 16:35
7	7	Vc19052907.d	1.	9E29058-CAL4		1X 5mL 1ppb VOC ...	29 May 2019 17:02
8	8	Vc19052908.d	1.	9E29058-CAL5		1X 5mL 2ppb VOC ...	29 May 2019 17:30
9	9	Vc19052909.d	1.	9E29058-CAL6		1X 5mL 5ppb VOC ...	29 May 2019 17:57
10	10	Vc19052910.d	1.	9E29058-CAL7		1X 5mL 10ppb VOC...	29 May 2019 18:25
11	11	Vc19052911.d	1.	9E29058-CAL8		1X 5mL 20ppb VOC...	29 May 2019 18:52
12	12	Vc19052912.d	1.	9E29058-CAL9		1X 5mL 50ppb VOC...	29 May 2019 19:20
13	13	Vc19052913.d	1.	9E29058-IBL2		1X 5mL DI+MeOH	29 May 2019 19:47
14	14	Vc19052914.d	1.	9E29058-CALA		1X 5mL 100ppb VO...	29 May 2019 20:15
15	15	Vc19052915.d	1.	9E29058-IBL3		1X 5mL DI+MeOH	29 May 2019 20:42
16	16	Vc19052916.d	1.	9E29058-CALB		1X 5mL 200ppb VO...	29 May 2019 21:10
17	17	Vc19052917.d	1.	9E29058-IBL4		1X 5mL DI+MeOH	29 May 2019 21:37
18	18	Vc19052918.d	1.	9E29058-IBL5		1X 5mL DI+MeOH	29 May 2019 22:05
19	19	Vc19052919.d	1.	9E29058-ICV1		1X 5mL 20ppb VOC...	29 May 2019 22:32
20	20	Vc19052920.d	1.	9E29058-IBL6		1X 5mL DI+MeOH	29 May 2019 22:59
21	21	Vc19052921.d	1.	9E29058-TUN2	RT	A19C135 BFB (IS/...	29 May 2019 23:27
22	22	Vc19052922.d	1.	9E29058-IBL7		1X 5mL DI+MeOH	29 May 2019 23:54
23	23	Vc19052923.d	1.	9E29058-ICB2		1X 5mL DI+MeOH	30 May 2019 00:22
24	24	Vc19052924.d	1.	9E29058-CALC		1X 5mL 50ppb GX ...	30 May 2019 00:49
25	25	Vc19052925.d	1.	9E29058-CALD		1X 5mL 100ppb GX...	30 May 2019 01:17
26	26	Vc19052926.d	1.	9E29058-CALE		1X 5mL 250ppb GX...	30 May 2019 01:44
27	27	Vc19052927.d	1.	9E29058-CALF		1X 5mL 500ppb GX...	30 May 2019 02:12
28	28	Vc19052928.d	1.	9E29058-CALG		1X 5mL 1000ppb G...	30 May 2019 02:39
29	29	Vc19052929.d	1.	9E29058-CALH		1X 5mL 2500ppb G...	30 May 2019 03:07
30	30	Vc19052930.d	1.	9E29058-CALI		1X 5mL 5000ppb G...	30 May 2019 03:34
31	31	Vc19052931.d	1.	9E29058-CALJ		1X 5mL 10000ppb ...	30 May 2019 04:02
32	32	Vc19052932.d	1.	9E29058-IBL8		1X 5mL DI+MeOH	30 May 2019 04:29
33	33	Vc19052933.d	1.	9E29058-IBL9		1X 5mL DI+MeOH	30 May 2019 04:57
34	34	Vc19052934.d	1.	9E29058-ICV2		1X 5mL 500ppb GX...	30 May 2019 05:25
35	35	Vc19052935.d	1.	9E29058-IBLA		1X 5mL DI+MeOH	30 May 2019 05:52

5/30/19

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052901.D
Acq On : 29 May 2019 2:17 pm
Operator : TB
Sample : 9E29058-IBL1
Misc : 1X 5mL DI+MeOH
ALS Vial : 1 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:31 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

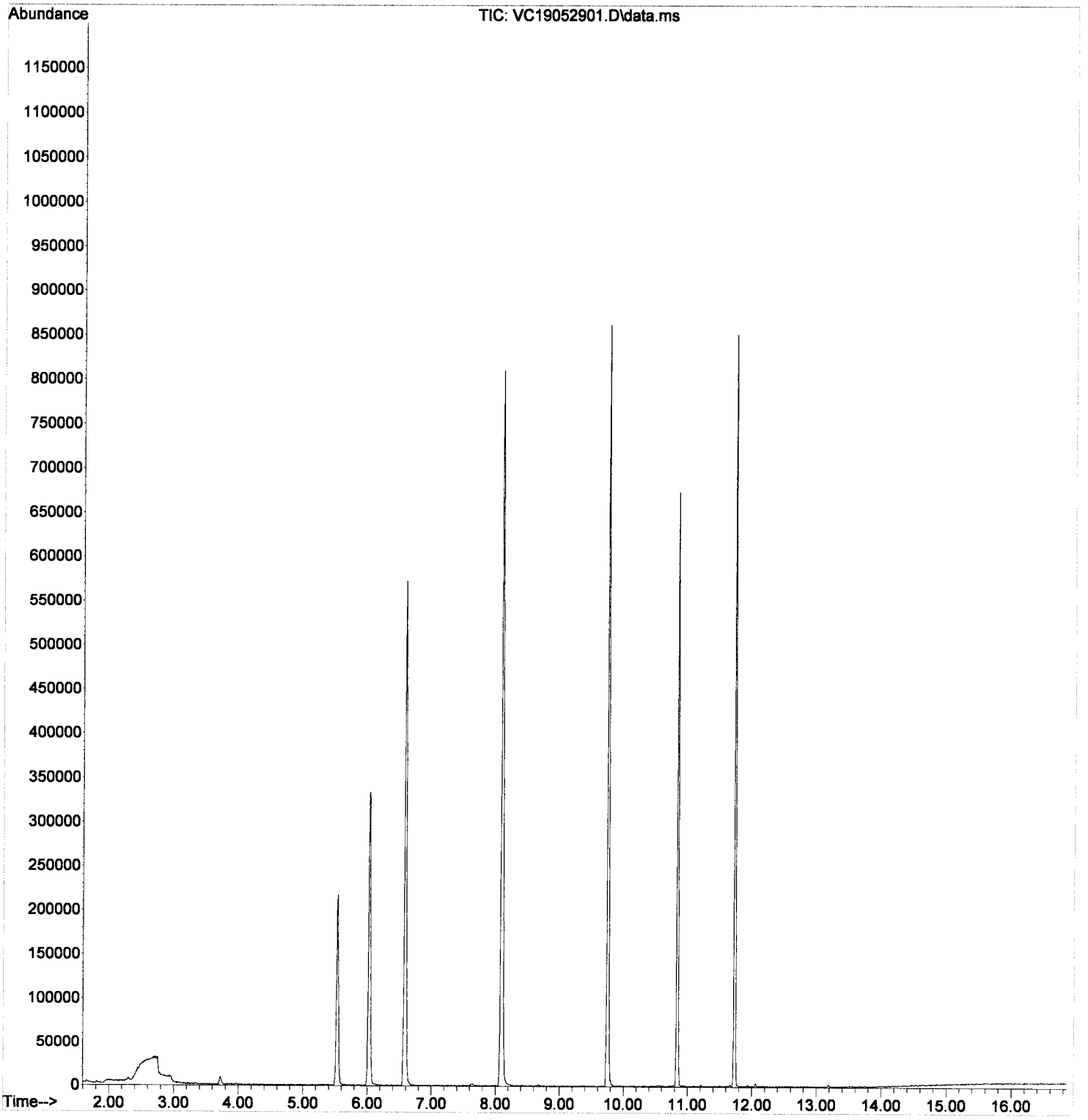
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.031	168	279040	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.748	117	484013	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.725	152	202813	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.532	111	149073	49.34	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.584	114	533928	49.75	ug/L		0.00
39) Toluene-d8 (S)	8.093	98	650638	49.69	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.837	174	177320	50.63	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.851	50	998	0.24	ug/L		88
5) Bromomethane	2.302	96	2128	1.33	ug/L		96
6) Chloroethane	2.435	64	170	0.16	ug/L	#	1
9) Carbon Disulfide	3.111	76	570	0.13	ug/L		77
11) Iodomethane	3.226	142	606	1.26	ug/L	#	33
12) Methylene Chloride	3.719	84	4593	Below Cal			90
13) Acetone	3.847	43	1940	1.54	ug/L		95
73) n-Butylbenzene	11.938	91	860	0.13	ug/L	#	71
76) Hexachlorobutadiene	13.191	223	353	0.56	ug/L	#	74

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052901.D
Acq On : 29 May 2019 2:17 pm
Operator : TB
Sample : 9E29058-IBL1
Misc : 1X 5mL DI+MeOH
ALS Vial : 1 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:31 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



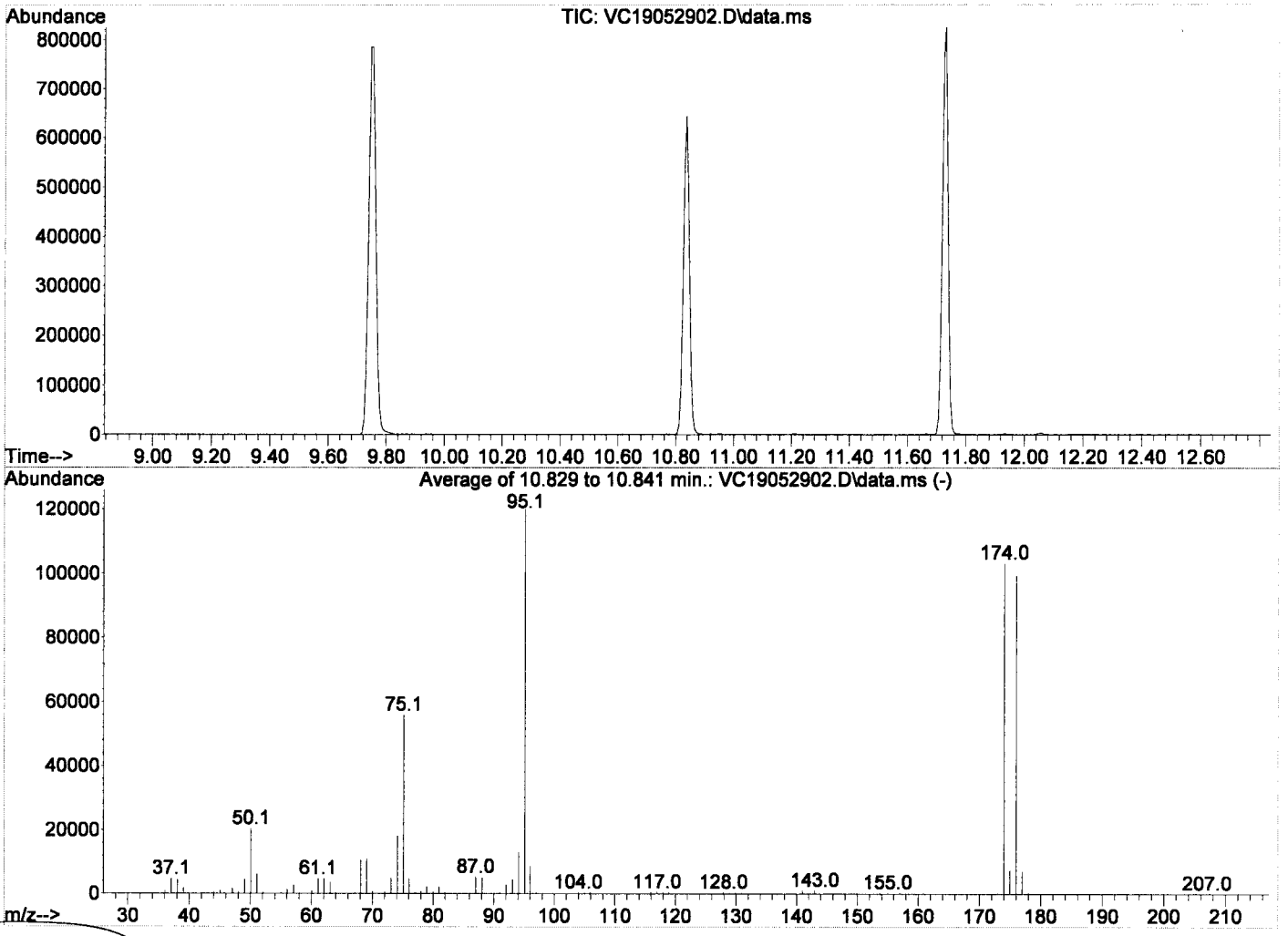
BFB

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052902.D
Acq On : 29 May 2019 2:45 pm
Operator : TB
Sample : 9E29058-TUN1
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\VC190529S.M
Title : EPA 8260: Volatile Organic Compounds
Last Update : Thu May 30 14:50:00 2019

5/30/19



AutoFind: Scans 1519, 1520, 1521; Background Corrected with Scan 1511

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	12	40	17.0	20413	PASS
75	95	30	60	46.6	55912	PASS
95	95	100	100	100.0	119877	PASS
96	95	5	9	7.3	8724	PASS
173	174	0.00	2	0.2	243	PASS
174	95	50	200	86.1	103224	PASS
175	174	5	9	7.3	7533	PASS
176	174	95	101	96.3	99416	PASS
177	176	5	9	7.2	7119	PASS

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052902.D
Acq On : 29 May 2019 2:45 pm
Operator : TB
Sample : 9E29058-TUN1
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:33 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

5/30/19

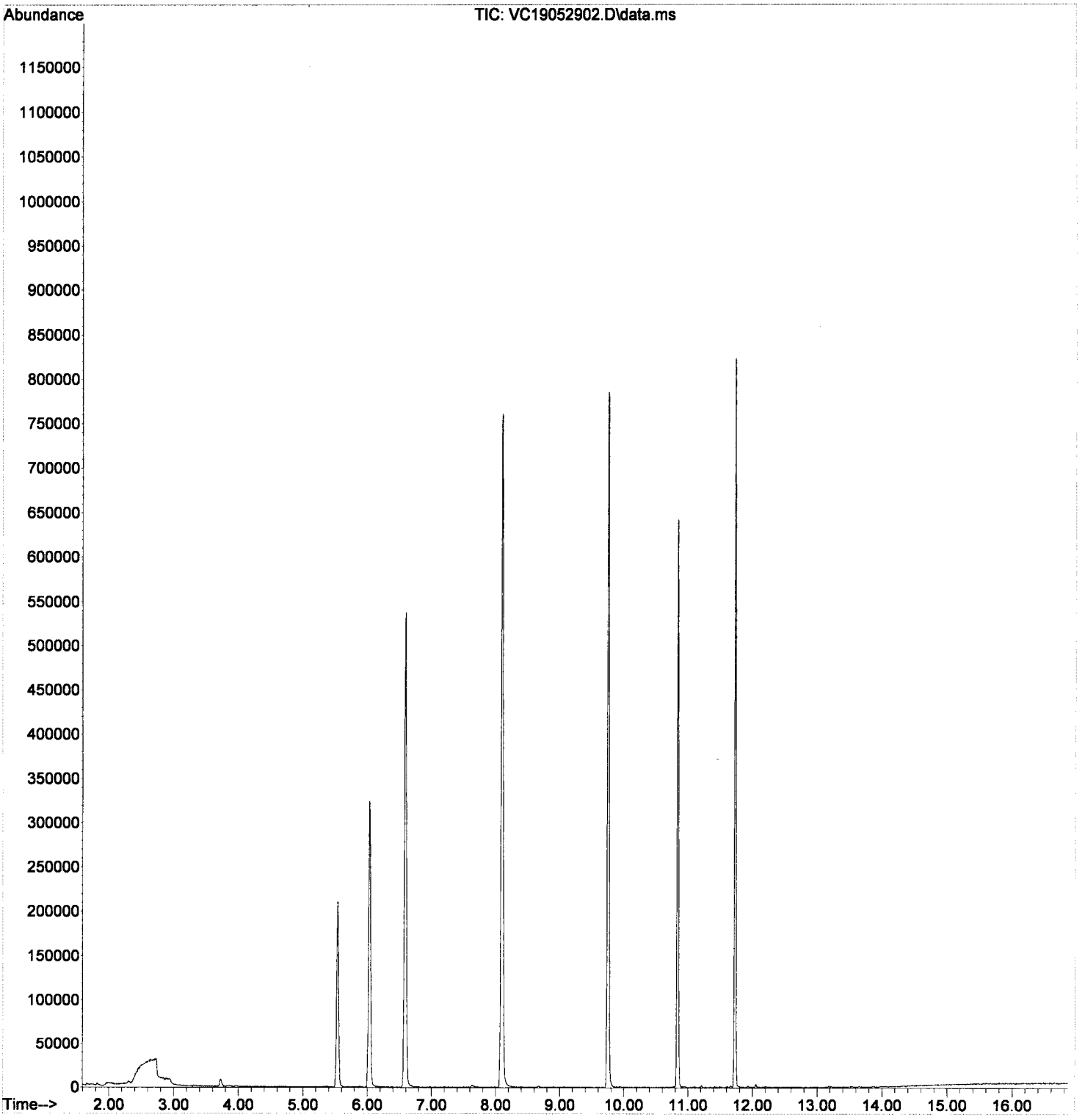
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.029	168	268009	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	467811	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.730	152	195372	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.537	111	142792	49.20	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.589	114	506916	49.17	ug/L		0.00
39) Toluene-d8 (S)	8.098	98	624549	49.35	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.835	174	171404	50.81	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.856	50	829	0.21	ug/L		90
5) Bromomethane	2.306	96	1688	1.10	ug/L		84
6) Chloroethane	2.428	64	226	0.22	ug/L	#	1
9) Carbon Disulfide	3.115	76	490	0.11	ug/L		77
11) Iodomethane	3.255	142	488	1.17	ug/L	#	47
12) Methylene Chloride	3.730	84	4955	Below Cal			82
13) Acetone	3.851	43	2013	1.67	ug/L		81
31) iso-Butyl Alcohol	6.267	43	180	0.67	ug/L	#	17
40) Toluene	8.146	91	1018	0.08	ug/L		93
52) m,p-Xylenes (2)	9.935	91	847	0.09	ug/L		94
70) 4-Isopropyltoluene	11.608	119	747	0.10	ug/L		80
73) n-Butylbenzene	11.936	91	1010	0.15	ug/L		84
76) Hexachlorobutadiene	13.183	223	275	0.46	ug/L	#	69
77) 1,2,4-Trichlorobenzene	13.226	180	236	0.10	ug/L		79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052902.D
Acq On : 29 May 2019 2:45 pm
Operator : TB
Sample : 9E29058-TUN1
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:33 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052903.D
Acq On : 29 May 2019 3:12 pm
Operator : TB
Sample : 9E29058-ICB1
Misc : 1X 5mL DI+MeOH
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:35 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

5/30/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.035	168	264985	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	454941	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.730	152	191224	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.537	111	144484	50.35	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.589	114	505611	49.61	ug/L		0.00
39) Toluene-d8 (S)	8.098	98	616289	50.08	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.835	174	168509	51.03	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.862	50	752	0.19	ug/L		85
5) Bromomethane	2.318	96	1622	1.06	ug/L	#	70
6) Chloroethane	2.446	64	201	0.20	ug/L	#	1
9) Carbon Disulfide	3.109	76	430	0.10	ug/L		77
11) Iodomethane	3.261	142	356	1.06	ug/L	#	70
12) Methylene Chloride	3.730	84	14774	0.19	ug/L		93
13) Acetone	3.839	43	519	0.43	ug/L		94
15) n-Hexane	3.973	86	571	Below Cal		#	70
40) Toluene	8.159	91	1411	0.12	ug/L		93
52) m,p-Xylenes (2)	9.935	91	769	0.09	ug/L		77
73) n-Butylbenzene	11.930	91	689	0.11	ug/L		82

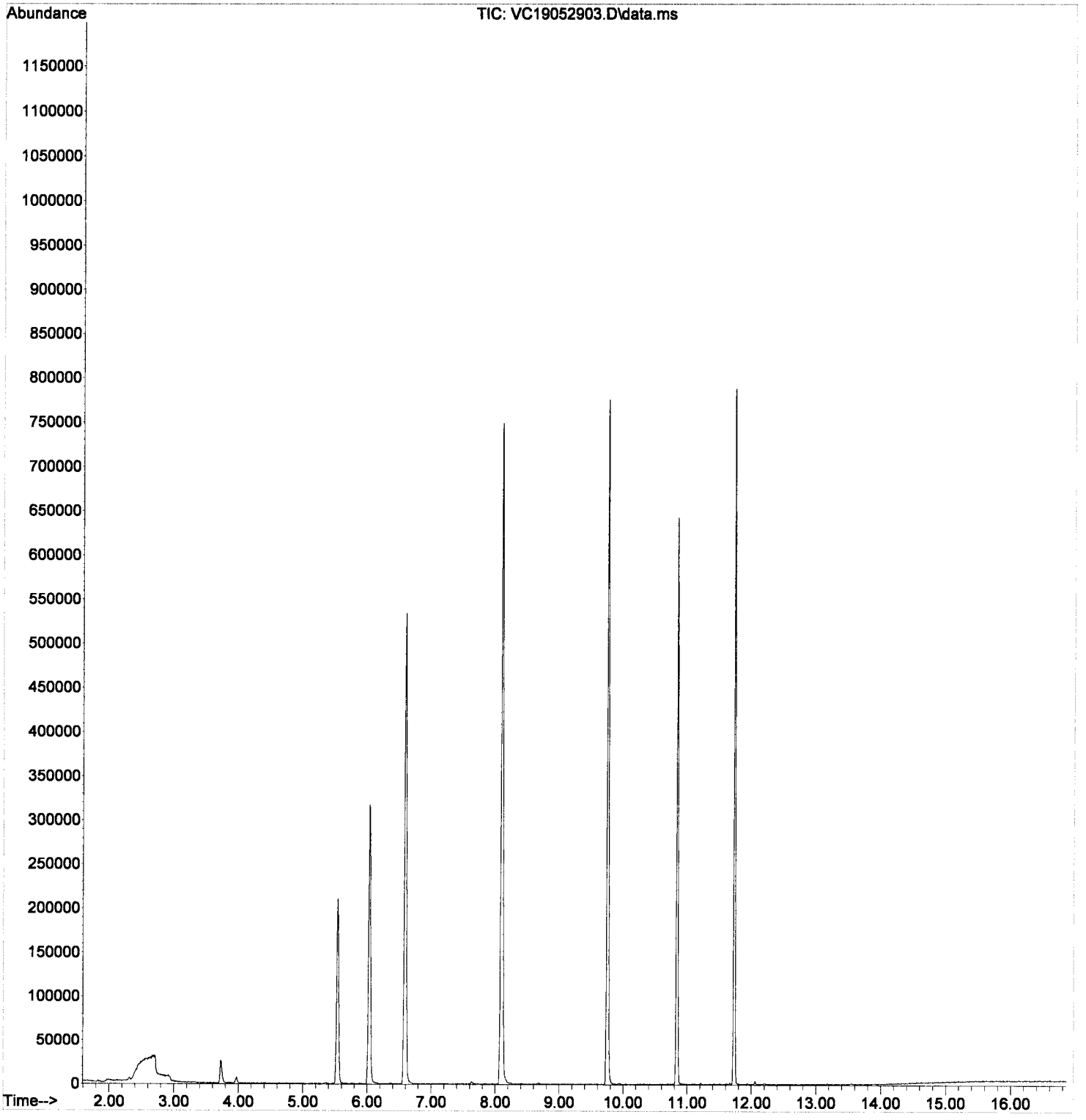
< MDL

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052903.D
Acq On : 29 May 2019 3:12 pm
Operator : TB
Sample : 9E29058-ICB1
Misc : 1X 5mL DI+MeOH
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:35 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052904.D
Acq On : 29 May 2019 3:40 pm
Operator : TB
Sample : 9E29058-CAL1
Misc : 1X 5mL 0.1ppb VOC DI+MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:57:18 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

post 5/30/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.029	168	259869	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	448840	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.729	152	194580	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.536	111	139535	48.58	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.588	114	493490	49.16	ug/L		0.00
39) Toluene-d8 (S)	8.097	98	607580	49.91	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.835	174	167905	49.68	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	d		
3) Chloromethane	1.855	50	835	0.23	ug/L		87
4) Vinyl Chloride	0.000		0	N.D.	d		
5) Bromomethane	2.306	96	1488	1.03	ug/L		89
6) Chloroethane	0.000		0	N.D.	d		
7) Trichlorofluoromethane	0.000		0	N.D.			
8) 1,1-Dichloroethene	0.000		0	N.D.	d		
9) Carbon Disulfide	0.000		0	N.D.	d		
10) Freon 113	0.000		0	N.D.	d		
11) Iodomethane	0.000		0	N.D.	d		
12) Methylene Chloride	3.723	84	5028	1.70	ug/L		93
13) Acetone	0.000		0	N.D.	d		
14) t-1,2-Dichloroethene	3.887	61	245	0.08	ug/L	#	37
15) n-Hexane	3.972	86	856	1.68	ug/L	#	89
16) Methyl-tert-butyl-ether	4.033	73	932	0.10	ug/L		75
17) 1,1-Dichloroethane	0.000		0	N.D.	d		
18) Acrylonitrile	0.000		0	N.D.			
19) c-1,2-Dichloroethene	5.067	61	365	0.11	ug/L	#	56
20) 2,2-Dichloropropane	0.000		0	N.D.	d		
21) Bromochloromethane	0.000		0	N.D.	d		
22) Chloroform	5.347	83	862	0.20	ug/L		67
23) Carbon Tetrachloride	0.000		0	N.D.	d		
24) Tetrahydrofuran	0.000		0	N.D.	d		
25) 1,1,1-Trichloroethane	5.542	97	303	0.09	ug/L	#	65
27) 1,1-Dichloropropene	0.000		0	N.D.	d		
28) 2-Butanone (MEK)	0.000		0	N.D.	d		
29) Benzene	5.937	78	1225	0.11	ug/L		76
30) 1,2-Dichloroethane (EDC)	0.000		0	N.D.	d		
31) iso-Butyl Alcohol	0.000		0	N.D.	d		
33) Trichloroethene (TCE)	6.558	130	358	0.12	ug/L	#	57
34) Dibromomethane	0.000		0	N.D.			
35) 1,2-Dichloropropane	0.000		0	N.D.	d		
36) Bromodichloromethane	0.000		0	N.D.	d		
38) c-1,3-Dichloropropene	0.000		0	N.D.			
40) Toluene	8.152	91	2496	0.22	ug/L		77
41) Tetrachloroethene (PCE)	8.602	166	338	0.13	ug/L	#	56
42) 4-Methyl-2-Pentanone (...	8.620	43	867	0.25	ug/L	#	41
43) t-1,3-Dichloropropene	8.657	75	268	0.08	ug/L		47
44) 1,1,2-Trichloroethane	8.821	97	229	0.09	ug/L	#	13
45) Dibromochloromethane	0.000		0	N.D.			
46) 1,3-Dichloropropane	9.113	76	438	0.10	ug/L	#	40
47) 1,2-Dibromoethane (EDB)	9.253	107	186	0.07	ug/L		78
48) 2-Hexanone	9.508	43	443	0.18	ug/L		71

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052904.D
Acq On : 29 May 2019 3:40 pm
Operator : TB
Sample : 9E29058-CAL1
Misc : 1X 5mL 0.1ppb VOC DI+MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:57:18 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

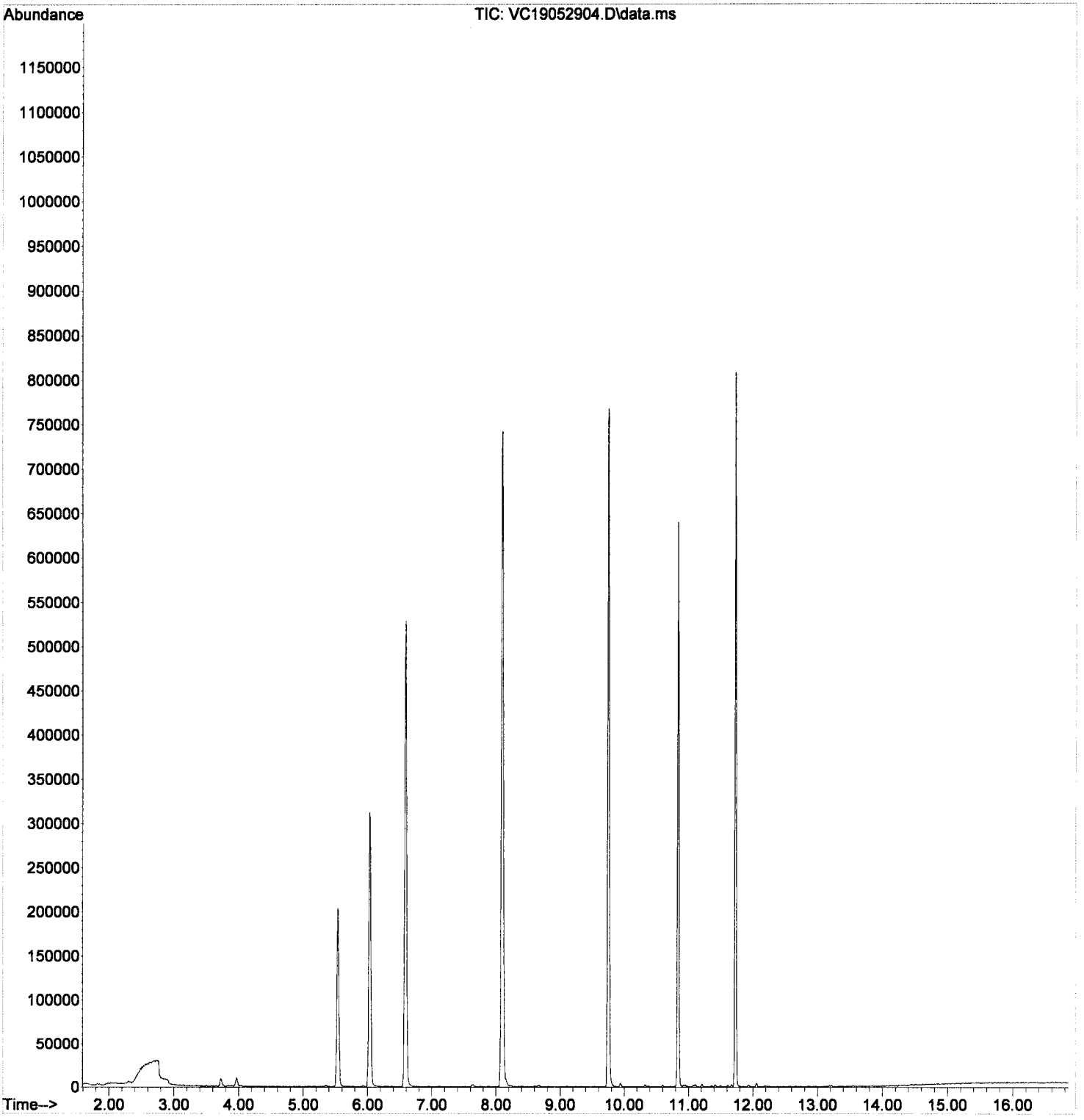
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.764	112	1131	0.16	ug/L	#	1
50) Ethylbenzene	9.800	91	1694	0.14	ug/L		86
51) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.			
52) m,p-Xylenes (2)	9.940	91	2487	0.28	ug/L		90
53) o-Xylene	10.324	91	1273	0.14	ug/L		92
54) Styrene	10.378	104	585	0.08	ug/L		78
55) Bromoform	0.000		0	N.D.			
56) Isopropylbenzene	10.597	105	1325	0.13	ug/L		83
59) Bromobenzene	10.926	156	177	0.07	ug/L		87
60) n-Propylbenzene	10.944	91	1564	0.14	ug/L		86
61) 1,1,2,2-Tetrachloroethane	11.005	83	266	0.10	ug/L	#	25
62) 2-Chlorotoluene	11.072	126	260	0.11	ug/L	#	75
63) 1,3,5-Trimethylbenzene	11.108	105	1305	0.16	ug/L		84
64) 1,2,3-Trichloropropane	0.000		0	N.D.			
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.			
66) 4-Chlorotoluene	11.206	91	1133	0.16	ug/L		76
67) tert-Butylbenzene	11.358	91	480	0.11	ug/L	#	75
68) 1,2,4-Trimethylbenzene	11.412	105	965	0.12	ug/L		80
69) sec-Butylbenzene	11.504	105	1196	0.13	ug/L		89
70) 4-Isopropyltoluene	11.607	119	1072	0.14	ug/L		93
71) 1,3-Dichlorobenzene	11.674	146	610	0.14	ug/L		85
72) 1,4-Dichlorobenzene	11.741	146	690	0.16	ug/L	#	25
73) n-Butylbenzene	11.930	91	1118	0.18	ug/L		93
74) 1,2-Dichlorobenzene	12.063	146	533	0.13	ug/L		93
75) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.			
76) Hexachlorobutadiene	13.183	223	235	0.38	ug/L	#	72
77) 1,2,4-Trichlorobenzene	13.213	180	358	0.15	ug/L		72
78) Naphthalene	13.493	128	706	0.08	ug/L		78
79) 1,2,3-Trichlorobenzene	13.663	180	105	0.04	ug/L		66

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052904.D
Acq On : 29 May 2019 3:40 pm
Operator : TB
Sample : 9E29058-CAL1
Misc : 1X 5mL 0.1ppb VOC DI+MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:57:18 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052904.D
Acq On : 29 May 2019 3:40 pm
Operator : TB
Sample : 9E29058-CAL1
Misc : 1X 5mL 0.1ppb VOC DI+MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:44 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

pre 5/30/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.029	168	259869	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	448840	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.729	152	194580	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.536	111	139535	48.58	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.588	114	493490	49.16	ug/L		0.00
39) Toluene-d8 (S)	8.097	98	607580	49.91	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.835	174	167905	49.68	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.673	85	220	0.10	ug/L	#	50
3) Chloromethane	1.855	50	835	0.23	ug/L		87
4) Vinyl Chloride	1.953	62	263	0.10	ug/L	#	48
5) Bromomethane	2.306	96	1488	1.03	ug/L		89
6) Chloroethane	2.439	64	459	0.47	ug/L	#	1
7) Trichlorofluoromethane	0.000		0	N.D.			
8) 1,1-Dichloroethene	3.084	61	199	0.08	ug/L	#	63
9) Carbon Disulfide	3.109	76	586	0.14	ug/L		46
10) Freon 113	3.145	101	290	0.14	ug/L	#	18
11) Iodomethane	3.242	142	333	0.36	ug/L	#	47
12) Methylene Chloride	3.723	84	5028	1.70	ug/L		93
13) Acetone	3.808	43	123	0.11	ug/L	#	42
14) t-1,2-Dichloroethene	3.887	61	245	0.08	ug/L	#	37
15) n-Hexane	3.972	86	856	1.68	ug/L	#	89
16) Methyl-tert-butyl-ether	4.033	73	932	0.10	ug/L		75
17) 1,1-Dichloroethane	4.520	63	373	0.10	ug/L	#	49
18) Acrylonitrile	0.000		0	N.D.			
19) c-1,2-Dichloroethene	5.067	61	365	0.11	ug/L	#	56
20) 2,2-Dichloropropane	5.177	77	202	0.07	ug/L		71
21) Bromochloromethane	5.262	49	156	0.08	ug/L	#	15
22) Chloroform	5.347	83	862	0.20	ug/L		67
23) Carbon Tetrachloride	5.481	117	134	0.06	ug/L		76
24) Tetrahydrofuran	5.530	42	135	0.09	ug/L	#	45
25) 1,1,1-Trichloroethane	5.542	97	303	0.09	ug/L	#	65
27) 1,1-Dichloropropene	5.670	75	369	0.11	ug/L	#	41
28) 2-Butanone (MEK)	5.718	43	696	0.33	ug/L		54
29) Benzene	5.937	78	1225	0.11	ug/L		76
30) 1,2-Dichloroethane (EDC)	6.156	62	233	0.07	ug/L	#	50
31) iso-Butyl Alcohol	6.260	43	192	0.75	ug/L		96
33) Trichloroethene (TCE)	6.558	130	358	0.12	ug/L	#	57
34) Dibromomethane	0.000		0	N.D.			
35) 1,2-Dichloropropane	7.111	63	306	0.10	ug/L	#	37
36) Bromodichloromethane	7.184	83	158	0.06	ug/L	#	26
38) c-1,3-Dichloropropene	0.000		0	N.D.			
40) Toluene	8.152	91	2496	0.22	ug/L		77
41) Tetrachloroethene (PCE)	8.602	166	338	0.13	ug/L	#	56
42) 4-Methyl-2-Pentanone (...	8.620	43	867	0.25	ug/L	#	41
43) t-1,3-Dichloropropene	8.657	75	268	0.08	ug/L		47
44) 1,1,2-Trichloroethane	8.821	97	229	0.09	ug/L	#	13
45) Dibromochloromethane	0.000		0	N.D.			
46) 1,3-Dichloropropane	9.113	76	438	0.10	ug/L	#	40
47) 1,2-Dibromoethane (EDB)	9.253	107	186	0.07	ug/L		78
48) 2-Hexanone	9.508	43	443	0.18	ug/L		71

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052904.D
Acq On : 29 May 2019 3:40 pm
Operator : TB
Sample : 9E29058-CAL1
Misc : 1X 5mL 0.1ppb VOC DI+MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:44 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

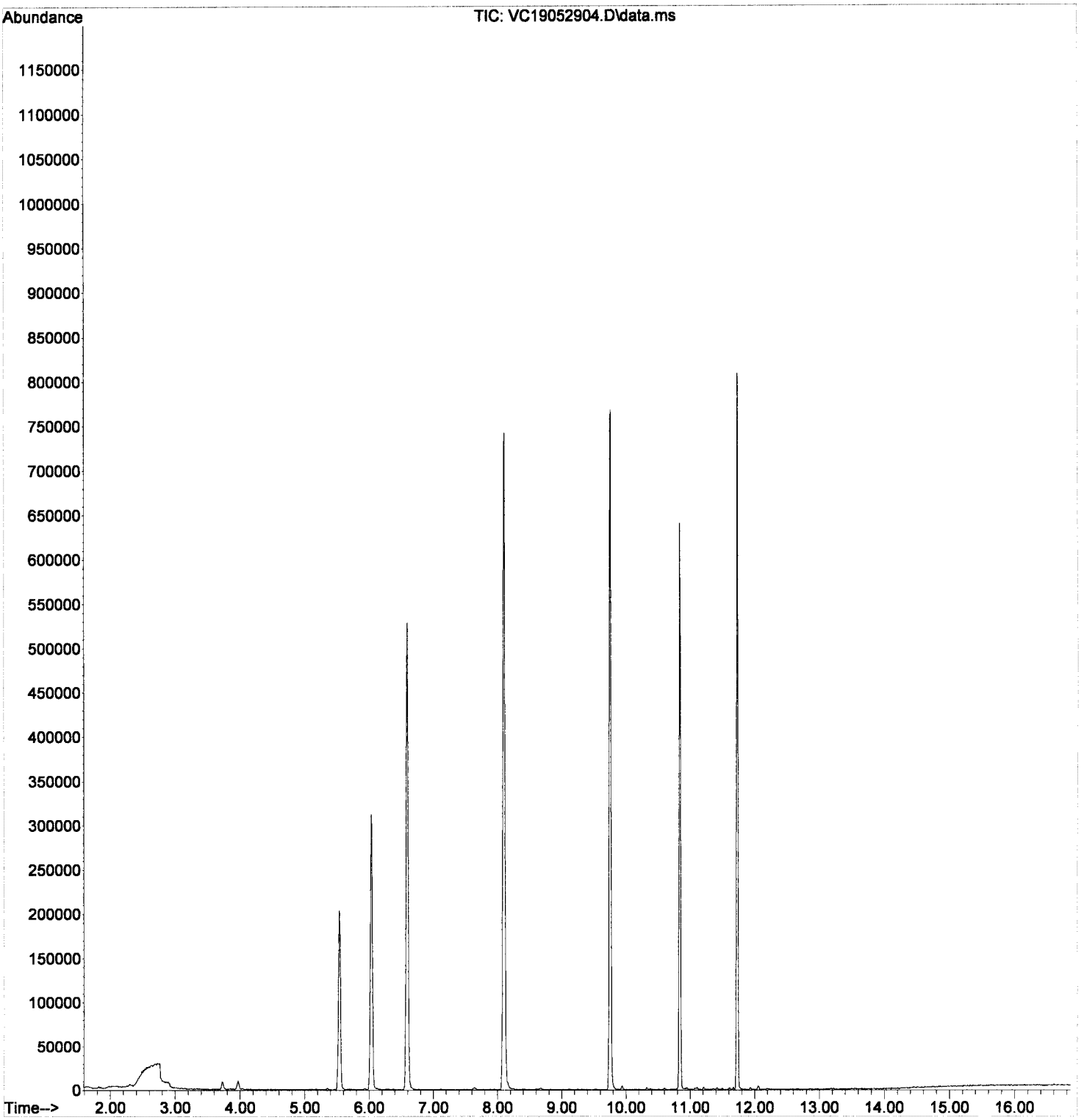
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) Chlorobenzene	9.764	112	1131	0.16	ug/L #	1
50) Ethylbenzene	9.800	91	1694	0.14	ug/L	86
51) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.		
52) m,p-Xylenes (2)	9.940	91	2487	0.28	ug/L	90
53) o-Xylene	10.324	91	1273	0.14	ug/L	92
54) Styrene	10.378	104	585	0.08	ug/L	78
55) Bromoform	0.000		0	N.D.		
56) Isopropylbenzene	10.597	105	1325	0.13	ug/L	83
59) Bromobenzene	10.926	156	177	0.07	ug/L	87
60) n-Propylbenzene	10.944	91	1564	0.14	ug/L	86
61) 1,1,2,2-Tetrachloroethane	11.005	83	266	0.10	ug/L #	25
62) 2-Chlorotoluene	11.072	126	260	0.11	ug/L #	75
63) 1,3,5-Trimethylbenzene	11.108	105	1305	0.16	ug/L	84
64) 1,2,3-Trichloropropane	0.000		0	N.D.		
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.		
66) 4-Chlorotoluene	11.206	91	1133	0.16	ug/L	76
67) tert-Butylbenzene	11.358	91	480	0.11	ug/L #	75
68) 1,2,4-Trimethylbenzene	11.412	105	965	0.12	ug/L	80
69) sec-Butylbenzene	11.504	105	1196	0.13	ug/L	89
70) 4-Isopropyltoluene	11.607	119	1072	0.14	ug/L	93
71) 1,3-Dichlorobenzene	11.674	146	610	0.14	ug/L	85
72) 1,4-Dichlorobenzene	11.741	146	690	0.16	ug/L #	25
73) n-Butylbenzene	11.930	91	1118	0.18	ug/L	93
74) 1,2-Dichlorobenzene	12.063	146	533	0.13	ug/L	93
75) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.		
76) Hexachlorobutadiene	13.183	223	235	0.38	ug/L #	72
77) 1,2,4-Trichlorobenzene	13.213	180	358	0.15	ug/L	72
78) Naphthalene	13.493	128	706	0.08	ug/L	78
79) 1,2,3-Trichlorobenzene	13.663	180	105	0.04	ug/L	66

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052904.D
Acq On : 29 May 2019 3:40 pm
Operator : TB
Sample : 9E29058-CAL1
Misc : 1X 5mL 0.1ppb VOC DI+MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:44 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052905.D
Acq On : 29 May 2019 4:07 pm
Operator : TB
Sample : 9E29058-CAL2
Misc : 1X 5mL 0.2ppb VOC DI+MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

5/30/19 post

Quant Time: May 30 12:04:06 2019
Quant Method : C:\msdchem\1\METHODS\~~VC190529S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.035	168	256759	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	446684	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.729	152	191276	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.536	111	136690	48.17	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.589	114	491851	49.59	ug/L		0.00
39) Toluene-d8 (S)	8.098	98	603494	49.82	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.835	174	165726	49.89	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.673	85	475	0.21	ug/L		62
3) Chloromethane	1.868	50	1572	0.43	ug/L		78
4) Vinyl Chloride	1.953	62	515	0.20	ug/L		92
5) Bromomethane	2.306	96	1803	1.27	ug/L		94
6) Chloroethane	0.000		0	N.D.	d		
7) Trichlorofluoromethane	0.000		0	N.D.	d		
8) 1,1-Dichloroethene	3.103	61	456	0.18	ug/L		93
9) Carbon Disulfide	3.115	76	835	0.21	ug/L		77
10) Freon 113	3.158	101	603	0.29	ug/L	#	9
11) Iodomethane	3.249	142	437	0.47	ug/L	#	21
12) Methylene Chloride	3.730	84	14589	5.00	ug/L		86
13) Acetone	0.000		0	N.D.	d		
14) t-1,2-Dichloroethene	3.894	61	734	0.24	ug/L		80
15) n-Hexane	3.973	86	874	1.73	ug/L	#	86
16) Methyl-tert-butyl-ether	4.034	73	1802	0.20	ug/L		86
17) 1,1-Dichloroethane	4.533	63	735	0.19	ug/L		68
18) Acrylonitrile	0.000		0	N.D.			
19) c-1,2-Dichloroethene	5.068	61	611	0.18	ug/L		78
20) 2,2-Dichloropropane	0.000		0	N.D.	d		
21) Bromochloromethane	5.269	49	453	0.22	ug/L		87
22) Chloroform	5.348	83	1314	0.30	ug/L		90
23) Carbon Tetrachloride	5.488	117	416	0.17	ug/L	#	52
24) Tetrahydrofuran	0.000		0	N.D.	d		
25) 1,1,1-Trichloroethane	5.536	97	657m	0.19	ug/L		
27) 1,1-Dichloropropene	5.688	75	822	0.24	ug/L	#	65
28) 2-Butanone (MEK)	0.000		0	N.D.	d		
29) Benzene	5.932	78	2321	0.21	ug/L		91
30) 1,2-Dichloroethane (EDC)	6.151	62	685	0.21	ug/L	#	50
31) iso-Butyl Alcohol	0.000		0	N.D.	d		
33) Trichloroethene (TCE)	6.552	130	778	0.26	ug/L	#	69
34) Dibromomethane	7.003	93	150	0.10	ug/L		83
35) 1,2-Dichloropropane	7.106	63	596	0.20	ug/L		91
36) Bromodichloromethane	7.185	83	431	0.16	ug/L	#	26
38) c-1,3-Dichloropropene	7.891	75	602	0.16	ug/L	#	74
40) Toluene	8.152	91	3425	0.30	ug/L		91
41) Tetrachloroethene (PCE)	8.602	166	698	0.27	ug/L		88
42) 4-Methyl-2-Pentanone (...	8.621	43	1694	0.49	ug/L		92
43) t-1,3-Dichloropropene	8.657	75	575	0.17	ug/L		47
44) 1,1,2-Trichloroethane	8.828	97	506	0.20	ug/L	#	46
45) Dibromochloromethane	9.028	129	172	0.10	ug/L	#	15
46) 1,3-Dichloropropane	9.120	76	988	0.22	ug/L		83
47) 1,2-Dibromoethane (EDB)	9.247	107	298	0.12	ug/L		82
48) 2-Hexanone	9.509	43	765	0.31	ug/L		89

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052905.D
Acq On : 29 May 2019 4:07 pm
Operator : TB
Sample : 9E29058-CAL2
Misc : 1X 5mL 0.2ppb VOC DI+MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 12:04:06 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.770	112	1617	0.23	ug/L	#	58
50) Ethylbenzene	9.801	91	2895	0.25	ug/L		70
51) 1,1,1,2-Tetrachloroethane	9.837	131	318	0.15	ug/L	#	81
52) m,p-Xylenes (2)	9.941	91	4246	0.49	ug/L		88
53) o-Xylene	10.330	91	2232	0.25	ug/L		99
54) Styrene	10.373	104	1051	0.15	ug/L		100
55) Bromoform	0.000		0	N.D.	d		
56) Isopropylbenzene	10.592	105	2225	0.21	ug/L		92
59) Bromobenzene	10.920	156	513	0.20	ug/L	#	70
60) n-Propylbenzene	10.945	91	2483	0.22	ug/L		88
61) 1,1,2,2-Tetrachloroethane	11.012	83	439	0.17	ug/L		70
62) 2-Chlorotoluene	11.085	126	535	0.23	ug/L	#	51
63) 1,3,5-Trimethylbenzene	11.103	105	1776	0.22	ug/L		91
64) 1,2,3-Trichloropropane	11.121	110	144	0.14	ug/L	#	84
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.			
66) 4-Chlorotoluene	11.212	91	1680	0.25	ug/L		95
67) tert-Butylbenzene	11.358	91	1208	0.28	ug/L		82
68) 1,2,4-Trimethylbenzene	11.413	105	1610	0.20	ug/L		86
69) sec-Butylbenzene	11.498	105	2071	0.23	ug/L		92
70) 4-Isopropyltoluene	11.608	119	1749	0.23	ug/L		94
71) 1,3-Dichlorobenzene	11.675	146	927	0.22	ug/L		86
72) 1,4-Dichlorobenzene	11.735	146	1152	0.27	ug/L	#	32
73) n-Butylbenzene	11.936	91	1667	0.27	ug/L		98
74) 1,2-Dichlorobenzene	12.058	146	833	0.21	ug/L		80
75) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.			
76) Hexachlorobutadiene	13.177	223	296	0.48	ug/L	#	65
77) 1,2,4-Trichlorobenzene	13.220	180	579	0.25	ug/L		74
78) Naphthalene	13.500	128	1368	0.16	ug/L		76
79) 1,2,3-Trichlorobenzene	13.658	180	532	0.23	ug/L		86

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052905.D
Acq On : 29 May 2019 4:07 pm
Operator : TB
Sample : 9E29058-CAL2
Misc : 1X 5mL 0.2ppb VOC DI+MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:46 2019
Quant Method : C:\msdchem\1\METHODS\~~VC190529S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

5/30/19 pre

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.035	168	256759	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	446684	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.729	152	191276	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.536	111	136690	48.17	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.589	114	491851	49.59	ug/L		0.00
39) Toluene-d8 (S)	8.098	98	603494	49.82	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.835	174	165726	49.89	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.673	85	475	0.21	ug/L		62
3) Chloromethane	1.868	50	1572	0.43	ug/L		78
4) Vinyl Chloride	1.953	62	515	0.20	ug/L		92
5) Bromomethane	2.306	96	1803	1.27	ug/L		94
6) Chloroethane	2.501	64	307	0.32	ug/L	#	1
7) Trichlorofluoromethane	2.568	101	138	0.09	ug/L	#	1
8) 1,1-Dichloroethene	3.103	61	456	0.18	ug/L		93
9) Carbon Disulfide	3.115	76	835	0.21	ug/L		77
10) Freon 113	3.158	101	603	0.29	ug/L	#	9
11) Iodomethane	3.249	142	437	0.47	ug/L	#	21
12) Methylene Chloride	3.730	84	14589	5.00	ug/L		86
13) Acetone	3.845	43	1953	1.75	ug/L		90
14) t-1,2-Dichloroethene	3.894	61	734	0.24	ug/L		80
15) n-Hexane	3.973	86	874	1.73	ug/L	#	86
16) Methyl-tert-butyl-ether	4.034	73	1802	0.20	ug/L		86
17) 1,1-Dichloroethane	4.533	63	735	0.19	ug/L		68
18) Acrylonitrile	0.000		0	N.D.			
19) c-1,2-Dichloroethene	5.068	61	611	0.18	ug/L		78
20) 2,2-Dichloropropane	5.165	77	653	0.22	ug/L		83
21) Bromochloromethane	5.269	49	453	0.22	ug/L		87
22) Chloroform	5.348	83	1314	0.30	ug/L		90
23) Carbon Tetrachloride	5.488	117	416	0.17	ug/L	#	52
24) Tetrahydrofuran	5.542	42	330	0.21	ug/L	#	67
25) 1,1,1-Trichloroethane	~~5.549~~	~~97~~	~~430~~	~~0.13~~	~~ug/L~~		~~79~~ MI
27) 1,1-Dichloropropene	5.688	75	822	0.24	ug/L	#	65
28) 2-Butanone (MEK)	5.731	43	1214	0.59	ug/L		54
29) Benzene	5.932	78	2321	0.21	ug/L		91
30) 1,2-Dichloroethane (EDC)	6.151	62	685	0.21	ug/L	#	50
31) iso-Butyl Alcohol	6.285	43	738	2.90	ug/L		74
33) Trichloroethene (TCE)	6.552	130	778	0.26	ug/L	#	69
34) Dibromomethane	7.003	93	150	0.10	ug/L		83
35) 1,2-Dichloropropane	7.106	63	596	0.20	ug/L		91
36) Bromodichloromethane	7.185	83	431	0.16	ug/L	#	26
38) c-1,3-Dichloropropene	7.891	75	602	0.16	ug/L	#	74
40) Toluene	8.152	91	3425	0.30	ug/L		91
41) Tetrachloroethene (PCE)	8.602	166	698	0.27	ug/L		88
42) 4-Methyl-2-Pentanone (...	8.621	43	1694	0.49	ug/L		92
43) t-1,3-Dichloropropene	8.657	75	575	0.17	ug/L		47
44) 1,1,2-Trichloroethane	8.828	97	506	0.20	ug/L	#	46
45) Dibromochloromethane	9.028	129	172	0.10	ug/L	#	15
46) 1,3-Dichloropropane	9.120	76	988	0.22	ug/L		83
47) 1,2-Dibromoethane (EDB)	9.247	107	298	0.12	ug/L		82
48) 2-Hexanone	9.509	43	765	0.31	ug/L		89

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052905.D
Acq On : 29 May 2019 4:07 pm
Operator : TB
Sample : 9E29058-CAL2
Misc : 1X 5mL 0.2ppb VOC DI+MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:46 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

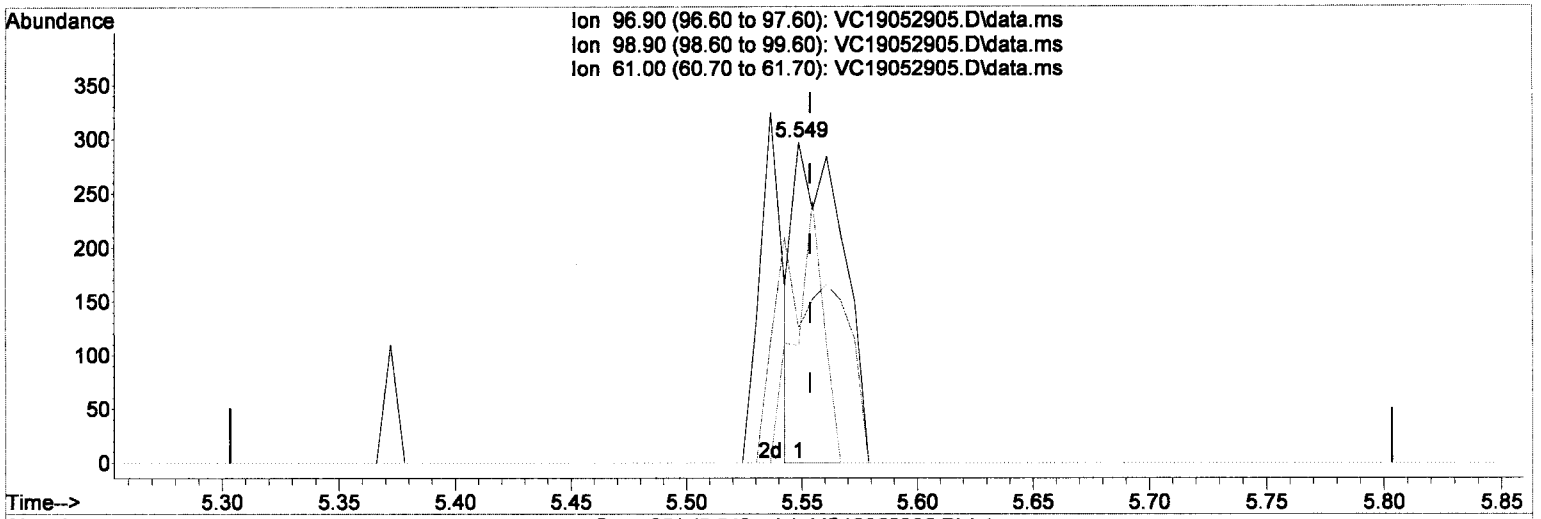
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.770	112	1617	0.23	ug/L	#	58
50) Ethylbenzene	9.801	91	2895	0.25	ug/L		70
51) 1,1,1,2-Tetrachloroethane	9.837	131	318	0.15	ug/L	#	81
52) m,p-Xylenes (2)	9.941	91	4246	0.49	ug/L		88
53) o-Xylene	10.330	91	2232	0.25	ug/L		99
54) Styrene	10.373	104	1051	0.15	ug/L		100
55) Bromoform	10.391	173	127	0.13	ug/L	#	36
56) Isopropylbenzene	10.592	105	2225	0.21	ug/L		92
59) Bromobenzene	10.920	156	513	0.20	ug/L	#	70
60) n-Propylbenzene	10.945	91	2483	0.22	ug/L		88
61) 1,1,2,2-Tetrachloroethane	11.012	83	439	0.17	ug/L		70
62) 2-Chlorotoluene	11.085	126	535	0.23	ug/L	#	51
63) 1,3,5-Trimethylbenzene	11.103	105	1776	0.22	ug/L		91
64) 1,2,3-Trichloropropane	11.121	110	144	0.14	ug/L	#	84
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.			
66) 4-Chlorotoluene	11.212	91	1680	0.25	ug/L		95
67) tert-Butylbenzene	11.358	91	1208	0.28	ug/L		82
68) 1,2,4-Trimethylbenzene	11.413	105	1610	0.20	ug/L		86
69) sec-Butylbenzene	11.498	105	2071	0.23	ug/L		92
70) 4-Isopropyltoluene	11.608	119	1749	0.23	ug/L		94
71) 1,3-Dichlorobenzene	11.675	146	927	0.22	ug/L		86
72) 1,4-Dichlorobenzene	11.735	146	1152	0.27	ug/L	#	32
73) n-Butylbenzene	11.936	91	1667	0.27	ug/L		98
74) 1,2-Dichlorobenzene	12.058	146	833	0.21	ug/L		80
75) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.			
76) Hexachlorobutadiene	13.177	223	296	0.48	ug/L	#	65
77) 1,2,4-Trichlorobenzene	13.220	180	579	0.25	ug/L		74
78) Naphthalene	13.500	128	1368	0.16	ug/L		76
79) 1,2,3-Trichlorobenzene	13.658	180	532	0.23	ug/L		86

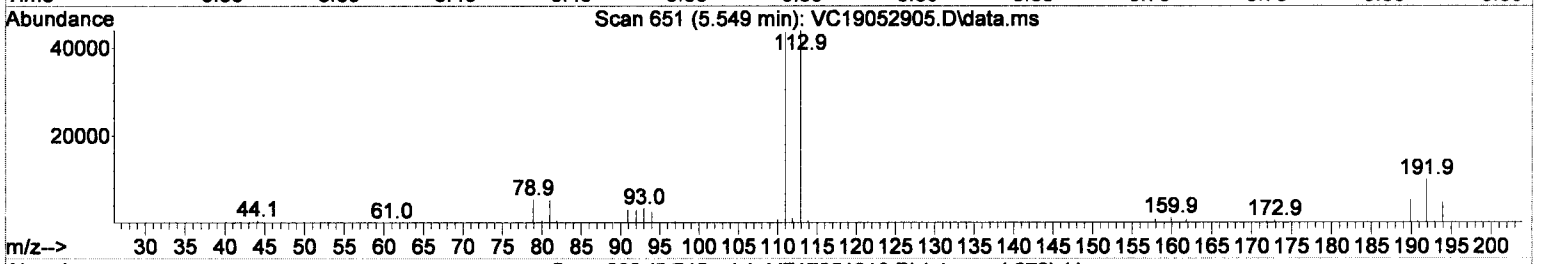
(#) = qualifier out of range (m) = manual integration (+) = signals summed

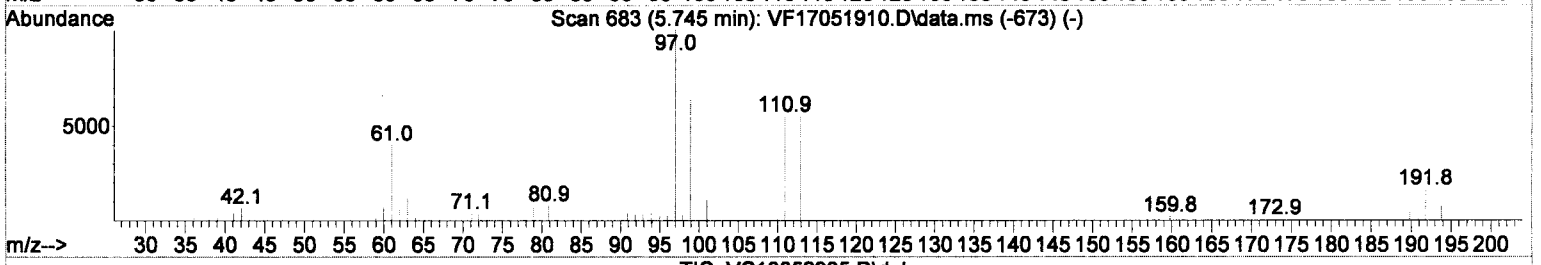
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052905.D
Acq On : 29 May 2019 4:07 pm
Operator : TB
Sample : 9E29058-CAL2
Misc : 1X 5mL 0.2ppb VOC DI+MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:46 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration







TIC: VC19052905.D\data.ms

(25) 1,1,1-Trichloroethane

5.549min (-0.005) 0.12 ug/L

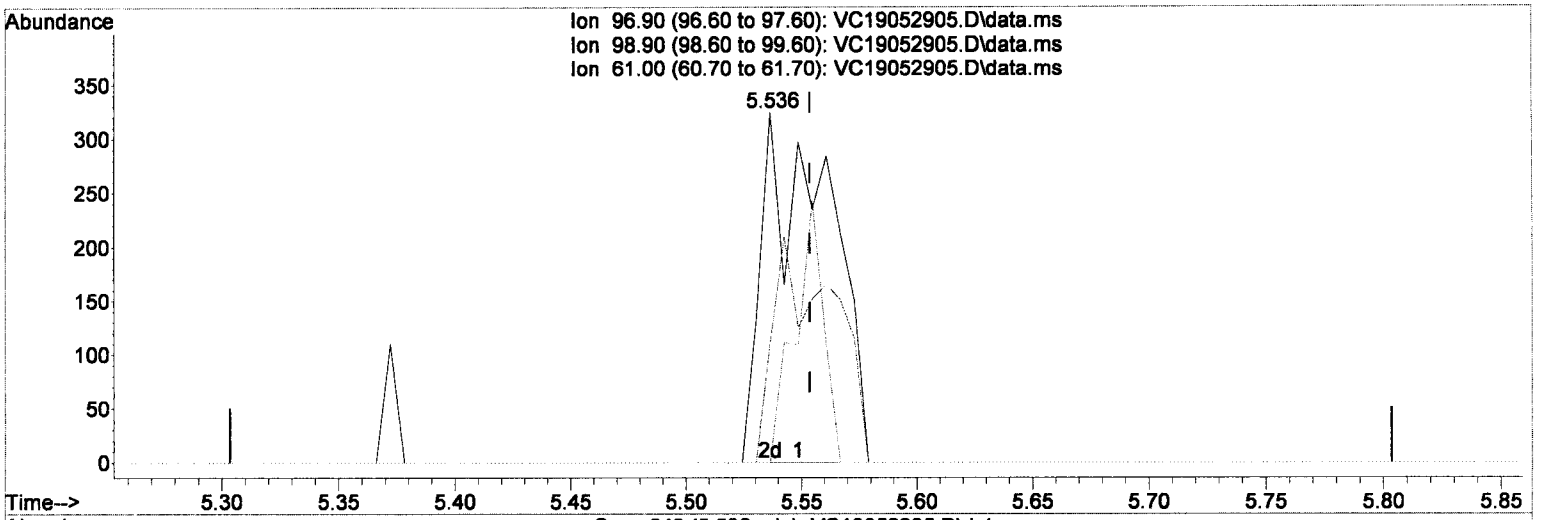
response 430

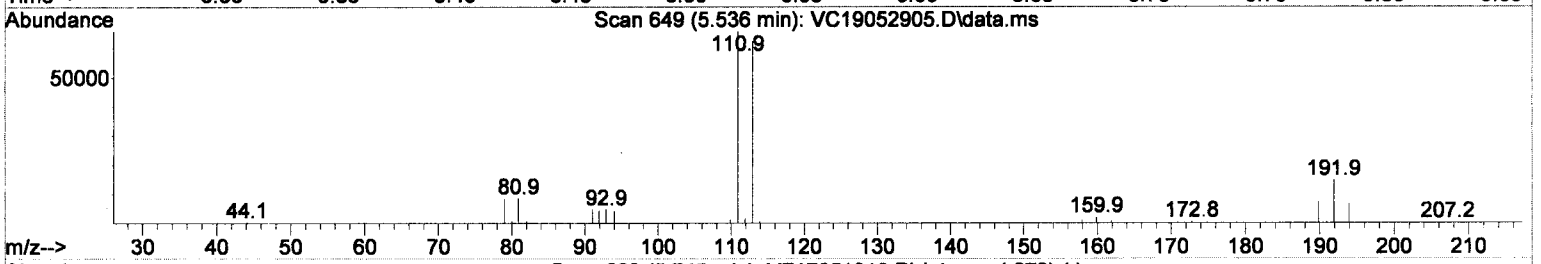
Ion	Exp%	Act%
96.90	100	100
98.90	65.60	42.09
61.00	42.20	36.70
0.00	0.00	0.00

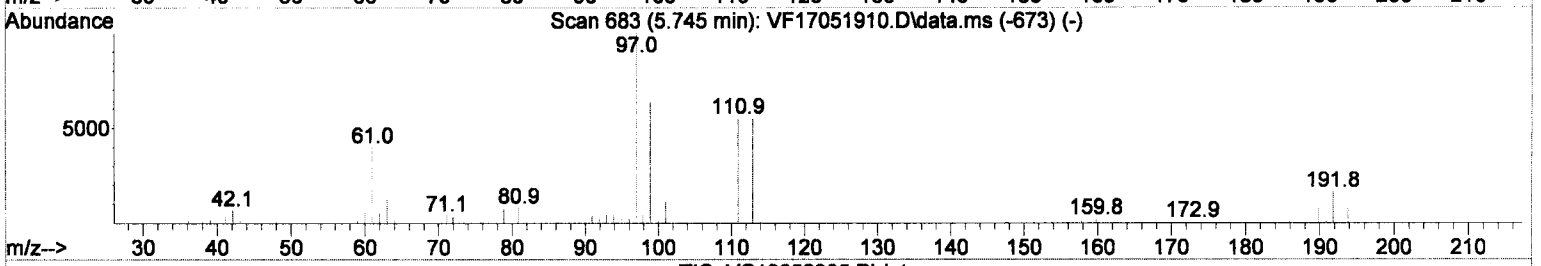
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052905.D
Acq On : 29 May 2019 4:07 pm
Operator : TB
Sample : 9E29058-CAL2
Misc : 1X 5mL 0.2ppb VOC DI+MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:46 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration







TIC: VC19052905.D\data.ms

(25) 1,1,1-Trichloroethane

5.536min (-0.017) 0.19 ug/L m

response 657

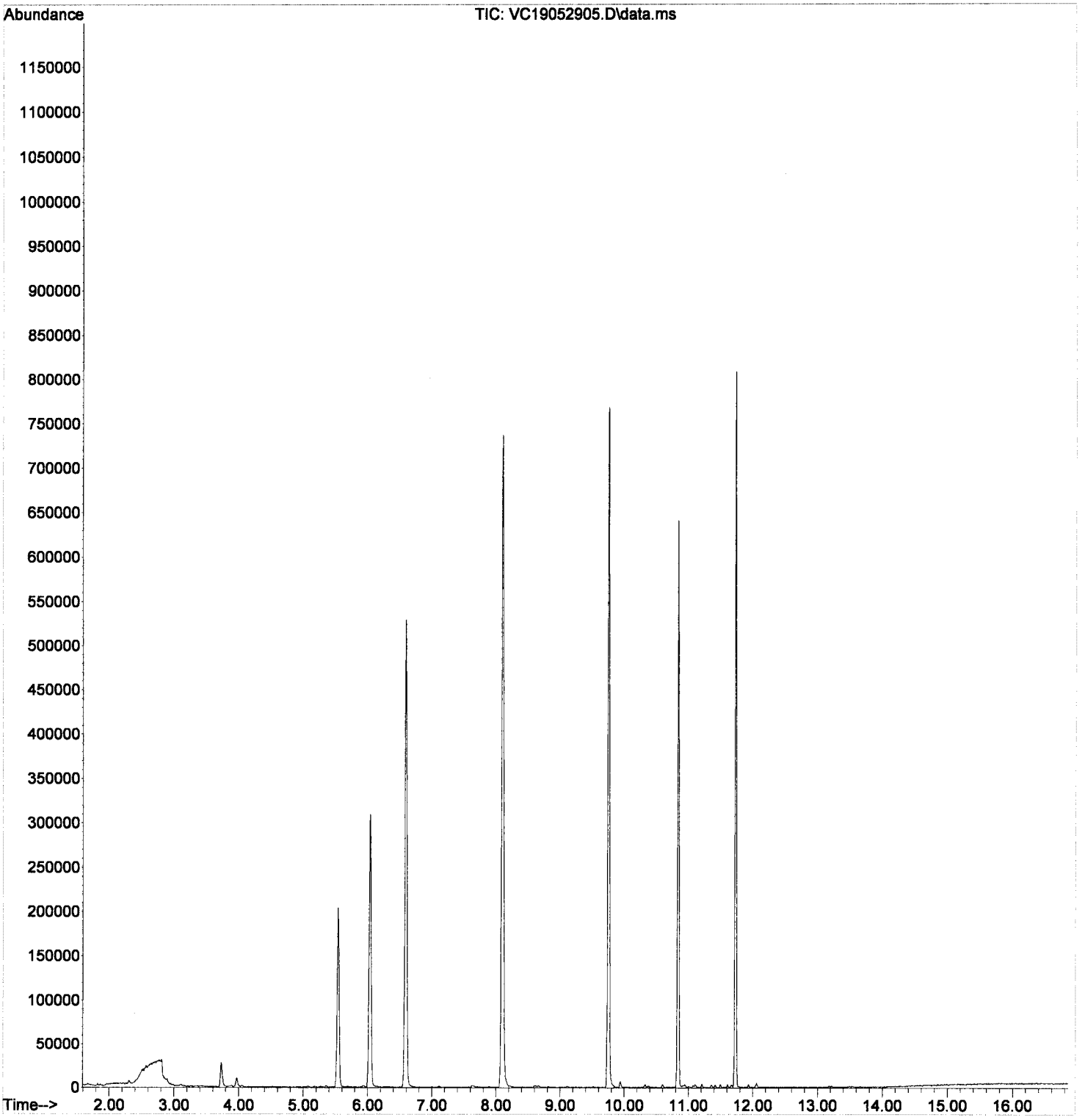
Ion	Exp%	Act%
96.90	100	100
98.90	65.60	64.37
61.00	42.20	0.00# - present
0.00	0.00	0.00

5/30/19

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052905.D
Acq On : 29 May 2019 4:07 pm
Operator : TB
Sample : 9E29058-CAL2
Misc : 1X 5mL 0.2ppb VOC DI+MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 12:04:06 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052906.D
Acq On : 29 May 2019 4:35 pm
Operator : TB
Sample : 9E29058-CAL3
Misc : 1X 5mL 0.4ppb VOC DI+MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

post
5/30/19

Quant Time: May 30 12:05:36 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.032	168	254275	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.749	117	441530	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.726	152	188614	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.539	111	132413	47.12	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.591	114	485518	49.43	ug/L		0.00
39) Toluene-d8 (S)	8.094	98	596173	49.79	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.837	174	163321	49.86	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.664	85	840	0.37	ug/L		88
3) Chloromethane	1.864	50	1870	0.52	ug/L		99
4) Vinyl Chloride	1.956	62	1058	0.41	ug/L		74
5) Bromomethane	2.308	96	2178	1.55	ug/L		97
6) Chloroethane	0.000		0	N.D.	d		
7) Trichlorofluoromethane	2.582	101	561	0.38	ug/L		76
8) 1,1-Dichloroethene	3.105	61	1130	0.44	ug/L		91
9) Carbon Disulfide	3.118	76	1568	0.39	ug/L		74
10) Freon 113	3.166	101	935	0.45	ug/L	#	48
11) Iodomethane	3.245	142	415	0.45	ug/L	#	76
12) Methylene Chloride	3.732	84	15095	5.22	ug/L		96
13) Acetone	0.000		0	N.D.	d		
14) t-1,2-Dichloroethene	3.902	61	1162	0.38	ug/L		85
15) n-Hexane	3.975	86	1123	2.25	ug/L	#	74
16) Methyl-tert-butyl-ether	4.042	73	3675	0.41	ug/L		88
17) 1,1-Dichloroethane	4.529	63	1418	0.38	ug/L		82
18) Acrylonitrile	4.620	53	342	0.23	ug/L		97
19) c-1,2-Dichloroethene	5.076	61	1412	0.42	ug/L		85
20) 2,2-Dichloropropane	5.180	77	1168	0.40	ug/L		77
21) Bromochloromethane	5.271	49	660	0.33	ug/L		82
22) Chloroform	5.356	83	2051	0.48	ug/L		94
23) Carbon Tetrachloride	5.472	117	700	0.30	ug/L		87
24) Tetrahydrofuran	5.539	42	841	0.55	ug/L	#	66
25) 1,1,1-Trichloroethane	5.545	97	1382	0.40	ug/L		83
27) 1,1-Dichloropropene	5.691	75	1310	0.39	ug/L		90
28) 2-Butanone (MEK)	0.000		0	N.D.	d		
29) Benzene	5.934	78	4546	0.41	ug/L		96
30) 1,2-Dichloroethane (EDC)	6.147	62	1395	0.42	ug/L		80
31) iso-Butyl Alcohol	0.000		0	N.D.	d		
33) Trichloroethene (TCE)	6.561	130	1054	0.35	ug/L	#	72
34) Dibromomethane	6.999	93	572	0.37	ug/L	#	68
35) 1,2-Dichloropropane	7.114	63	1068	0.37	ug/L		95
36) Bromodichloromethane	7.181	83	872	0.33	ug/L		86
38) c-1,3-Dichloropropene	7.899	75	1128	0.30	ug/L		93
40) Toluene	8.161	91	5721	0.50	ug/L		99
41) Tetrachloroethene (PCE)	8.605	166	1321	0.52	ug/L		77
42) 4-Methyl-2-Pentanone (...	8.623	43	3139	0.91	ug/L		80
43) t-1,3-Dichloropropene	8.654	75	908	0.27	ug/L		95
44) 1,1,2-Trichloroethane	8.818	97	911	0.37	ug/L		82
45) Dibromochloromethane	9.006	129	549	0.31	ug/L		81
46) 1,3-Dichloropropane	9.116	76	1866	0.42	ug/L		96
47) 1,2-Dibromoethane (EDB)	9.256	107	794	0.32	ug/L		70
48) 2-Hexanone	9.511	43	1839	0.74	ug/L		94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052906.D
Acq On : 29 May 2019 4:35 pm
Operator : TB
Sample : 9E29058-CAL3
Misc : 1X 5mL 0.4ppb VOC DI+MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 12:05:36 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

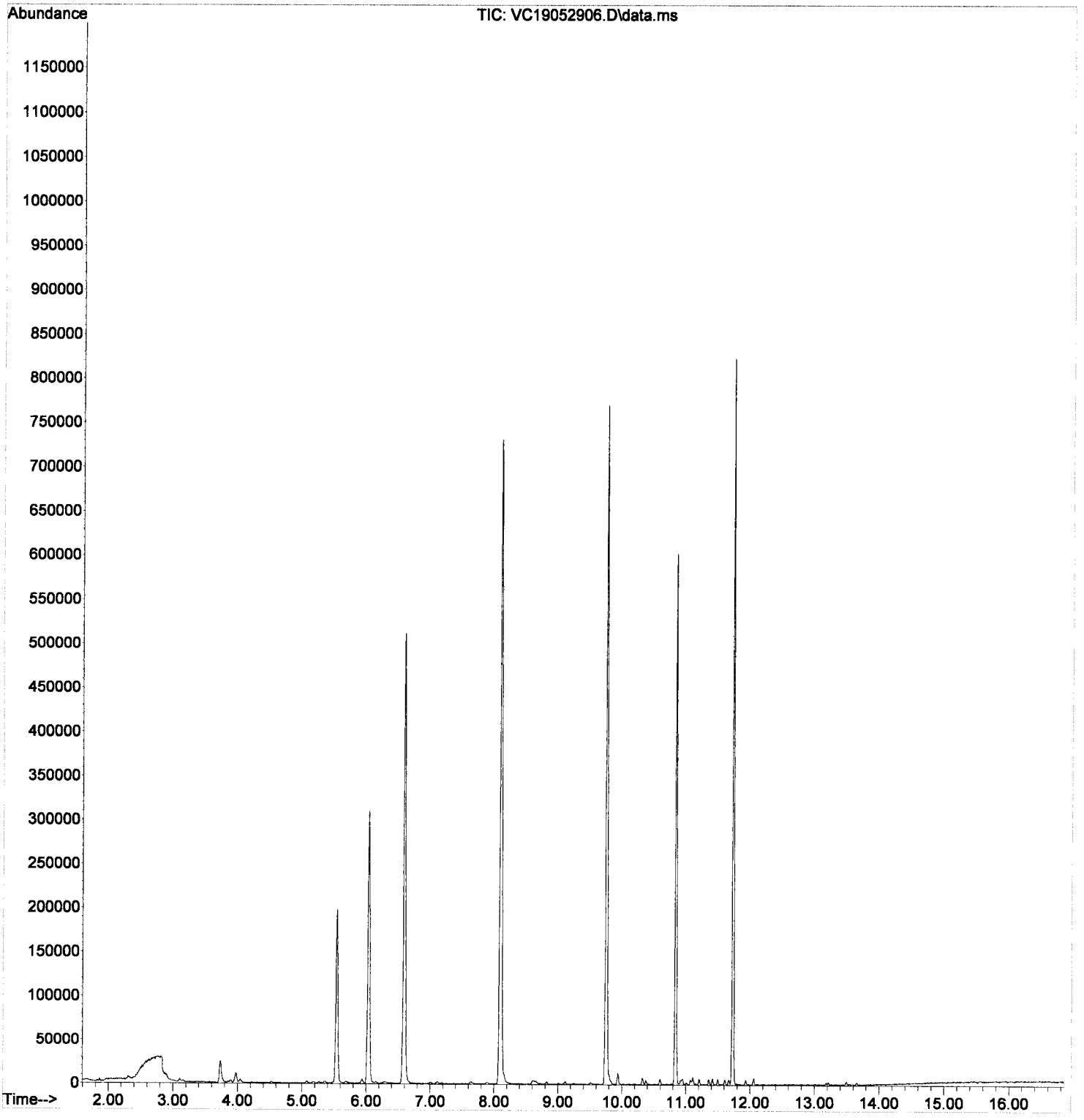
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.767	112	3136	0.46	ug/L	#	64
50) Ethylbenzene	9.797	91	5392	0.46	ug/L		98
51) 1,1,1,2-Tetrachloroethane	9.834	131	602	0.29	ug/L		90
52) m,p-Xylenes (2)	9.937	91	7624	0.88	ug/L		90
53) o-Xylene	10.326	91	3760	0.42	ug/L		92
54) Styrene	10.375	104	2262	0.33	ug/L		95
55) Bromoform	10.393	173	186	0.19	ug/L		93
56) Isopropylbenzene	10.594	105	4105	0.40	ug/L		94
59) Bromobenzene	10.917	156	1043	0.41	ug/L		83
60) n-Propylbenzene	10.947	91	4750	0.42	ug/L		99
61) 1,1,2,2-Tetrachloroethane	11.008	83	1001	0.39	ug/L		71
62) 2-Chlorotoluene	11.069	126	911	0.39	ug/L	#	77
63) 1,3,5-Trimethylbenzene	11.105	105	3139	0.40	ug/L		98
64) 1,2,3-Trichloropropane	11.117	110	500	0.48	ug/L		84
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.			
66) 4-Chlorotoluene	11.209	91	2912	0.43	ug/L		97
67) tert-Butylbenzene	11.361	91	1681	0.40	ug/L		93
68) 1,2,4-Trimethylbenzene	11.415	105	3385	0.43	ug/L		90
69) sec-Butylbenzene	11.501	105	3773	0.42	ug/L		92
70) 4-Isopropyltoluene	11.610	119	3163	0.42	ug/L		98
71) 1,3-Dichlorobenzene	11.677	146	1855	0.44	ug/L		90
72) 1,4-Dichlorobenzene	11.744	146	1914	0.46	ug/L		95
73) n-Butylbenzene	11.932	91	2690	0.44	ug/L		91
74) 1,2-Dichlorobenzene	12.060	146	1753	0.45	ug/L		93
75) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.	d		
76) Hexachlorobutadiene	13.192	223	375	0.62	ug/L	#	37
77) 1,2,4-Trichlorobenzene	13.216	180	812	0.35	ug/L		90
78) Naphthalene	13.496	128	2785	0.33	ug/L		94
79) 1,2,3-Trichlorobenzene	13.660	180	850	0.37	ug/L		92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052906.D
Acq On : 29 May 2019 4:35 pm
Operator : TB
Sample : 9E29058-CAL3
Misc : 1X 5mL 0.4ppb VOC DI+MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 12:05:36 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052906.D
Acq On : 29 May 2019 4:35 pm
Operator : TB
Sample : 9E29058-CAL3
Misc : 1X 5mL 0.4ppb VOC DI+MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:48 2019
Quant Method : C:\msdchem\1\METHODS\~~VC190529S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

5/30/19 pre

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.032	168	254275	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.749	117	441530	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.726	152	188614	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.539	111	132413	47.12	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.591	114	485518	49.43	ug/L		0.00
39) Toluene-d8 (S)	8.094	98	596173	49.79	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.837	174	163321	49.86	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.664	85	840	0.37	ug/L		88
3) Chloromethane	1.864	50	1870	0.52	ug/L		99
4) Vinyl Chloride	1.956	62	1058	0.41	ug/L		74
5) Bromomethane	2.308	96	2178	1.55	ug/L		97
6) Chloroethane	2.442	64	407	0.43	ug/L	#	1
7) Trichlorofluoromethane	2.582	101	561	0.38	ug/L		76
8) 1,1-Dichloroethene	3.105	61	1130	0.44	ug/L		91
9) Carbon Disulfide	3.118	76	1568	0.39	ug/L		74
10) Freon 113	3.166	101	935	0.45	ug/L	#	48
11) Iodomethane	3.245	142	415	0.45	ug/L	#	76
12) Methylene Chloride	3.732	84	15095	5.22	ug/L		96
13) Acetone	3.854	43	2175	1.97	ug/L		93
14) t-1,2-Dichloroethene	3.902	61	1162	0.38	ug/L		85
15) n-Hexane	3.975	86	1123	2.25	ug/L	#	74
16) Methyl-tert-butyl-ether	4.042	73	3675	0.41	ug/L		88
17) 1,1-Dichloroethane	4.529	63	1418	0.38	ug/L		82
18) Acrylonitrile	4.620	53	342	0.23	ug/L		97
19) c-1,2-Dichloroethene	5.076	61	1412	0.42	ug/L		85
20) 2,2-Dichloropropane	5.180	77	1168	0.40	ug/L		77
21) Bromochloromethane	5.271	49	660	0.33	ug/L		82
22) Chloroform	5.356	83	2051	0.48	ug/L		94
23) Carbon Tetrachloride	5.472	117	700	0.30	ug/L		87
24) Tetrahydrofuran	5.539	42	841	0.55	ug/L	#	66
25) 1,1,1-Trichloroethane	5.545	97	1382	0.40	ug/L		83
27) 1,1-Dichloropropene	5.691	75	1310	0.39	ug/L		90
28) 2-Butanone (MEK)	5.721	43	1770	0.86	ug/L		91
29) Benzene	5.934	78	4546	0.41	ug/L		96
30) 1,2-Dichloroethane (EDC)	6.147	62	1395	0.42	ug/L		80
31) iso-Butyl Alcohol	6.287	43	1484	5.89	ug/L		90
33) Trichloroethene (TCE)	6.561	130	1054	0.35	ug/L	#	72
34) Dibromomethane	6.999	93	572	0.37	ug/L	#	68
35) 1,2-Dichloropropane	7.114	63	1068	0.37	ug/L		95
36) Bromodichloromethane	7.181	83	872	0.33	ug/L		86
38) c-1,3-Dichloropropene	7.899	75	1128	0.30	ug/L		93
40) Toluene	8.161	91	5721	0.50	ug/L		99
41) Tetrachloroethene (PCE)	8.605	166	1321	0.52	ug/L		77
42) 4-Methyl-2-Pentanone (...	8.623	43	3139	0.91	ug/L		80
43) t-1,3-Dichloropropene	8.654	75	908	0.27	ug/L		95
44) 1,1,2-Trichloroethane	8.818	97	911	0.37	ug/L		82
45) Dibromochloromethane	9.006	129	549	0.31	ug/L		81
46) 1,3-Dichloropropane	9.116	76	1866	0.42	ug/L		96
47) 1,2-Dibromoethane (EDB)	9.256	107	794	0.32	ug/L		70
48) 2-Hexanone	9.511	43	1839	0.74	ug/L		94

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052906.D
Acq On : 29 May 2019 4:35 pm
Operator : TB
Sample : 9E29058-CAL3
Misc : 1X 5mL 0.4ppb VOC DI+MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:48 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

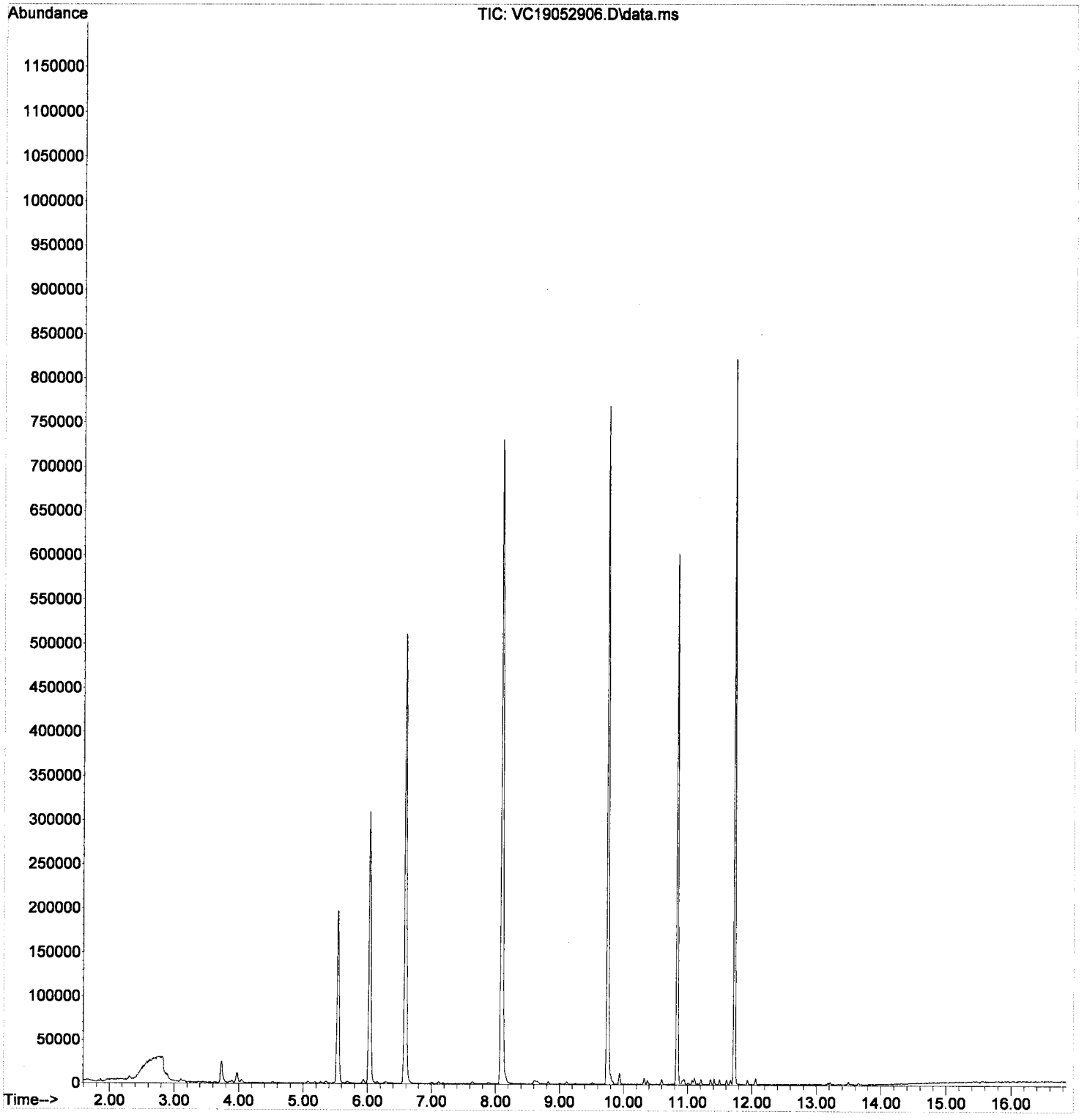
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.767	112	3136	0.46	ug/L	#	64
50) Ethylbenzene	9.797	91	5392	0.46	ug/L		98
51) 1,1,1,2-Tetrachloroethane	9.834	131	602	0.29	ug/L		90
52) m,p-Xylenes (2)	9.937	91	7624	0.88	ug/L		90
53) o-Xylene	10.326	91	3760	0.42	ug/L		92
54) Styrene	10.375	104	2262	0.33	ug/L		95
55) Bromoform	10.393	173	186	0.19	ug/L		93
56) Isopropylbenzene	10.594	105	4105	0.40	ug/L		94
59) Bromobenzene	10.917	156	1043	0.41	ug/L		83
60) n-Propylbenzene	10.947	91	4750	0.42	ug/L		99
61) 1,1,2,2-Tetrachloroethane	11.008	83	1001	0.39	ug/L		71
62) 2-Chlorotoluene	11.069	126	911	0.39	ug/L	#	77
63) 1,3,5-Trimethylbenzene	11.105	105	3139	0.40	ug/L		98
64) 1,2,3-Trichloropropane	11.117	110	500	0.48	ug/L		84
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.			
66) 4-Chlorotoluene	11.209	91	2912	0.43	ug/L		97
67) tert-Butylbenzene	11.361	91	1681	0.40	ug/L		93
68) 1,2,4-Trimethylbenzene	11.415	105	3385	0.43	ug/L		90
69) sec-Butylbenzene	11.501	105	3773	0.42	ug/L		92
70) 4-Isopropyltoluene	11.610	119	3163	0.42	ug/L		98
71) 1,3-Dichlorobenzene	11.677	146	1855	0.44	ug/L		90
72) 1,4-Dichlorobenzene	11.744	146	1914	0.46	ug/L		95
73) n-Butylbenzene	11.932	91	2690	0.44	ug/L		91
74) 1,2-Dichlorobenzene	12.060	146	1753	0.45	ug/L		93
75) 1,2-Dibromo-3-Chloropr...	12.681	157	107	0.18	ug/L	#	30
76) Hexachlorobutadiene	13.192	223	375	0.62	ug/L	#	37
77) 1,2,4-Trichlorobenzene	13.216	180	812	0.35	ug/L		90
78) Naphthalene	13.496	128	2785	0.33	ug/L		94
79) 1,2,3-Trichlorobenzene	13.660	180	850	0.37	ug/L		92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052906.D
Acq On : 29 May 2019 4:35 pm
Operator : TB
Sample : 9E29058-CAL3
Misc : 1X 5mL 0.4ppb VOC DI+MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:48 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052907.D
Acq On : 29 May 2019 5:02 pm
Operator : TB
Sample : 9E29058-CAL4
Misc : 1X 5mL 1ppb VOC DI+MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 12:06:59 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

post
5/30/19
5/30/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.034	168	245560	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.751	117	430913	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.728	152	183911	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.535	111	127981	47.16	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.588	114	472967	49.86	ug/L		0.00
39) Toluene-d8 (S)	8.096	98	583864	49.96	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.834	174	158686	49.68	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.660	85	2045	0.94	ug/L		78
3) Chloromethane	1.861	50	3872	1.11	ug/L		98
4) Vinyl Chloride	1.952	62	2495	0.99	ug/L		83
5) Bromomethane	2.299	96	2456	1.81	ug/L		96
7) Trichlorofluoromethane	2.572	101	1421	0.99	ug/L		82
8) 1,1-Dichloroethene	3.102	61	2472	0.99	ug/L		91
9) Carbon Disulfide	3.108	76	3330	0.86	ug/L		96
10) Freon 113	3.144	101	2147	1.07	ug/L		80
11) Iodomethane	3.242	142	702	0.79	ug/L	#	79
12) Methylene Chloride	3.728	84	15763	5.65	ug/L		93
13) Acetone	3.856	43	3386m	3.17	ug/L		
14) t-1,2-Dichloroethene	3.886	61	2611	0.89	ug/L		93
15) n-Hexane	3.972	86	1382	2.86	ug/L	#	79
16) Methyl-tert-butyl-ether	4.032	73	8517	0.99	ug/L		93
17) 1,1-Dichloroethane	4.519	63	3481	0.96	ug/L		99
18) Acrylonitrile	4.610	53	1313	0.90	ug/L		73
19) c-1,2-Dichloroethene	5.067	61	3087	0.95	ug/L		97
20) 2,2-Dichloropropane	5.176	77	2678	0.95	ug/L		90
21) Bromochloromethane	5.267	49	1861	0.96	ug/L		85
22) Chloroform	5.353	83	4395	1.06	ug/L		96
23) Carbon Tetrachloride	5.474	117	1931	0.85	ug/L		90
24) Tetrahydrofuran	5.547	42	1903	1.28	ug/L		93
25) 1,1,1-Trichloroethane	5.547	97	2923	0.88	ug/L		88
27) 1,1-Dichloropropene	5.675	75	3655	1.13	ug/L		88
28) 2-Butanone (MEK)	5.705	43	4450	2.25	ug/L		97
29) Benzene	5.937	78	11217	1.06	ug/L		93
30) 1,2-Dichloroethane (EDC)	6.156	62	3138	0.99	ug/L		92
31) iso-Butyl Alcohol	6.296	43	6030m	24.77	ug/L		
33) Trichloroethene (TCE)	6.551	130	2995	1.03	ug/L		92
34) Dibromomethane	6.995	93	1272	0.86	ug/L		86
35) 1,2-Dichloropropane	7.111	63	2601	0.93	ug/L		79
36) Bromodichloromethane	7.178	83	2077	0.82	ug/L		94
38) c-1,3-Dichloropropene	7.889	75	3081	0.84	ug/L		77
40) Toluene	8.157	91	12756	1.15	ug/L		99
41) Tetrachloroethene (PCE)	8.595	166	2616	1.06	ug/L		96
42) 4-Methyl-2-Pentanone (...	8.626	43	7035	2.10	ug/L		93
43) t-1,3-Dichloropropene	8.644	75	2671	0.81	ug/L		78
44) 1,1,2-Trichloroethane	8.826	97	2251	0.94	ug/L		92
45) Dibromochloromethane	9.009	129	1390	0.80	ug/L		87
46) 1,3-Dichloropropane	9.106	76	4104	0.94	ug/L		88
47) 1,2-Dibromoethane (EDB)	9.240	107	2135	0.90	ug/L		79
48) 2-Hexanone	9.508	43	4936	2.04	ug/L		93
49) Chlorobenzene	9.769	112	7300	1.09	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052907.D
Acq On : 29 May 2019 5:02 pm
Operator : TB
Sample : 9E29058-CAL4
Misc : 1X 5mL 1ppb VOC DI+MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 12:06:59 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

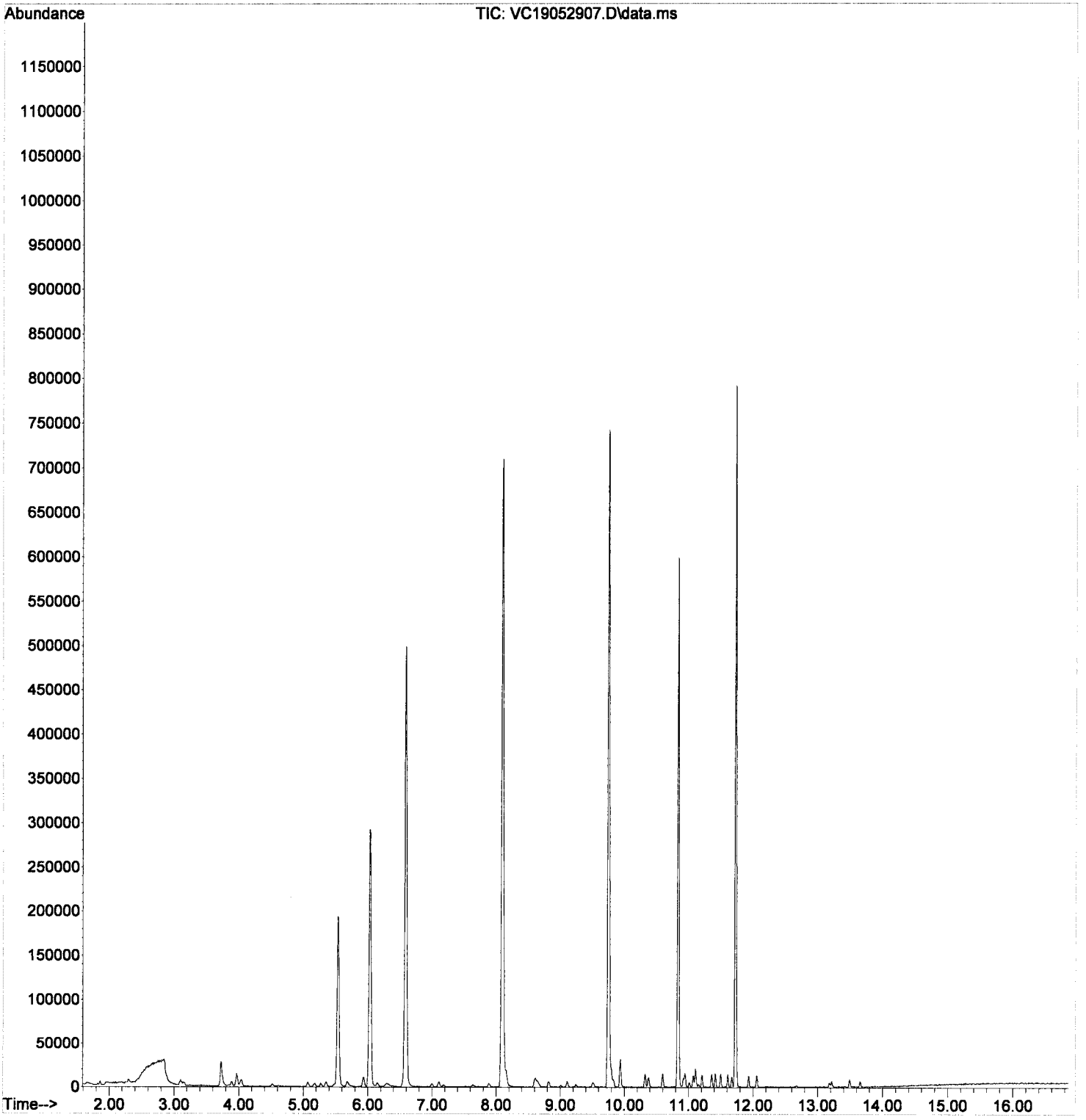
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
50) Ethylbenzene	9.800	91	12069	1.06	ug/L		95
51) 1,1,1,2-Tetrachloroethane	9.824	131	1810	0.88	ug/L	#	73
52) m,p-Xylenes (2)	9.933	91	17400	2.07	ug/L		97
53) o-Xylene	10.323	91	9051	1.04	ug/L		99
54) Styrene	10.378	104	5658	0.86	ug/L		93
55) Bromoform	10.384	173	619	0.65	ug/L		91
56) Isopropylbenzene	10.597	105	9890	0.98	ug/L		93
59) Bromobenzene	10.919	156	2592	1.05	ug/L	#	82
60) n-Propylbenzene	10.943	91	10579	0.97	ug/L		95
61) 1,1,2,2-Tetrachloroethane	11.010	83	2272	0.90	ug/L		86
62) 2-Chlorotoluene	11.071	126	2285	1.01	ug/L		86
63) 1,3,5-Trimethylbenzene	11.108	105	7772	1.02	ug/L		97
64) 1,2,3-Trichloropropane	11.114	110	983	0.97	ug/L		90
65) t-1,4-Dichloro-2-butene	11.150	88	180	0.57	ug/L	#	63
66) 4-Chlorotoluene	11.211	91	6874	1.05	ug/L		98
67) tert-Butylbenzene	11.357	91	4182	1.02	ug/L		88
68) 1,2,4-Trimethylbenzene	11.412	105	7847	1.01	ug/L		93
69) sec-Butylbenzene	11.497	105	8865	1.00	ug/L		96
70) 4-Isopropyltoluene	11.606	119	6901	0.95	ug/L		96
71) 1,3-Dichlorobenzene	11.667	146	4049	0.99	ug/L		96
72) 1,4-Dichlorobenzene	11.740	146	4368	1.08	ug/L		75
73) n-Butylbenzene	11.929	91	6459	1.07	ug/L		87
74) 1,2-Dichlorobenzene	12.063	146	3804	1.00	ug/L		86
75) 1,2-Dibromo-3-Chloropr...	12.671	157	368	0.64	ug/L	#	45
76) Hexachlorobutadiene	13.182	223	652	1.10	ug/L	#	70
77) 1,2,4-Trichlorobenzene	13.219	180	2286	1.02	ug/L		91
78) Naphthalene	13.492	128	6879	0.84	ug/L		97
79) 1,2,3-Trichlorobenzene	13.657	180	2090	0.93	ug/L		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052907.D
Acq On : 29 May 2019 5:02 pm
Operator : TB
Sample : 9E29058-CAL4
Misc : 1X 5mL 1ppb VOC DI+MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 12:06:59 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052907.D
Acq On : 29 May 2019 5:02 pm
Operator : TB
Sample : 9E29058-CAL4
Misc : 1X 5mL 1ppb VOC DI+MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:50 2019
Quant Method : C:\msdchem\1\METHODS\~~VC190529S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

5/30/19 pre

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.034	168	245560	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.751	117	430913	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.728	152	183911	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.535	111	127981	47.16	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.588	114	472967	49.86	ug/L		0.00
39) Toluene-d8 (S)	8.096	98	583864	49.96	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.834	174	158686	49.68	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.660	85	2045	0.94	ug/L		78
3) Chloromethane	1.861	50	3872	1.11	ug/L		98
4) Vinyl Chloride	1.952	62	2495	0.99	ug/L		83
5) Bromomethane	2.299	96	2456	1.81	ug/L		96
6) Chloroethane	2.445	64	782	0.85	ug/L	#	1
7) Trichlorofluoromethane	2.572	101	1421	0.99	ug/L		82
8) 1,1-Dichloroethene	3.102	61	2472	0.99	ug/L		91
9) Carbon Disulfide	3.108	76	3330	0.86	ug/L		96
10) Freon 113	3.144	101	2147	1.07	ug/L		80
11) Iodomethane	3.242	142	702	0.79	ug/L	#	79
12) Methylene Chloride	3.728	84	15763	5.65	ug/L		93
13) Acetone	~~3.838~~	~~43~~	~~1378~~	~~1.29~~	~~ug/L~~		~~82~~ MI
14) t-1,2-Dichloroethene	3.886	61	2611	0.89	ug/L		93
15) n-Hexane	3.972	86	1382	2.86	ug/L	#	79
16) Methyl-tert-butyl-ether	4.032	73	8517	0.99	ug/L		93
17) 1,1-Dichloroethane	4.519	63	3481	0.96	ug/L		99
18) Acrylonitrile	4.610	53	1313	0.90	ug/L		73
19) c-1,2-Dichloroethene	5.067	61	3087	0.95	ug/L		97
20) 2,2-Dichloropropane	5.176	77	2678	0.95	ug/L		90
21) Bromochloromethane	5.267	49	1861	0.96	ug/L		85
22) Chloroform	5.353	83	4395	1.06	ug/L		96
23) Carbon Tetrachloride	5.474	117	1931	0.85	ug/L		90
24) Tetrahydrofuran	5.547	42	1903	1.28	ug/L		93
25) 1,1,1-Trichloroethane	5.547	97	2923	0.88	ug/L		88
27) 1,1-Dichloropropene	5.675	75	3655	1.13	ug/L		88
28) 2-Butanone (MEK)	5.705	43	4450	2.25	ug/L		97
29) Benzene	5.937	78	11217	1.06	ug/L		93
30) 1,2-Dichloroethane (EDC)	6.156	62	3138	0.99	ug/L		92
31) iso-Butyl Alcohol	~~6.296~~	~~43~~	~~3491~~	~~14.34~~	~~ug/L~~		~~90~~ MI
33) Trichloroethene (TCE)	6.551	130	2995	1.03	ug/L		92
34) Dibromomethane	6.995	93	1272	0.86	ug/L		86
35) 1,2-Dichloropropane	7.111	63	2601	0.93	ug/L		79
36) Bromodichloromethane	7.178	83	2077	0.82	ug/L		94
38) c-1,3-Dichloropropene	7.889	75	3081	0.84	ug/L		77
40) Toluene	8.157	91	12756	1.15	ug/L		99
41) Tetrachloroethene (PCE)	8.595	166	2616	1.06	ug/L		96
42) 4-Methyl-2-Pentanone (...	8.626	43	7035	2.10	ug/L		93
43) t-1,3-Dichloropropene	8.644	75	2671	0.81	ug/L		78
44) 1,1,2-Trichloroethane	8.826	97	2251	0.94	ug/L		92
45) Dibromochloromethane	9.009	129	1390	0.80	ug/L		87
46) 1,3-Dichloropropane	9.106	76	4104	0.94	ug/L		88
47) 1,2-Dibromoethane (EDB)	9.240	107	2135	0.90	ug/L		79
48) 2-Hexanone	9.508	43	4936	2.04	ug/L		93

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052907.D
Acq On : 29 May 2019 5:02 pm
Operator : TB
Sample : 9E29058-CAL4
Misc : 1X 5mL 1ppb VOC DI+MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:50 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

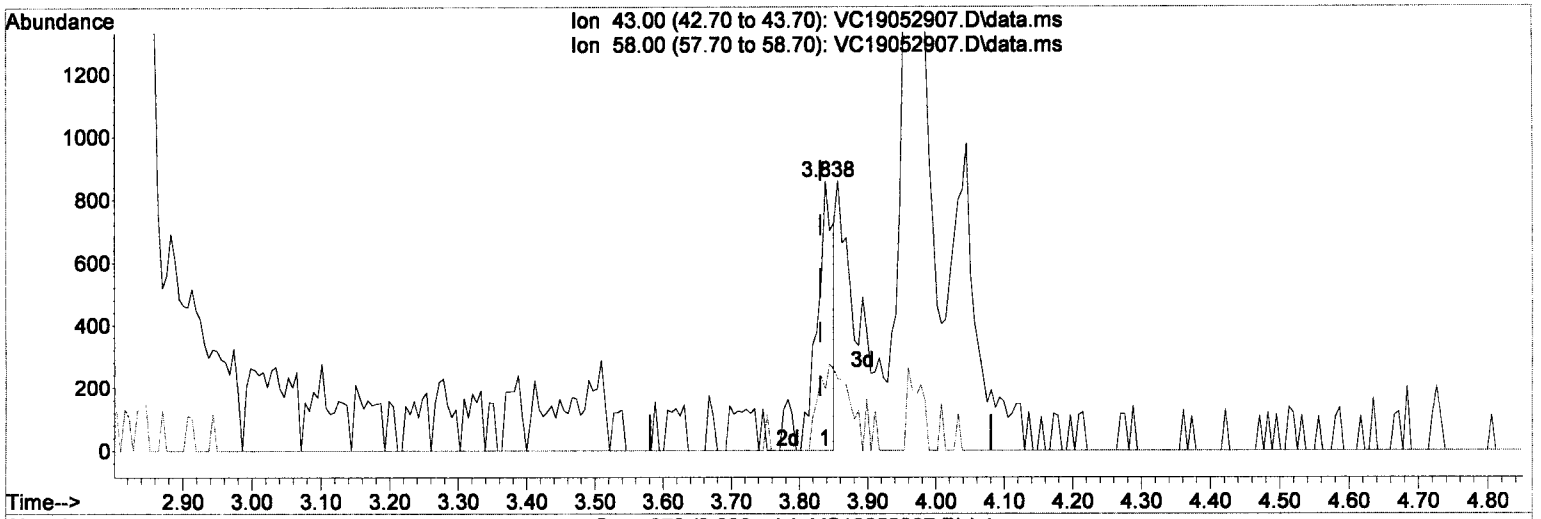
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.769	112	7300	1.09	ug/L		98
50) Ethylbenzene	9.800	91	12069	1.06	ug/L		95
51) 1,1,1,2-Tetrachloroethane	9.824	131	1810	0.88	ug/L	#	73
52) m,p-Xylenes (2)	9.933	91	17400	2.07	ug/L		97
53) o-Xylene	10.323	91	9051	1.04	ug/L		99
54) Styrene	10.378	104	5658	0.86	ug/L		93
55) Bromoform	10.384	173	619	0.65	ug/L		91
56) Isopropylbenzene	10.597	105	9890	0.98	ug/L		93
59) Bromobenzene	10.919	156	2592	1.05	ug/L	#	82
60) n-Propylbenzene	10.943	91	10579	0.97	ug/L		95
61) 1,1,2,2-Tetrachloroethane	11.010	83	2272	0.90	ug/L		86
62) 2-Chlorotoluene	11.071	126	2285	1.01	ug/L		86
63) 1,3,5-Trimethylbenzene	11.108	105	7772	1.02	ug/L		97
64) 1,2,3-Trichloropropane	11.114	110	983	0.97	ug/L		90
65) t-1,4-Dichloro-2-butene	11.150	88	180	0.57	ug/L	#	63
66) 4-Chlorotoluene	11.211	91	6874	1.05	ug/L		98
67) tert-Butylbenzene	11.357	91	4182	1.02	ug/L		88
68) 1,2,4-Trimethylbenzene	11.412	105	7847	1.01	ug/L		93
69) sec-Butylbenzene	11.497	105	8865	1.00	ug/L		96
70) 4-Isopropyltoluene	11.606	119	6901	0.95	ug/L		96
71) 1,3-Dichlorobenzene	11.667	146	4049	0.99	ug/L		96
72) 1,4-Dichlorobenzene	11.740	146	4368	1.08	ug/L		75
73) n-Butylbenzene	11.929	91	6459	1.07	ug/L		87
74) 1,2-Dichlorobenzene	12.063	146	3804	1.00	ug/L		86
75) 1,2-Dibromo-3-Chloropr...	12.671	157	368	0.64	ug/L	#	45
76) Hexachlorobutadiene	13.182	223	652	1.10	ug/L	#	70
77) 1,2,4-Trichlorobenzene	13.219	180	2286	1.02	ug/L		91
78) Naphthalene	13.492	128	6879	0.84	ug/L		97
79) 1,2,3-Trichlorobenzene	13.657	180	2090	0.93	ug/L		95

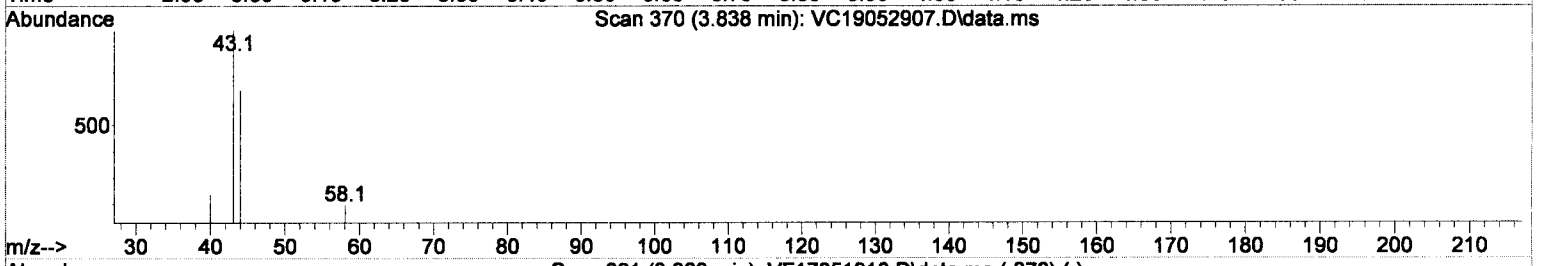
(#) = qualifier out of range (m) = manual integration (+) = signals summed

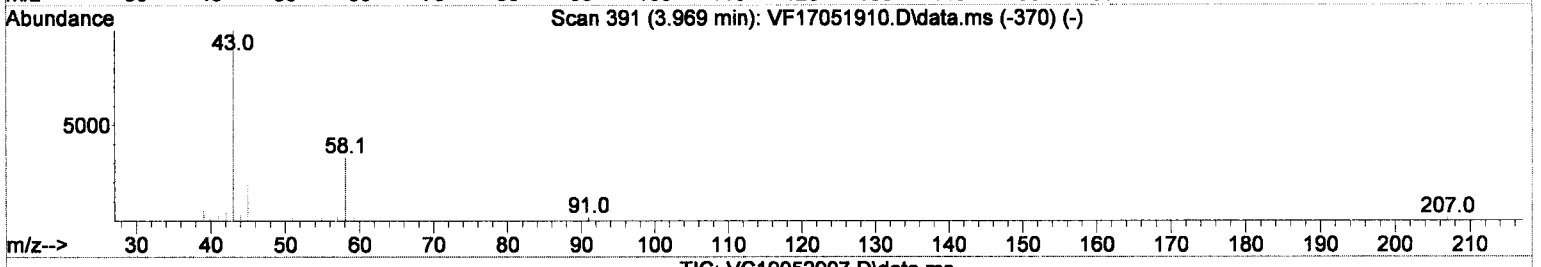
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052907.D
Acq On : 29 May 2019 5:02 pm
Operator : TB
Sample : 9E29058-CAL4
Misc : 1X 5mL 1ppb VOC DI+MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:50 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration







TIC: VC19052907.D\data.ms

(13) Acetone

3.838min (+0.007) 1.29 ug/L

response 1378

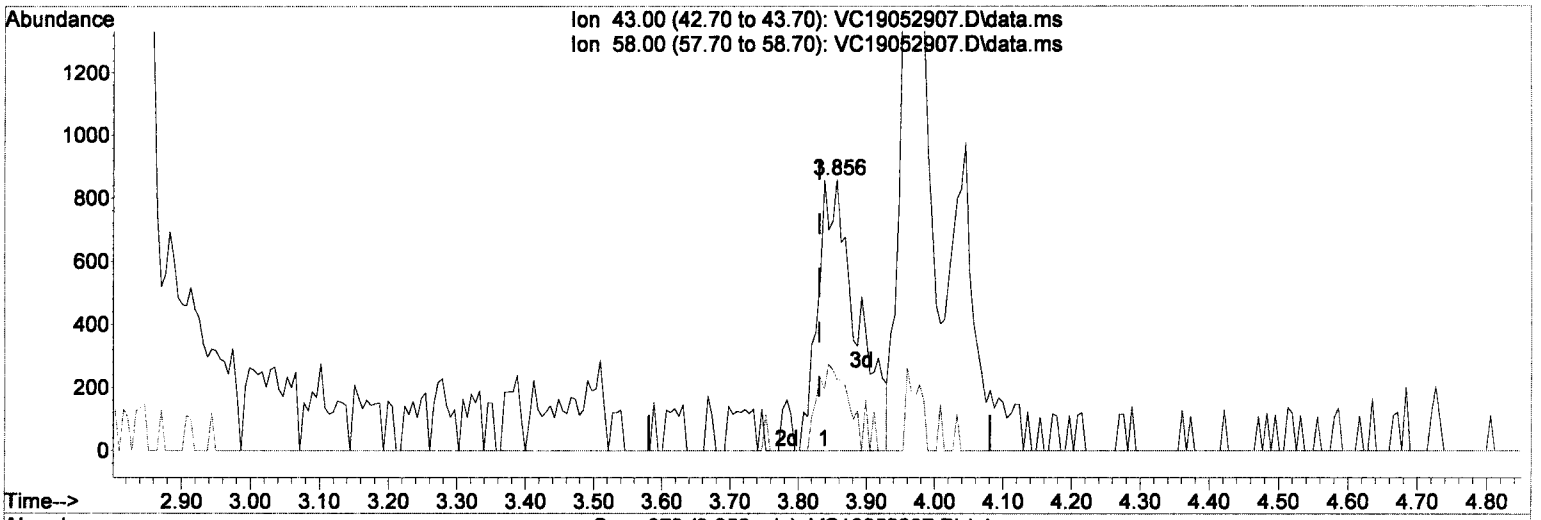
Ion	Exp%	Act%
43.00	100	100
58.00	33.10	22.75
0.00	0.00	0.00
0.00	0.00	0.00

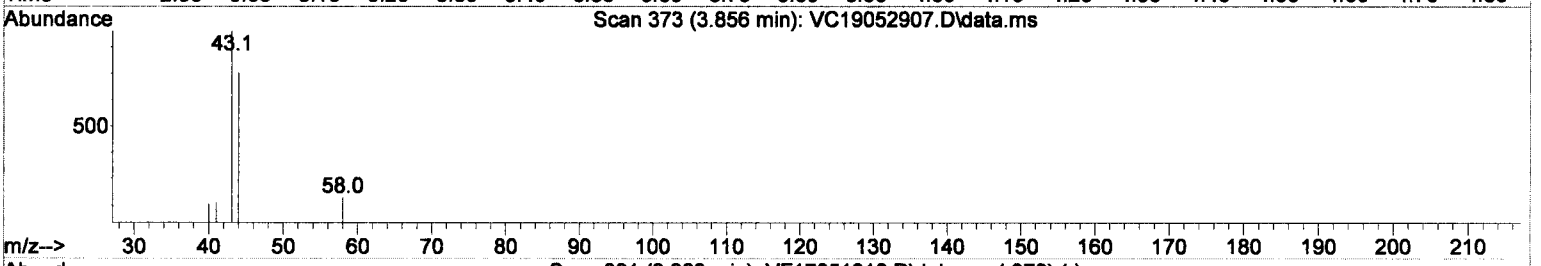
MF

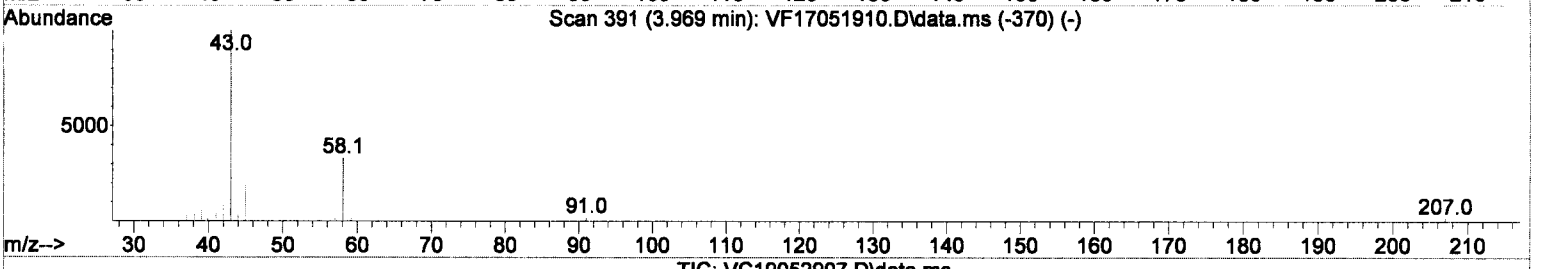
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052907.D
Acq On : 29 May 2019 5:02 pm
Operator : TB
Sample : 9E29058-CAL4
Misc : 1X 5mL 1ppb VOC DI+MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:50 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration







TIC: VC19052907.D\data.ms

(13) Acetone

3.856min (+0.025) 3.17 ug/L m

response 3386

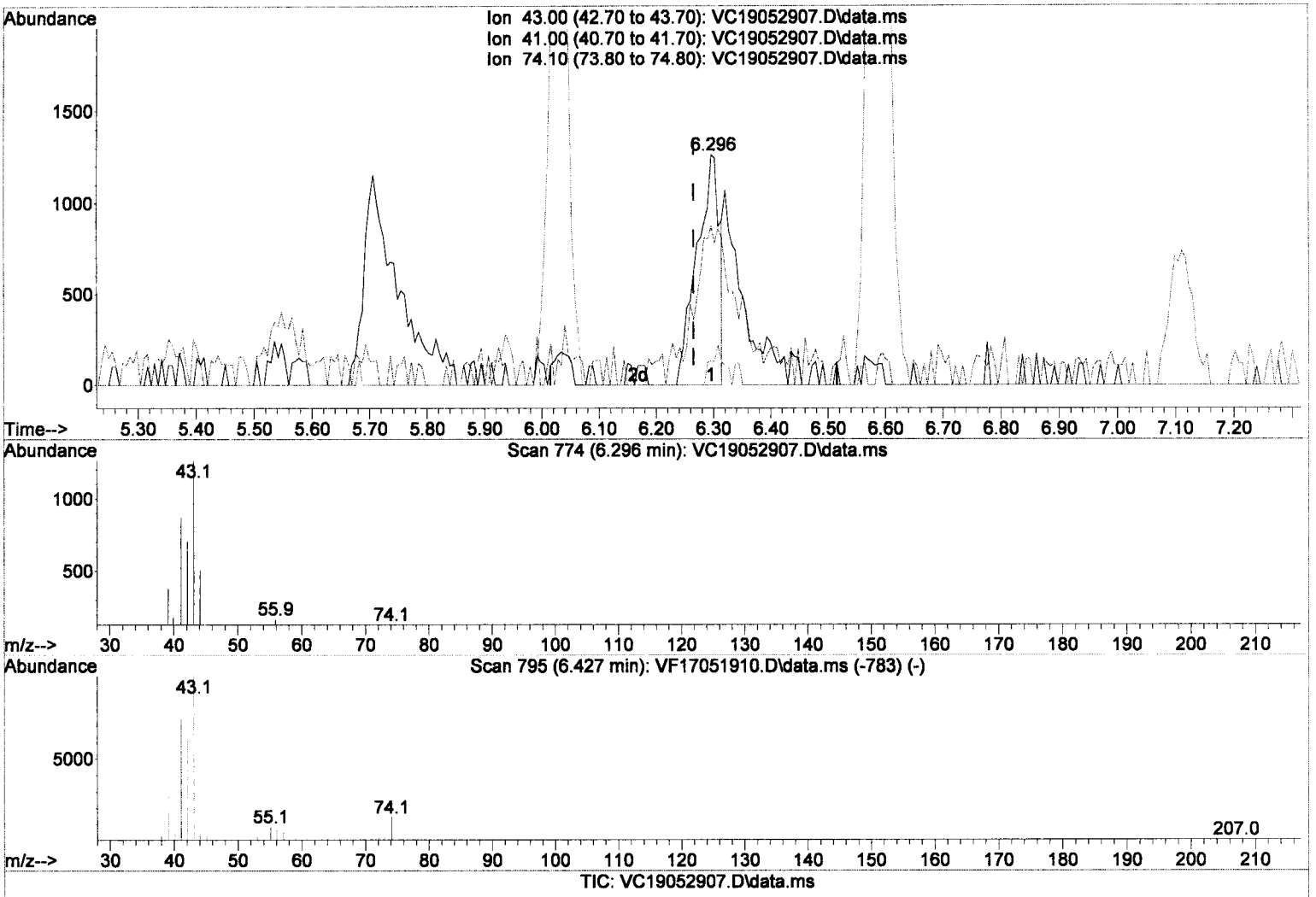
Ion	Exp%	Act%
43.00	100	100
58.00	33.10	26.51
0.00	0.00	0.00
0.00	0.00	0.00

5/30/19

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052907.D
Acq On : 29 May 2019 5:02 pm
Operator : TB
Sample : 9E29058-CAL4
Misc : 1X 5mL 1ppb VOC DI+MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:50 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



TIC: VC19052907.D\data.ms

(31) iso-Butyl Alcohol

6.296min (+0.030) 14.34 ug/L

response 3491

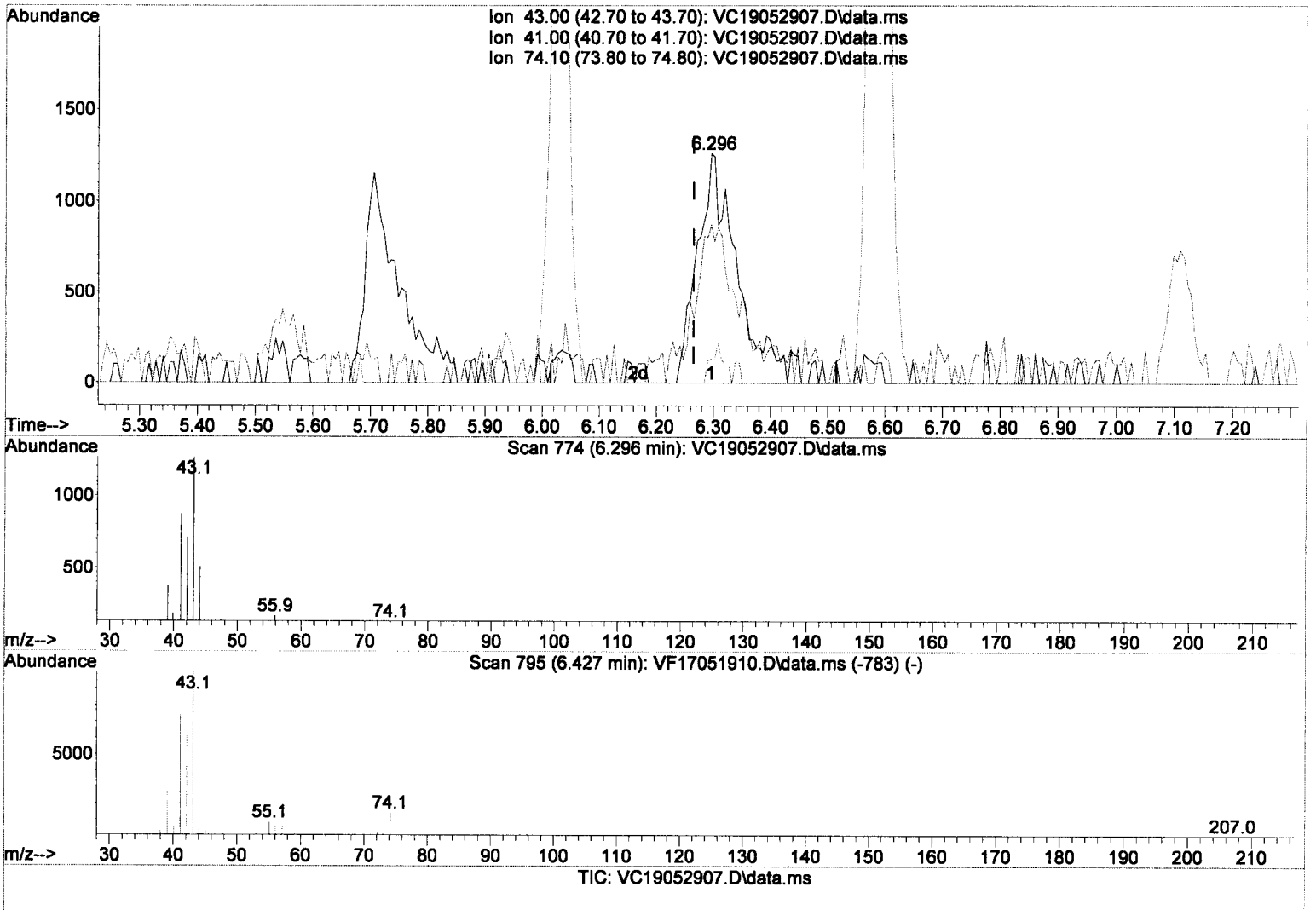
Ion	Exp%	Act%
43.00	100	100
41.00	78.40	68.99
74.10	9.40	10.55
0.00	0.00	0.00

MF

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052907.D
Acq On : 29 May 2019 5:02 pm
Operator : TB
Sample : 9E29058-CAL4
Misc : 1X 5mL 1ppb VOC DI+MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:50 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



TIC: VC19052907.D\data.ms

(31) iso-Butyl Alcohol

6.296min (+0.030) 24.77 ug/L m

response 6030

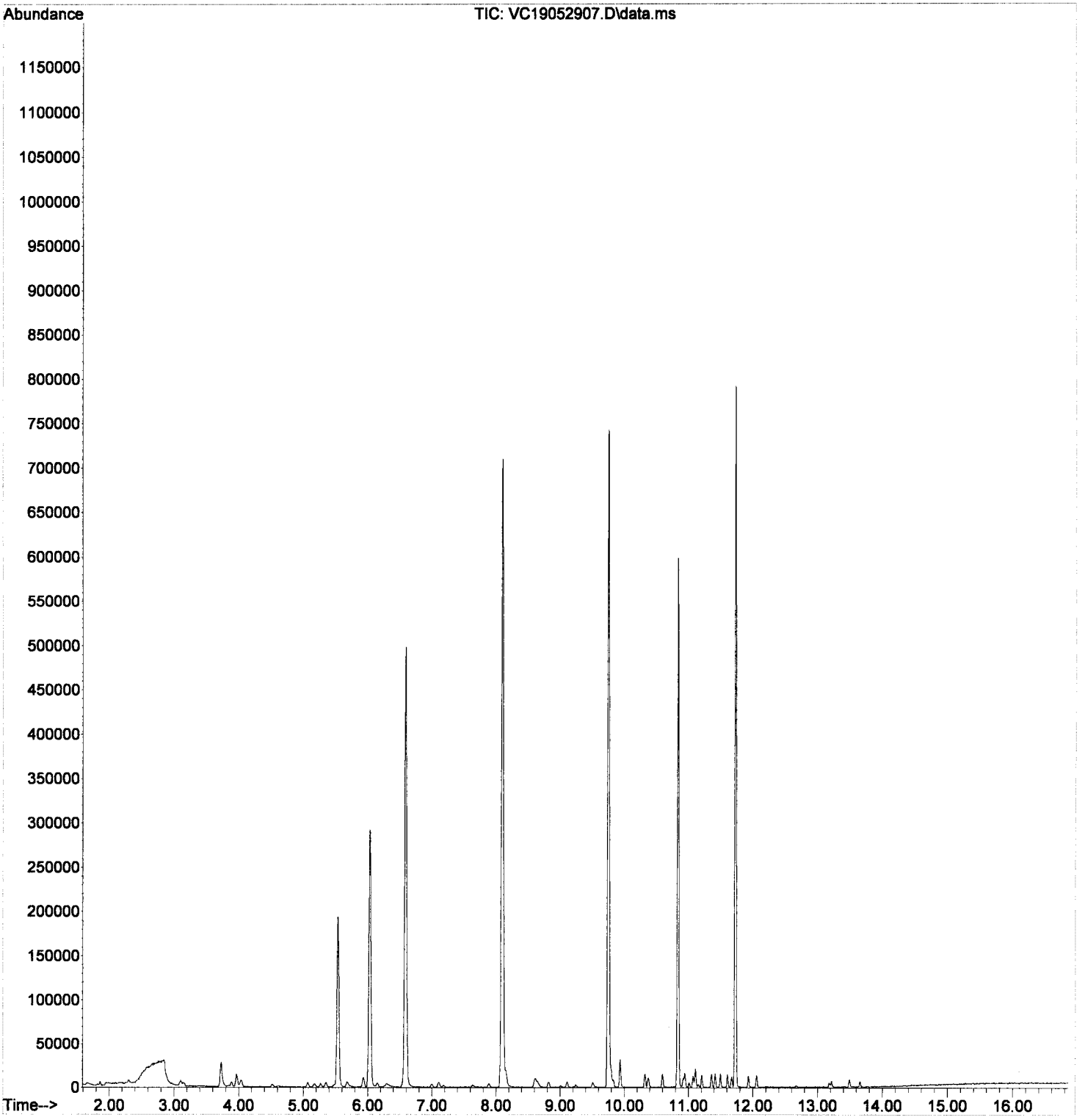
Ion	Exp%	Act%
43.00	100	100
41.00	78.40	68.99
74.10	9.40	10.55
0.00	0.00	0.00

5/30/19

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052907.D
Acq On : 29 May 2019 5:02 pm
Operator : TB
Sample : 9E29058-CAL4
Misc : 1X 5mL 1ppb VOC DI+MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:50 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

5/30/19 post

Quant Time: May 30 11:45:52 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.035	168	254825	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	451536	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.729	152	194740	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.536	111	140136	49.76	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.589	114	496387	50.43	ug/L		0.00
39) Toluene-d8 (S)	8.097	98	607810	49.63	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.835	174	166852	49.33	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.667	85	4563	2.03	ug/L		94
3) Chloromethane	1.862	50	7629	2.11	ug/L		94
4) Vinyl Chloride	1.953	62	5260	2.01	ug/L		91
5) Bromomethane	2.306	96	4475	3.17	ug/L		92
6) Chloroethane	2.440	64	2003	2.10	ug/L	#	1
7) Trichlorofluoromethane	2.580	101	2958	1.99	ug/L		94
8) 1,1-Dichloroethene	3.103	61	4891	1.89	ug/L		88
9) Carbon Disulfide	3.115	76	6854	1.70	ug/L		98
10) Freon 113	3.152	101	3908	1.88	ug/L		85
11) Iodomethane	3.249	142	1507	1.64	ug/L	#	75
12) Methylene Chloride	3.729	84	18469	6.37	ug/L		98
13) Acetone	3.845	43	5795	5.23	ug/L		94
14) t-1,2-Dichloroethene	3.894	61	5764	1.90	ug/L		99
15) n-Hexane	3.973	86	1767	3.53	ug/L	#	87
16) Methyl-tert-butyl-ether	4.034	73	17541	1.96	ug/L		91
17) 1,1-Dichloroethane	4.520	63	7479	1.99	ug/L		93
18) Acrylonitrile	4.606	53	2550	1.68	ug/L		86
19) c-1,2-Dichloroethene	5.068	61	6425	1.91	ug/L		99
20) 2,2-Dichloropropane	5.177	77	5498	1.88	ug/L		96
21) Bromochloromethane	5.269	49	3833	1.91	ug/L		98
22) Chloroform	5.354	83	8763	2.03	ug/L		98
23) Carbon Tetrachloride	5.475	117	3774	1.59	ug/L		92
24) Tetrahydrofuran	5.542	42	3294	2.13	ug/L		88
25) 1,1,1-Trichloroethane	5.548	97	6438	1.88	ug/L		98
27) 1,1-Dichloropropene	5.682	75	6475	1.93	ug/L		95
28) 2-Butanone (MEK)	5.701	43	7369	3.59	ug/L		94
29) Benzene	5.938	78	21880	1.99	ug/L		96
30) 1,2-Dichloroethane (EDC)	6.151	62	6601	2.00	ug/L		99
31) iso-Butyl Alcohol	6.291	43	11367	45.00	ug/L		84
33) Trichloroethene (TCE)	6.546	130	6232	2.07	ug/L		87
34) Dibromomethane	6.996	93	2771	1.81	ug/L		87
35) 1,2-Dichloropropane	7.112	63	5608	1.93	ug/L		92
36) Bromodichloromethane	7.179	83	4030	1.53	ug/L		90
38) c-1,3-Dichloropropene	7.891	75	6187	1.61	ug/L		95
40) Toluene	8.152	91	23832	2.05	ug/L		88
41) Tetrachloroethene (PCE)	8.602	166	4849	1.88	ug/L		96
42) 4-Methyl-2-Pentanone (...	8.615	43	13222	3.76	ug/L		91
43) t-1,3-Dichloropropene	8.645	75	5147	1.49	ug/L		98
44) 1,1,2-Trichloroethane	8.821	97	4541	1.81	ug/L		88
45) Dibromochloromethane	9.004	129	2873	1.57	ug/L		88
46) 1,3-Dichloropropane	9.107	76	8546	1.86	ug/L		93
47) 1,2-Dibromoethane (EDB)	9.241	107	4166	1.67	ug/L		100
48) 2-Hexanone	9.509	43	8511	3.36	ug/L		93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:52 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

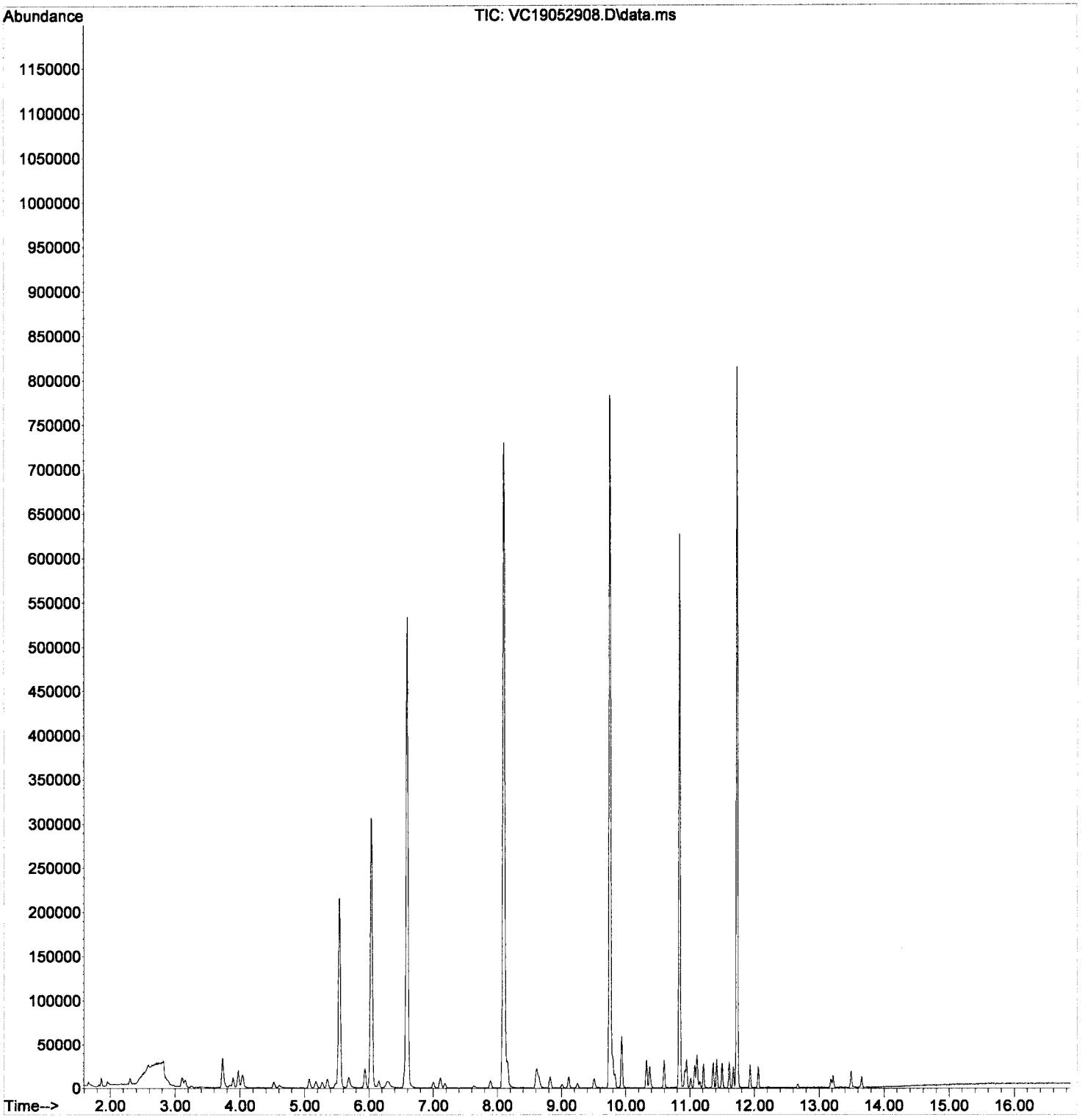
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.764	112	14584	2.08	ug/L		98
50) Ethylbenzene	9.795	91	23660	1.98	ug/L		99
51) 1,1,1,2-Tetrachloroethane	9.831	131	3542	1.64	ug/L		95
52) m,p-Xylenes (2)	9.935	91	34407	3.91	ug/L		98
53) o-Xylene	10.324	91	17445	1.91	ug/L		99
54) Styrene	10.373	104	11631	1.68	ug/L		95
55) Bromoform	10.391	173	1354	1.36	ug/L		82
56) Isopropylbenzene	10.598	105	20325	1.92	ug/L		96
59) Bromobenzene	10.920	156	5277	2.01	ug/L		89
60) n-Propylbenzene	10.945	91	22107	1.91	ug/L		92
61) 1,1,2,2-Tetrachloroethane	11.011	83	4646	1.75	ug/L		96
62) 2-Chlorotoluene	11.066	126	4419	1.84	ug/L		97
63) 1,3,5-Trimethylbenzene	11.103	105	14521	1.80	ug/L		94
64) 1,2,3-Trichloropropane	11.115	110	2200	2.06	ug/L		91
65) t-1,4-Dichloro-2-butene	11.151	88	320	0.95	ug/L	#	52
66) 4-Chlorotoluene	11.206	91	13410	1.93	ug/L		98
67) tert-Butylbenzene	11.358	91	8037	1.86	ug/L		97
68) 1,2,4-Trimethylbenzene	11.413	105	15360	1.87	ug/L		99
69) sec-Butylbenzene	11.498	105	16671	1.78	ug/L		99
70) 4-Isopropyltoluene	11.608	119	14651	1.91	ug/L		99
71) 1,3-Dichlorobenzene	11.675	146	8756	2.03	ug/L		92
72) 1,4-Dichlorobenzene	11.741	146	8705	2.03	ug/L		92
73) n-Butylbenzene	11.930	91	12230	1.92	ug/L		98
74) 1,2-Dichlorobenzene	12.058	146	7643	1.90	ug/L		89
75) 1,2-Dibromo-3-Chloropr...	12.672	157	826	1.35	ug/L		83
76) Hexachlorobutadiene	13.183	223	1244	1.99	ug/L	#	83
77) 1,2,4-Trichlorobenzene	13.214	180	4471	1.88	ug/L		92
78) Naphthalene	13.493	128	14001	1.61	ug/L		96
79) 1,2,3-Trichlorobenzene	13.652	180	4310	1.82	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:52 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:52 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

5/30/19 pre

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.035	168	254825	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	451536	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.729	152	194740	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.536	111	140136	49.76	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.589	114	496387	50.43	ug/L		0.00
39) Toluene-d8 (S)	8.097	98	607810	49.63	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.835	174	166852	49.33	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.667	85	4563	2.03	ug/L		94
3) Chloromethane	1.862	50	7629	2.11	ug/L		94
4) Vinyl Chloride	1.953	62	5260	2.01	ug/L		91
5) Bromomethane	2.306	96	4475	3.17	ug/L		92
6) Chloroethane	2.440	64	2003	2.10	ug/L	#	1
7) Trichlorofluoromethane	2.580	101	2958	1.99	ug/L		94
8) 1,1-Dichloroethene	3.103	61	4891	1.89	ug/L		88
9) Carbon Disulfide	3.115	76	6854	1.70	ug/L		98
10) Freon 113	3.152	101	3908	1.88	ug/L		85
11) Iodomethane	3.249	142	1507	1.64	ug/L	#	75
12) Methylene Chloride	3.729	84	18469	6.37	ug/L		98
13) Acetone	3.845	43	5795	5.23	ug/L		94
14) t-1,2-Dichloroethene	3.894	61	5764	1.90	ug/L		99
15) n-Hexane	3.973	86	1767	3.53	ug/L	#	87
16) Methyl-tert-butyl-ether	4.034	73	17541	1.96	ug/L		91
17) 1,1-Dichloroethane	4.520	63	7479	1.99	ug/L		93
18) Acrylonitrile	4.606	53	2550	1.68	ug/L		86
19) c-1,2-Dichloroethene	5.068	61	6425	1.91	ug/L		99
20) 2,2-Dichloropropane	5.177	77	5498	1.88	ug/L		96
21) Bromochloromethane	5.269	49	3833	1.91	ug/L		98
22) Chloroform	5.354	83	8763	2.03	ug/L		98
23) Carbon Tetrachloride	5.475	117	3774	1.59	ug/L		92
24) Tetrahydrofuran	5.542	42	3294	2.13	ug/L		88
25) 1,1,1-Trichloroethane	5.548	97	6438	1.88	ug/L		98
27) 1,1-Dichloropropene	5.682	75	6475	1.93	ug/L		95
28) 2-Butanone (MEK)	5.701	43	7369	3.59	ug/L		94
29) Benzene	5.938	78	21880	1.99	ug/L		96
30) 1,2-Dichloroethane (EDC)	6.151	62	6601	2.00	ug/L		99
31) iso-Butyl Alcohol	6.291	43	11367	45.00	ug/L		84
33) Trichloroethene (TCE)	6.546	130	6232	2.07	ug/L		87
34) Dibromomethane	6.996	93	2771	1.81	ug/L		87
35) 1,2-Dichloropropane	7.112	63	5608	1.93	ug/L		92
36) Bromodichloromethane	7.179	83	4030	1.53	ug/L		90
38) c-1,3-Dichloropropene	7.891	75	6187	1.61	ug/L		95
40) Toluene	8.152	91	23832	2.05	ug/L		88
41) Tetrachloroethene (PCE)	8.602	166	4849	1.88	ug/L		96
42) 4-Methyl-2-Pentanone (...	8.615	43	13222	3.76	ug/L		91
43) t-1,3-Dichloropropene	8.645	75	5147	1.49	ug/L		98
44) 1,1,2-Trichloroethane	8.821	97	4541	1.81	ug/L		88
45) Dibromochloromethane	9.004	129	2873	1.57	ug/L		88
46) 1,3-Dichloropropane	9.107	76	8546	1.86	ug/L		93
47) 1,2-Dibromoethane (EDB)	9.241	107	4166	1.67	ug/L		100
48) 2-Hexanone	9.509	43	8511	3.36	ug/L		93

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:52 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

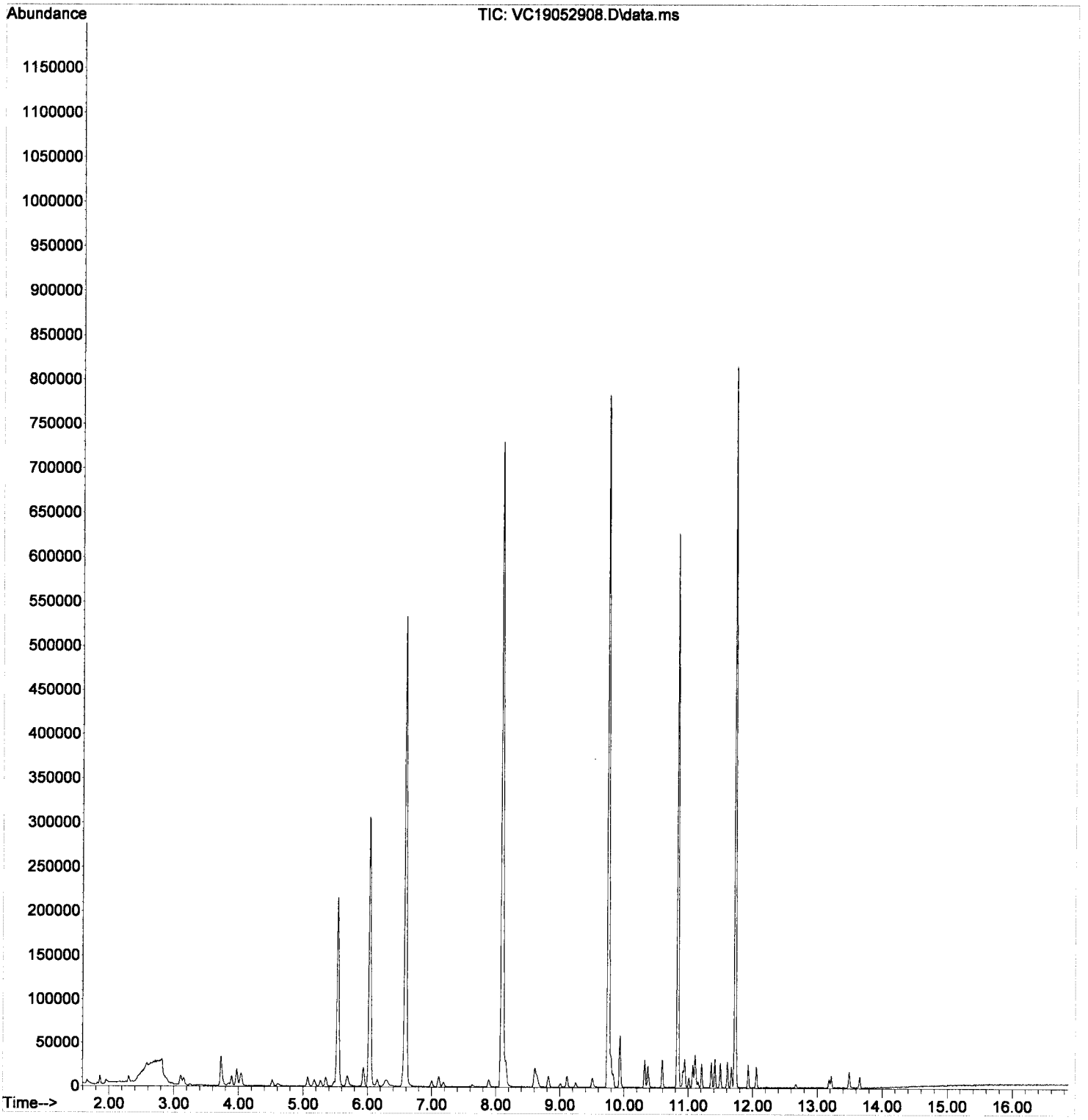
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.764	112	14584	2.08	ug/L		98
50) Ethylbenzene	9.795	91	23660	1.98	ug/L		99
51) 1,1,1,2-Tetrachloroethane	9.831	131	3542	1.64	ug/L		95
52) m,p-Xylenes (2)	9.935	91	34407	3.91	ug/L		98
53) o-Xylene	10.324	91	17445	1.91	ug/L		99
54) Styrene	10.373	104	11631	1.68	ug/L		95
55) Bromoform	10.391	173	1354	1.36	ug/L		82
56) Isopropylbenzene	10.598	105	20325	1.92	ug/L		96
59) Bromobenzene	10.920	156	5277	2.01	ug/L		89
60) n-Propylbenzene	10.945	91	22107	1.91	ug/L		92
61) 1,1,2,2-Tetrachloroethane	11.011	83	4646	1.75	ug/L		96
62) 2-Chlorotoluene	11.066	126	4419	1.84	ug/L		97
63) 1,3,5-Trimethylbenzene	11.103	105	14521	1.80	ug/L		94
64) 1,2,3-Trichloropropane	11.115	110	2200	2.06	ug/L		91
65) t-1,4-Dichloro-2-butene	11.151	88	320	0.95	ug/L	#	52
66) 4-Chlorotoluene	11.206	91	13410	1.93	ug/L		98
67) tert-Butylbenzene	11.358	91	8037	1.86	ug/L		97
68) 1,2,4-Trimethylbenzene	11.413	105	15360	1.87	ug/L		99
69) sec-Butylbenzene	11.498	105	16671	1.78	ug/L		99
70) 4-Isopropyltoluene	11.608	119	14651	1.91	ug/L		99
71) 1,3-Dichlorobenzene	11.675	146	8756	2.03	ug/L		92
72) 1,4-Dichlorobenzene	11.741	146	8705	2.03	ug/L		92
73) n-Butylbenzene	11.930	91	12230	1.92	ug/L		98
74) 1,2-Dichlorobenzene	12.058	146	7643	1.90	ug/L		89
75) 1,2-Dibromo-3-Chloropr...	12.672	157	826	1.35	ug/L		83
76) Hexachlorobutadiene	13.183	223	1244	1.99	ug/L	#	83
77) 1,2,4-Trichlorobenzene	13.214	180	4471	1.88	ug/L		92
78) Naphthalene	13.493	128	14001	1.61	ug/L		96
79) 1,2,3-Trichlorobenzene	13.652	180	4310	1.82	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:52 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052909.D
Acq On : 29 May 2019 5:57 pm
Operator : TB
Sample : 9E29058-CAL6
Misc : 1X 5mL 5ppb VOC DI+MeOH
ALS Vial : 9 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:54 2019
Quant Method : C:\msdchem\1\METHODS\~~VC190529S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

5/30/19
no change

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.036	168	254773	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.753	117	445170	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.730	152	188506	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.537	111	136458	48.46	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.589	114	492217	50.01	ug/L		0.00
39) Toluene-d8 (S)	8.098	98	604964	50.11	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.835	174	163573	49.96	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.668	85	12196	5.43	ug/L		96
3) Chloromethane	1.862	50	19122	5.29	ug/L		98
4) Vinyl Chloride	1.954	62	13474	5.16	ug/L		99
5) Bromomethane	2.306	96	9080	6.44	ug/L		91
6) Chloroethane	2.452	64	5245	5.50	ug/L	#	43
7) Trichlorofluoromethane	2.580	101	7697	5.18	ug/L		99
8) 1,1-Dichloroethene	3.097	61	13008	5.04	ug/L		85
9) Carbon Disulfide	3.109	76	17910	4.45	ug/L		99
10) Freon 113	3.152	101	10435	5.03	ug/L		94
11) Iodomethane	3.249	142	3398	3.70	ug/L		98
12) Methylene Chloride	3.736	84	25250	8.72	ug/L		97
13) Acetone	3.846	43	11897	10.74	ug/L		94
14) t-1,2-Dichloroethene	3.894	61	15650	5.15	ug/L		94
15) n-Hexane	3.973	86	3499	6.99	ug/L	#	90
16) Methyl-tert-butyl-ether	4.040	73	44834	5.02	ug/L		98
17) 1,1-Dichloroethane	4.527	63	18960	5.04	ug/L		98
18) Acrylonitrile	4.606	53	7679	5.05	ug/L		94
19) c-1,2-Dichloroethene	5.068	61	17123	5.09	ug/L		95
20) 2,2-Dichloropropane	5.178	77	14424	4.94	ug/L		93
21) Bromochloromethane	5.269	49	10200	5.08	ug/L		90
22) Chloroform	5.354	83	21196	4.92	ug/L		97
23) Carbon Tetrachloride	5.482	117	10919	4.61	ug/L		95
24) Tetrahydrofuran	5.537	42	7878	5.10	ug/L		94
25) 1,1,1-Trichloroethane	5.555	97	16696	4.87	ug/L		96
27) 1,1-Dichloropropene	5.677	75	16613	4.95	ug/L		98
28) 2-Butanone (MEK)	5.701	43	21043	10.25	ug/L		96
29) Benzene	5.932	78	56100	5.10	ug/L		96
30) 1,2-Dichloroethane (EDC)	6.151	62	16641	5.05	ug/L		97
31) iso-Butyl Alcohol	6.297	43	31527	124.84	ug/L		83
33) Trichloroethene (TCE)	6.547	130	15220	5.06	ug/L		92
34) Dibromomethane	7.003	93	7159	4.67	ug/L		99
35) 1,2-Dichloropropane	7.112	63	14430	4.97	ug/L		91
36) Bromodichloromethane	7.185	83	11827	4.50	ug/L		99
38) c-1,3-Dichloropropene	7.885	75	17156	4.52	ug/L		98
40) Toluene	8.153	91	59374	5.19	ug/L		98
41) Tetrachloroethene (PCE)	8.603	166	13201	5.20	ug/L		97
42) 4-Methyl-2-Pentanone (...	8.615	43	34042	9.82	ug/L		97
43) t-1,3-Dichloropropene	8.645	75	14478	4.26	ug/L		94
44) 1,1,2-Trichloroethane	8.816	97	12374	5.00	ug/L		96
45) Dibromochloromethane	9.004	129	7443	4.14	ug/L		86
46) 1,3-Dichloropropane	9.108	76	22298	4.93	ug/L		97
47) 1,2-Dibromoethane (EDB)	9.248	107	11552	4.69	ug/L		95
48) 2-Hexanone	9.503	43	24821	9.93	ug/L		95

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052909.D
Acq On : 29 May 2019 5:57 pm
Operator : TB
Sample : 9E29058-CAL6
Misc : 1X 5mL 5ppb VOC DI+MeOH
ALS Vial : 9 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:54 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

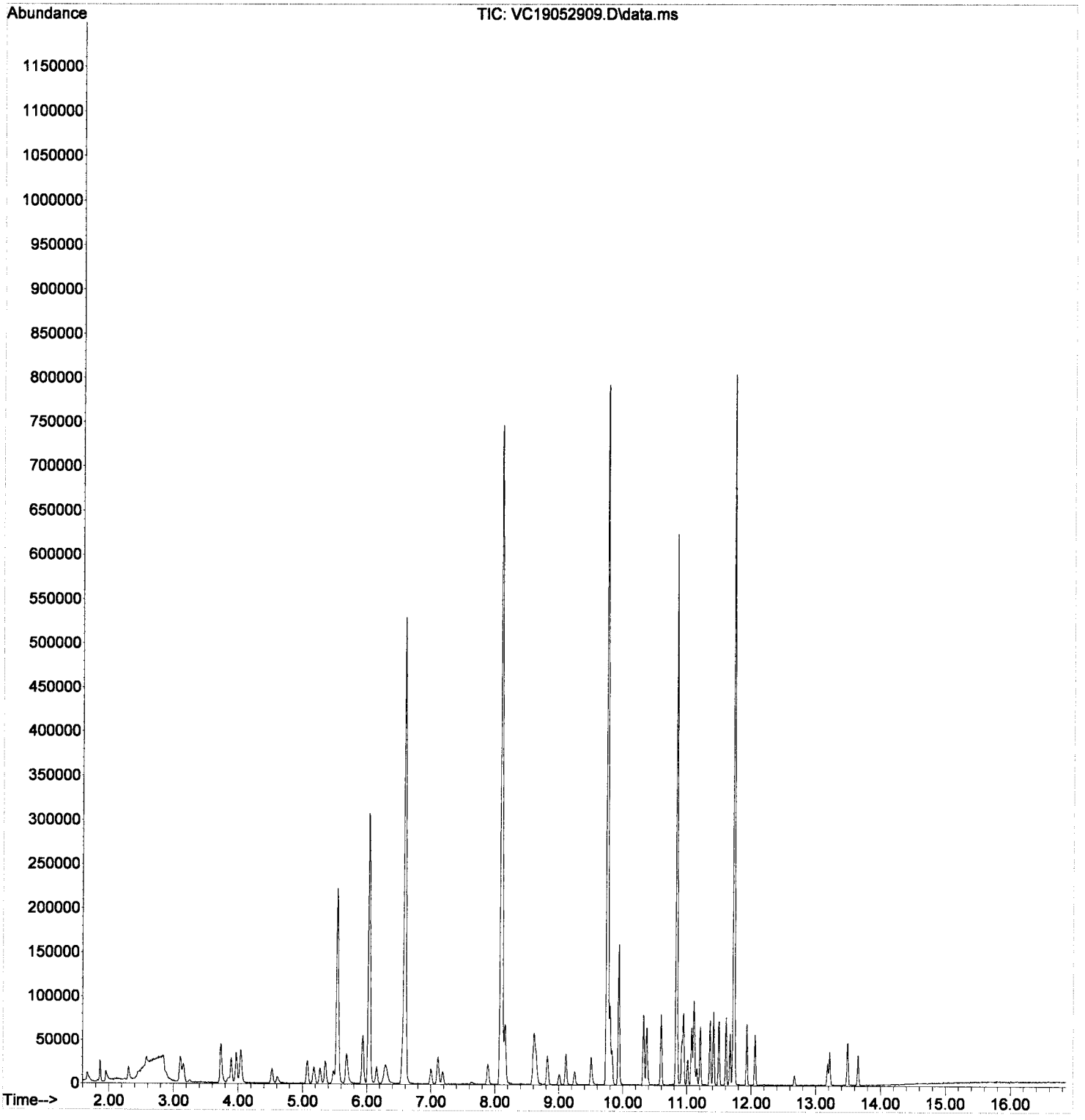
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.765	112	35456	5.12	ug/L		94
50) Ethylbenzene	9.795	91	60912	5.17	ug/L		99
51) 1,1,1,2-Tetrachloroethane	9.832	131	9596	4.51	ug/L		94
52) m,p-Xylenes (2)	9.935	91	87900	10.12	ug/L		97
53) o-Xylene	10.324	91	45708	5.06	ug/L		98
54) Styrene	10.373	104	31844	4.66	ug/L		97
55) Bromoform	10.385	173	4070	4.14	ug/L		92
56) Isopropylbenzene	10.598	105	53051	5.09	ug/L		94
59) Bromobenzene	10.921	156	13190	5.20	ug/L		96
60) n-Propylbenzene	10.945	91	57721	5.15	ug/L		98
61) 1,1,2,2-Tetrachloroethane	11.006	83	12322	4.79	ug/L		96
62) 2-Chlorotoluene	11.073	126	12024	5.17	ug/L	#	84
63) 1,3,5-Trimethylbenzene	11.103	105	39774	5.09	ug/L		98
64) 1,2,3-Trichloropropane	11.115	110	5164	4.99	ug/L		86
65) t-1,4-Dichloro-2-butene	11.152	88	1285	3.96	ug/L	#	83
66) 4-Chlorotoluene	11.207	91	33806	5.03	ug/L		94
67) tert-Butylbenzene	11.359	91	20763	4.96	ug/L		95
68) 1,2,4-Trimethylbenzene	11.413	105	39159	4.93	ug/L		99
69) sec-Butylbenzene	11.499	105	45399	5.01	ug/L		97
70) 4-Isopropyltoluene	11.608	119	37395	5.03	ug/L		97
71) 1,3-Dichlorobenzene	11.669	146	21090	5.04	ug/L		96
72) 1,4-Dichlorobenzene	11.736	146	21623	5.22	ug/L		95
73) n-Butylbenzene	11.930	91	31024	5.03	ug/L		96
74) 1,2-Dichlorobenzene	12.058	146	19883	5.09	ug/L		93
75) 1,2-Dibromo-3-Chloropr...	12.673	157	2389	4.05	ug/L		96
76) Hexachlorobutadiene	13.184	223	2782	4.59	ug/L	#	75
77) 1,2,4-Trichlorobenzene	13.214	180	11381	4.93	ug/L		97
78) Naphthalene	13.494	128	38161	4.53	ug/L		98
79) 1,2,3-Trichlorobenzene	13.652	180	10740	4.67	ug/L		90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052909.D
Acq On : 29 May 2019 5:57 pm
Operator : TB
Sample : 9E29058-CAL6
Misc : 1X 5mL 5ppb VOC DI+MeOH
ALS Vial : 9 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:54 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052910.D
Acq On : 29 May 2019 6:25 pm
Operator : TB
Sample : 9E29058-CAL7
Misc : 1X 5mL 10ppb VOC DI+MeOH
ALS Vial : 10 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:56 2019
Quant Method : C:\msdchem\1\METHODS\VC~~190529S~~.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

5/30/19
no change

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.031	168	250992	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.748	117	436340	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.725	152	186773	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.532	111	135028	48.67	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.584	114	477661	49.27	ug/L		0.00
39) Toluene-d8 (S)	8.093	98	590419	49.89	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.837	174	161677	49.84	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.657	85	22760	10.28	ug/L		97
3) Chloromethane	1.857	50	35625	10.00	ug/L		98
4) Vinyl Chloride	1.943	62	25219	9.80	ug/L		95
5) Bromomethane	2.296	96	16179	11.65	ug/L		94
6) Chloroethane	2.435	64	9117	9.71	ug/L	#	67
7) Trichlorofluoromethane	2.569	101	13672	9.35	ug/L		94
8) 1,1-Dichloroethene	3.092	61	25751	10.13	ug/L		85
9) Carbon Disulfide	3.105	76	36451	9.20	ug/L		97
10) Freon 113	3.147	101	20551	10.06	ug/L		84
11) Iodomethane	3.238	142	7794	8.61	ug/L		93
12) Methylene Chloride	3.719	84	35620	12.48	ug/L		97
13) Acetone	3.835	43	20645	18.91	ug/L		96
14) t-1,2-Dichloroethene	3.883	61	30362	10.15	ug/L		98
15) n-Hexane	3.962	86	5559	11.27	ug/L	#	92
16) Methyl-tert-butyl-ether	4.035	73	87421	9.94	ug/L		98
17) 1,1-Dichloroethane	4.516	63	36342	9.81	ug/L		95
18) Acrylonitrile	4.595	53	15131	10.10	ug/L		98
19) c-1,2-Dichloroethene	5.070	61	33881	10.23	ug/L		96
20) 2,2-Dichloropropane	5.173	77	29348	10.20	ug/L		85
21) Bromochloromethane	5.264	49	20180	10.21	ug/L		92
22) Chloroform	5.343	83	42125	9.93	ug/L		98
23) Carbon Tetrachloride	5.477	117	22616	9.69	ug/L		95
24) Tetrahydrofuran	5.538	42	15478	10.18	ug/L		96
25) 1,1,1-Trichloroethane	5.544	97	32805	9.71	ug/L		98
27) 1,1-Dichloropropene	5.672	75	32947	9.97	ug/L		97
28) 2-Butanone (MEK)	5.690	43	40332	19.95	ug/L		95
29) Benzene	5.927	78	109245	10.08	ug/L		98
30) 1,2-Dichloroethane (EDC)	6.146	62	32514	10.01	ug/L		95
31) iso-Butyl Alcohol	6.286	43	61468	247.07	ug/L		89
33) Trichloroethene (TCE)	6.548	130	29345	9.90	ug/L		95
34) Dibromomethane	6.998	93	14902	9.86	ug/L		94
35) 1,2-Dichloropropane	7.108	63	27791	9.71	ug/L		93
36) Bromodichloromethane	7.174	83	23755	9.17	ug/L		94
38) c-1,3-Dichloropropene	7.886	75	35060	9.42	ug/L		97
40) Toluene	8.154	91	113987	10.16	ug/L		99
41) Tetrachloroethene (PCE)	8.598	166	25684	10.31	ug/L		98
42) 4-Methyl-2-Pentanone (...	8.616	43	69619	20.50	ug/L		98
43) t-1,3-Dichloropropene	8.647	75	31437	9.43	ug/L		99
44) 1,1,2-Trichloroethane	8.817	97	24039	9.90	ug/L		88
45) Dibromochloromethane	9.006	129	16078	9.12	ug/L		92
46) 1,3-Dichloropropane	9.103	76	43756	9.86	ug/L		98
47) 1,2-Dibromoethane (EDB)	9.243	107	23883	9.89	ug/L		91
48) 2-Hexanone	9.498	43	49008	20.01	ug/L		97

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052910.D
Acq On : 29 May 2019 6:25 pm
Operator : TB
Sample : 9E29058-CAL7
Misc : 1X 5mL 10ppb VOC DI+MeOH
ALS Vial : 10 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:56 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

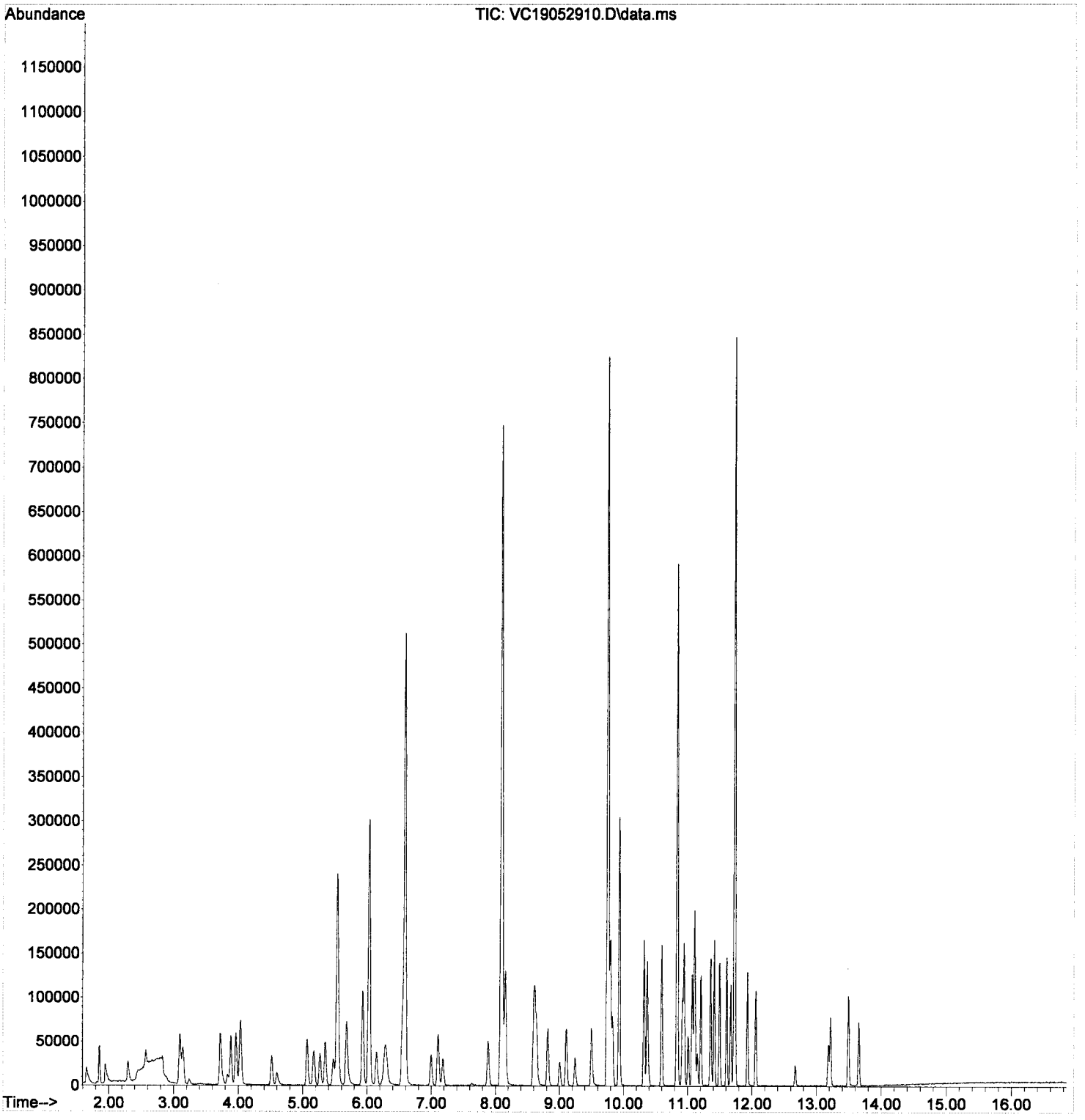
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.766	112	68508	10.10	ug/L		96
50) Ethylbenzene	9.796	91	115497	10.01	ug/L		98
51) 1,1,1,2-Tetrachloroethane	9.827	131	19728	9.47	ug/L		96
52) m,p-Xylenes (2)	9.930	91	170308	20.00	ug/L		99
53) o-Xylene	10.320	91	87450	9.88	ug/L		99
54) Styrene	10.368	104	64308	9.61	ug/L		99
55) Bromoform	10.387	173	8679	9.00	ug/L		95
56) Isopropylbenzene	10.593	105	101485	9.94	ug/L		97
59) Bromobenzene	10.916	156	25871	10.29	ug/L		87
60) n-Propylbenzene	10.940	91	110989	10.00	ug/L		98
61) 1,1,2,2-Tetrachloroethane	11.007	83	25383	9.95	ug/L		99
62) 2-Chlorotoluene	11.068	126	23789	10.32	ug/L	#	79
63) 1,3,5-Trimethylbenzene	11.104	105	77961	10.07	ug/L		98
64) 1,2,3-Trichloropropane	11.117	110	10336	10.07	ug/L	#	81
65) t-1,4-Dichloro-2-butene	11.153	88	2829	8.80	ug/L		94
66) 4-Chlorotoluene	11.208	91	65138	9.79	ug/L		98
67) tert-Butylbenzene	11.354	91	41310	9.96	ug/L		96
68) 1,2,4-Trimethylbenzene	11.415	105	78362	9.96	ug/L		99
69) sec-Butylbenzene	11.500	105	88679	9.88	ug/L		98
70) 4-Isopropyltoluene	11.609	119	74162	10.06	ug/L		96
71) 1,3-Dichlorobenzene	11.670	146	41681	10.05	ug/L		97
72) 1,4-Dichlorobenzene	11.737	146	41926	10.22	ug/L		96
73) n-Butylbenzene	11.932	91	61550	10.07	ug/L		98
74) 1,2-Dichlorobenzene	12.059	146	38321	9.91	ug/L		98
75) 1,2-Dibromo-3-Chloropr...	12.674	157	5509	9.42	ug/L		96
76) Hexachlorobutadiene	13.179	223	5351	8.91	ug/L		94
77) 1,2,4-Trichlorobenzene	13.215	180	23206	10.15	ug/L		93
78) Naphthalene	13.495	128	79664	9.54	ug/L		98
79) 1,2,3-Trichlorobenzene	13.653	180	22472	9.87	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052910.D
Acq On : 29 May 2019 6:25 pm
Operator : TB
Sample : 9E29058-CAL7
Misc : 1X 5mL 10ppb VOC DI+MeOH
ALS Vial : 10 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:56 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052911.D
Acq On : 29 May 2019 6:52 pm
Operator : TB
Sample : 9E29058-CAL8
Misc : 1X 5mL 20ppb VOC DI+MeOH
ALS Vial : 11 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:58 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

5/30/19
no change

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.031	168	256524	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.748	117	450201	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.725	152	190782	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.532	111	141761	50.00	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.584	114	495460	50.00	ug/L		0.00
39) Toluene-d8 (S)	8.093	98	610484	50.00	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.837	174	165674	50.00	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.657	85	45253	20.00	ug/L		97
3) Chloromethane	1.858	50	72826	20.00	ug/L		100
4) Vinyl Chloride	1.949	62	52612	20.00	ug/L		95
5) Bromomethane	2.296	96	28393	20.00	ug/L		98
6) Chloroethane	2.448	64	19192	20.00	ug/L		88
7) Trichlorofluoromethane	2.575	101	29898	20.00	ug/L		99
8) 1,1-Dichloroethene	3.093	61	51985	20.00	ug/L		90
9) Carbon Disulfide	3.105	76	80999	20.00	ug/L		99
10) Freon 113	3.147	101	41761	20.00	ug/L		87
11) Iodomethane	3.245	142	18507	20.00	ug/L		97
12) Methylene Chloride	3.725	84	58329	20.00	ug/L		96
13) Acetone	3.835	43	44627	40.00	ug/L		100
14) t-1,2-Dichloroethene	3.883	61	61167	20.00	ug/L		98
15) n-Hexane	3.962	86	10080	20.00	ug/L	#	90
16) Methyl-tert-butyl-ether	4.035	73	179725	20.00	ug/L		99
17) 1,1-Dichloroethane	4.516	63	75709	20.00	ug/L		95
18) Acrylonitrile	4.595	53	30627	20.00	ug/L		96
19) c-1,2-Dichloroethene	5.070	61	67717	20.00	ug/L		96
20) 2,2-Dichloropropane	5.173	77	58827	20.00	ug/L		89
21) Bromochloromethane	5.264	49	40396	20.00	ug/L		94
22) Chloroform	5.349	83	86712	20.00	ug/L		98
23) Carbon Tetrachloride	5.477	117	47689	20.00	ug/L		93
24) Tetrahydrofuran	5.532	42	31084	20.00	ug/L		92
25) 1,1,1-Trichloroethane	5.550	97	69031	20.00	ug/L		99
27) 1,1-Dichloropropene	5.678	75	67566	20.00	ug/L		98
28) 2-Butanone (MEK)	5.690	43	82660	40.00	ug/L		99
29) Benzene	5.934	78	221601	20.00	ug/L		98
30) 1,2-Dichloroethane (EDC)	6.146	62	66416	20.00	ug/L		99
31) iso-Butyl Alcohol	6.286	43	127134	500.00	ug/L		91
33) Trichloroethene (TCE)	6.548	130	60590	20.00	ug/L		97
34) Dibromomethane	6.998	93	30886	20.00	ug/L		91
35) 1,2-Dichloropropane	7.108	63	58485	20.00	ug/L		89
36) Bromodichloromethane	7.181	83	52937	20.00	ug/L		97
38) c-1,3-Dichloropropene	7.886	75	76771	20.00	ug/L		99
40) Toluene	8.154	91	231426	20.00	ug/L		97
41) Tetrachloroethene (PCE)	8.598	166	51386	20.00	ug/L		97
42) 4-Methyl-2-Pentanone (...	8.616	43	140164	40.00	ug/L		99
43) t-1,3-Dichloropropene	8.641	75	68797	20.00	ug/L		97
44) 1,1,2-Trichloroethane	8.817	97	50104	20.00	ug/L		96
45) Dibromochloromethane	9.006	129	36395	20.00	ug/L		97
46) 1,3-Dichloropropane	9.109	76	91532	20.00	ug/L		99
47) 1,2-Dibromoethane (EDB)	9.243	107	49836	20.00	ug/L		94
48) 2-Hexanone	9.498	43	101065	40.00	ug/L		97

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052911.D
Acq On : 29 May 2019 6:52 pm
Operator : TB
Sample : 9E29058-CAL8
Misc : 1X 5mL 20ppb VOC DI+MeOH
ALS Vial : 11 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:58 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

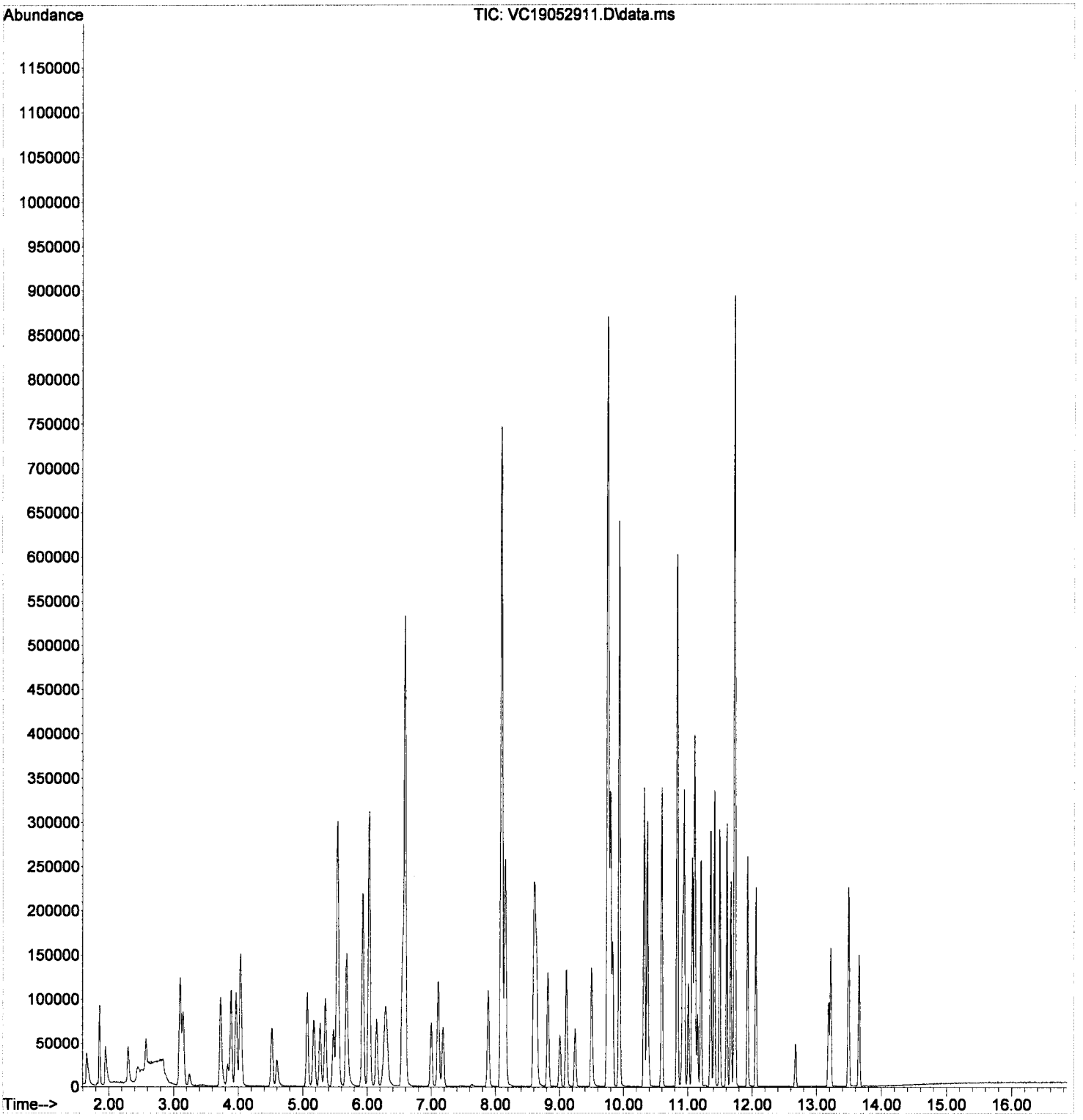
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.766	112	139988	20.00	ug/L		95
50) Ethylbenzene	9.797	91	238085	20.00	ug/L		100
51) 1,1,1,2-Tetrachloroethane	9.827	131	42996	20.00	ug/L		99
52) m,p-Xylenes (2)	9.930	91	351394	40.00	ug/L		100
53) o-Xylene	10.320	91	182582	20.00	ug/L		98
54) Styrene	10.368	104	138152	20.00	ug/L		99
55) Bromoform	10.387	173	19903	20.00	ug/L		100
56) Isopropylbenzene	10.593	105	210609	20.00	ug/L		98
59) Bromobenzene	10.916	156	51348	20.00	ug/L		91
60) n-Propylbenzene	10.940	91	226710	20.00	ug/L		98
61) 1,1,2,2-Tetrachloroethane	11.007	83	52097	20.00	ug/L		99
62) 2-Chlorotoluene	11.068	126	47080	20.00	ug/L	#	83
63) 1,3,5-Trimethylbenzene	11.104	105	158194	20.00	ug/L		98
64) 1,2,3-Trichloropropane	11.117	110	20960	20.00	ug/L		88
65) t-1,4-Dichloro-2-butene	11.153	88	6571	20.00	ug/L	#	78
66) 4-Chlorotoluene	11.202	91	135968	20.00	ug/L		98
67) tert-Butylbenzene	11.354	91	84715	20.00	ug/L		95
68) 1,2,4-Trimethylbenzene	11.415	105	160708	20.00	ug/L		98
69) sec-Butylbenzene	11.494	105	183450	20.00	ug/L		97
70) 4-Isopropyltoluene	11.609	119	150593	20.00	ug/L		99
71) 1,3-Dichlorobenzene	11.670	146	84703	20.00	ug/L		97
72) 1,4-Dichlorobenzene	11.737	146	83842	20.00	ug/L		98
73) n-Butylbenzene	11.932	91	124826	20.00	ug/L		99
74) 1,2-Dichlorobenzene	12.060	146	79024	20.00	ug/L		97
75) 1,2-Dibromo-3-Chloropr...	12.674	157	11948	20.00	ug/L		92
76) Hexachlorobutadiene	13.185	223	12267	20.00	ug/L		97
77) 1,2,4-Trichlorobenzene	13.215	180	46713	20.00	ug/L		98
78) Naphthalene	13.489	128	170582	20.00	ug/L		98
79) 1,2,3-Trichlorobenzene	13.653	180	46516	20.00	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052911.D
Acq On : 29 May 2019 6:52 pm
Operator : TB
Sample : 9E29058-CAL8
Misc : 1X 5mL 20ppb VOC DI+MeOH
ALS Vial : 11 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:58 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052912.D
Acq On : 29 May 2019 7:20 pm
Operator : TB
Sample : 9E29058-CAL9
Misc : 1X 5mL 50ppb VOC DI+MeOH
ALS Vial : 12 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:46:00 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

5/30/19

no change

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.031	168	250786	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.748	117	449432	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.725	152	195329	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.532	111	143870	51.90	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.591	114	489311	50.51	ug/L		0.00
39) Toluene-d8 (S)	8.094	98	601358	49.34	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.837	174	167723	49.44	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.663	85	122313	55.29	ug/L		99
3) Chloromethane	1.864	50	179217	50.34	ug/L		99
4) Vinyl Chloride	1.949	62	132089	51.36	ug/L		97
5) Bromomethane	2.302	96	66982	48.26	ug/L		99
6) Chloroethane	2.448	64	47938	51.10	ug/L		86
7) Trichlorofluoromethane	2.576	101	73023	49.97	ug/L		98
8) 1,1-Dichloroethene	3.099	61	135031	53.14	ug/L		87
9) Carbon Disulfide	3.111	76	237187	59.91	ug/L		99
10) Freon 113	3.148	101	104970	51.42	ug/L		89
11) Iodomethane	3.245	142	58902	65.11	ug/L		98
12) Methylene Chloride	3.726	84	122804	43.07	ug/L		98
13) Acetone	3.835	43	111792	102.49	ug/L		94
14) t-1,2-Dichloroethene	3.890	61	157053	52.53	ug/L		99
15) n-Hexane	3.969	86	25466	51.68	ug/L	#	84
16) Methyl-tert-butyl-ether	4.036	73	446710	50.85	ug/L		97
17) 1,1-Dichloroethane	4.523	63	187888	50.77	ug/L		99
18) Acrylonitrile	4.596	53	79642	53.20	ug/L		96
19) c-1,2-Dichloroethene	5.070	61	170168	51.41	ug/L		99
20) 2,2-Dichloropropane	5.173	77	148829	51.76	ug/L		88
21) Bromochloromethane	5.265	49	100930	51.11	ug/L		97
22) Chloroform	5.350	83	217722	51.37	ug/L		98
23) Carbon Tetrachloride	5.478	117	132426	56.81	ug/L		93
24) Tetrahydrofuran	5.532	42	78409	51.60	ug/L		93
25) 1,1,1-Trichloroethane	5.551	97	175402	51.98	ug/L		98
27) 1,1-Dichloropropene	5.678	75	172418	52.20	ug/L		98
28) 2-Butanone (MEK)	5.684	43	208404	103.16	ug/L		95
29) Benzene	5.934	78	547822	50.57	ug/L		98
30) 1,2-Dichloroethane (EDC)	6.147	62	166385	51.25	ug/L		97
31) iso-Butyl Alcohol	6.281	43	325134	1307.96	ug/L		87
33) Trichloroethene (TCE)	6.548	130	153840	51.94	ug/L		99
34) Dibromomethane	6.998	93	80383	53.24	ug/L		93
35) 1,2-Dichloropropane	7.108	63	145741	50.98	ug/L		92
36) Bromodichloromethane	7.181	83	148293	57.31	ug/L		99
38) c-1,3-Dichloropropene	7.887	75	206054	53.77	ug/L		97
40) Toluene	8.154	91	567186	49.10	ug/L		100
41) Tetrachloroethene (PCE)	8.598	166	131806	51.39	ug/L		98
42) 4-Methyl-2-Pentanone (...	8.617	43	362001	103.48	ug/L		99
43) t-1,3-Dichloropropene	8.641	75	188244	54.82	ug/L		96
44) 1,1,2-Trichloroethane	8.817	97	128045	51.20	ug/L		96
45) Dibromochloromethane	9.006	129	110966	61.08	ug/L		98
46) 1,3-Dichloropropane	9.109	76	228171	49.94	ug/L		100
47) 1,2-Dibromoethane (EDB)	9.243	107	132585	53.30	ug/L		98
48) 2-Hexanone	9.499	43	264271	104.77	ug/L		97

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052912.D
Acq On : 29 May 2019 7:20 pm
Operator : TB
Sample : 9E29058-CAL9
Misc : 1X 5mL 50ppb VOC DI+MeOH
ALS Vial : 12 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:46:00 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

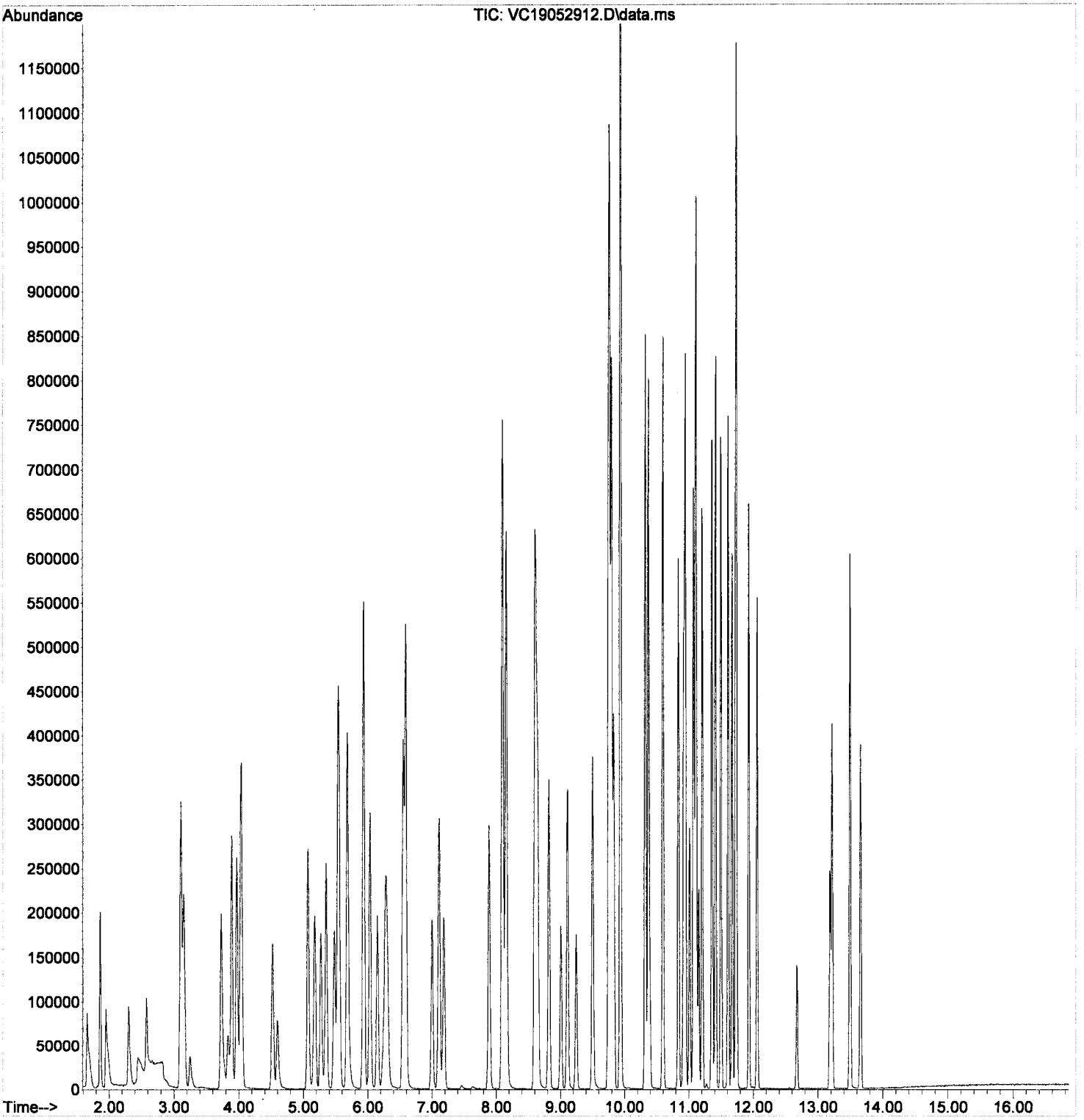
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.766	112	351235	50.27	ug/L		97
50) Ethylbenzene	9.797	91	580649	48.86	ug/L		99
51) 1,1,1,2-Tetrachloroethane	9.827	131	116780	54.41	ug/L		96
52) m,p-Xylenes (2)	9.931	91	846663	96.54	ug/L		98
53) o-Xylene	10.320	91	457250	50.17	ug/L		99
54) Styrene	10.369	104	353430	51.25	ug/L		98
55) Bromoform	10.387	173	64724	65.15	ug/L		97
56) Isopropylbenzene	10.594	105	514735	48.96	ug/L		100
59) Bromobenzene	10.916	156	134239	51.07	ug/L		92
60) n-Propylbenzene	10.941	91	564190	48.61	ug/L		100
61) 1,1,2,2-Tetrachloroethane	11.008	83	135917	50.96	ug/L		98
62) 2-Chlorotoluene	11.068	126	120765	50.11	ug/L		86
63) 1,3,5-Trimethylbenzene	11.105	105	396913	49.01	ug/L		97
64) 1,2,3-Trichloropropane	11.117	110	54793	51.07	ug/L		92
65) t-1,4-Dichloro-2-butene	11.154	88	19084	56.73	ug/L	#	77
66) 4-Chlorotoluene	11.202	91	345630	49.66	ug/L		98
67) tert-Butylbenzene	11.360	91	215868	49.78	ug/L		96
68) 1,2,4-Trimethylbenzene	11.415	105	400305	48.66	ug/L		98
69) sec-Butylbenzene	11.494	105	461029	49.09	ug/L		97
70) 4-Isopropyltoluene	11.610	119	386921	50.19	ug/L		97
71) 1,3-Dichlorobenzene	11.671	146	218010	50.28	ug/L		98
72) 1,4-Dichlorobenzene	11.738	146	214078	49.88	ug/L		100
73) n-Butylbenzene	11.926	91	313322	49.03	ug/L		98
74) 1,2-Dichlorobenzene	12.060	146	201831	49.89	ug/L		99
75) 1,2-Dibromo-3-Chloropr...	12.674	157	36171	59.14	ug/L		93
76) Hexachlorobutadiene	13.179	223	30150	48.01	ug/L		97
77) 1,2,4-Trichlorobenzene	13.216	180	126759	53.01	ug/L		97
78) Naphthalene	13.490	128	451629	51.72	ug/L		99
79) 1,2,3-Trichlorobenzene	13.654	180	120109	50.44	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052912.D
Acq On : 29 May 2019 7:20 pm
Operator : TB
Sample : 9E29058-CAL9
Misc : 1X 5mL 50ppb VOC DI+MeOH
ALS Vial : 12 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:46:00 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052913.D
Acq On : 29 May 2019 7:47 pm
Operator : TB
Sample : 9E29058-IBL2
Misc : 1X 5mL DI+MeOH
ALS Vial : 13 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:37 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

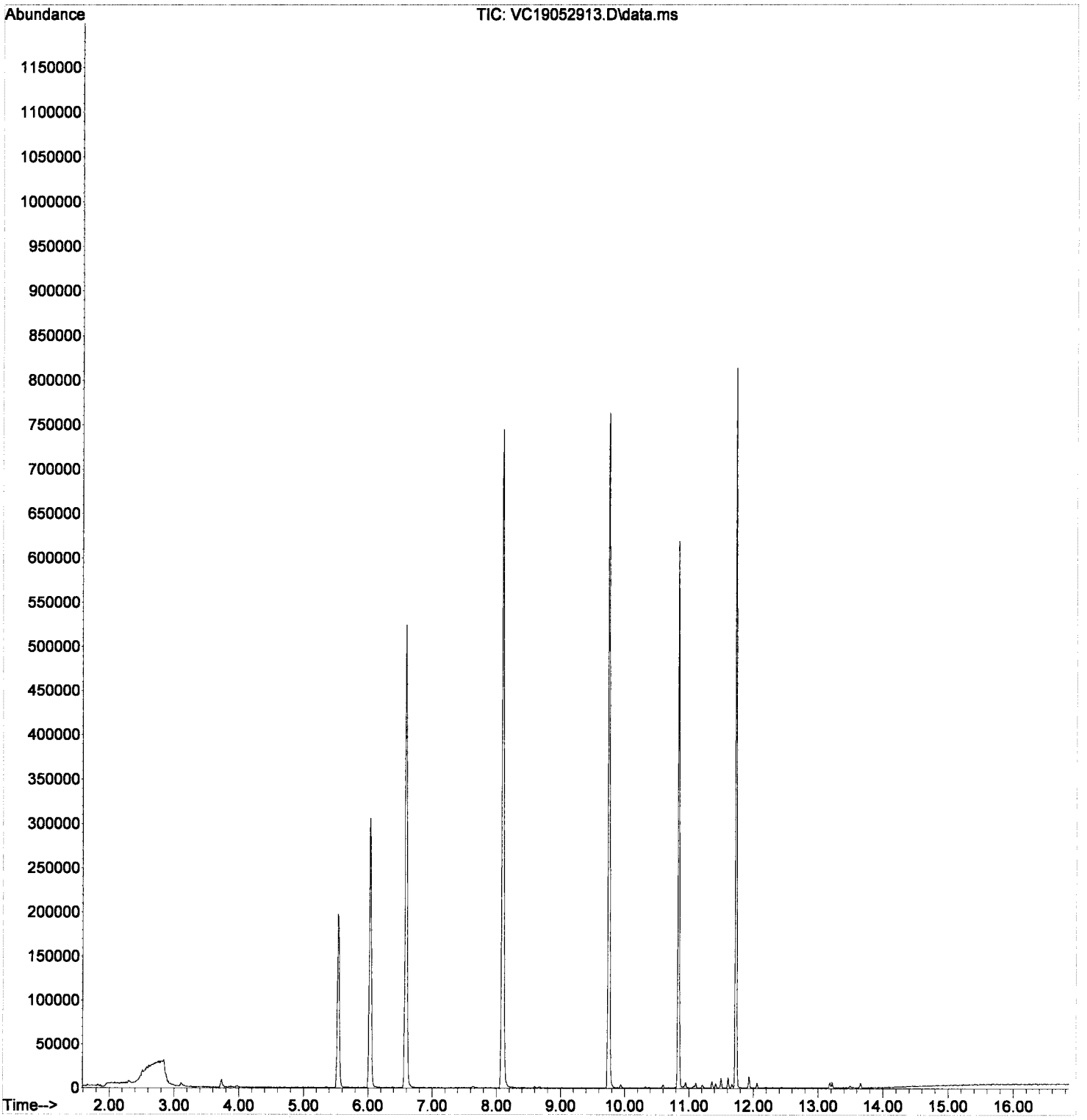
Compound	R.T.	QIon	Response	Conc Units		Dev(Min)
Internal Standards						
1) Pentafluorobenzene (I)	6.034	168	251569	50.00 ug/L		0.00
37) Chlorobenzene-d5 (I)	9.751	117	444742	50.00 ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.728	152	190416	50.00 ug/L		0.00
System Monitoring Compounds						
26) Dibromofluoromethane (S)	5.535	111	134463	49.36 ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.588	114	487332	50.36 ug/L		0.00
39) Toluene-d8 (S)	8.096	98	596282	49.56 ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.834	174	163307	49.67 ug/L		0.00
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.666	85	357	0.16 ug/L	#	50
3) Chloromethane	1.867	50	976	0.26 ug/L		84
5) Bromomethane	2.311	96	1740	1.20 ug/L		77
6) Chloroethane	2.524	64	106	0.11 ug/L	#	1
9) Carbon Disulfide	3.114	76	5278	1.31 ug/L		93
10) Freon 113	3.144	101	240	0.11 ug/L	#	73
11) Iodomethane	3.260	142	820	1.51 ug/L	#	78
12) Methylene Chloride	3.734	84	4772	Below Cal		93
13) Acetone	3.807	43	145	0.13 ug/L	#	42
14) t-1,2-Dichloroethene	3.886	61	405	0.14 ug/L	#	69
27) 1,1-Dichloropropene	5.681	75	506	0.15 ug/L		65
33) Trichloroethene (TCE)	6.551	130	349	0.11 ug/L	#	74
40) Toluene	8.157	91	1535	0.13 ug/L		81
41) Tetrachloroethene (PCE)	8.595	166	515	0.19 ug/L	#	55
49) Chlorobenzene	9.763	112	913	0.13 ug/L	#	1
50) Ethylbenzene	9.794	91	1643	0.14 ug/L		90
52) m,p-Xylenes (2)	9.940	91	2720	0.31 ug/L		91
53) o-Xylene	10.323	91	959	0.11 ug/L		80
54) Styrene	10.378	104	575	0.09 ug/L		80
56) Isopropylbenzene	10.597	105	2561	0.25 ug/L		82
59) Bromobenzene	10.919	156	356	0.14 ug/L		91
60) n-Propylbenzene	10.949	91	4592	0.40 ug/L		96
62) 2-Chlorotoluene	11.077	126	404	0.17 ug/L	#	82
63) 1,3,5-Trimethylbenzene	11.108	105	2985	0.39 ug/L		86
66) 4-Chlorotoluene	11.205	91	1724	0.25 ug/L		92
67) tert-Butylbenzene	11.357	91	2078	0.48 ug/L	#	78
68) 1,2,4-Trimethylbenzene	11.418	105	2595	0.33 ug/L		98
69) sec-Butylbenzene	11.497	105	7228	0.79 ug/L		94
70) 4-Isopropyltoluene	11.606	119	6170	0.83 ug/L		92
71) 1,3-Dichlorobenzene	11.673	146	1236	0.28 ug/L		91
72) 1,4-Dichlorobenzene	11.740	146	1354	0.31 ug/L	#	35
73) n-Butylbenzene	11.929	91	6549	1.03 ug/L		96
74) 1,2-Dichlorobenzene	12.063	146	829	0.20 ug/L		92
76) Hexachlorobutadiene	13.176	223	818	1.39 ug/L	#	74
77) 1,2,4-Trichlorobenzene	13.219	180	2228	0.94 ug/L		77
78) Naphthalene	13.492	128	2214	0.28 ug/L		84
79) 1,2,3-Trichlorobenzene	13.657	180	1953	0.87 ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052913.D
Acq On : 29 May 2019 7:47 pm
Operator : TB
Sample : 9E29058-IBL2
Misc : 1X 5mL DI+MeOH
ALS Vial : 13 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:37 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052914.D
Acq On : 29 May 2019 8:15 pm
Operator : TB
Sample : 9E29058-CALA
Misc : 1X 5mL 100ppb VOC DI+MeOH
ALS Vial : 14 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:46:02 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

5/30/19

no change

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (I)	6.031	168	260650	50.00	ug/L	0.00
37) Chlorobenzene-d5 (I)	9.748	117	459775	50.00	ug/L	0.00
57) 1,4-Dichlorobenzene-d4...	11.725	152	197554	50.00	ug/L	0.00
System Monitoring Compounds						
26) Dibromofluoromethane (S)	5.532	111	144066	50.01	ug/L	0.00
32) 1,4-Difluorobenzene (S)	6.584	114	496661	49.33	ug/L	0.00
39) Toluene-d8 (S)	8.093	98	619571	49.69	ug/L	0.00
58) 4-Bromofluorobenzene (S)	10.836	174	172526	50.28	ug/L	0.00
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.650	85	241195	104.91	ug/L	98
3) Chloromethane	1.851	50	355923	96.20	ug/L	99
4) Vinyl Chloride	1.942	62	265790	99.44	ug/L	98
5) Bromomethane	2.295	96	130087	90.18	ug/L	93
6) Chloroethane	2.441	64	105670	108.38	ug/L	98
7) Trichlorofluoromethane	2.569	101	152590	100.46	ug/L	99
8) 1,1-Dichloroethene	3.086	61	268375	101.62	ug/L	88
9) Carbon Disulfide	3.098	76	506056	122.98	ug/L	99
10) Freon 113	3.141	101	207803	97.94	ug/L	88
11) Iodomethane	3.238	142	139044	147.88	ug/L	99
12) Methylene Chloride	3.719	84	236890	79.94	ug/L	94
13) Acetone	3.828	43	225817	199.20	ug/L	94
14) t-1,2-Dichloroethene	3.883	61	311743	100.32	ug/L	96
15) n-Hexane	3.962	86	48610	94.92	ug/L	97
16) Methyl-tert-butyl-ether	4.029	73	885758	97.01	ug/L	97
17) 1,1-Dichloroethane	4.516	63	388015	100.88	ug/L	99
18) Acrylonitrile	4.589	53	160664	103.26	ug/L	100
19) c-1,2-Dichloroethene	5.063	61	343281	99.78	ug/L	99
20) 2,2-Dichloropropane	5.167	77	299040	100.06	ug/L	88
21) Bromochloromethane	5.264	49	202481	98.66	ug/L	99
22) Chloroform	5.343	83	433579	98.42	ug/L	98
23) Carbon Tetrachloride	5.471	117	278862	115.10	ug/L	98
24) Tetrahydrofuran	5.526	42	156885	99.34	ug/L	93
25) 1,1,1-Trichloroethane	5.544	97	353917	100.92	ug/L	97
27) 1,1-Dichloropropene	5.672	75	339212	98.82	ug/L	99
28) 2-Butanone (MEK)	5.684	43	408448	194.52	ug/L	95
29) Benzene	5.927	78	1066556	94.74	ug/L	96
30) 1,2-Dichloroethane (EDC)	6.146	62	327724	97.13	ug/L	98
31) iso-Butyl Alcohol	6.280	43	664229	2570.97	ug/L	88
33) Trichloroethene (TCE)	6.548	130	306069	99.43	ug/L	98
34) Dibromomethane	6.992	93	161634	103.01	ug/L	92
35) 1,2-Dichloropropane	7.101	63	294477	99.11	ug/L	92
36) Bromodichloromethane	7.180	83	315200	117.20	ug/L	97
38) c-1,3-Dichloropropene	7.886	75	423217	107.96	ug/L	99
40) Toluene	8.154	91	1105825	93.58	ug/L	97
41) Tetrachloroethene (PCE)	8.598	166	260817	99.40	ug/L	98
42) 4-Methyl-2-Pentanone (...	8.616	43	707759	197.77	ug/L	98
43) t-1,3-Dichloropropene	8.640	75	389918	110.99	ug/L	97
44) 1,1,2-Trichloroethane	8.817	97	255240	99.76	ug/L	95
45) Dibromochloromethane	9.005	129	241274	129.83	ug/L	94
46) 1,3-Dichloropropane	9.103	76	456442	97.66	ug/L	99
47) 1,2-Dibromoethane (EDB)	9.243	107	266180	104.60	ug/L	100
48) 2-Hexanone	9.498	43	528430	204.79	ug/L	99

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052914.D
Acq On : 29 May 2019 8:15 pm
Operator : TB
Sample : 9E29058-CALA
Misc : 1X 5mL 100ppb VOC DI+MeOH
ALS Vial : 14 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:46:02 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

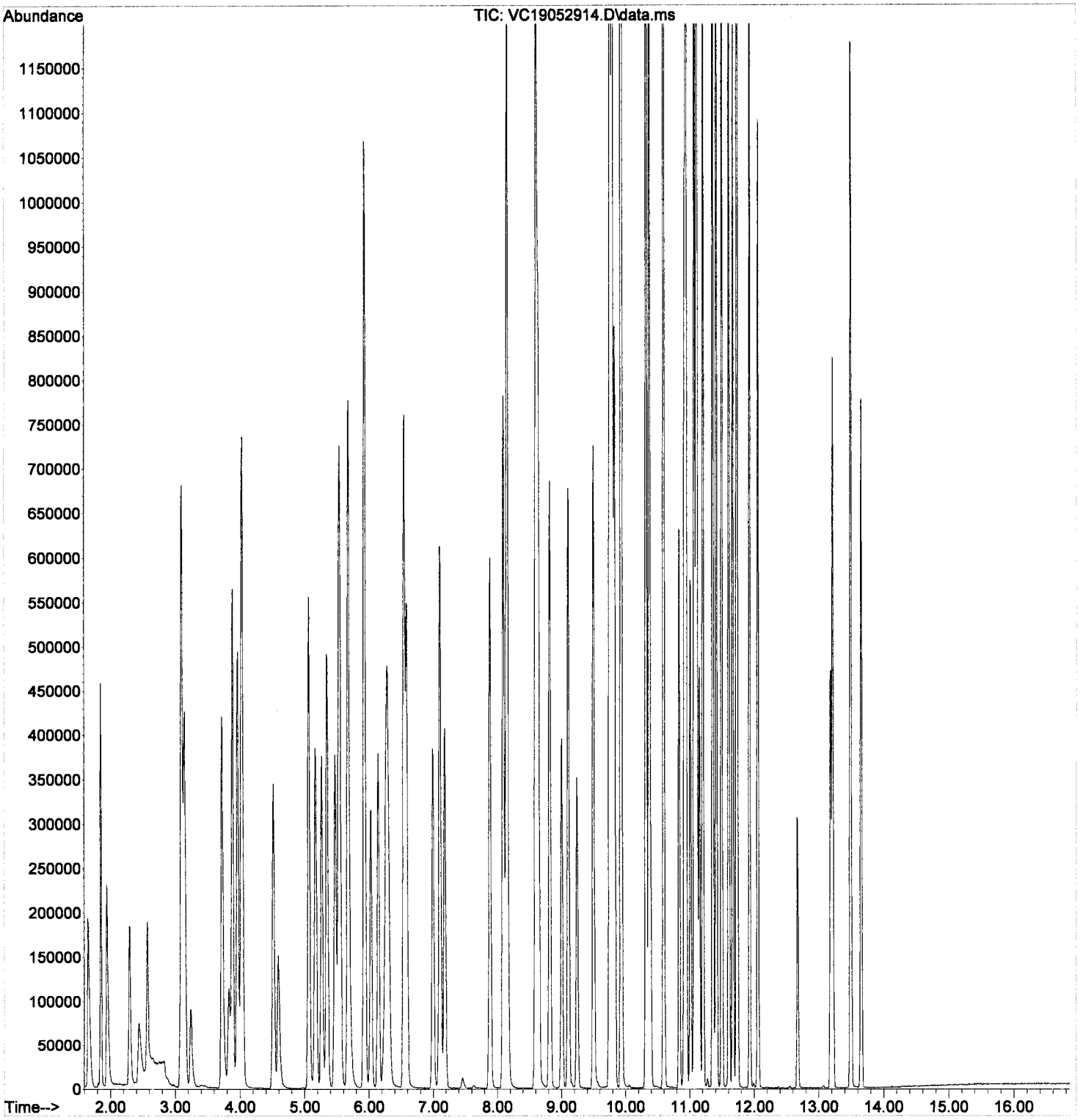
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.766	112	689400	96.44	ug/L		97
50) Ethylbenzene	9.790	91	1114972	91.71	ug/L		96
51) 1,1,1,2-Tetrachloroethane	9.827	131	242014	110.23	ug/L		98
52) m,p-Xylenes (2)	9.930	91	1592559	177.51	ug/L		95
53) o-Xylene	10.319	91	885817	95.01	ug/L		96
54) Styrene	10.368	104	713586	101.15	ug/L		97
55) Bromoform	10.386	173	146040	143.70	ug/L		99
56) Isopropylbenzene	10.593	105	1002570	93.22	ug/L		97
59) Bromobenzene	10.916	156	271067	101.96	ug/L		93
60) n-Propylbenzene	10.940	91	1090767	92.93	ug/L		98
61) 1,1,2,2-Tetrachloroethane	11.007	83	271157	100.53	ug/L		99
62) 2-Chlorotoluene	11.068	126	246373	101.07	ug/L		93
63) 1,3,5-Trimethylbenzene	11.104	105	773425	94.43	ug/L		95
64) 1,2,3-Trichloropropane	11.116	110	105916	97.60	ug/L		87
65) t-1,4-Dichloro-2-butene	11.153	88	40488	119.01	ug/L	#	74
66) 4-Chlorotoluene	11.208	91	677786	96.28	ug/L		97
67) tert-Butylbenzene	11.354	91	425964	97.12	ug/L		92
68) 1,2,4-Trimethylbenzene	11.414	105	777007	93.38	ug/L		97
69) sec-Butylbenzene	11.500	105	882609	92.92	ug/L		99
70) 4-Isopropyltoluene	11.609	119	751233	96.35	ug/L		98
71) 1,3-Dichlorobenzene	11.670	146	425300	96.98	ug/L		99
72) 1,4-Dichlorobenzene	11.737	146	418076	96.31	ug/L		97
73) n-Butylbenzene	11.932	91	597386	92.43	ug/L		99
74) 1,2-Dichlorobenzene	12.059	146	392931	96.04	ug/L		97
75) 1,2-Dibromo-3-Chloropr...	12.674	157	80792	130.60	ug/L		93
76) Hexachlorobutadiene	13.185	223	57553	90.62	ug/L		99
77) 1,2,4-Trichlorobenzene	13.215	180	244685	101.17	ug/L		99
78) Naphthalene	13.489	128	891724	100.97	ug/L		98
79) 1,2,3-Trichlorobenzene	13.653	180	241375	100.22	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052914.D
Acq On : 29 May 2019 8:15 pm
Operator : TB
Sample : 9E29058-CALA
Misc : 1X 5mL 100ppb VOC DI+MeOH
ALS Vial : 14 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:46:02 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052915.D
Acq On : 29 May 2019 8:42 pm
Operator : TB
Sample : 9E29058-IBL3
Misc : 1X 5mL DI+MeOH
ALS Vial : 15 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:39 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units		Dev(Min)
Internal Standards						
1) Pentafluorobenzene (I)	6.034	168	256547	50.00 ug/L		0.00
37) Chlorobenzene-d5 (I)	9.751	117	452677	50.00 ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.728	152	192224	50.00 ug/L		0.00
System Monitoring Compounds						
26) Dibromofluoromethane (S)	5.535	111	140388	50.53 ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.587	114	494571	50.12 ug/L		0.00
39) Toluene-d8 (S)	8.096	98	609458	49.77 ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.834	174	168721	50.83 ug/L		0.00
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.654	85	676	0.29 ug/L	#	50
3) Chloromethane	1.861	50	943	0.25 ug/L		88
4) Vinyl Chloride	1.946	62	275	0.11 ug/L		68
5) Bromomethane	2.305	96	1722	1.17 ug/L		89
6) Chloroethane	2.445	64	129	0.13 ug/L	#	1
7) Trichlorofluoromethane	2.572	101	180	0.12 ug/L	#	65
8) 1,1-Dichloroethene	3.089	61	380	0.15 ug/L		79
9) Carbon Disulfide	3.108	76	2586	0.63 ug/L		89
10) Freon 113	3.156	101	673	0.31 ug/L	#	65
11) Iodomethane	3.254	142	849	1.52 ug/L	#	75
12) Methylene Chloride	3.728	84	3426	Below Cal		88
13) Acetone	3.850	43	871	0.75 ug/L		95
14) t-1,2-Dichloroethene	3.892	61	750	0.25 ug/L		84
15) n-Hexane	3.971	86	246	Below Cal	#	4
19) c-1,2-Dichloroethene	5.054	61	315	0.09 ug/L	#	17
24) Tetrahydrofuran	5.535	42	155	0.09 ug/L	#	46
27) 1,1-Dichloropropene	5.687	75	990	0.29 ug/L		91
28) 2-Butanone (MEK)	5.724	43	638	0.31 ug/L		54
33) Trichloroethene (TCE)	6.551	130	647	0.21 ug/L		84
40) Toluene	8.157	91	1952	0.16 ug/L		87
41) Tetrachloroethene (PCE)	8.601	166	1080	0.39 ug/L		85
49) Chlorobenzene	9.769	112	1460	0.20 ug/L		76
50) Ethylbenzene	9.793	91	2680	0.22 ug/L		78
52) m,p-Xylenes (2)	9.933	91	4420	0.50 ug/L		88
53) o-Xylene	10.323	91	1924	0.21 ug/L		92
54) Styrene	10.377	104	1021	0.16 ug/L		88
56) Isopropylbenzene	10.596	105	4775	0.45 ug/L		92
59) Bromobenzene	10.919	156	566	0.22 ug/L	#	66
60) n-Propylbenzene	10.943	91	8814	0.76 ug/L		95
62) 2-Chlorotoluene	11.071	126	976	0.41 ug/L		99
63) 1,3,5-Trimethylbenzene	11.107	105	5812	0.74 ug/L		87
66) 4-Chlorotoluene	11.211	91	2829	0.41 ug/L		94
67) tert-Butylbenzene	11.357	91	4500	1.03 ug/L		94
68) 1,2,4-Trimethylbenzene	11.412	105	5321	0.66 ug/L		98
69) sec-Butylbenzene	11.497	105	13359	1.44 ug/L		93
70) 4-Isopropyltoluene	11.606	119	11787	1.56 ug/L		92
71) 1,3-Dichlorobenzene	11.673	146	2471	0.55 ug/L		97
72) 1,4-Dichlorobenzene	11.740	146	2868	0.64 ug/L		80
73) n-Butylbenzene	11.929	91	12734	1.99 ug/L		98
74) 1,2-Dichlorobenzene	12.063	146	1697	0.41 ug/L		91
76) Hexachlorobutadiene	13.182	223	1410	2.38 ug/L		84
77) 1,2,4-Trichlorobenzene	13.212	180	3876	1.63 ug/L		98
78) Naphthalene	13.492	128	4286	0.53 ug/L		94

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052915.D
Acq On : 29 May 2019 8:42 pm
Operator : TB
Sample : 9E29058-IBL3
Misc : 1X 5mL DI+MeOH
ALS Vial : 15 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:39 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

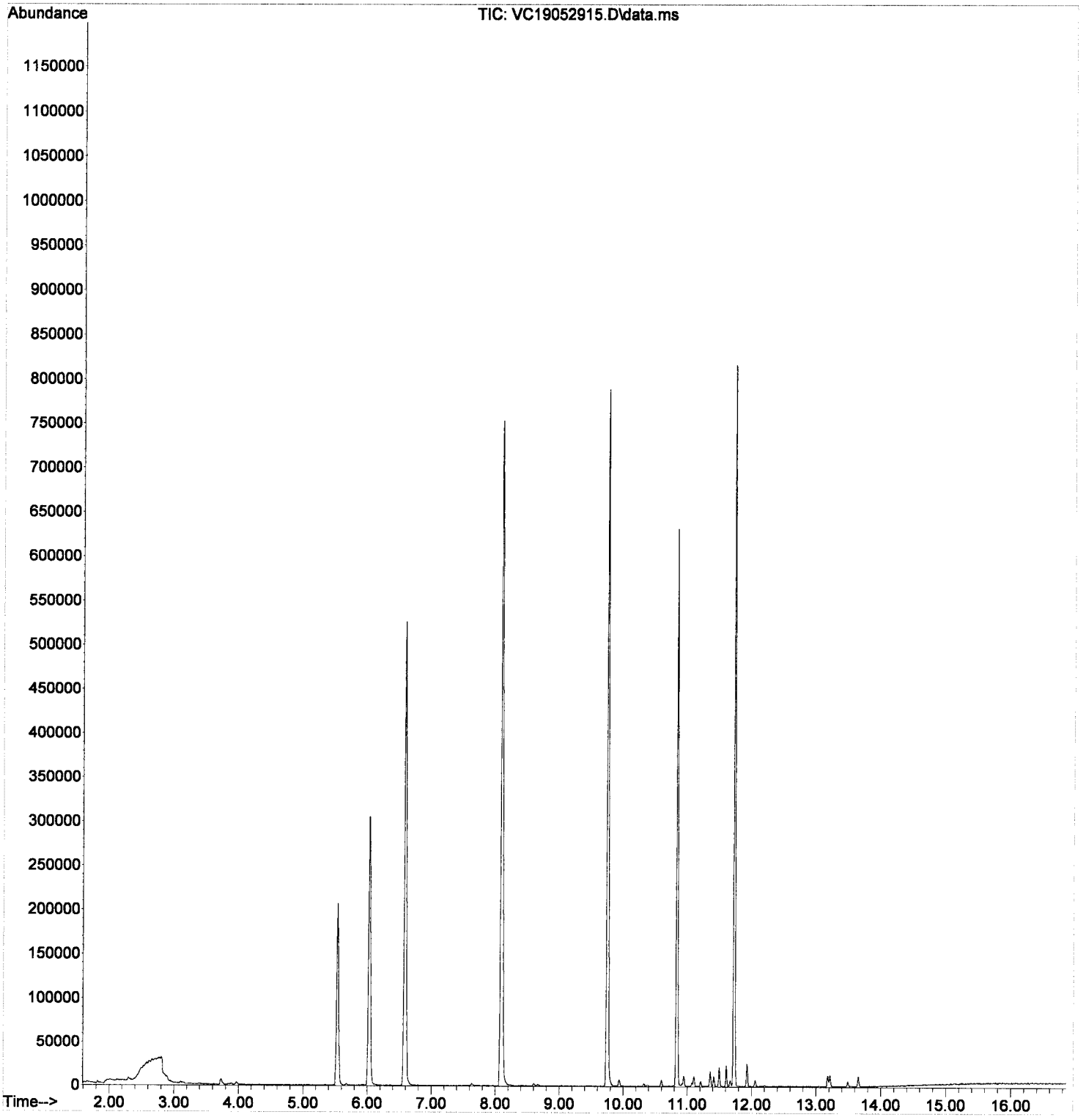
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
79) 1,2,3-Trichlorobenzene	13.656	180	3676	1.63	ug/L	89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052915.D
Acq On : 29 May 2019 8:42 pm
Operator : TB
Sample : 9E29058-IBL3
Misc : 1X 5mL DI+MeOH
ALS Vial : 15 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:39 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052916.D
Acq On : 29 May 2019 9:10 pm
Operator : TB
Sample : 9E29058-CALB
Misc : 1X 5mL 200ppb VOC DI+MeOH
ALS Vial : 16 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:46:04 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

5/30/19 no change

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (I)	6.029	168	266542	50.00	ug/L	0.00
37) Chlorobenzene-d5 (I)	9.752	117	464260	50.00	ug/L	0.00
57) 1,4-Dichlorobenzene-d4...	11.729	152	201371	50.00	ug/L	0.00
System Monitoring Compounds						
26) Dibromofluoromethane (S)	5.530	111	144453	49.03	ug/L	0.00
32) 1,4-Difluorobenzene (S)	6.582	114	515449	50.06	ug/L	0.00
39) Toluene-d8 (S)	8.091	98	635623	50.48	ug/L	0.00
58) 4-Bromofluorobenzene (S)	10.834	174	170853	48.85	ug/L	0.00
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.655	85	453681	192.97	ug/L	98
3) Chloromethane	1.855	50	652609	172.49	ug/L	99
4) Vinyl Chloride	1.940	62	501566	183.50	ug/L	98
5) Bromomethane	2.293	96	269576	182.75	ug/L	96
6) Chloroethane	2.433	64	187116	187.66	ug/L	95
7) Trichlorofluoromethane	2.567	101	268497	172.86	ug/L	99
8) 1,1-Dichloroethene	3.090	61	525278	194.49	ug/L	90
9) Carbon Disulfide	3.102	76	1024014	243.34	ug/L	98
10) Freon 113	3.139	101	409831	188.90	ug/L	88
11) Iodomethane	3.236	142	307158	319.46	ug/L	98
12) Methylene Chloride	3.723	84	435629	143.76	ug/L	96
13) Acetone	3.826	43	420741	362.94	ug/L	93
14) t-1,2-Dichloroethene	3.881	61	595457	187.38	ug/L	94
15) n-Hexane	3.960	86	98461	188.02	ug/L	97
16) Methyl-tert-butyl-ether	4.027	73	1674237	179.31	ug/L	94
17) 1,1-Dichloroethane	4.514	63	718862	182.76	ug/L	99
18) Acrylonitrile	4.587	53	314097	197.40	ug/L	100
19) c-1,2-Dichloroethene	5.061	61	647004	183.91	ug/L	99
20) 2,2-Dichloropropane	5.165	77	584639	191.29	ug/L	88
21) Bromochloromethane	5.262	49	383923	182.94	ug/L	99
22) Chloroform	5.347	83	802076	178.04	ug/L	97
23) Carbon Tetrachloride	5.475	117	577566	233.12	ug/L	98
24) Tetrahydrofuran	5.524	42	306415	189.74	ug/L	94
25) 1,1,1-Trichloroethane	5.542	97	697341	194.44	ug/L	99
27) 1,1-Dichloropropene	5.670	75	664805	189.39	ug/L	97
28) 2-Butanone (MEK)	5.682	43	802082	373.55	ug/L	95
29) Benzene	5.925	78	1978560	171.86	ug/L	93
30) 1,2-Dichloroethane (EDC)	6.144	62	639082	185.22	ug/L	97
31) iso-Butyl Alcohol	6.278	43	1273429	4819.98	ug/L	89
33) Trichloroethene (TCE)	6.546	130	582863	185.16	ug/L	98
34) Dibromomethane	6.996	93	312313	194.63	ug/L	96
35) 1,2-Dichloropropane	7.105	63	569634	187.48	ug/L	94
36) Bromodichloromethane	7.178	83	637695	231.87	ug/L	96
38) c-1,3-Dichloropropene	7.884	75	831235	209.99	ug/L	98
40) Toluene	8.152	91	2033618	170.42	ug/L	94
41) Tetrachloroethene (PCE)	8.596	166	514549	194.20	ug/L	98
42) 4-Methyl-2-Pentanone (...	8.614	43	1330786	368.28	ug/L	97
43) t-1,3-Dichloropropene	8.644	75	772812	217.86	ug/L	95
44) 1,1,2-Trichloroethane	8.815	97	500164	193.60	ug/L	97
45) Dibromochloromethane	9.003	129	499033	265.93	ug/L	97
46) 1,3-Dichloropropane	9.107	76	863655	183.00	ug/L	99
47) 1,2-Dibromoethane (EDB)	9.241	107	519720	202.26	ug/L	100
48) 2-Hexanone	9.496	43	1007307	386.60	ug/L	95

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052916.D
Acq On : 29 May 2019 9:10 pm
Operator : TB
Sample : 9E29058-CALB
Misc : 1X 5mL 200ppb VOC DI+MeOH
ALS Vial : 16 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:46:04 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

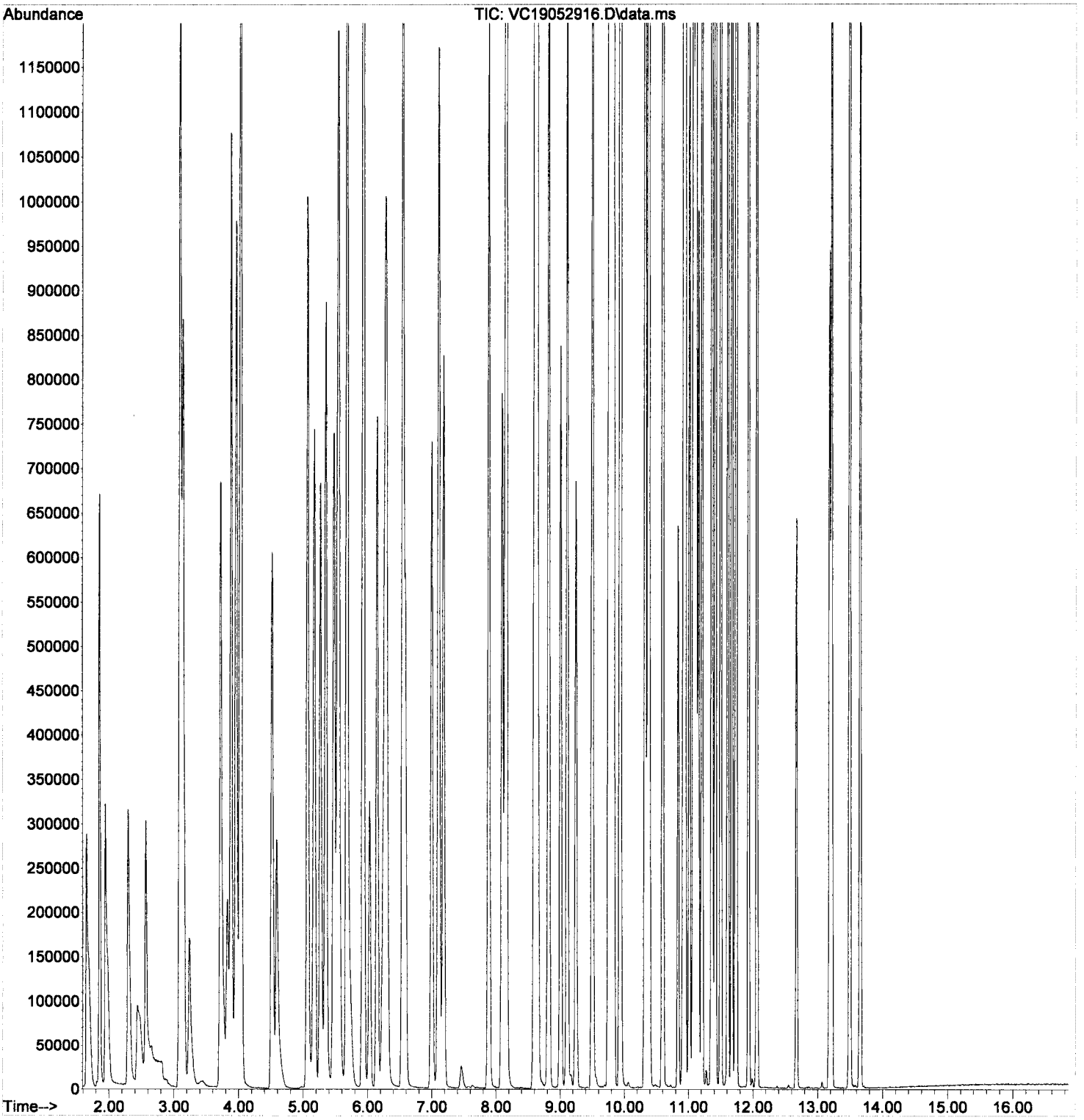
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.764	112	1272416	176.28	ug/L		94
50) Ethylbenzene	9.794	91	1992124	162.28	ug/L		91
51) 1,1,1,2-Tetrachloroethane	9.831	131	477013	215.17	ug/L		97
52) m,p-Xylenes (2)	9.934	91	2720941	300.35	ug/L		86
53) o-Xylene	10.317	91	1581408	167.98	ug/L		93
54) Styrene	10.366	104	1293977	181.65	ug/L		92
55) Bromoform	10.390	173	312567	304.58	ug/L		99
56) Isopropylbenzene	10.597	105	1774164	163.38	ug/L		93
59) Bromobenzene	10.920	156	503576	185.83	ug/L		98
60) n-Propylbenzene	10.944	91	1879841	157.12	ug/L		91
61) 1,1,2,2-Tetrachloroethane	11.011	83	542178	197.20	ug/L		99
62) 2-Chlorotoluene	11.072	126	452526	182.13	ug/L		97
63) 1,3,5-Trimethylbenzene	11.102	105	1378879	165.16	ug/L		94
64) 1,2,3-Trichloropropane	11.114	110	207925	187.97	ug/L		90
65) t-1,4-Dichloro-2-butene	11.151	88	84511	243.70	ug/L	#	74
66) 4-Chlorotoluene	11.206	91	1200687	167.33	ug/L		94
67) tert-Butylbenzene	11.358	91	765557	171.23	ug/L		94
68) 1,2,4-Trimethylbenzene	11.412	105	1351532	159.35	ug/L		92
69) sec-Butylbenzene	11.498	105	1543796	159.46	ug/L		95
70) 4-Isopropyltoluene	11.607	119	1333607	167.80	ug/L		95
71) 1,3-Dichlorobenzene	11.668	146	784949	175.60	ug/L		97
72) 1,4-Dichlorobenzene	11.741	146	784148	177.22	ug/L		97
73) n-Butylbenzene	11.929	91	1090372	165.52	ug/L		95
74) 1,2-Dichlorobenzene	12.057	146	746324	178.95	ug/L		95
75) 1,2-Dibromo-3-Chloropr...	12.672	157	172847	274.12	ug/L		92
76) Hexachlorobutadiene	13.183	223	115944	179.09	ug/L		98
77) 1,2,4-Trichlorobenzene	13.213	180	483143	195.98	ug/L		97
78) Naphthalene	13.493	128	1658112	184.18	ug/L		97
79) 1,2,3-Trichlorobenzene	13.651	180	476195	193.98	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052916.D
Acq On : 29 May 2019 9:10 pm
Operator : TB
Sample : 9E29058-CALB
Misc : 1X 5mL 200ppb VOC DI+MeOH
ALS Vial : 16 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:46:04 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052917.D
Acq On : 29 May 2019 9:37 pm
Operator : TB
Sample : 9E29058-IBL4
Misc : 1X 5mL DI+MeOH
ALS Vial : 17 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:41 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units		Dev(Min)
Internal Standards						
1) Pentafluorobenzene (I)	6.035	168	266471	50.00 ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	468131	50.00 ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.729	152	198041	50.00 ug/L		0.00
System Monitoring Compounds						
26) Dibromofluoromethane (S)	5.536	111	145533	50.44 ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.588	114	513391	50.09 ug/L		0.00
39) Toluene-d8 (S)	8.097	98	627007	49.51 ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.834	174	174112	50.92 ug/L		0.00
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.661	85	1425	0.60 ug/L		87
3) Chloromethane	1.861	50	1797	0.46 ug/L		93
4) Vinyl Chloride	1.946	62	700	0.26 ug/L		91
5) Bromomethane	2.311	96	2516	1.64 ug/L	#	68
6) Chloroethane	2.433	64	128	0.13 ug/L	#	1
7) Trichlorofluoromethane	2.585	101	522	0.34 ug/L	#	16
8) 1,1-Dichloroethene	3.096	61	781	0.29 ug/L		96
9) Carbon Disulfide	3.114	76	5429	1.27 ug/L		94
10) Freon 113	3.139	101	1424	0.62 ug/L	#	64
11) Iodomethane	3.254	142	1500	2.07 ug/L	#	89
12) Methylene Chloride	3.729	84	5380	Below Cal		98
13) Acetone	3.838	43	1747	1.45 ug/L		95
14) t-1,2-Dichloroethene	3.893	61	1472	0.47 ug/L		93
15) n-Hexane	3.972	86	243	Below Cal	#	83
19) c-1,2-Dichloroethene	5.085	61	580	0.17 ug/L		83
22) Chloroform	5.359	83	846	0.18 ug/L		85
23) Carbon Tetrachloride	5.487	117	459	0.19 ug/L		82
25) 1,1,1-Trichloroethane	5.542	97	318	0.09 ug/L	#	45
27) 1,1-Dichloropropene	5.682	75	1691	0.47 ug/L		90
28) 2-Butanone (MEK)	5.712	43	436	0.20 ug/L		54
29) Benzene	5.931	78	1907	0.16 ug/L		95
30) 1,2-Dichloroethane (EDC)	6.156	62	420	0.12 ug/L		71
31) iso-Butyl Alcohol	6.308	43	105	0.40 ug/L		92
33) Trichloroethene (TCE)	6.558	130	1357	0.42 ug/L		82
34) Dibromomethane	7.002	93	215	0.14 ug/L	#	25
38) c-1,3-Dichloropropene	7.896	75	390	0.11 ug/L		65
40) Toluene	8.158	91	3533	0.29 ug/L		98
41) Tetrachloroethene (PCE)	8.596	166	2047	0.71 ug/L		97
43) t-1,3-Dichloropropene	8.656	75	377	0.11 ug/L		57
46) 1,3-Dichloropropane	9.113	76	475	0.10 ug/L	#	73
47) 1,2-Dibromoethane (EDB)	9.247	107	201	0.08 ug/L		72
48) 2-Hexanone	9.520	43	358	0.14 ug/L	#	31
49) Chlorobenzene	9.764	112	2333	0.31 ug/L	#	58
50) Ethylbenzene	9.800	91	4828	0.38 ug/L		94
52) m,p-Xylenes (2)	9.940	91	8543	0.94 ug/L		95
53) o-Xylene	10.323	91	2908	0.30 ug/L		88
54) Styrene	10.378	104	1910	0.29 ug/L		88
56) Isopropylbenzene	10.597	105	9551	0.87 ug/L		98
59) Bromobenzene	10.920	156	911	0.35 ug/L		87
60) n-Propylbenzene	10.944	91	17507	1.47 ug/L		99
61) 1,1,2,2-Tetrachloroethane	11.023	83	278	0.11 ug/L	#	25
62) 2-Chlorotoluene	11.072	126	1493	0.60 ug/L		93
63) 1,3,5-Trimethylbenzene	11.102	105	11474	1.42 ug/L		91

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052917.D
Acq On : 29 May 2019 9:37 pm
Operator : TB
Sample : 9E29058-IBL4
Misc : 1X 5mL DI+MeOH
ALS Vial : 17 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:41 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

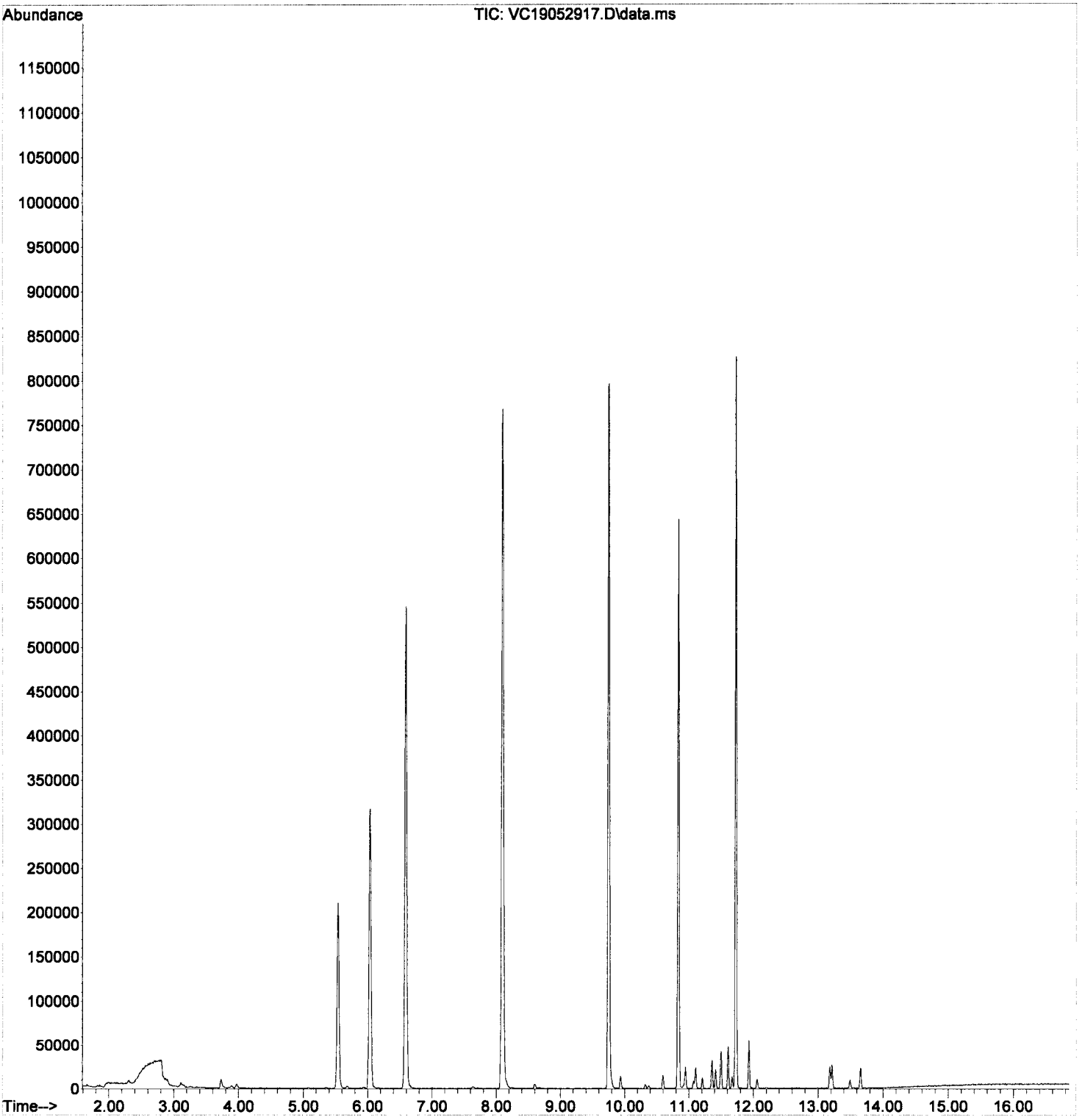
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
66) 4-Chlorotoluene	11.205	91	5419	0.76	ug/L	99
67) tert-Butylbenzene	11.358	91	8902	1.97	ug/L	98
68) 1,2,4-Trimethylbenzene	11.412	105	10380	1.26	ug/L	98
69) sec-Butylbenzene	11.497	105	27464	2.88	ug/L	98
70) 4-Isopropyltoluene	11.607	119	23355	3.01	ug/L	98
71) 1,3-Dichlorobenzene	11.674	146	4941	1.08	ug/L	94
72) 1,4-Dichlorobenzene	11.741	146	4659	1.02	ug/L	91
73) n-Butylbenzene	11.929	91	25413	3.85	ug/L	97
74) 1,2-Dichlorobenzene	12.057	146	3084	0.73	ug/L	97
76) Hexachlorobutadiene	13.183	223	2835	4.65	ug/L	96
77) 1,2,4-Trichlorobenzene	13.213	180	8316	3.39	ug/L	94
78) Naphthalene	13.493	128	8127	0.98	ug/L	100
79) 1,2,3-Trichlorobenzene	13.657	180	7607	3.27	ug/L	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052917.D
Acq On : 29 May 2019 9:37 pm
Operator : TB
Sample : 9E29058-IBL4
Misc : 1X 5mL DI+MeOH
ALS Vial : 17 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:41 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052918.D
Acq On : 29 May 2019 10:05 pm
Operator : TB
Sample : 9E29058-IBL5
Misc : 1X 5mL DI+MeOH
ALS Vial : 18 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:43 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

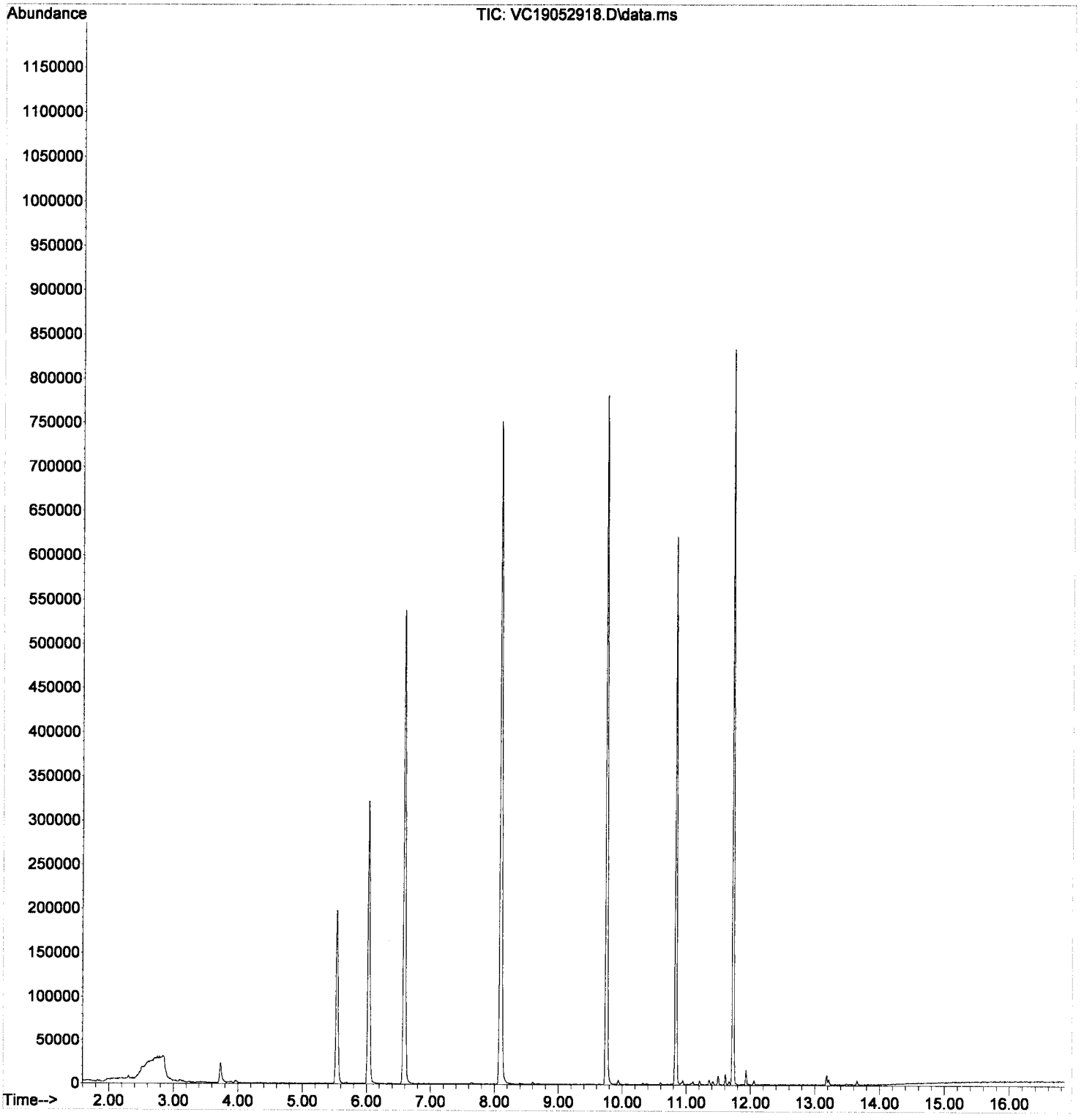
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.030	168	262431	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.747	117	460245	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.724	152	197727	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.538	111	139115	48.95	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.590	114	508408	50.37	ug/L		0.00
39) Toluene-d8 (S)	8.093	98	623082	50.04	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.836	174	168233	49.27	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.668	85	297	0.13	ug/L	#	50
3) Chloromethane	1.863	50	964	0.25	ug/L		84
5) Bromomethane	2.301	96	1935	1.28	ug/L		71
6) Chloroethane	2.526	64	129	0.13	ug/L	#	1
8) 1,1-Dichloroethene	3.098	61	246	0.09	ug/L	#	72
9) Carbon Disulfide	3.104	76	1990	0.47	ug/L		88
10) Freon 113	3.153	101	635	0.28	ug/L		77
11) Iodomethane	3.262	142	695	1.37	ug/L	#	47
12) Methylene Chloride	3.731	84	13098	Below Cal			94
13) Acetone	3.859	43	2652	2.24	ug/L		78
14) t-1,2-Dichloroethene	3.889	61	496	0.16	ug/L	#	74
27) 1,1-Dichloropropene	5.690	75	683	0.19	ug/L		84
28) 2-Butanone (MEK)	5.732	43	375	0.18	ug/L		54
33) Trichloroethene (TCE)	6.553	130	416	0.13	ug/L		83
40) Toluene	8.166	91	1276	0.10	ug/L		90
41) Tetrachloroethene (PCE)	8.610	166	725	0.26	ug/L	#	60
49) Chlorobenzene	9.766	112	925	0.13	ug/L	#	1
50) Ethylbenzene	9.802	91	1878	0.15	ug/L		82
52) m,p-Xylenes (2)	9.936	91	2865	0.32	ug/L		95
53) o-Xylene	10.325	91	936	0.10	ug/L		75
54) Styrene	10.374	104	646	0.10	ug/L		93
56) Isopropylbenzene	10.599	105	1528	0.14	ug/L		89
59) Bromobenzene	10.915	156	389	0.15	ug/L		74
60) n-Propylbenzene	10.946	91	3694	0.31	ug/L		96
62) 2-Chlorotoluene	11.067	126	433	0.18	ug/L	#	58
63) 1,3,5-Trimethylbenzene	11.104	105	2122	0.26	ug/L		88
66) 4-Chlorotoluene	11.207	91	1647	0.23	ug/L		97
67) tert-Butylbenzene	11.359	91	1693	0.38	ug/L		92
68) 1,2,4-Trimethylbenzene	11.420	105	2188	0.27	ug/L		98
69) sec-Butylbenzene	11.499	105	6614	0.69	ug/L		95
70) 4-Isopropyltoluene	11.609	119	5729	0.74	ug/L		91
71) 1,3-Dichlorobenzene	11.670	146	1299	0.28	ug/L		92
72) 1,4-Dichlorobenzene	11.743	146	1341	0.29	ug/L		78
73) n-Butylbenzene	11.931	91	7709	1.17	ug/L		99
74) 1,2-Dichlorobenzene	12.053	146	631	0.15	ug/L		97
76) Hexachlorobutadiene	13.184	223	1476	2.42	ug/L		90
77) 1,2,4-Trichlorobenzene	13.215	180	2198	0.90	ug/L		98
78) Naphthalene	13.495	128	1302	0.16	ug/L		78
79) 1,2,3-Trichlorobenzene	13.659	180	1736	0.75	ug/L		78

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052918.D
Acq On : 29 May 2019 10:05 pm
Operator : TB
Sample : 9E29058-IBL5
Misc : 1X 5mL DI+MeOH
ALS Vial : 18 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:43 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052919.D
Acq On : 29 May 2019 10:32 pm
Operator : TB
Sample : 9E29058-ICV1
Misc : 1X 5mL 20ppb VOC DI+MeOH
ALS Vial : 19 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

5/30/19

Quant Time: May 30 15:28:45 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.037	168	267090	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.747	117	469227	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.725	152	199143	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.538	111	150987	52.20	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.590	114	516911	50.32	ug/L		0.00
39) Toluene-d8 (S)	8.093	98	628263	49.49	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.836	174	172175	50.07	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.663	85	39805	16.60	ug/L		99
3) Chloromethane	1.863	50	73919	18.77	ug/L		100
4) Vinyl Chloride	1.955	62	52823	19.40	ug/L		93
5) Bromomethane	2.301	96	32111	20.91	ug/L		97
6) Chloroethane	2.447	64	21900	21.41	ug/L		83
7) Trichlorofluoromethane	2.575	101	27335	18.01	ug/L		97
8) 1,1-Dichloroethene	3.098	61	68501	25.35	ug/L		87
9) Carbon Disulfide	3.110	76	83938	19.57	ug/L		99
10) Freon 113	3.147	101	44798	19.53	ug/L		90
11) Iodomethane	3.250	142	17633	15.93	ug/L		97
12) Methylene Chloride	3.731	84	57801	18.27	ug/L		97
13) Acetone	3.834	43	48607	40.37	ug/L		94
14) t-1,2-Dichloroethene	3.889	61	76230	24.33	ug/L		94
15) n-Hexane	3.968	86	11789	21.52	ug/L	#	86
16) Methyl-tert-butyl-ether	4.035	73	188517	20.31	ug/L		98
17) 1,1-Dichloroethane	4.522	63	93082	24.10	ug/L		98
18) Acrylonitrile	4.595	53	32674	20.92	ug/L		98
19) c-1,2-Dichloroethene	5.069	61	75358	21.55	ug/L		96
20) 2,2-Dichloropropane	5.173	77	59131	19.54	ug/L		89
21) Bromochloromethane	5.270	49	44777	21.67	ug/L		97
22) Chloroform	5.349	83	94903	20.68	ug/L		99
23) Carbon Tetrachloride	5.477	117	53890	21.74	ug/L		98
24) Tetrahydrofuran	5.532	42	32013	18.31	ug/L		92
25) 1,1,1-Trichloroethane	5.550	97	78867	22.51	ug/L		99
27) 1,1-Dichloropropene	5.678	75	74489	20.65	ug/L		97
28) 2-Butanone (MEK)	5.690	43	86952	40.50	ug/L		96
29) Benzene	5.933	78	246265	21.21	ug/L		99
30) 1,2-Dichloroethane (EDC)	6.146	62	74000	21.38	ug/L		99
31) iso-Butyl Alcohol	6.274	43	134411	505.53	ug/L		93
33) Trichloroethene (TCE)	6.548	130	66523	20.43	ug/L		98
34) Dibromomethane	6.998	93	33103	21.33	ug/L		91
35) 1,2-Dichloropropane	7.107	63	62437	21.04	ug/L		93
36) Bromodichloromethane	7.180	83	57376	21.95	ug/L		96
38) c-1,3-Dichloropropene	7.886	75	81256	22.00	ug/L		99
40) Toluene	8.154	91	246595	19.87	ug/L		98
41) Tetrachloroethene (PCE)	8.604	166	55691	19.35	ug/L		100
42) 4-Methyl-2-Pentanone (...	8.616	43	148633	38.79	ug/L		100
43) t-1,3-Dichloropropene	8.646	75	74591	21.77	ug/L		98
44) 1,1,2-Trichloroethane	8.817	97	54388	21.45	ug/L		96
45) Dibromochloromethane	9.005	129	40277	18.92	ug/L		94
46) 1,3-Dichloropropane	9.109	76	97055	20.69	ug/L		99
47) 1,2-Dibromoethane (EDB)	9.243	107	54165	21.85	ug/L		100
48) 2-Hexanone	9.498	43	105747	40.70	ug/L		98

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052919.D
Acq On : 29 May 2019 10:32 pm
Operator : TB
Sample : 9E29058-ICV1
Misc : 1X 5mL 20ppb VOC DI+MeOH
ALS Vial : 19 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:45 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

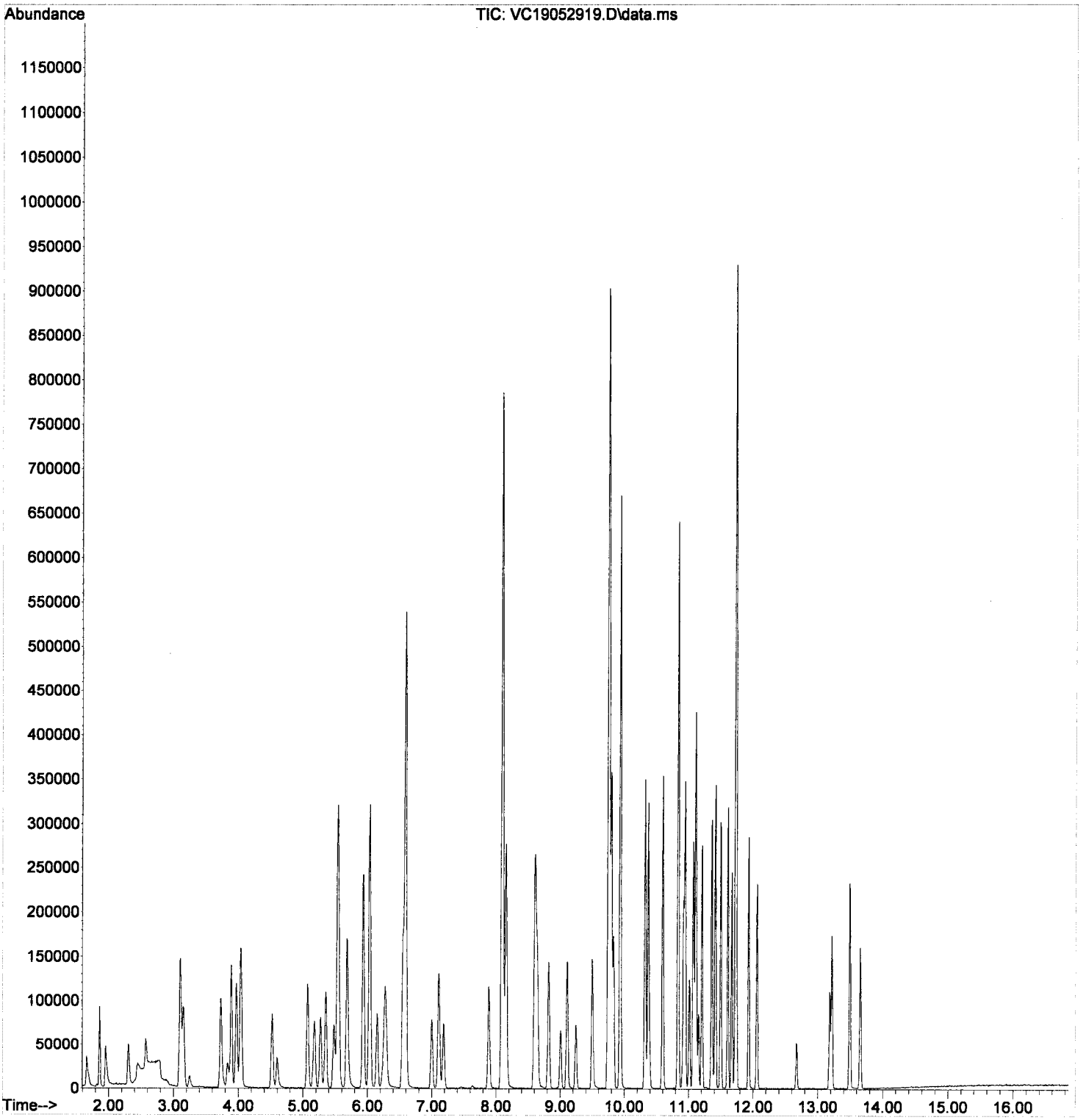
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.766	112	151633	20.14	ug/L		99
50) Ethylbenzene	9.796	91	250184	19.82	ug/L		99
51) 1,1,1,2-Tetrachloroethane	9.827	131	46738	22.01	ug/L		99
52) m,p-Xylenes (2)	9.930	91	369390	40.54	ug/L		100
53) o-Xylene	10.319	91	192124	20.06	ug/L		99
54) Styrene	10.368	104	143713	21.47	ug/L		98
55) Bromoform	10.386	173	22610	18.67	ug/L		95
56) Isopropylbenzene	10.593	105	216506	19.72	ug/L		99
59) Bromobenzene	10.922	156	56374	21.44	ug/L		99
60) n-Propylbenzene	10.940	91	236282	19.71	ug/L		98
61) 1,1,2,2-Tetrachloroethane	11.007	83	56206	21.54	ug/L		94
62) 2-Chlorotoluene	11.068	126	49936	20.12	ug/L	#	82
63) 1,3,5-Trimethylbenzene	11.104	105	168273	20.76	ug/L		98
64) 1,2,3-Trichloropropane	11.116	110	21880	20.34	ug/L	#	83
65) t-1,4-Dichloro-2-butene	11.153	88	6955	19.17	ug/L	#	86
66) 4-Chlorotoluene	11.208	91	145649	20.30	ug/L		98
67) tert-Butylbenzene	11.354	91	88273	19.43	ug/L		96
68) 1,2,4-Trimethylbenzene	11.414	105	167703	20.22	ug/L		97
69) sec-Butylbenzene	11.500	105	193906	20.19	ug/L		98
70) 4-Isopropyltoluene	11.609	119	164288	21.02	ug/L		97
71) 1,3-Dichlorobenzene	11.670	146	90545	19.62	ug/L		99
72) 1,4-Dichlorobenzene	11.737	146	90005	19.52	ug/L		96
73) n-Butylbenzene	11.931	91	134289	20.21	ug/L		99
74) 1,2-Dichlorobenzene	12.059	146	83574	19.72	ug/L		99
75) 1,2-Dibromo-3-Chloropr...	12.674	157	12442	20.02	ug/L		98
76) Hexachlorobutadiene	13.179	223	13236	21.57	ug/L		98
77) 1,2,4-Trichlorobenzene	13.215	180	51658	20.93	ug/L		97
78) Naphthalene	13.489	128	180001	21.67	ug/L		99
79) 1,2,3-Trichlorobenzene	13.653	180	48911	20.92	ug/L		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052919.D
Acq On : 29 May 2019 10:32 pm
Operator : TB
Sample : 9E29058-ICV1
Misc : 1X 5mL 20ppb VOC DI+MeOH
ALS Vial : 19 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:45 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052920.D
Acq On : 29 May 2019 10:59 pm
Operator : TB
Sample : 9E29058-IBL6
Misc : 1X 5mL DI+MeOH
ALS Vial : 20 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:47 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

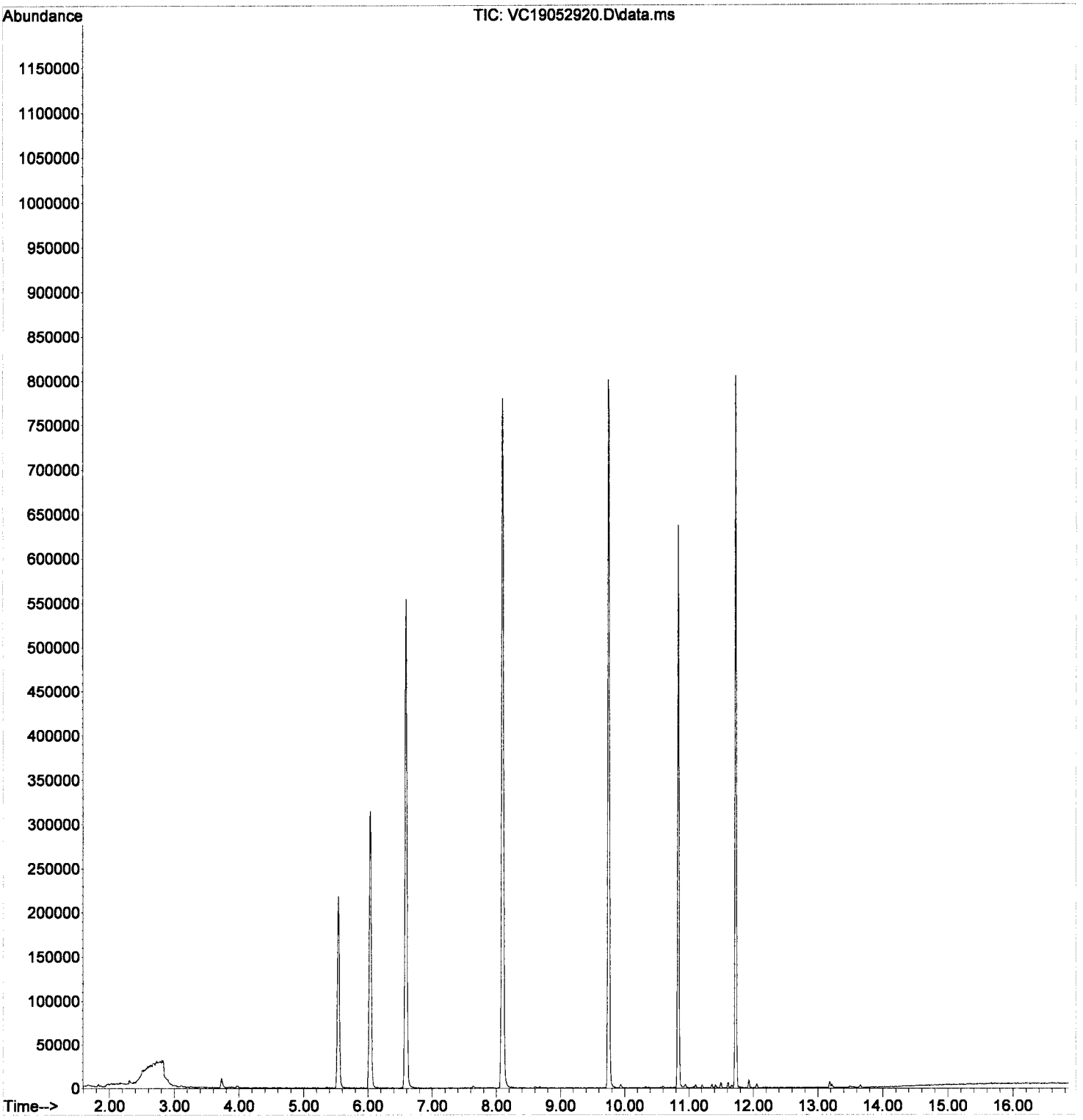
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.035	168	263418	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.746	117	469419	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.729	152	193137	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.536	111	149058	52.26	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.588	114	517972	51.12	ug/L		0.00
39) Toluene-d8 (S)	8.097	98	636573	50.13	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.834	174	170886	51.24	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.667	85	391	0.17	ug/L	#	50
3) Chloromethane	1.861	50	1206	0.31	ug/L		94
5) Bromomethane	2.305	96	2643	1.75	ug/L		81
6) Chloroethane	2.531	64	502	0.50	ug/L	#	1
9) Carbon Disulfide	3.121	76	1128	0.27	ug/L		51
10) Freon 113	3.157	101	259	0.11	ug/L	#	79
11) Iodomethane	3.254	142	1123	1.75	ug/L	#	89
12) Methylene Chloride	3.735	84	5229	Below Cal			93
13) Acetone	3.851	43	2026	1.71	ug/L		85
14) t-1,2-Dichloroethene	3.893	61	342	0.11	ug/L		88
15) n-Hexane	3.960	86	175	Below Cal		#	1
22) Chloroform	5.353	83	416	0.09	ug/L		79
27) 1,1-Dichloropropene	5.688	75	499	0.14	ug/L	#	68
28) 2-Butanone (MEK)	5.737	43	239	0.11	ug/L		54
40) Toluene	8.158	91	1337	0.11	ug/L		72
41) Tetrachloroethene (PCE)	8.590	166	614	0.21	ug/L	#	67
49) Chlorobenzene	9.770	112	761	0.10	ug/L	#	41
50) Ethylbenzene	9.794	91	1537	0.12	ug/L		91
52) m,p-Xylenes (2)	9.934	91	2237	0.25	ug/L		92
53) o-Xylene	10.323	91	1026	0.11	ug/L		60
56) Isopropylbenzene	10.597	105	1697	0.15	ug/L		86
60) n-Propylbenzene	10.944	91	2962	0.25	ug/L		89
62) 2-Chlorotoluene	11.072	126	260	0.11	ug/L	#	86
63) 1,3,5-Trimethylbenzene	11.108	105	1782	0.23	ug/L		85
66) 4-Chlorotoluene	11.212	91	1495	0.21	ug/L		80
67) tert-Butylbenzene	11.358	91	1160	0.26	ug/L		82
68) 1,2,4-Trimethylbenzene	11.412	105	1662	0.21	ug/L		95
69) sec-Butylbenzene	11.498	105	3585	0.38	ug/L		96
70) 4-Isopropyltoluene	11.607	119	3334	0.44	ug/L		92
71) 1,3-Dichlorobenzene	11.674	146	1044	0.23	ug/L		87
72) 1,4-Dichlorobenzene	11.735	146	1219	0.27	ug/L	#	40
73) n-Butylbenzene	11.930	91	4399	0.68	ug/L		95
74) 1,2-Dichlorobenzene	12.063	146	605	0.15	ug/L		72
76) Hexachlorobutadiene	13.177	223	834	1.40	ug/L		89
77) 1,2,4-Trichlorobenzene	13.213	180	1499	0.63	ug/L		82
78) Naphthalene	13.499	128	1487	0.18	ug/L		89
79) 1,2,3-Trichlorobenzene	13.651	180	1110	0.49	ug/L	#	66

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052920.D
Acq On : 29 May 2019 10:59 pm
Operator : TB
Sample : 9E29058-IBL6
Misc : 1X 5mL DI+MeOH
ALS Vial : 20 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:47 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



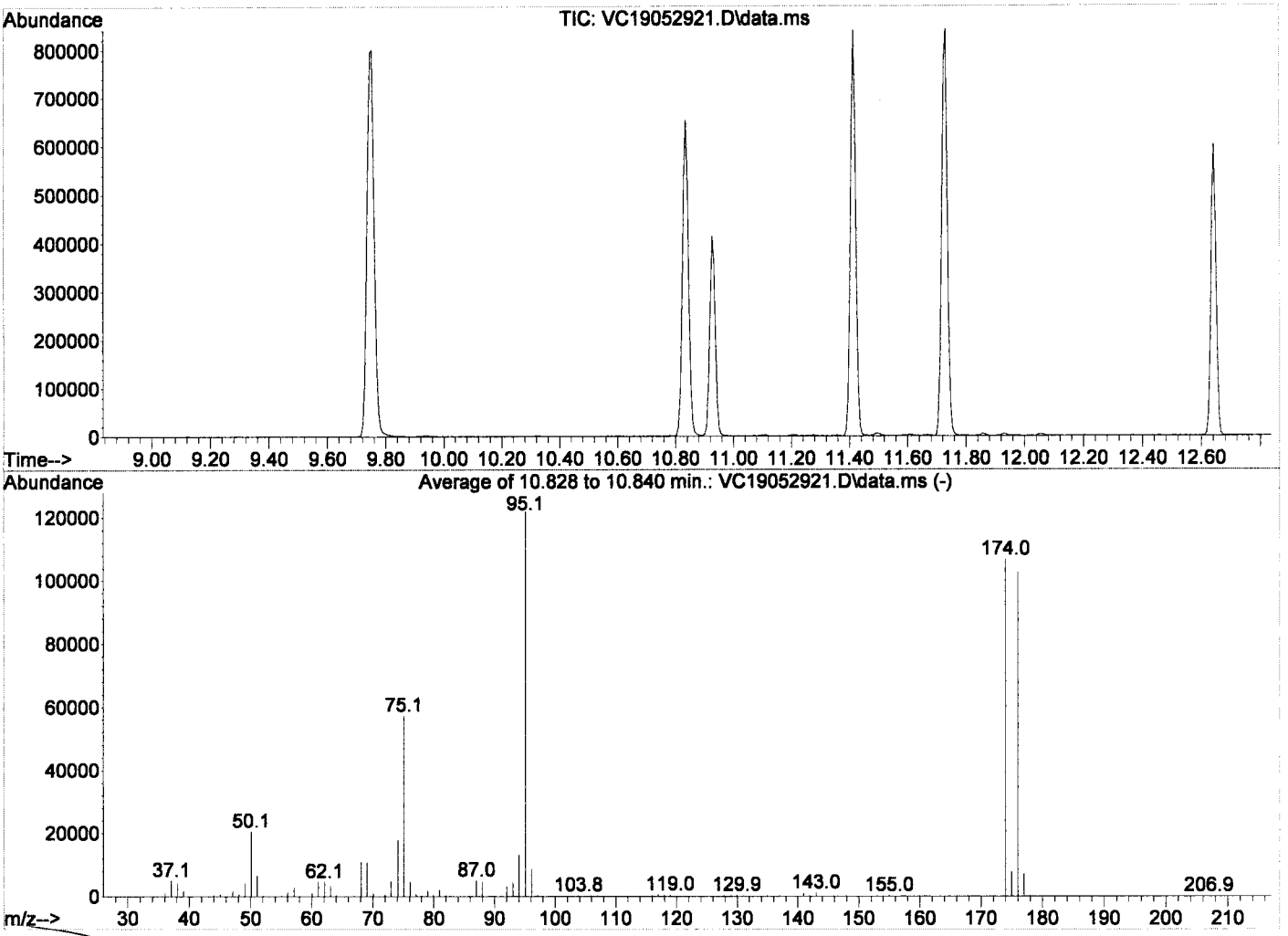
BFB

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052921.D
Acq On : 29 May 2019 11:27 pm
Operator : TB
Sample : 9E29058-TUN2 RT
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\VC190529G.M
Title : NWTPH-Gx by GC/MS
Last Update : Thu May 30 15:52:54 2019

5/30/19



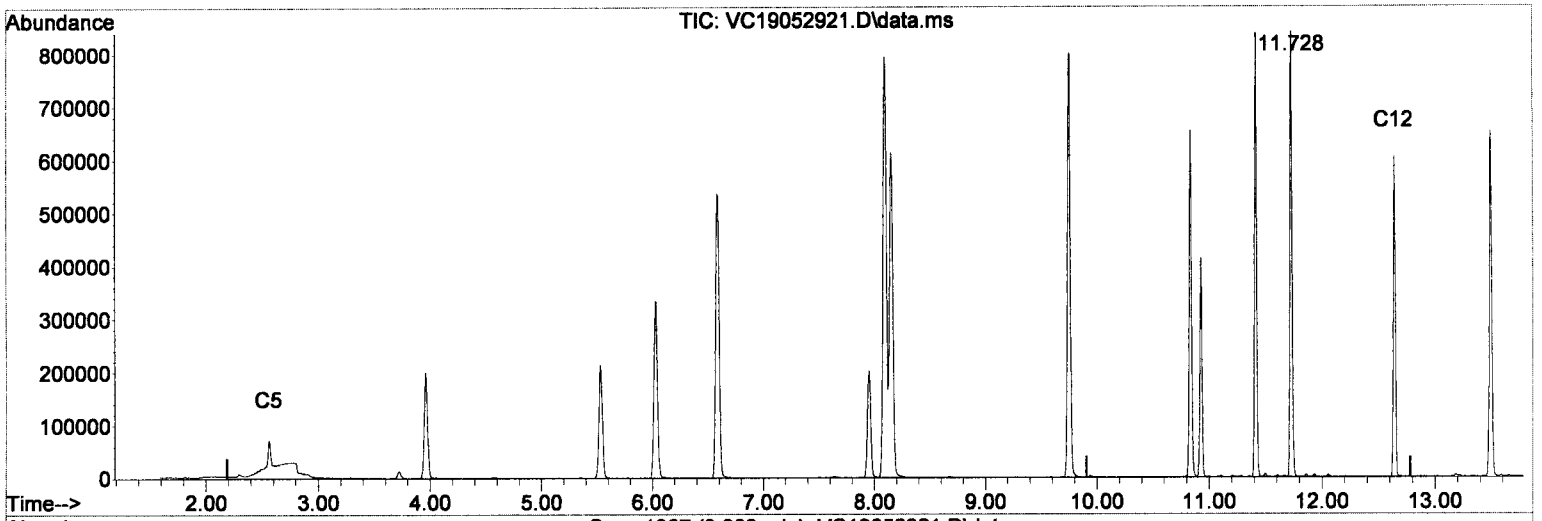
AutoFind: Scans 1519, 1520, 1521; Background Corrected with Scan 1512

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	12	40	16.8	20485	PASS
75	95	30	60	47.0	57338	PASS
95	95	100	100	100.0	121885	PASS
96	95	5	9	7.2	8794	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	200	87.5	106672	PASS
175	174	5	9	7.2	7710	PASS
176	174	95	101	96.1	102493	PASS
177	176	5	9	7.0	7180	PASS

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052921.D
Acq On : 29 May 2019 11:27 pm
Operator : TB
Sample : 9E29058-TUN2 RT
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:53 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration



TIC: VC19052921.D\data.ms

(5) CA-LUFT (C5-C12) (H)

9.906min (0.000) 392.07 ug/L m

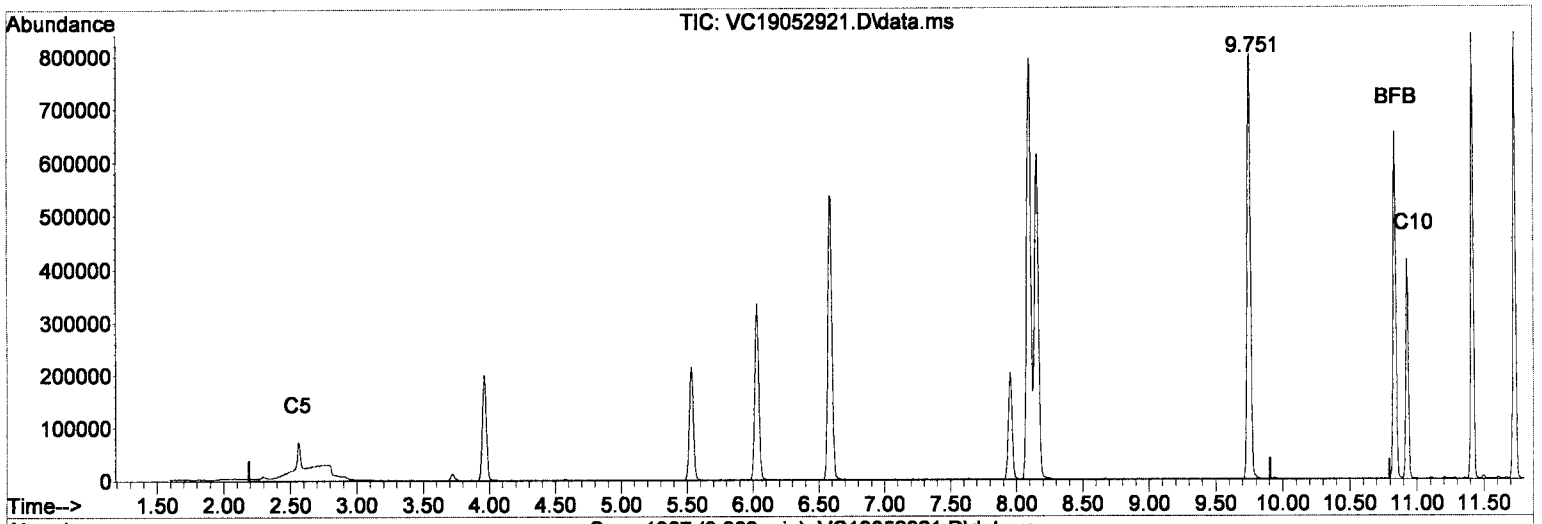
response 5195528

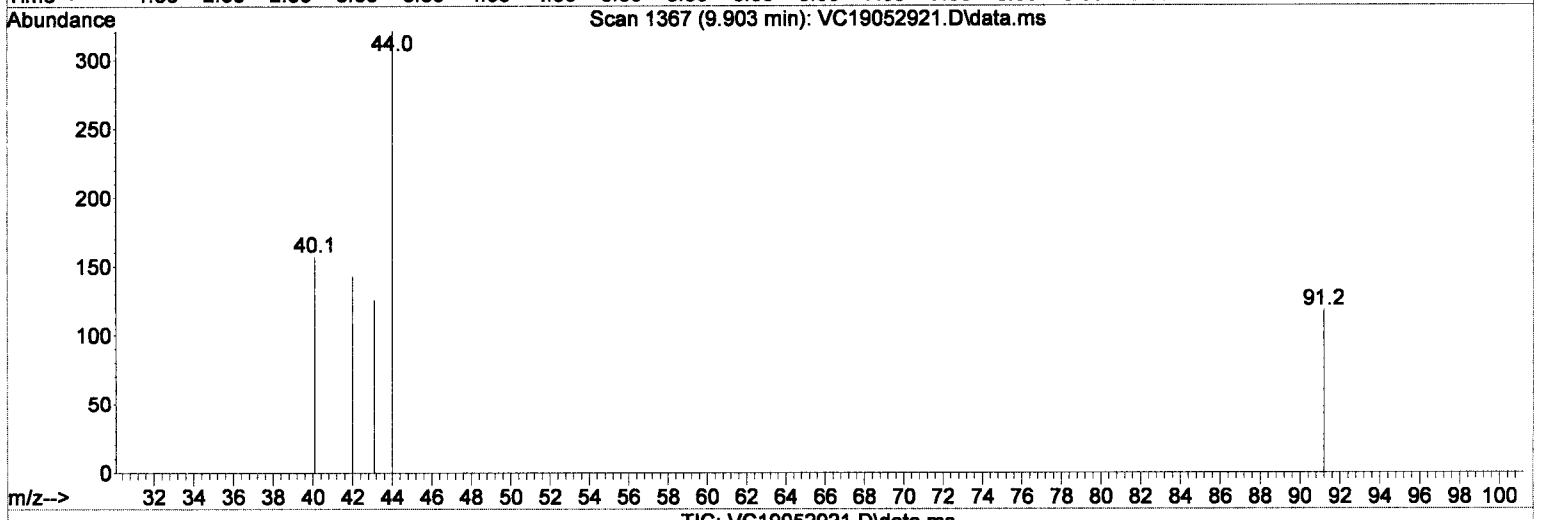
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.79#
0.00	0.00	0.62#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052921.D
Acq On : 29 May 2019 11:27 pm
Operator : TB
Sample : 9E29058-TUN2 RT
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:53 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration





TIC: VC19052921.D\data.ms

(6) TPHg (C5-C9) (H)

9.906min (0.000) 229.20 ug/L m

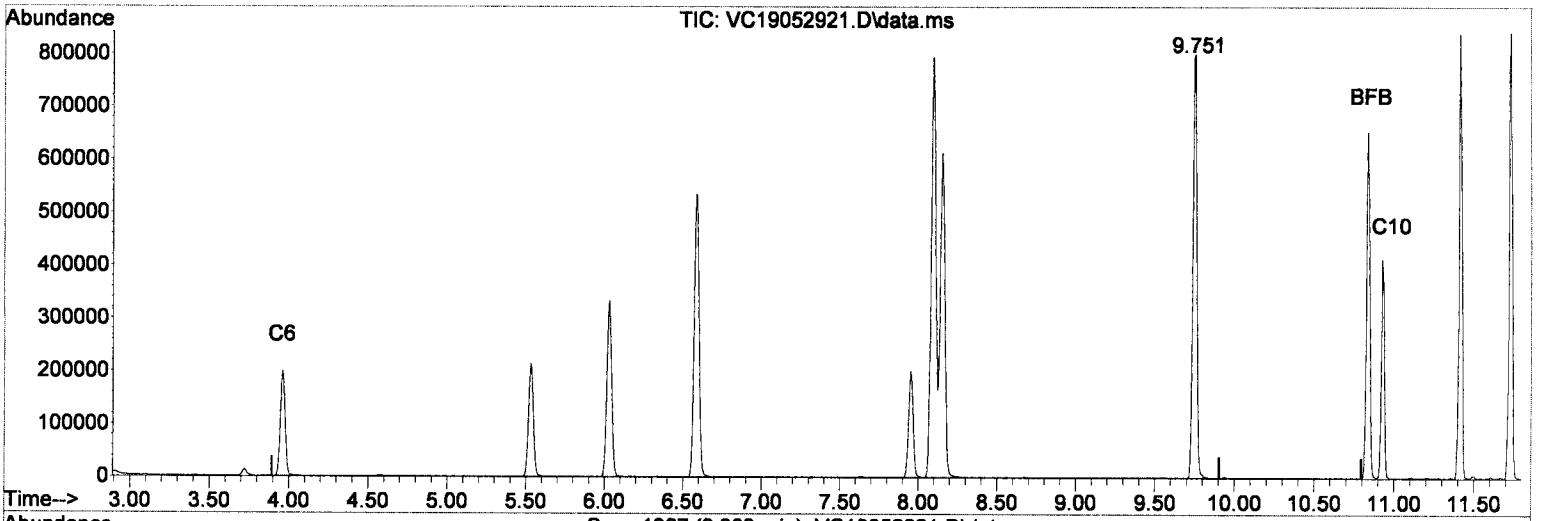
response 2819041

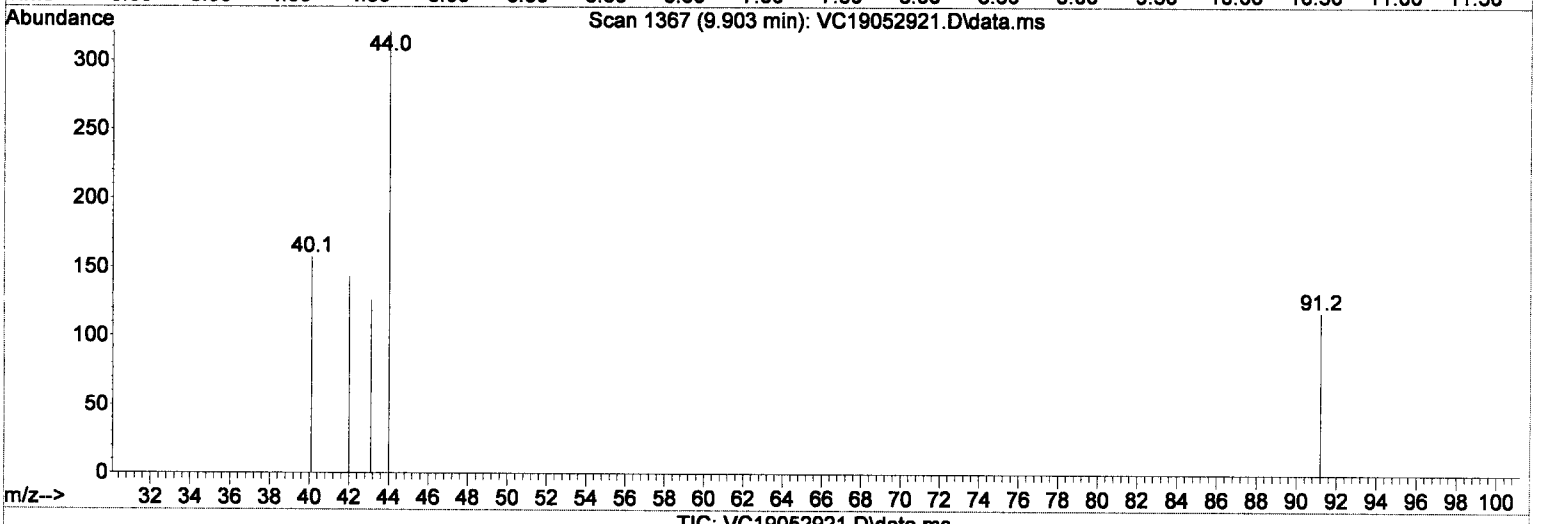
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	1.45#
0.00	0.00	1.14#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052921.D
Acq On : 29 May 2019 11:27 pm
Operator : TB
Sample : 9E29058-TUN2 RT
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:53 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration





TIC: VC19052921.D\data.ms

(7) TPHg (C6-C10) (H)

9.906min (0.000) 281.64 ug/L m

response 2593656

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	1.58#
0.00	0.00	1.24#
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052921.D
Acq On : 29 May 2019 11:27 pm
Operator : TB
Sample : 9E29058-TUN2 RT
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:53 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

5/30/19

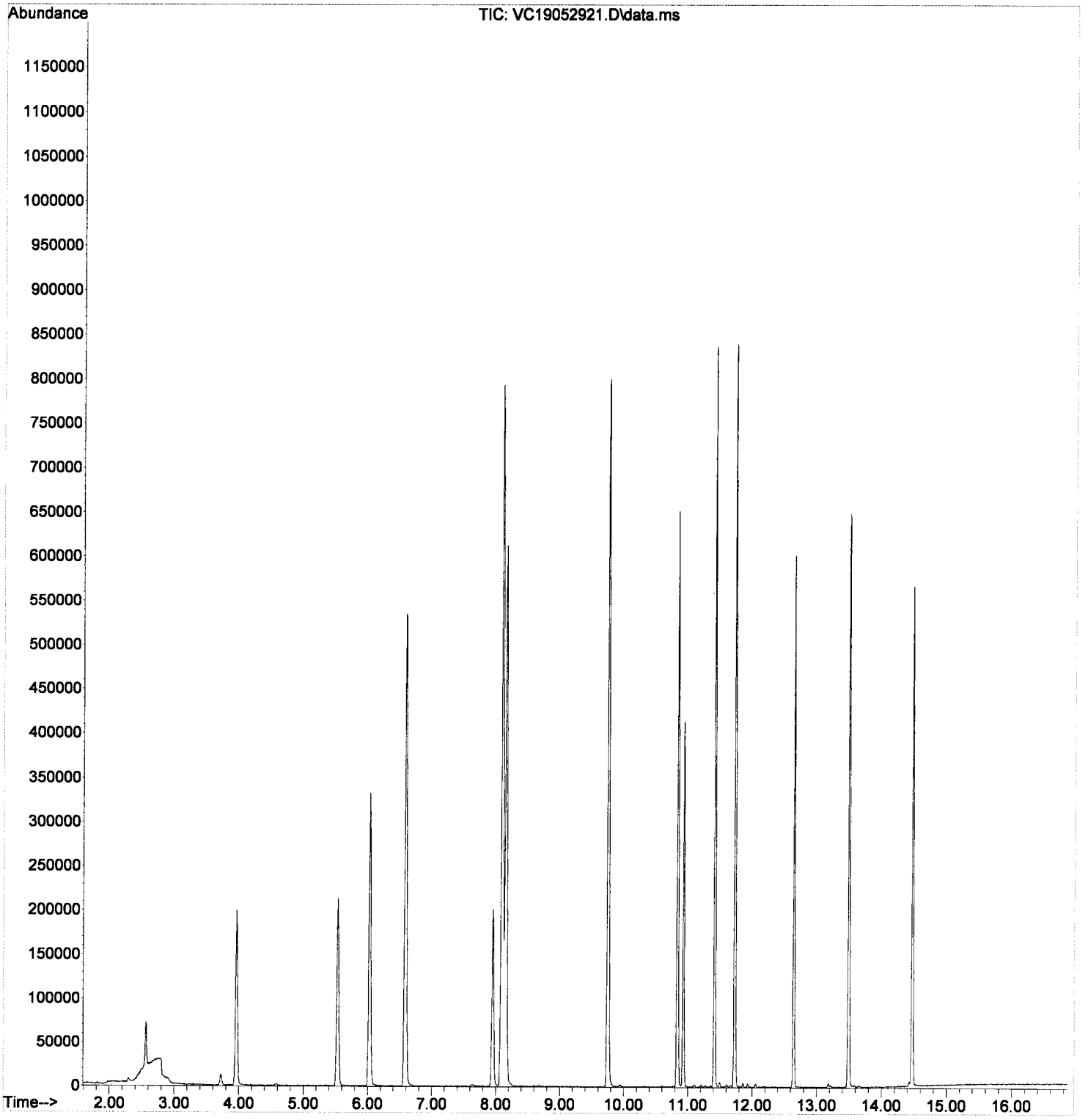
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.028	168	265731	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.582	TIC	1164135	47.01	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.834	TIC	943243	50.99	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.751	TIC	1393197	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.091	TIC	1667197	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.728	TIC	1147078	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	5195528m	392.07	ug/L	
6) TPHg (C5-C9)	9.906	TIC	2819041m	229.20	ug/L	
7) TPHg (C6-C10)	9.906	TIC	2593656m	281.64	ug/L	
8) NWTPH-Gx	9.906	TIC	5082946m	669.68	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052921.D
Acq On : 29 May 2019 11:27 pm
Operator : TB
Sample : 9E29058-TUN2 RT
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:53 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052923.D
Acq On : 30 May 2019 12:22 am
Operator : TB
Sample : 9E29058-ICB2
Misc : 1X 5mL DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:56 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

5/30/19

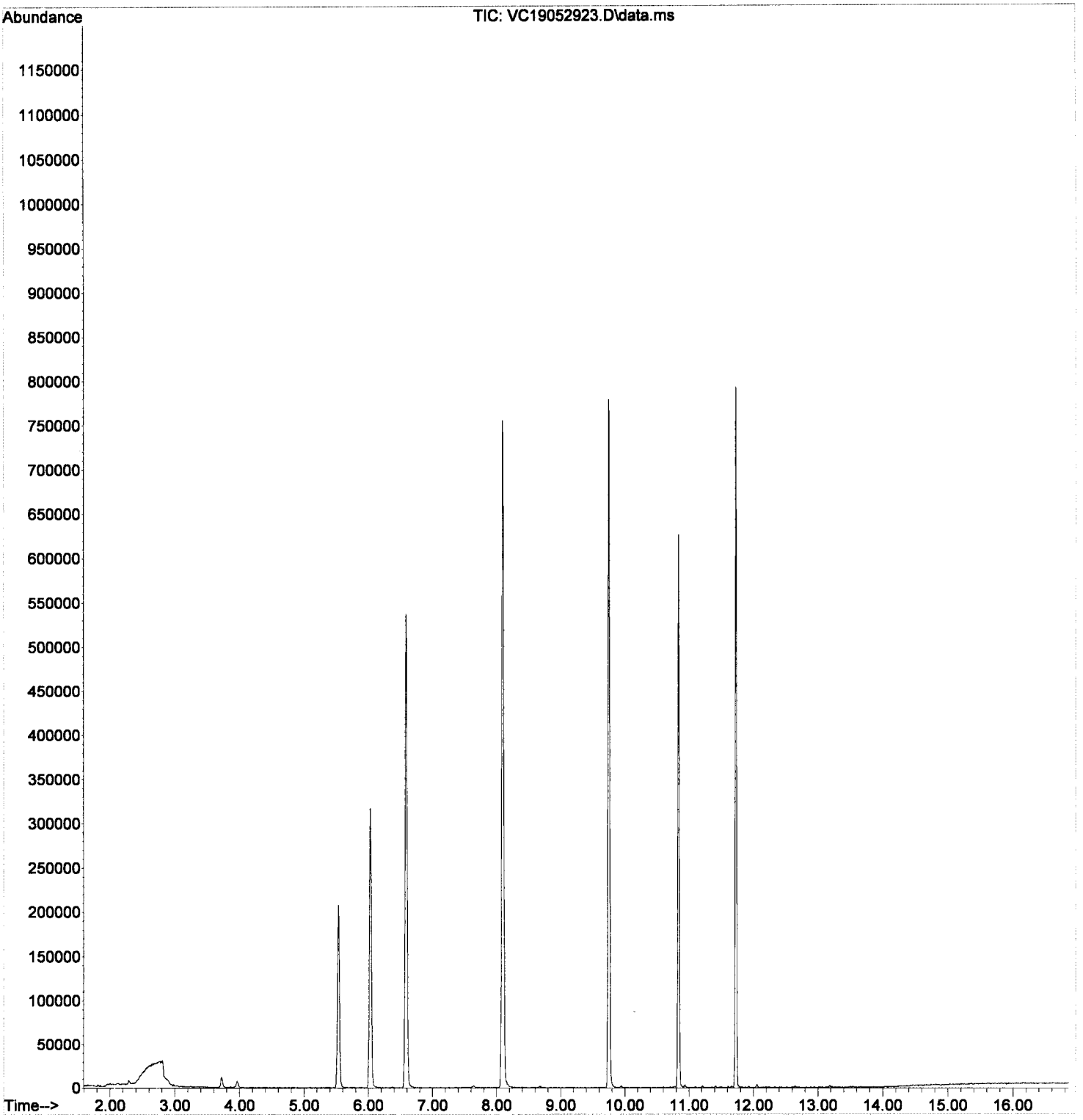
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.029	168	261900	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.582	TIC	1130594	46.32	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.835	TIC	894652	49.07	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.746	TIC	1326473	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.091	TIC	1614341	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.729	TIC	1093552	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	651712m	9.28	ug/L	LMQC
6) TPHg (C5-C9)	9.906	TIC	651712m	14.63	ug/L	
7) TPHg (C6-C10)	9.906	TIC	464649m	14.02	ug/L	
8) NWTPH-Gx	9.906	TIC	8855m	13.72	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052923.D
Acq On : 30 May 2019 12:22 am
Operator : TB
Sample : 9E29058-ICB2
Misc : 1X 5mL DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:56 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

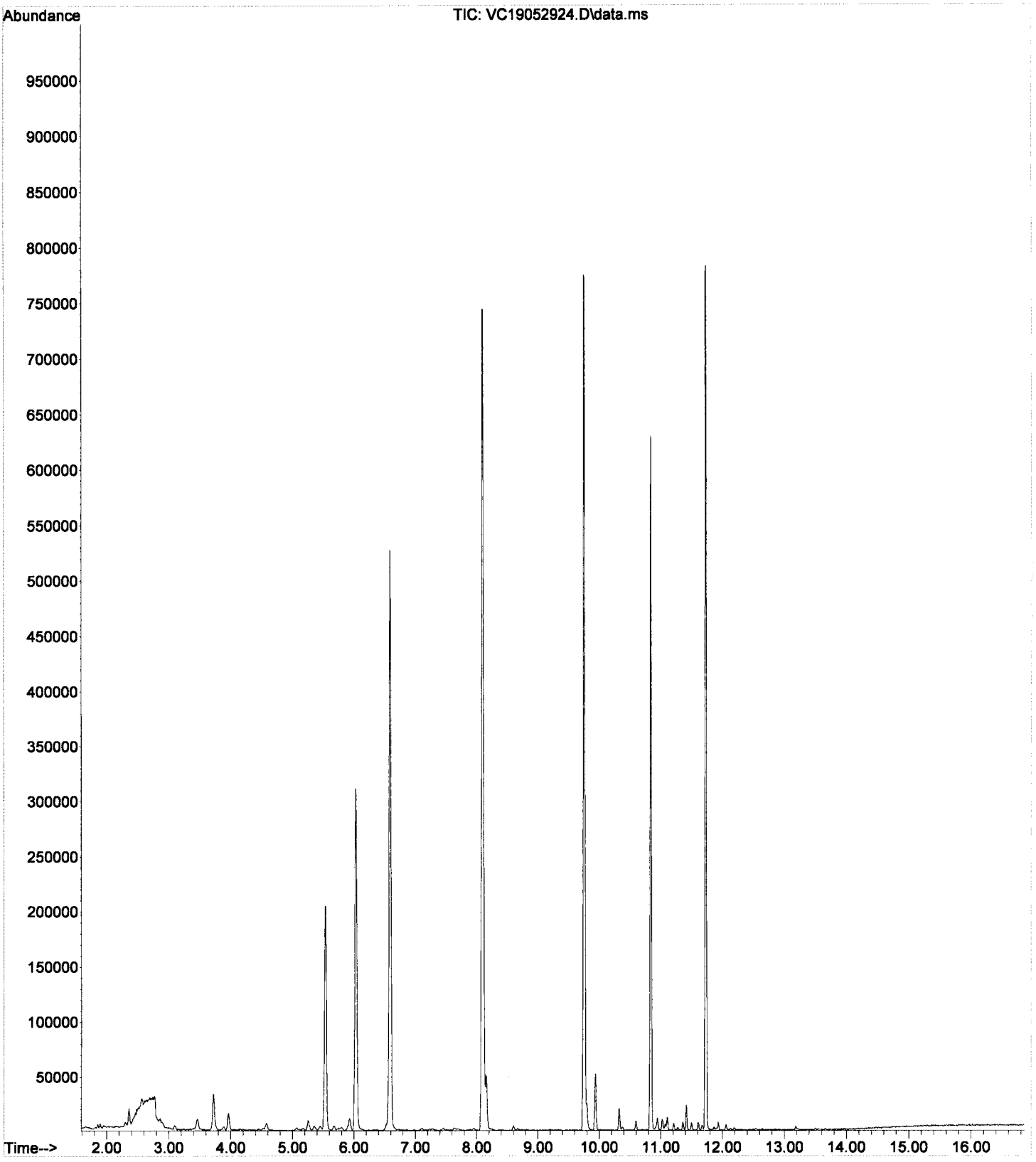
Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052924.D
Acq On : 30 May 2019 12:49 am
Operator : TB
Sample : 9E29058-CALC
Misc : 1X 5mL 50ppb GX DI+MeOH
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:47:24 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.029	168	257140	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.588	TIC	1139443	49.09	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.835	TIC	893711	50.46	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.746	TIC	1364832	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.091	TIC	1608804	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.729	TIC	1090524	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	1126234m	86.93	ug/L	
6) TPHg (C5-C9)	9.906	TIC	959474m	85.93	ug/L	
7) TPHg (C6-C10)	9.906	TIC	733539m	85.30	ug/L	
8) NWTPH-Gx	9.906	TIC	337341m	46.30	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

File :C:\msdchem\1\DATA\2019-05\9E29058\VC19052924.D
Operator : TB
Acquired : 30 May 2019 12:49 am using AcqMethod VC1612RUN.M
Instrument : VOA-GCMS3
Sample Name: 9E29058-CALC
Misc Info : 1X 5mL 50ppb GX DI+MeOH
Vial Number: 24



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052925.D
Acq On : 30 May 2019 1:17 am
Operator : TB
Sample : 9E29058-CALD
Misc : 1X 5mL 100ppb GX DI+MeOH
ALS Vial : 25 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

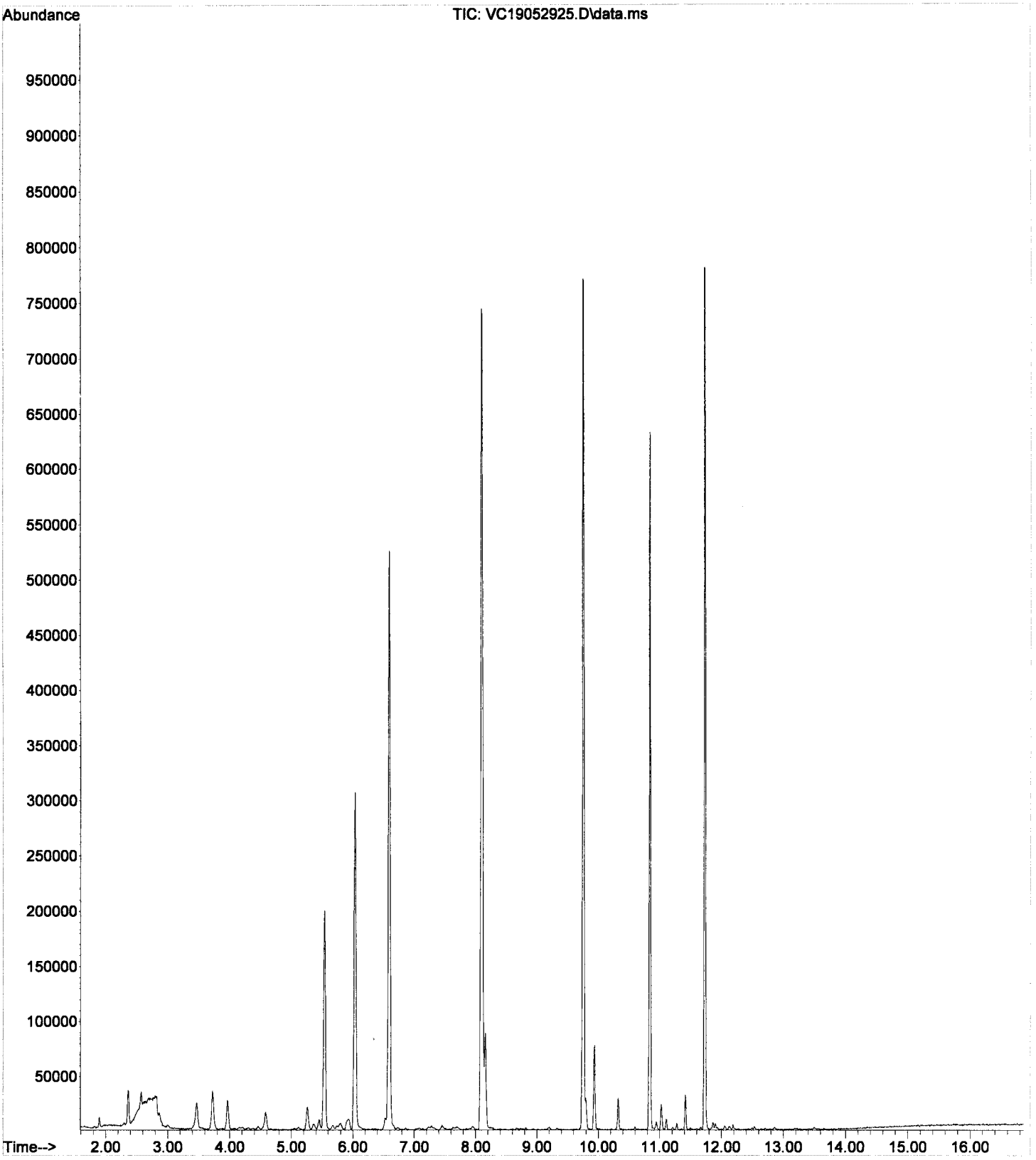
Quant Time: May 30 15:47:26 2019
Quant Method : C:\msdchem\1\METHODS\~~VC190529G.M~~
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration

5/30/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.029	168	254092	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.589	TIC	1130909	49.31	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.835	TIC	893010	51.02	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.746	TIC	1356890	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.092	TIC	1598426	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.724	TIC	1104507	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	1624353m	126.88	ug/L	
6) TPHg (C5-C9)	9.906	TIC	1478586m	134.01	ug/L	
7) TPHg (C6-C10)	9.906	TIC	1118241m	131.60	ug/L	
8) NWTPH-Gx	9.906	TIC	594153m	82.53	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

File :C:\msdchem\1\DATA\2019-05\9E29058\VC19052925.D
Operator : TB
Acquired : 30 May 2019 1:17 am using AcqMethod VC1612RUN.M
Instrument : VOA-GCMS3
Sample Name: 9E29058-CALD
Misc Info : 1X 5mL 100ppb GX DI+MeOH
Vial Number: 25



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052926.D
Acq On : 30 May 2019 1:44 am
Operator : TB
Sample : 9E29058-CALE
Misc : 1X 5mL 250ppb GX DI+MeOH
ALS Vial : 26 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

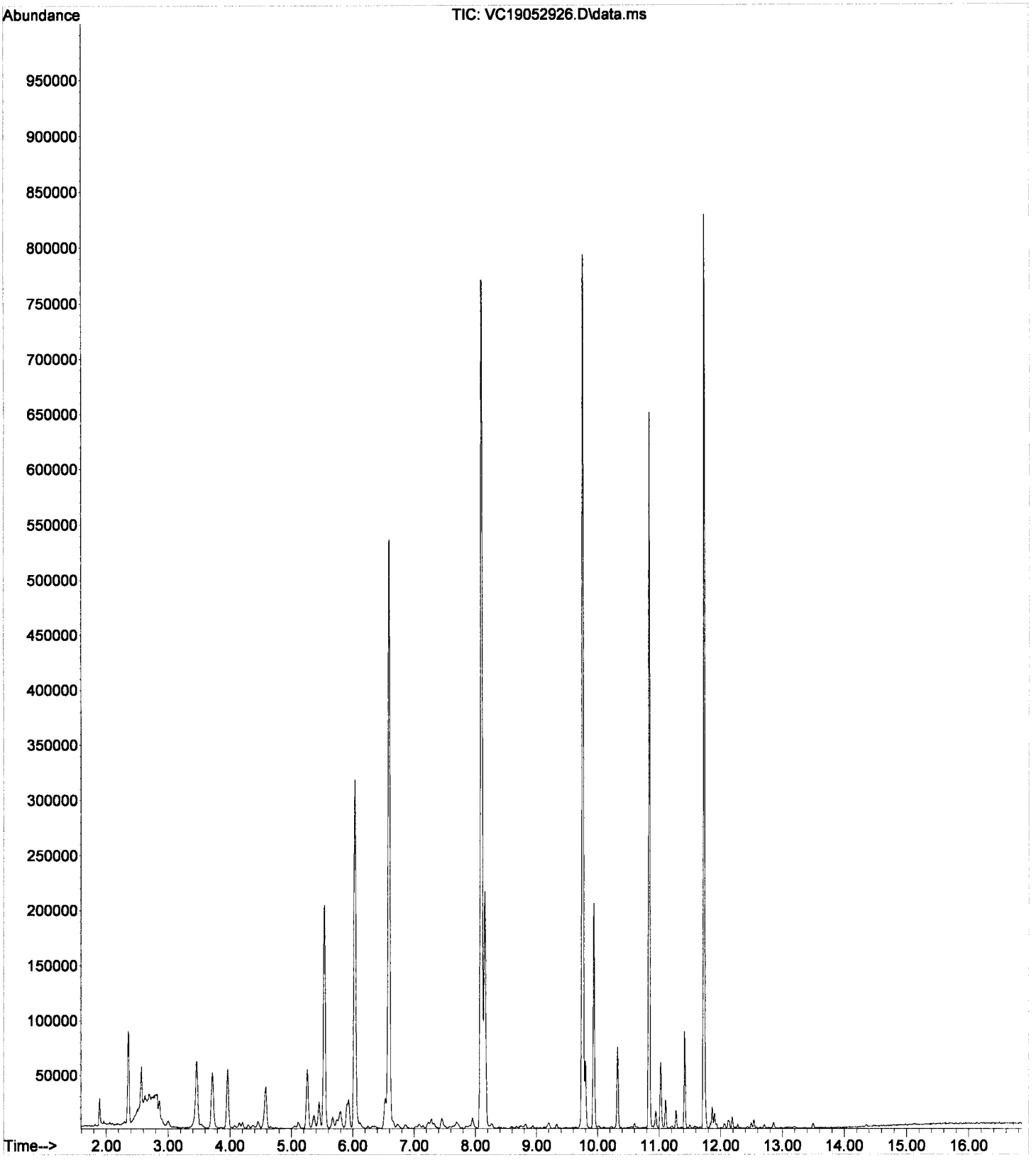
Quant Time: May 30 15:47:28 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration

5/30/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.028	168	264662	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.588	TIC	1181697	49.47	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.834	TIC	923159	50.64	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.751	TIC	1373720	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.090	TIC	1645193	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.728	TIC	1147251	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	3450881m	258.79	ug/L	
6) TPHg (C5-C9)	9.906	TIC	3008909m	261.82	ug/L	
7) TPHg (C6-C10)	9.906	TIC	2261282m	255.49	ug/L	
8) NWTPH-Gx	9.906	TIC	1724074m	229.91	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

File :C:\msdchem\1\DATA\2019-05\9E29058\VC19052926.D
Operator : TB
Acquired : 30 May 2019 1:44 am using AcqMethod VC1612RUN.M
Instrument : VOA-GCMS3
Sample Name: 9E29058-CALE
Misc Info : 1X 5mL 250ppb GX DI+MeOH
Vial Number: 26



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052927.D
Acq On : 30 May 2019 2:12 am
Operator : TB
Sample : 9E29058-CALF
Misc : 1X 5mL 500ppb GX DI+MeOH
ALS Vial : 27 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

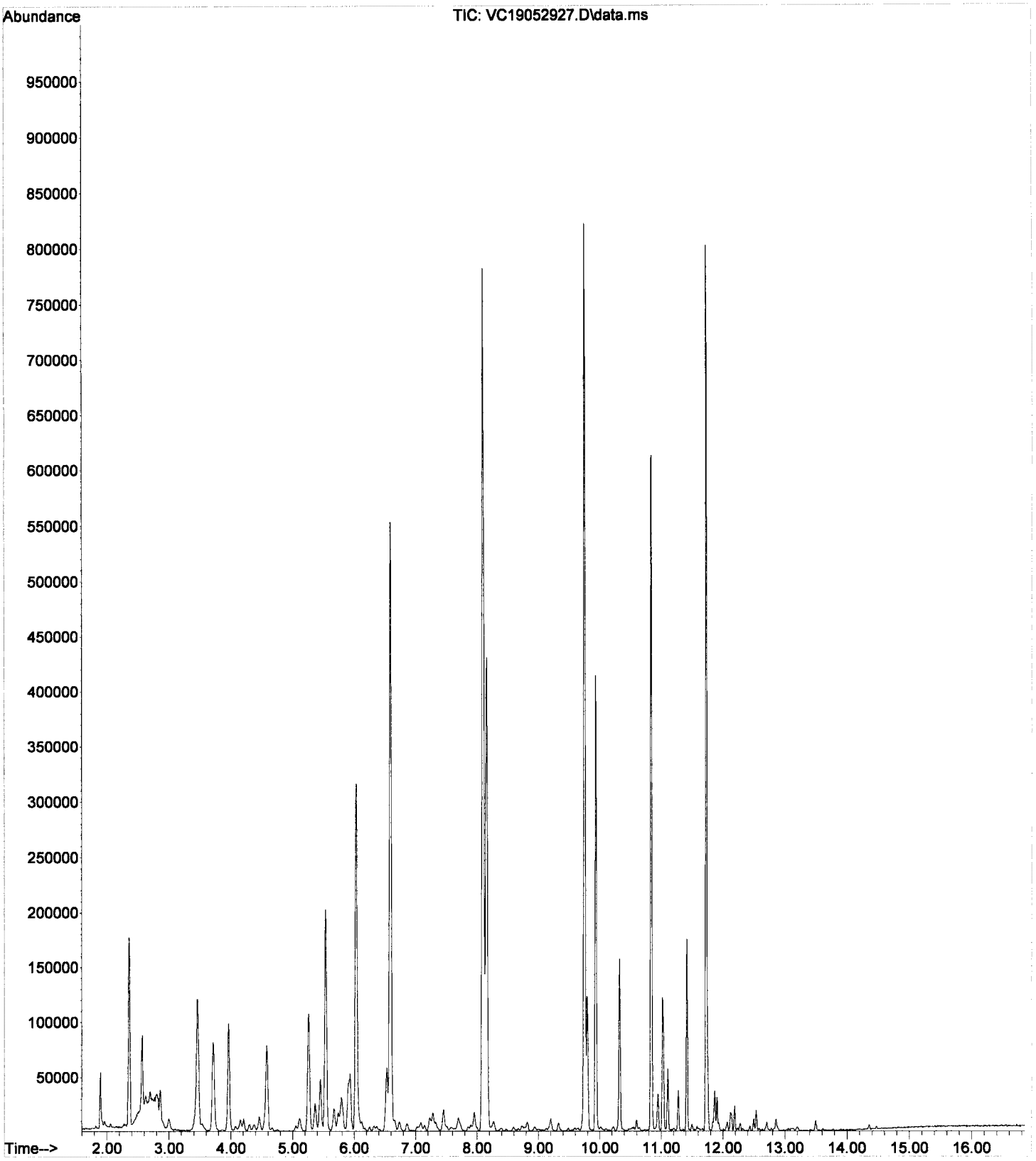
Quant Time: May 30 15:47:30 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration

5/30/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.031	168	261529	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.585	TIC	1178596	49.93	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.837	TIC	900724	50.00	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.748	TIC	1373218	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.093	TIC	1631979	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.725	TIC	1139134	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	6589983m	500.13	ug/L	
6) TPHg (C5-C9)	9.906	TIC	5679706m	500.15	ug/L	
7) TPHg (C6-C10)	9.906	TIC	4374724m	500.19	ug/L	
8) NWTPH-Gx	9.906	TIC	3706703m	500.22	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

File :C:\msdchem\1\DATA\2019-05\9E29058\VC19052927.D
Operator : TB
Acquired : 30 May 2019 2:12 am using AcqMethod VC1612RUN.M
Instrument : VOA-GCMS3
Sample Name: 9E29058-CALF
Misc Info : 1X 5mL 500ppb GX DI+MeOH
Vial Number: 27



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052928.D
Acq On : 30 May 2019 2:39 am
Operator : TB
Sample : 9E29058-CALG
Misc : 1X 5mL 1000ppb GX DI+MeOH
ALS Vial : 28 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

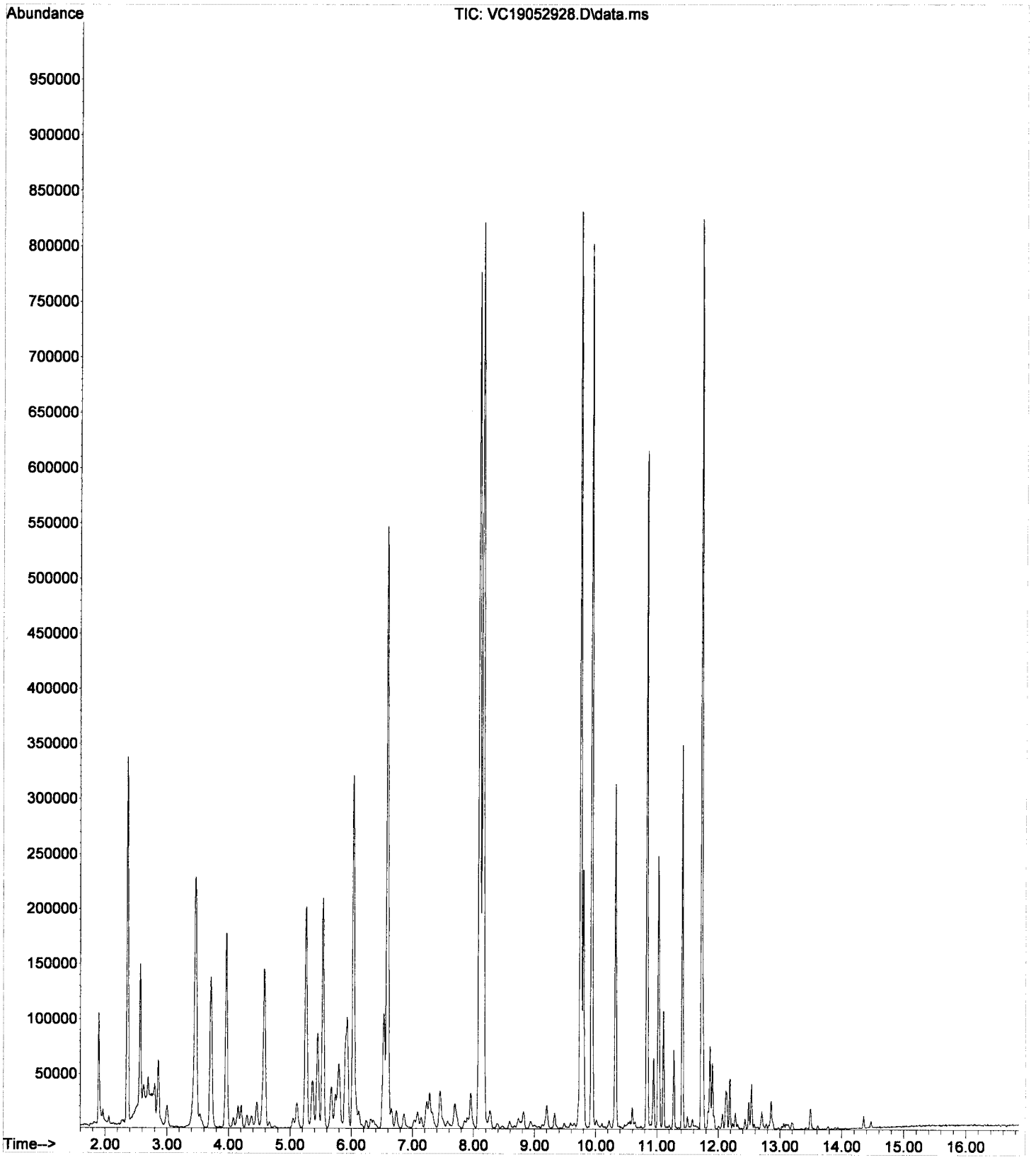
Quant Time: May 30 15:47:32 2019
Quant Method : C:\msdchem\1\METHODS\~~VC190529G.M~~
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration

5/30/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.031	168	261111	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.585	TIC	1170992	49.69	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.837	TIC	915240	50.89	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.748	TIC	1421490	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.094	TIC	1681294	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.725	TIC	1206900	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	12264001m	932.23	ug/L	
6) TPHg (C5-C9)	9.906	TIC	10516295m	927.53	ug/L	
7) TPHg (C6-C10)	9.906	TIC	8234768m	943.04	ug/L	
8) NWTPH-Gx	9.906	TIC	7396048m	999.71	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

File :C:\msdchem\1\DATA\2019-05\9E29058\VC19052928.D
Operator : TB
Acquired : 30 May 2019 2:39 am using AcqMethod VC1612RUN.M
Instrument : VOA-GCMS3
Sample Name: 9E29058-CALG
Misc Info : 1X 5mL 1000ppb GX DI+MeOH
Vial Number: 28



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052929.D
Acq On : 30 May 2019 3:07 am
Operator : TB
Sample : 9E29058-CALH
Misc : 1X 5mL 2500ppb GX DI+MeOH
ALS Vial : 29 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

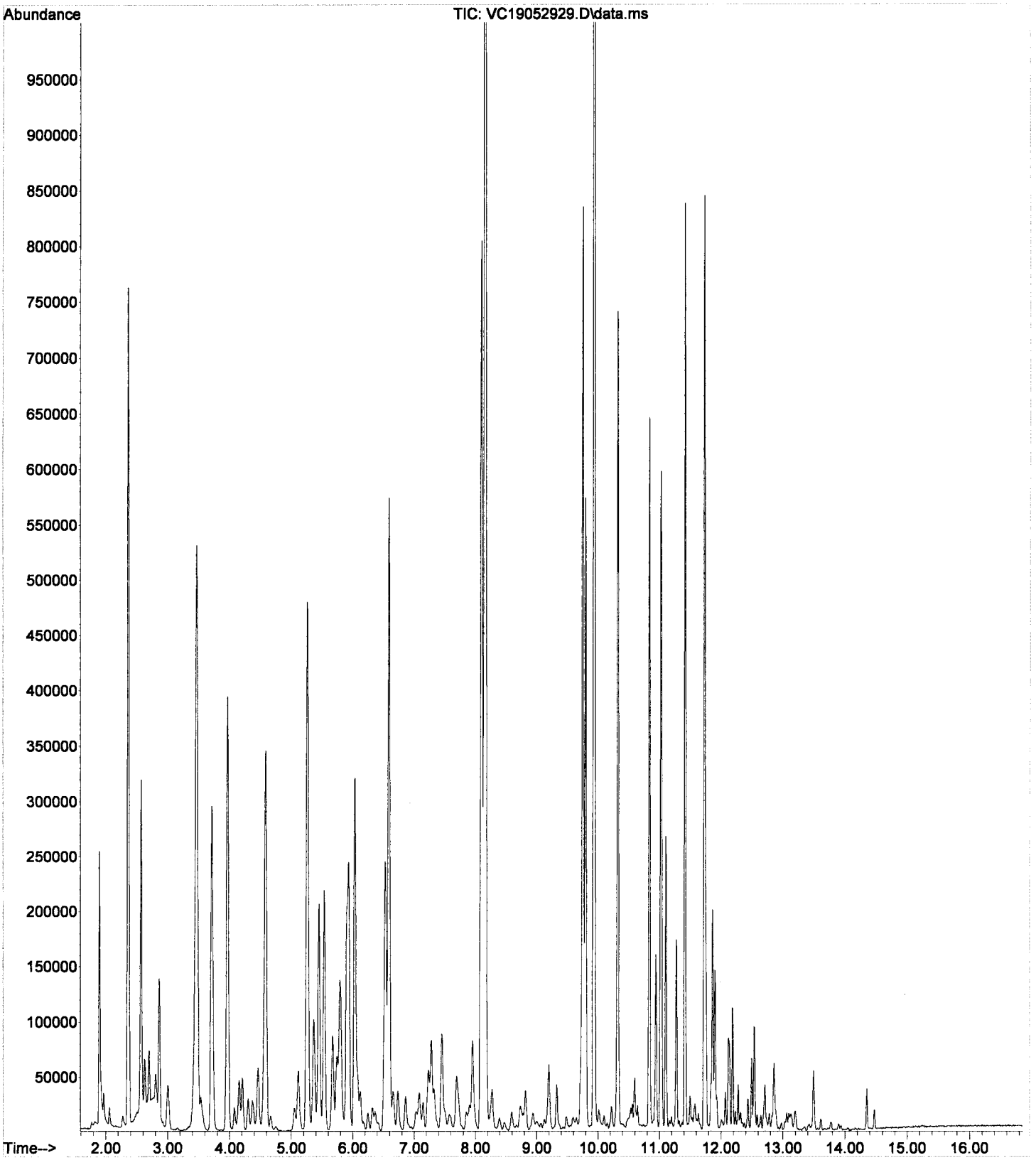
Quant Time: May 30 15:47:34 2019
Quant Method : C:\msdchem\1\METHODS\~~VC190529G~~.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration

5/30/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.034	168	268653	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.588	TIC	1212113	49.99	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.834	TIC	936867	50.63	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.751	TIC	1507141	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.096	TIC	1729205	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.728	TIC	1379986	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	28320107m	2092.27	ug/L	
6) TPHg (C5-C9)	9.906	TIC	23917340m	2050.28	ug/L	
7) TPHg (C6-C10)	9.906	TIC	18963080m	2110.68	ug/L	
8) NWTPH-Gx	9.906	TIC	18385276m	2415.33	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

File :C:\msdchem\1\DATA\2019-05\9E29058\VC19052929.D
Operator : TB
Acquired : 30 May 2019 3:07 am using AcqMethod VC1612RUN.M
Instrument : VOA-GCMS3
Sample Name: 9E29058-CALH
Misc Info : 1X 5mL 2500ppb GX DI+MeOH
Vial Number: 29



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052930.D
Acq On : 30 May 2019 3:34 am
Operator : TB
Sample : 9E29058-CALI
Misc : 1X 5mL 5000ppb GX DI+MeOH
ALS Vial : 30 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:50:56 2019
Quant Method : C:\msdchem\1\METHODS\~~VC190529G.M~~
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration

5/30/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.035	168	266073	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.588	TIC	1320230	54.97	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.835	TIC	922982	50.36	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.752	TIC	1171661m	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.097	TIC	1683833	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.729	TIC	1344258m	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	61543670m	4590.90	ug/L	
6) TPHg (C5-C9)	9.906	TIC	51205660m	4432.09	ug/L	
7) TPHg (C6-C10)	9.906	TIC	41070880m	4615.70	ug/L	
8) NWTPH-Gx	9.906	TIC	41069114m	5447.68	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052930.D
Acq On : 30 May 2019 3:34 am
Operator : TB
Sample : 9E29058-CALI
Misc : 1X 5mL 5000ppb GX DI+MeOH
ALS Vial : 30 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:47:36 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration

5/30/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.035	168	266073	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.588	TIC	1320230	54.97	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.835	TIC	922982	50.36	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.752	TIC	1634465	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.097	TIC	1683833	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.729	TIC	1634619	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	60790505m	4534.72	ug/L	
6) TPHg (C5-C9)	9.906	TIC	50742856m	4392.03	ug/L	
7) TPHg (C6-C10)	9.906	TIC	40608076m	4563.69	ug/L	
8) NWTPH-Gx	9.906	TIC	40315949m	5347.78	ug/L	

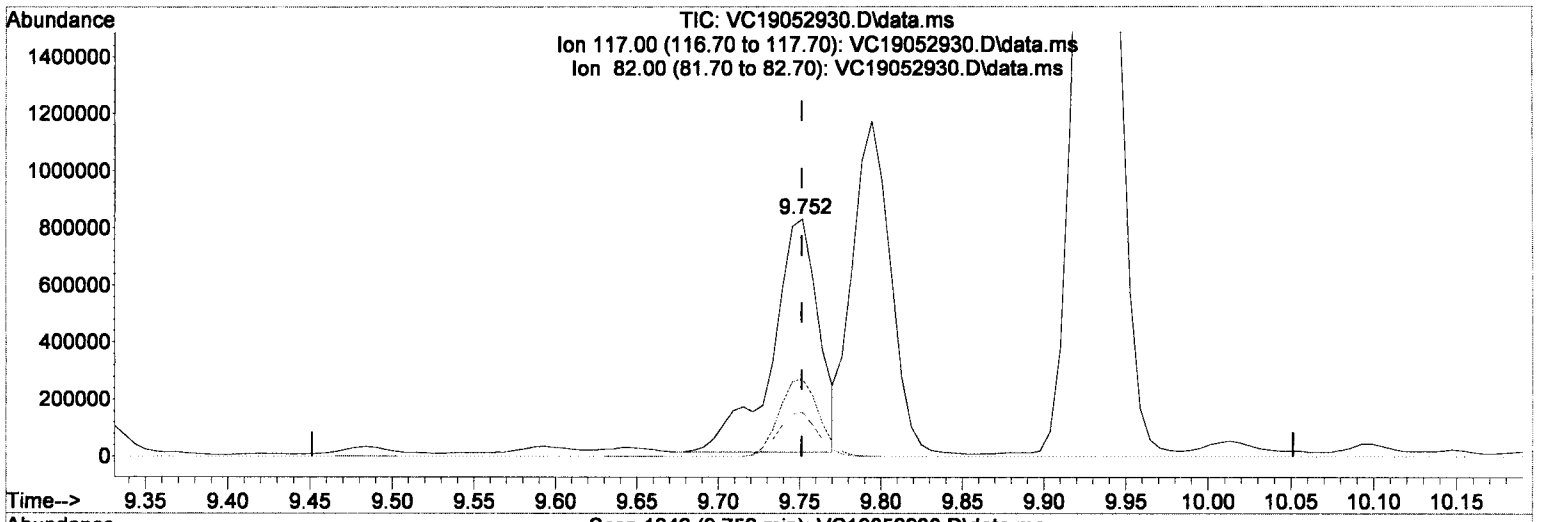
MT

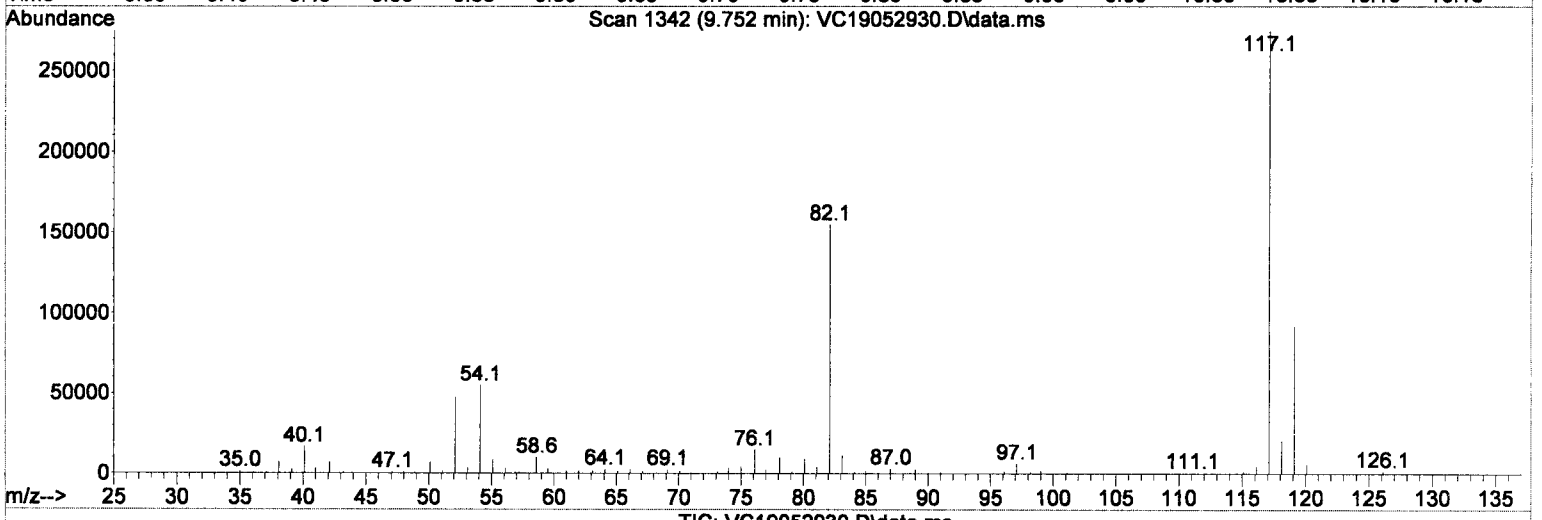
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052930.D
Acq On : 30 May 2019 3:34 am
Operator : TB
Sample : 9E29058-CALI
Misc : 1X 5mL 5000ppb GX DI+MeOH
ALS Vial : 30 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:47:36 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration





TIC: VC19052930.D\data.ms

(4) Chlorobenzene-d5 (NR) (S)

9.752min (+0.000) 0.00 ug/L

response 1634465

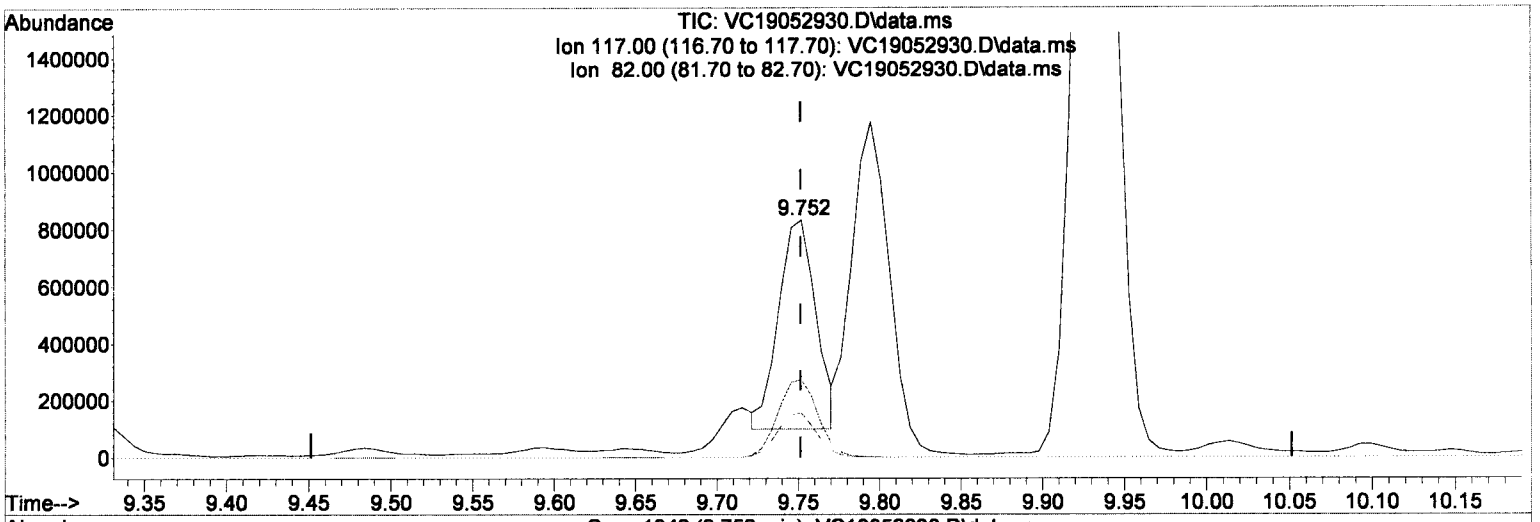
Signal	Exp%	Act%
TIC	100	100
117.00	32.40	28.75
82.00	18.10	16.01
0.00	0.00	0.00

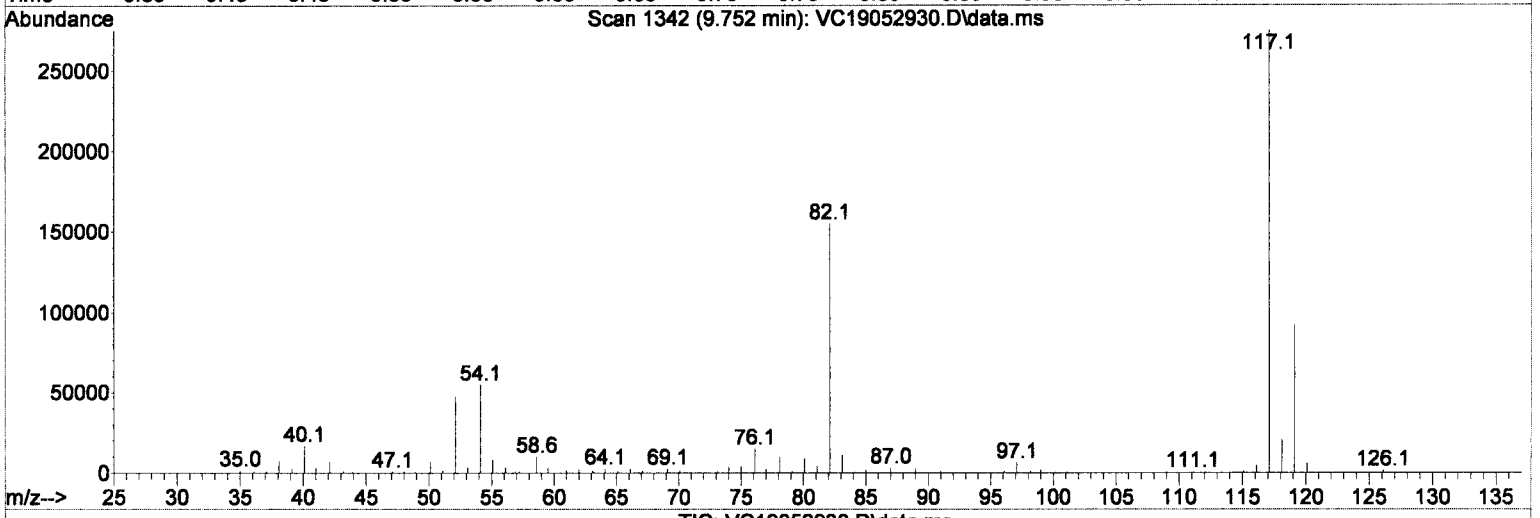
MT

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052930.D
Acq On : 30 May 2019 3:34 am
Operator : TB
Sample : 9E29058-CALI
Misc : 1X 5mL 5000ppb GX DI+MeOH
ALS Vial : 30 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:47:36 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration





TIC: VC19052930.D\data.ms

(4) Chlorobenzene-d5 (NR) (S)

9.752min (+0.000) 0.00 ug/L (m)

5/30/19

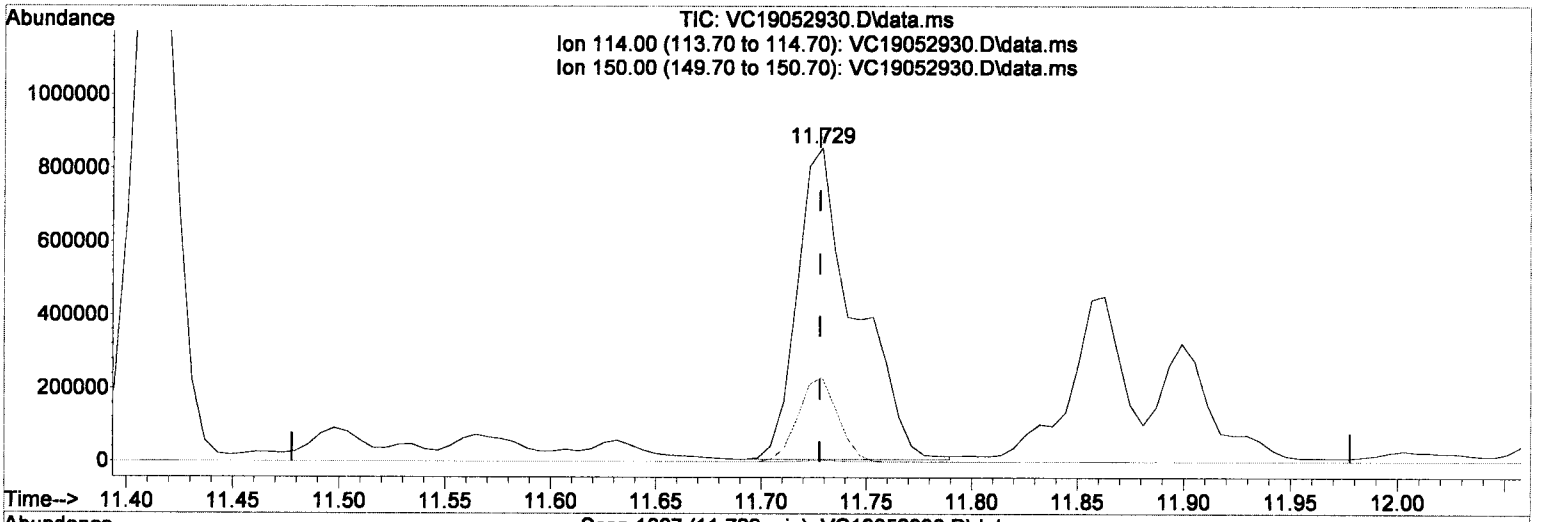
response 1171661

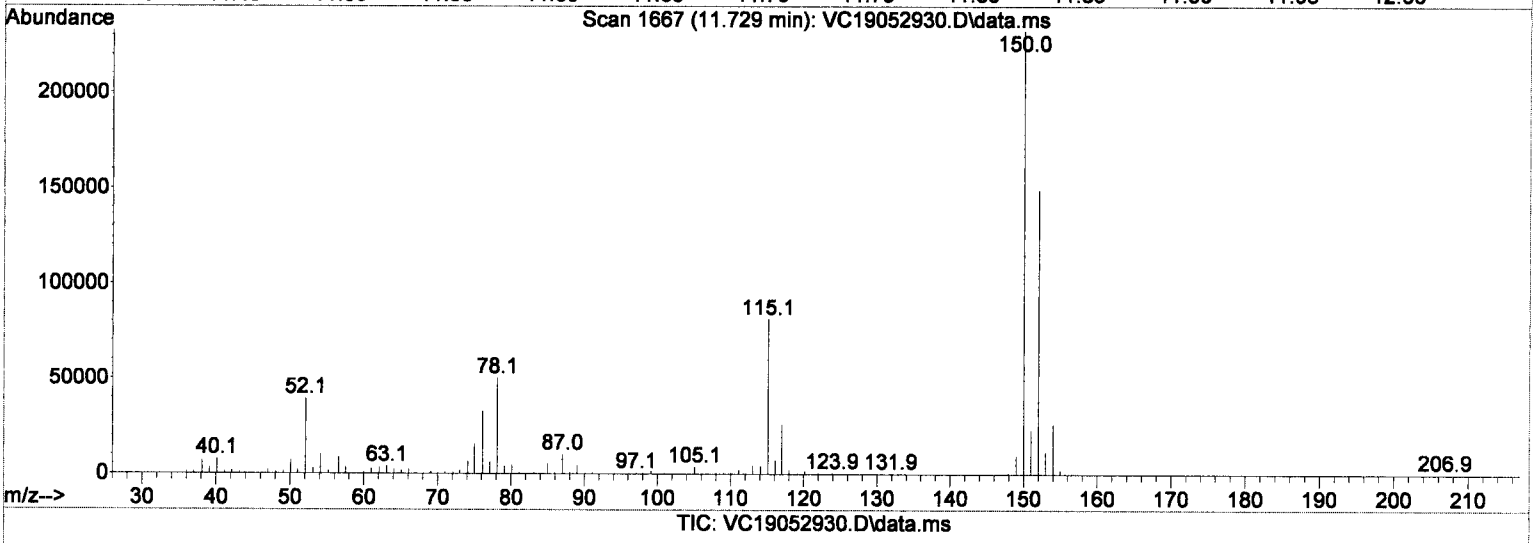
Signal	Exp%	Act%
TIC	100	100
117.00	32.40	40.11
82.00	18.10	22.34
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052930.D
Acq On : 30 May 2019 3:34 am
Operator : TB
Sample : 9E29058-CALI
Misc : 1X 5mL 5000ppb GX DI+MeOH
ALS Vial : 30 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:47:36 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration





TIC: VC19052930.D\data.ms

(12) 1,4-Dichlorobenzene-d4 (NR) (S)

11.729min (+0.001) 0.00 ug/L

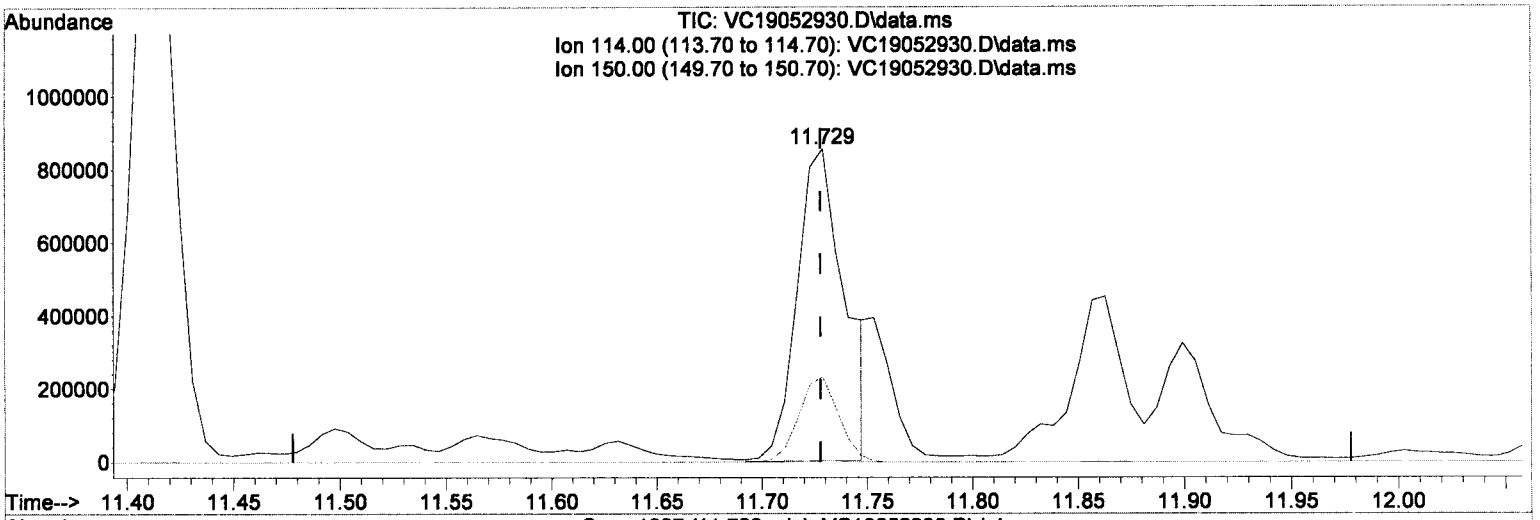
response 1634619

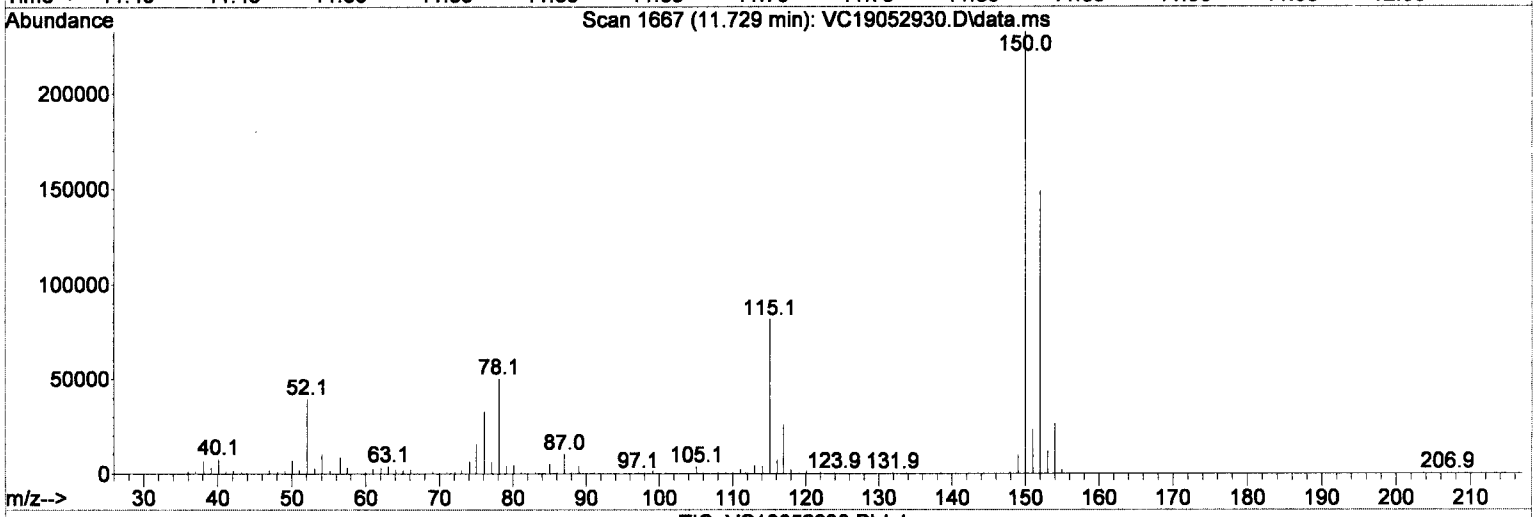
Signal	Exp%	Act%
TIC	100	100
114.00	0.20	0.00
150.00	24.00	18.78
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052930.D
Acq On : 30 May 2019 3:34 am
Operator : TB
Sample : 9E29058-CALI
Misc : 1X 5mL 5000ppb GX DI+MeOH
ALS Vial : 30 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:47:36 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration





TIC: VC19052930.D\data.ms

(12) 1,4-Dichlorobenzene-d4 (NR) (S)

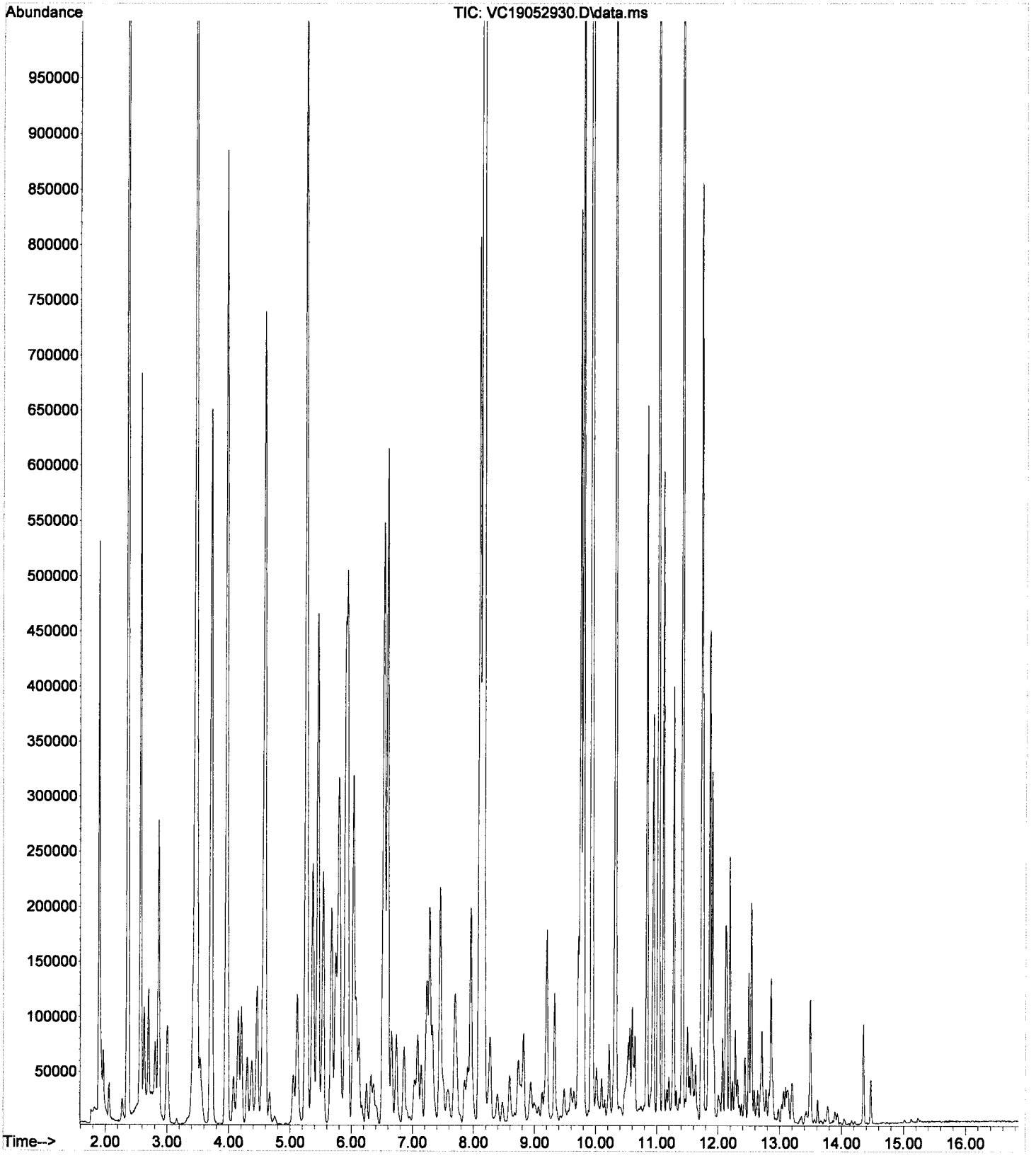
11.729min (+0.001) 0.00 ug/L m

response 1344258

Signal	Exp%	Act%
TIC	100	100
114.00	0.20	0.00
150.00	24.00	22.84
0.00	0.00	0.00

5/30/19

File :C:\msdchem\1\DATA\2019-05\9E29058\VC19052930.D
Operator : TB
Acquired : 30 May 2019 3:34 am using AcqMethod VC1612RUN.M
Instrument : VOA-GCMS3
Sample Name: 9E29058-CALI
Misc Info : 1X 5mL 5000ppb GX DI+MeOH
Vial Number: 30



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052931.D
Acq On : 30 May 2019 4:02 am
Operator : TB
Sample : 9E29058-CALJ
Misc : 1X 5mL 10000ppb GX DI+MeOH
ALS Vial : 31 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

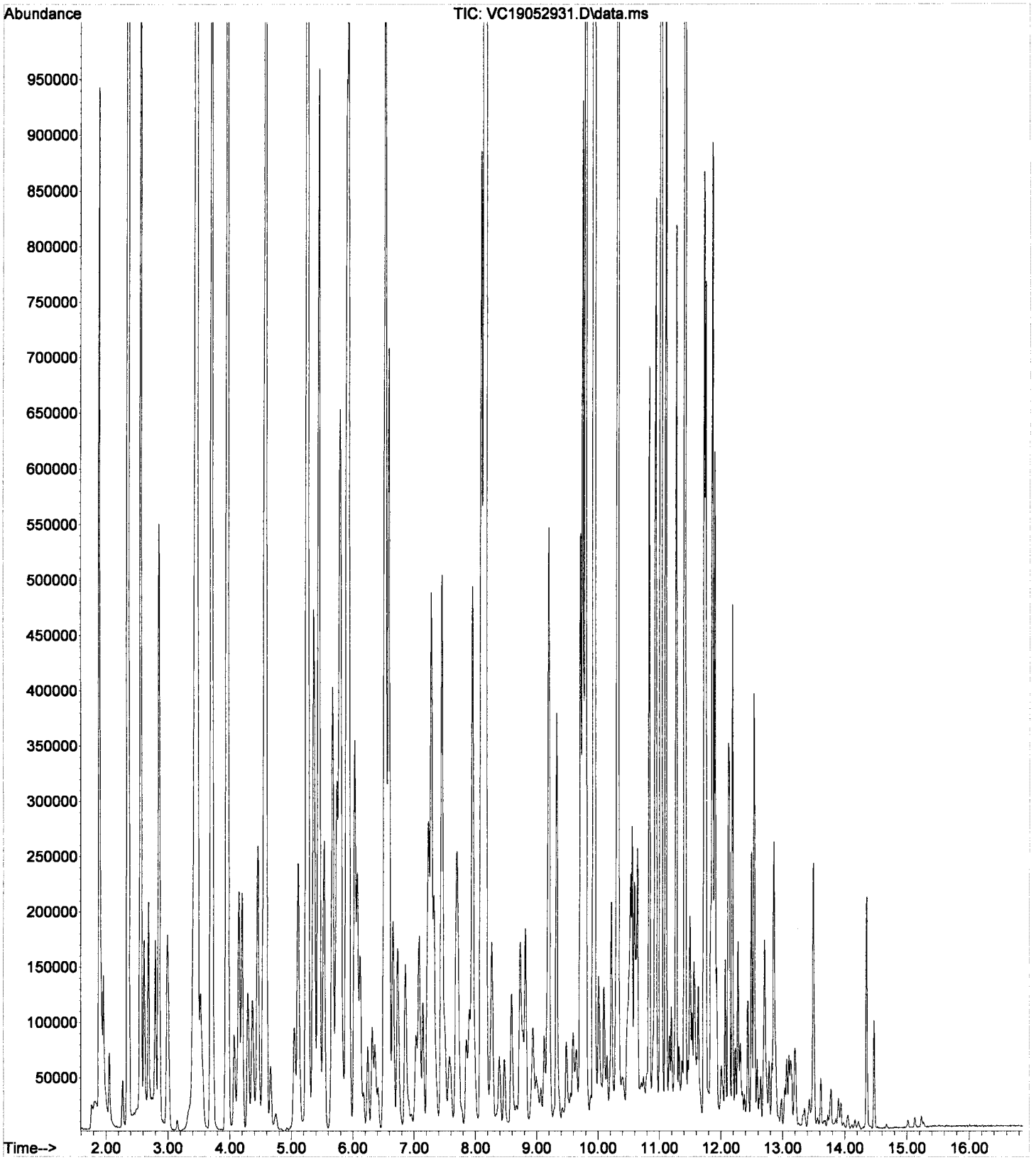
5/30/19

Quant Time: May 30 15:47:38 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.029	168	280943	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.583	TIC	1535644	60.56	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.835	TIC	973205	50.29	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.746	TIC	1469336	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.091	TIC	1948912	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.723	TIC	1323065	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	121522195m	8585.25	ug/L	
6) TPHg (C5-C9)	9.906	TIC	100273382m	8219.75	ug/L	
7) TPHg (C6-C10)	9.906	TIC	81063895m	8628.07	ug/L	
8) NWTPH-Gx	9.906	TIC	82431215m	10355.49	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

File :C:\msdchem\1\DATA\2019-05\9E29058\VC19052931.D
Operator : TB
Acquired : 30 May 2019 4:02 am using AcqMethod VC1612RUN.M
Instrument : VOA-GCMS3
Sample Name: 9E29058-CALJ
Misc Info : 1X 5mL 10000ppb GX DI+MeOH
Vial Number: 31



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052932.D
Acq On : 30 May 2019 4:29 am
Operator : TB
Sample : 9E29058-IBL8
Misc : 1X 5mL DI+MeOH
ALS Vial : 32 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:58 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

NR

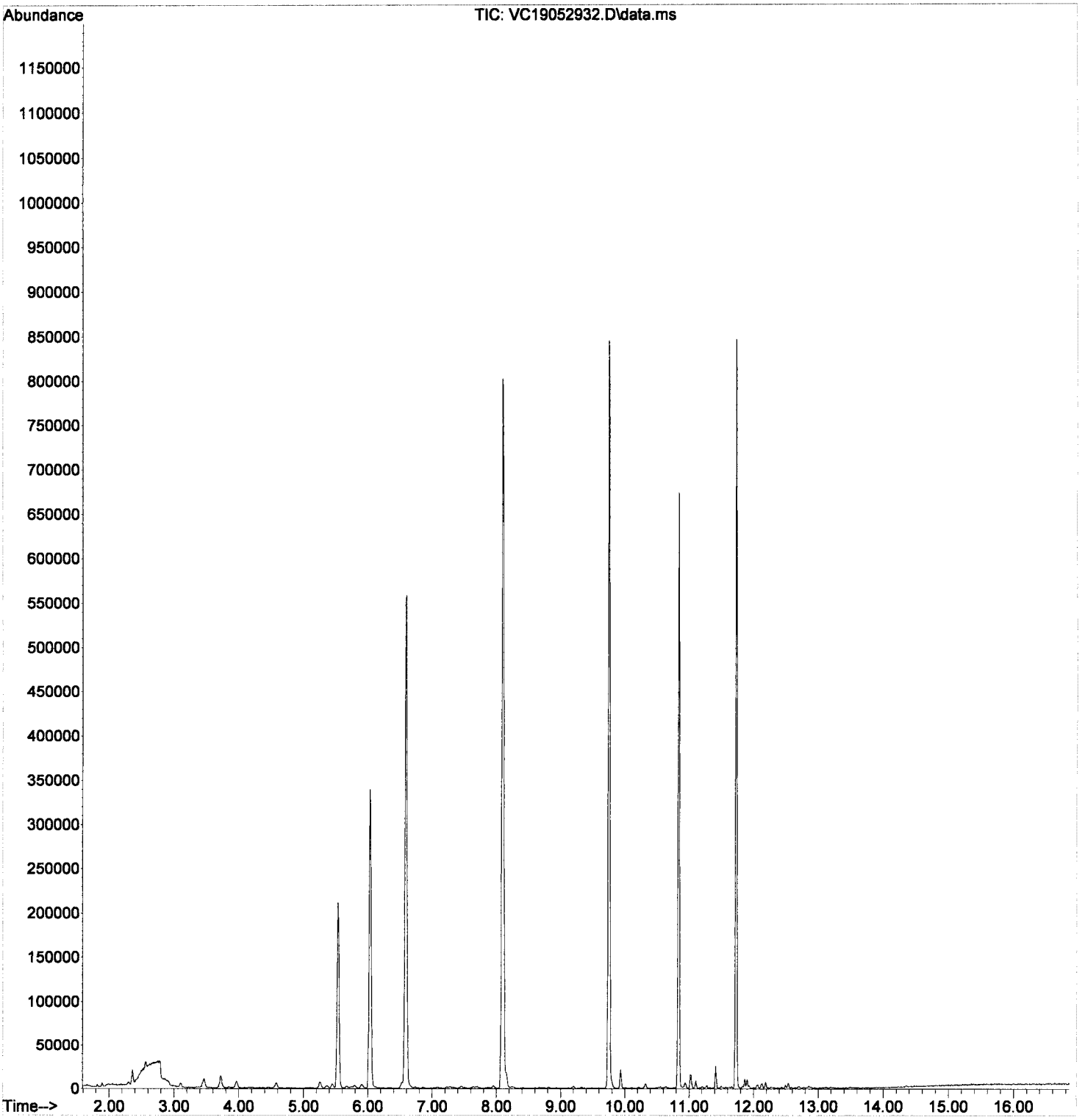
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.029	168	279728	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.589	TIC	1222030	46.88	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.835	TIC	961897	49.39	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.746	TIC	1419826	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.091	TIC	1738033	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.723	TIC	1151134	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	1068894m	39.14	ug/L	
6) TPHg (C5-C9)	9.906	TIC	896529m	33.55	ug/L	
7) TPHg (C6-C10)	9.906	TIC	652995m	32.78	ug/L	
8) NWTPH-Gx	9.906	TIC	279571m	46.94	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052932.D
Acq On : 30 May 2019 4:29 am
Operator : TB
Sample : 9E29058-IBL8
Misc : 1X 5mL DI+MeOH
ALS Vial : 32 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:58 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052933.D
Acq On : 30 May 2019 4:57 am
Operator : TB
Sample : 9E29058-IBL9
Misc : 1X 5mL DI+MeOH
ALS Vial : 33 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 16:00:00 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

NR

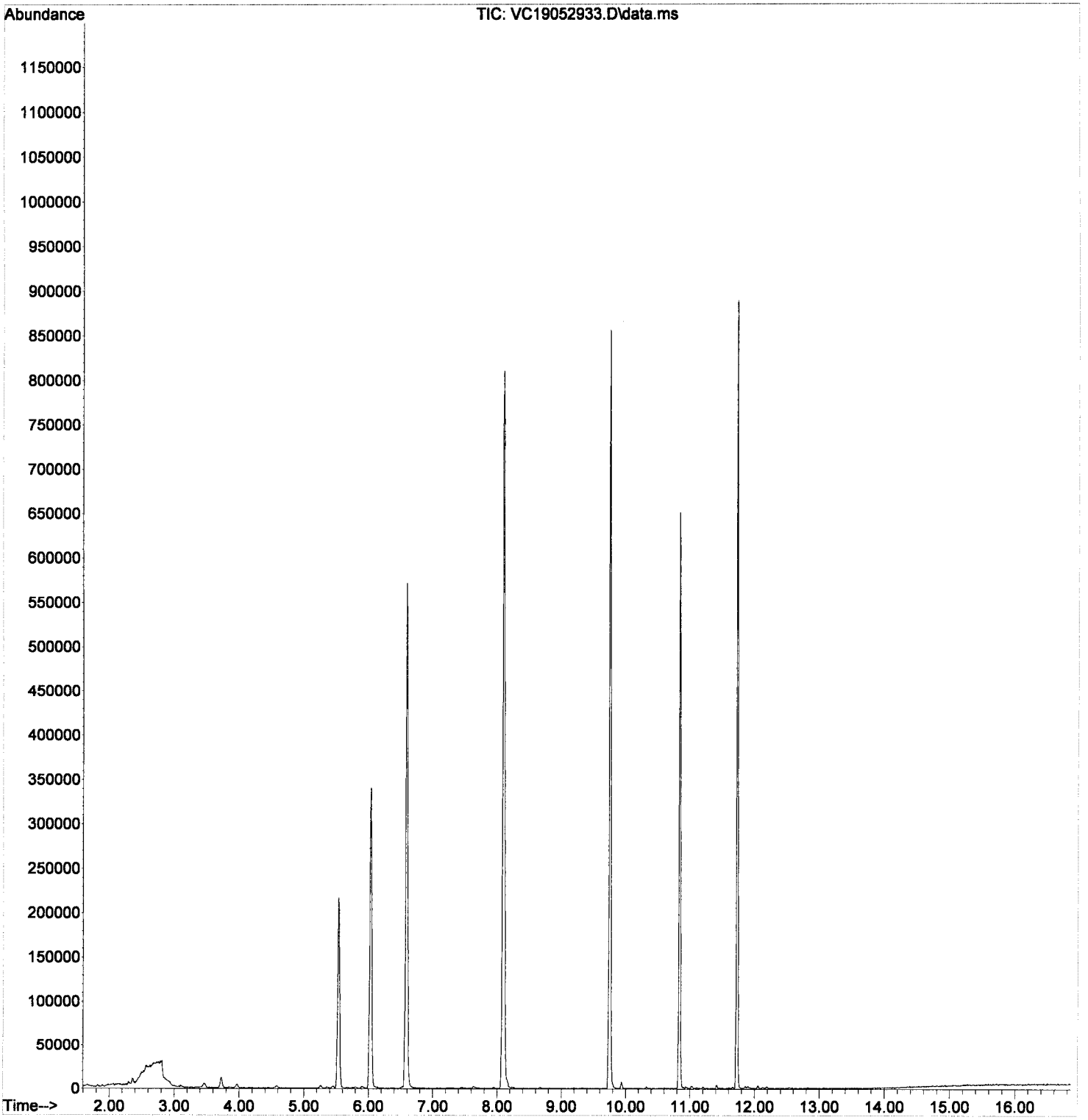
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.031	168	283591	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.585	TIC	1202716	45.51	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.831	TIC	964432	48.85	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.748	TIC	1423294	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.094	TIC	1741215	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.725	TIC	1168289	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	663119m	5.91	ug/L	
6) TPHg (C5-C9)	9.906	TIC	644102m	8.90	ug/L	
7) TPHg (C6-C10)	9.906	TIC	521725m	16.22	ug/L	
8) NWTPH-Gx	9.906	TIC	43772m	17.87	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052933.D
Acq On : 30 May 2019 4:57 am
Operator : TB
Sample : 9E29058-IBL9
Misc : 1X 5mL DI+MeOH
ALS Vial : 33 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 16:00:00 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052934.D
Acq On : 30 May 2019 5:25 am
Operator : TB
Sample : 9E29058-ICV2
Misc : 1X 5mL 500ppb GX DI+MeOH
ALS Vial : 34 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 16:00:02 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

5/30/19

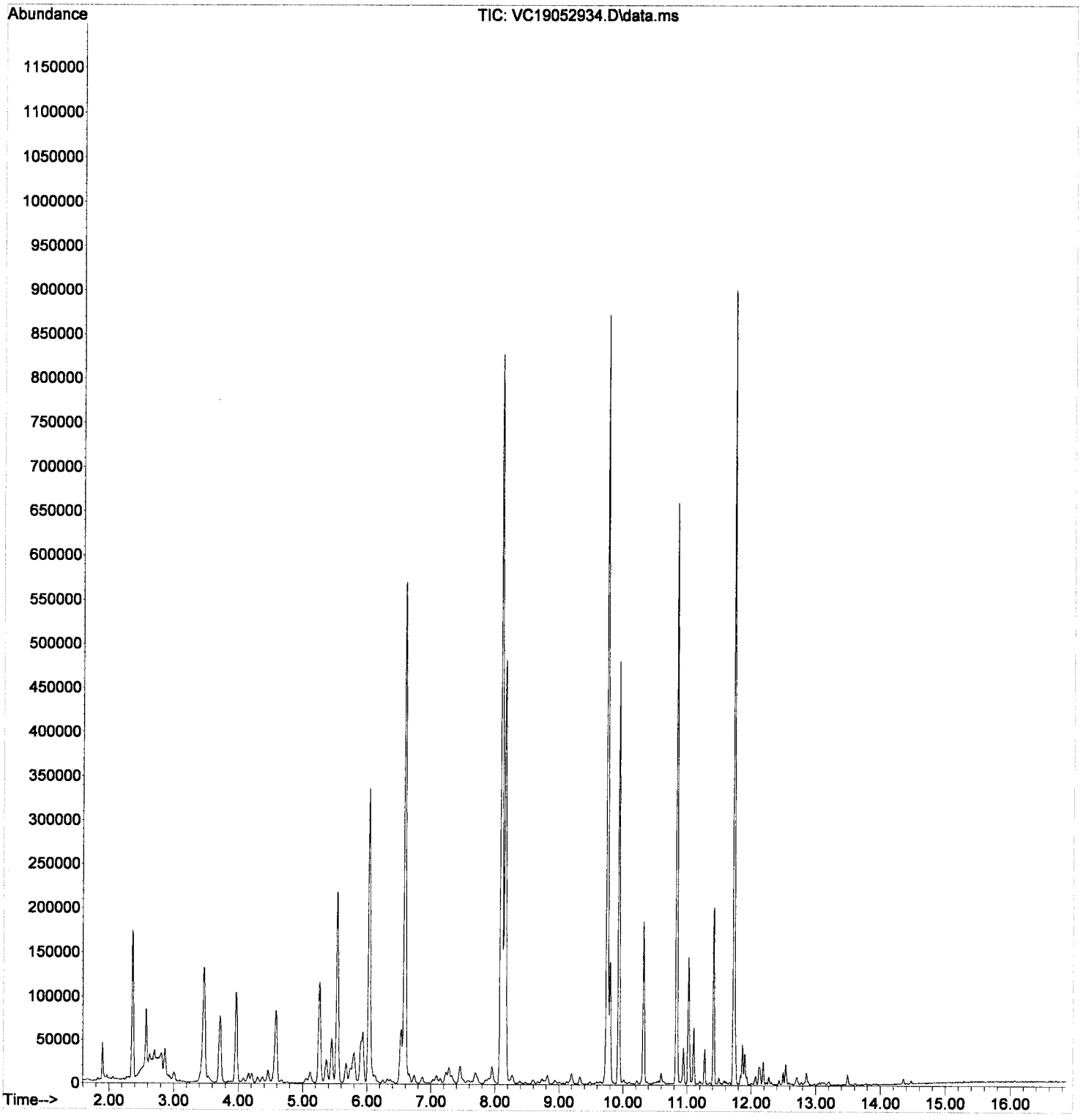
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.032	168	282127	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.585	TIC	1225298	46.60	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.831	TIC	969339	49.35	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.749	TIC	1455006	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.094	TIC	1726664	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.726	TIC	1226030	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	7243471m	529.63	ug/L	
6) TPHg (C5-C9)	9.906	TIC	6152737m	526.03	ug/L	
7) TPHg (C6-C10)	9.906	TIC	4887342m	535.49	ug/L	
8) NWTPH-Gx	9.906	TIC	4278524m	533.68	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052934.D
Acq On : 30 May 2019 5:25 am
Operator : TB
Sample : 9E29058-ICV2
Misc : 1X 5mL 500ppb GX DI+MeOH
ALS Vial : 34 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 16:00:02 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052935.D
Acq On : 30 May 2019 5:52 am
Operator : TB
Sample : 9E29058-IBLA
Misc : 1X 5mL DI+MeOH
ALS Vial : 35 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 16:00:04 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

NR

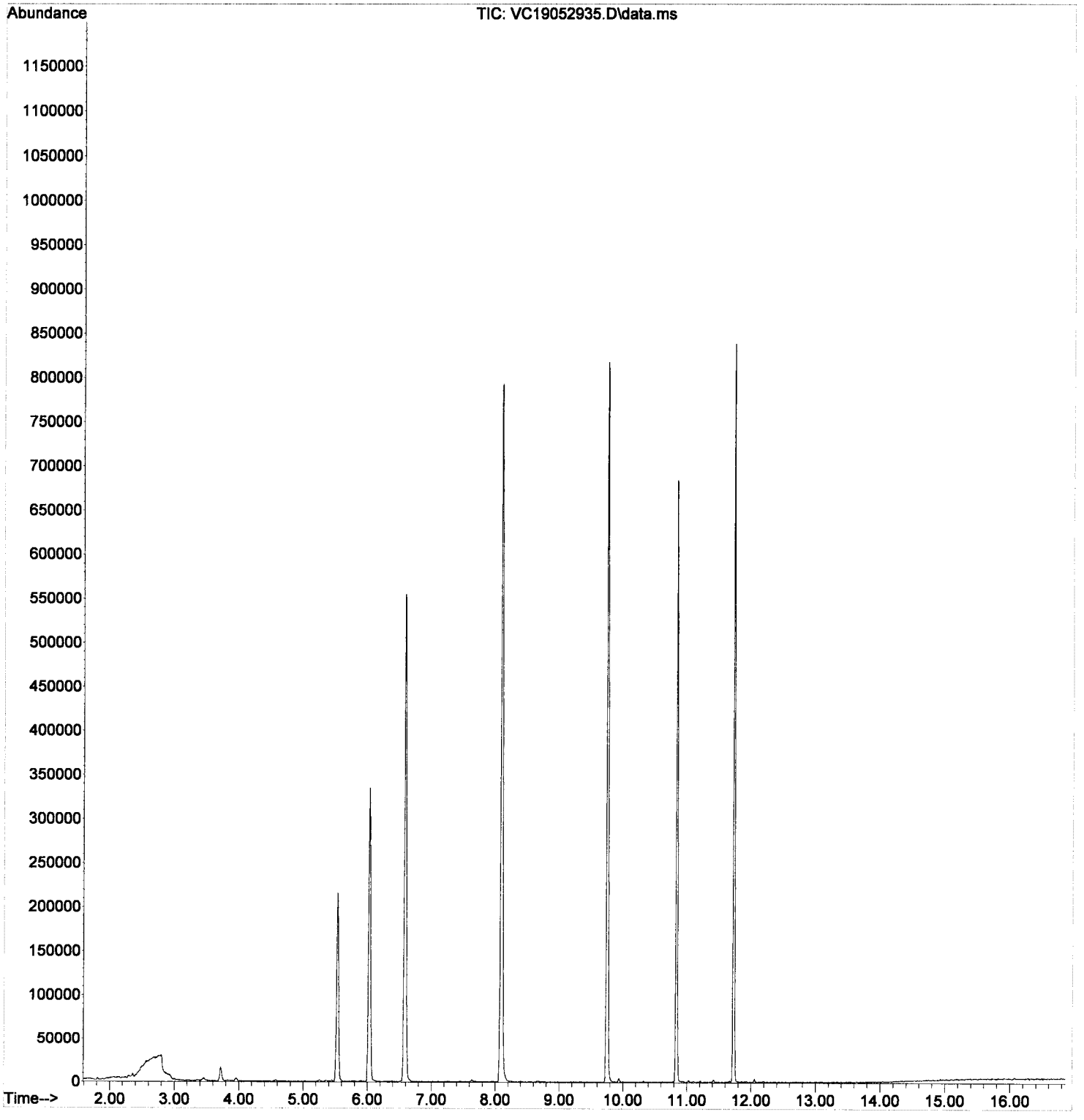
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.028	168	276844	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.582	TIC	1199322	46.48	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.834	TIC	959696	49.79	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.745	TIC	1402860	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.096	TIC	1704421	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.728	TIC	1157049	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	652148m	6.30	ug/L	
6) TPHg (C5-C9)	9.906	TIC	651994m	11.11	ug/L	
7) TPHg (C6-C10)	9.906	TIC	497146m	14.74	ug/L	
8) NWTPH-Gx	9.906	TIC	16386m	14.59	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052935.D
Acq On : 30 May 2019 5:52 am
Operator : TB
Sample : 9E29058-IBLA
Misc : 1X 5mL DI+MeOH
ALS Vial : 35 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 16:00:04 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration



APEX LABORATORIES, LLC
6700 SW Sandburg St. Tigard OR 97223 phone 503-718-2323

Volatile Organic Compounds by EPA 8260C

Benchsheet & Analysis Sequence Data

Batch 9051463

Sequence 9E31027 (A9E0902-01)

PREPARATION BENCH SHEET

BATCH #: 9051463 (Soil)

Apex Laboratories

Prep Method: EPA 5035A

Lab Number	Cont.	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surr.	ClientID / Sample	Extraction Comments	pH*
9051463-BLK1		QC	05/31/19 13:00	7.5	5							
9051463-BS1		QC	05/31/19 13:00	5	5	A19E350		62.5				
9051463-BS2		QC	05/31/19 13:00	5	5	A19E314		250				
9051463-BS3		QC	05/31/19 13:00	5	5	A19E311		250				
A9D0906-17	A	8260D Full List - Developmei	04/26/19 15:44	5	5					Medium Level Volatiles	FP, PT	
A9D0906-17	A	8260B Full List + Misc	04/26/19 15:44	5	5					Medium Level Volatiles	FP, PT	
A9D0906-17	A	8260C Oxygenates	04/26/19 15:44	5	5					Medium Level Volatiles	TAME/DIPE Only	
A9D0906-17	A	8260C Full List	04/26/19 15:44	5	5					Medium Level Volatiles	FP, PT	
A9E0895-06	B	NWTPH-Gx	(Date Sampled)	5.72 ✓	5					P28-13' (052319)	FP, Added for BatchQC in: 905146	
A9E0895-06	B	8260C Halogenated VOCs	(Date Sampled)	5.72	5					P28-13' (052319)	FP	
A9E0895-06	B	8260D Full List - Developmei	(Date Sampled)	5.72	5					P28-13' (052319)	FP, Added for BatchQC in: 905146	
A9E0895-06	B	8260C Oxygenates	(Date Sampled)	5.72	5					P28-13' (052319)	FP, Added for BatchQC in: 905146	
A9E0895-06	B	8260C Full List	(Date Sampled)	5.72	5					P28-13' (052319)	FP, Added for BatchQC in: 905146	
A9E0895-06	B	8260B Full List + Misc	(Date Sampled)	5.72	5					P28-13' (052319)	FP, Added for BatchQC in: 905146	
9051463-DUP1		QC	05/31/19 15:27	6.17 ✓	5		A9E0895-06					
A9E0895-07	B	8260C Halogenated VOCs	(Date Sampled)	5.32 ✓	5					P23-1' (052319)	FP	
A9E0895-08	B	8260C Halogenated VOCs	(Date Sampled)	3.45 ✓	5					P23-6' (052319)	FP, Use Cont B.	
A9E0895-09	B	8260C Halogenated VOCs	(Date Sampled)	3.92 ✓	5					P23-8' (052319)	FP	
A9E0895-10	B	8260C Halogenated VOCs	(Date Sampled)	5.87 ✓	5					P23-13' (052319)	FP	
A9E0895-11	B	8260C Halogenated VOCs	(Date Sampled)	5.91 ✓	5					P23-12' (052319)	FP	
A9E0895-12	B	8260C Halogenated VOCs	(Date Sampled)	4.31 ✓	5					P24-1' (052319)	FP	
A9E0895-13	B	8260B Full List + Misc	(Date Sampled)	4.85 ✓	5					P24-3' (052319)	FP, Added for BatchQC in: 905146	

Prepared By: [signature] 6/3/19 Date

Reviewed By: [signature] 6/3/19 Date

PREPARATION BENCH SHEET

BATCH #: 9051463 (Soil)

Apex Laboratories

Prep Method: EPA 5035A

Lab Number	Cont.	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surr.	ClientID / Sample	Extraction Comments	pH*
A9E0895-13	B	8260C Halogenated VOCs	(Date Sampled)	4.85	5					P24-3' (052319)	FP	
A9E0895-13	B	8260D Full List - Developmei	(Date Sampled)	4.85	5					P24-3' (052319)	FP, Added for BatchQC in: 905146	
A9E0895-13	B	NWTPH-Gx	(Date Sampled)	4.85	5					P24-3' (052319)	FP, Added for BatchQC in: 905146	
A9E0895-13	B	8260C Full List	(Date Sampled)	4.85	5					P24-3' (052319)	FP, Added for BatchQC in: 905146	
A9E0895-13	B	8260C Oxygenates	(Date Sampled)	4.85	5					P24-3' (052319)	FP, Added for BatchQC in: 905146	
9051463-MS1		QC	05/31/19 15:27	4.85	5	A19E314	A9E0895-13	340			DW=62.9% @50X	
A9E0902-01	D	NWTPH-Gx	05/29/19 17:00	5.73	5					2708-190524-014	MOD	
A9E0902-01	D	8260C Full List	05/29/19 17:00	5.73	5					2708-190524-014	MOD	
A9E0929-01	B	8260C Full List	(Date Sampled)	14.5	15					GSWIDW-339-13-052919	FP	
A9E0929-02	B	8260C Full List	(Date Sampled)	14.39	15					GSWIDW-341-13-052919	FP	
A9E0929-03	B	8260C Full List	(Date Sampled)	14.59	15					GSWIDW-396-13-052919	FP	
A9E0929-03	B	8260C Halogenated VOCs	(Date Sampled)	14.59	15					GSWIDW-396-13-052919	FP, Added for BatchQC in: 905146	
A9E0929-03	B	NWTPH-Gx	(Date Sampled)	14.59	15					GSWIDW-396-13-052919	FP, Added for BatchQC in: 905146	
A9E0929-03	B	8260D Full List - Developmei	(Date Sampled)	14.59	15					GSWIDW-396-13-052919	FP, Added for BatchQC in: 905146	
A9E0929-03	B	8260C Oxygenates	(Date Sampled)	14.59	15					GSWIDW-396-13-052919	FP, Added for BatchQC in: 905146	
A9E0929-03	B	8260B Full List + Misc	(Date Sampled)	14.59	15					GSWIDW-396-13-052919	FP, Added for BatchQC in: 905146	
9051463-MS2		QC	05/31/19 15:27	14.59	15	A19E350	A9E0929-03	204.25			DW=90.8% @50X	

*pH <2 verified

Standards/Reagents

Reagent(s)

Std ID	Exp. Date	Description
A16L123	11/30/23	Sample Prep Bal 3
A19C375	09/25/19	Methanol - Fisher (P/T) #185562

Analyte Spike(s)

Std ID	Exp. Date	Description
A19E311	11/09/19	Prim NWTPH-Gx Spike (500 ug/mL)
A19E314	11/09/19	8260B Cal. Std. B VOC Spike Mix (20-40ug/ml
A19E350	11/26/19	Oxygenates Cal. Std. B Spike Mix (20-5000ug/n

Surrogate(s)

Std ID	Exp. Date	Description

Prepared By: Date

Reviewed By: Date

PREPARATION BENCH SHEET

BATCH #: 9051463 (Soil)

Apex Laboratories

Prep Method: EPA 5035A

Lab Number	Cont.	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surr.	ClientID / Sample	Extraction Comments	pH*
SOIL MS3												

Prepared By: Date

Reviewed By: Date

Volatile Soils Matrix Spike Volume Calculation (Validated 5/3/2013)

Enter the Spike Amount value into the Bench Sheet to ensure correct MS/MSD recoveries.

Batch: 9051463

Matrix Spike

Sample Weight	Final Volume	Dilution	Dry Weight
g	mL		%
4.850	5	50	62.9
			0.629

Final Spike Level	**Spike Amount**
ug/kg	**ul**
2228.82	**340**

Assumptions:
Spiking Solution = 20ug/mL
Spike Amount into 50mL = 50ul
Dilution = 1mL of MeOH to 50mL of water
Initial Spike Concentration = 20ug/L

A9E0895-13

6/3/19

VOC

Volatile Soils Matrix Spike Volume Calculation (Validated 5/3/2013)

Enter the Spike Amount value into the Bench Sheet to ensure correct MS/MSD recoveries.

Batch: 9051463

Matrix Spike

Sample Weight	Final Volume	Dilution	Dry Weight
g	mL		%
14.590	15	50	90.8
			0.908

Final Spike Level	**Spike Amount**
ug/kg	**ul**
1233.59	**817**

$\times \frac{12.5}{50} = 204.25\ \mu L$

Assumptions:
Spiking Solution = 20ug/mL ~~8~~ 6/3/19
Spike Amount into 50mL = ~~50ul~~ 12.5 µL
Dilution = 1mL of MeOH to 50mL of water
Initial Spike Concentration = 20ug/L

A9E0929-03

OXY

Worksheet

5035 Field Prep Worksheet (Validated 7/11/16)

Sample ID	Container	Container Weight (g)	Tare Weight (g)	Net Sample Weight (g)	Formula Check
A9E0895-06	B	39.61	33.89	5.72	
A9E0895-06	C DUP	39.41	33.24	6.17	
A9E0895-07	B	39.07	33.75	5.32	
A9E0895-08	B	37.11	33.66	3.45	
A9E0895-09	B	37.18	33.26	3.92	
A9E0895-10	B	39.28	33.41	5.87	
A9E0895-11	B	38.97	33.06	5.91	
A9E0895-12	B	37.29	32.98	4.31	
A9E0895-13	B	38.11	33.26	4.85	
A9E0929-01	B	48.14	33.64	14.5	
A9E0929-02	B	47.9	33.51	14.39	
A9E0929-03	B	48.24	33.65	14.59	

6/3/19

A9E0902

5035 Container Prep Worksheet
~Soil Jar Extraction~

A9E0902-01	2708-190524-014	Sampled: 05/24/19 12:50

		Container Used	Sample Weight (g)	Volume MeOH (mL)	Prepared By:	Prepared date/time	Within 48 hours?	Notes:
D Solid	40 mL VOA - In House Prep - 5035 (MeOH)	A	5.73	5 10 15	AB	@ 5/29/19 1700	Y N	Mod. odor, rocky

8260C Full List Expires: 05/26/19 12:50 Due: 06/10/19 17:00

NWTPH-Gx Expires: 05/26/19 12:50 Due: 06/04/19 17:00

10,000

Methanol Reagent ID: A19C375~ Balance ID: A18J327~

A9E0895

5035 Container Prep Worksheet
~Field MeOH Preserved~

(Prepared = Sampled Date/Time)

A9E0895-06 — **P28-13' (052319)** — Sampled: **05/23/19 09:50**

(B) Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.61	Tare Weight (g): 33.89	Volume MeOH (mL): 5 10 15 Other	Notes:
(C) Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.41	Tare Weight (g): 33.24	Volume MeOH (mL): 5 10 15 Other	Notes:

Due: TAT:

Halo

A9E0895-07 — **P23-1' (052319)** — Sampled: **05/23/19 10:30**

(B) Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.07	Tare Weight (g): 33.75	Volume MeOH (mL): 5 10 15 Other	Notes:
C Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.22	Tare Weight (g): 33.63	Volume MeOH (mL): 5 10 15 Other	Notes:

Due: TAT:

A9E0895-08 — **P23-6' (052319)** — Sampled: **05/23/19 10:35**

(B) Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 37.11	Tare Weight (g): 33.66	Volume MeOH (mL): 5 10 15 Other	Notes: D
C Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g):	Tare Weight (g):	Volume MeOH (mL): 5 10 15 Other	Notes: ~~DO Not Use~~

Due: TAT:

A9E0895-09 — **P23-8' (052319)** — Sampled: **05/23/19 10:20**

(B) Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 37.18	Tare Weight (g): 33.26	Volume MeOH (mL): 5 10 15 Other	Notes:
C Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 36.20	Tare Weight (g): 33.36	Volume MeOH (mL): 5 10 15 Other	Notes:

Due: TAT:

A9E0895-10 — **P23-13' (052319)** — Sampled: **05/23/19 10:35**

(B) Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.28	Tare Weight (g): 33.41	Volume MeOH (mL): 5 10 15 Other	Notes:
C Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 38.84	Tare Weight (g): 32.97	Volume MeOH (mL): 5 10 15 Other	Notes:

Due: TAT:

Weighed by: MS @ 5/29/19 16:08

Methanol Reagent ID: A19C375 Balance ID: A18J327

Print Date: 5/29/2019 2:52:16PM

A9E0895

5035 Container Prep Worksheet
~Field MeOH Preserved~

(Prepared = Sampled Date/Time)

A9E0895-11 — **P23-12' (052319)** — Sampled: **05/23/19 10:35**

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 38.97	Tare Weight (g): 33.86	Volume MeOH (mL): 5 10 15 Other	Notes:
C Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.78	Tare Weight (g): 33.45	Volume MeOH (mL): 5 10 15 Other	Notes:

Halo

Due: TAT:

A9E0895-12 — **P24-1' (052319)** — Sampled: **05/23/19 10:55**

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 37.29	Tare Weight (g): 32.98	Volume MeOH (mL): 5 10 15 Other	Notes:
C Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.49	Tare Weight (g): 33.50	Volume MeOH (mL): 5 10 15 Other	Notes:

Due: TAT:

A9E0895-13 — **P24-3' (052319)** — Sampled: **05/23/19 11:00**

MS VOC

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 38.11	Tare Weight (g): 33.26	Volume MeOH (mL): 5 10 15 Other	Notes:
C Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 38.25	Tare Weight (g): 33.44	Volume MeOH (mL): 5 10 15 Other	Notes:

Due: TAT:

A9E0895-17 — **P29-1' (052319)** — Sampled: **05/23/19 13:15**

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 42.98	Tare Weight (g): 33.39	Volume MeOH (mL): 5 10 15 Other	Notes:
C Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 40.35	Tare Weight (g): 33.58	Volume MeOH (mL): 5 10 15 Other	Notes:

Due: TAT:

A9E0895-18 — **P29-6' (052319)** — Sampled: **05/23/19 13:20**

B Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 38.67	Tare Weight (g): 33.14	Volume MeOH (mL): 5 10 15 Other	Notes:
C Soil	40 mL VOA - 5035 (MeOH)	Container Weight (g): 39.49	Tare Weight (g): 33.30	Volume MeOH (mL): 5 10 15 Other	Notes:

Due: TAT:

Weighed by: MM @ 5/29/19 16:08

Methanol Reagent ID: A19C375~ Balance ID: A18J327~

A9E0929

5035 Container Prep Worksheet
~Field MeOH Preserved~

(Prepared = Sampled Date/Time)

A9E0929-01 — **GSWIDW-339-13-052919** — Sampled: **05/29/19 11:30**

			Container Weight (g)	Tare Weight (g)	Volume MeOH (mL)	Notes:
B	Soil	40 mL VOA - 5035 (MeOH)	48.14	33.64	5 10 15 Other	Over weight
C	Soil	40 mL VOA - 5035 (MeOH)	46.13	33.42	5 10 15 Other	

8260 — Due: — TAT: — added 10mL TB 5/31/19

A9E0929-02 — **GSWIDW-341-13-052919** — Sampled: **05/29/19 11:45**

			Container Weight (g)	Tare Weight (g)	Volume MeOH (mL)	Notes:
B	Soil	40 mL VOA - 5035 (MeOH)	47.90	33.51	5 10 15 Other	
C	Soil	40 mL VOA - 5035 (MeOH)	46.11	33.74	5 10 15 Other	

Due: — TAT: — added 10mL TB 5/31/19

A9E0929-03 — **GSWIDW-396-13-052919** — Sampled: **05/29/19 12:00**

			Container Weight (g)	Tare Weight (g)	Volume MeOH (mL)	Notes:
B	Soil	40 mL VOA - 5035 (MeOH)	48.24	33.65	5 10 15 Other	
C	Soil	40 mL VOA - 5035 (MeOH)	47.10	33.41	5 10 15 Other	added 10mL TB 5/31/19

Due: — TAT:

KLS 0X4

DW=90.8%

Weighed by: KLS @ 5/30/19 14:29

Methanol Reagent ID: A19C375 — Balance ID: A18J327

[redacted]

SAMPLE DESCRIPTION

- Provided as a 5 g pre-spiked soil matrix and 5 mL methanol flame sealed in a 10 mL amber ampoule.
- The standard should be stored at 4±2°C.

GENERAL INFORMATION

- This standard is pre-dried so percent moisture is 0%.
- Store any remaining standard at 4±2°C.
- The diluted standard will contain all or a subset of the analytes in the required concentration range.
- It is recommended to save any remaining standard until final reports have been sent.

ADDITIONAL INFORMATION

- Use a sample weight of 5 grams when reporting
- Transfer the remainder of methanol to an appropriate storage vial.
- Due to stability issues, the standard must be analyzed **immediately** after dilution.

INSTRUCTIONS

- The standard should be brought to room temperature when used.
- Shake the sample for a couple of minutes prior to opening.
- Carefully open the ampule by snapping off the top at the narrow part of the neck.
- Remove an aliquot, using a gas tight syringe, from the vial and inject into your purge and trap vessel below the surface of the water.
- Analyze the methanol extract following your normal procedure.
- It is recommended that the standard be analyzed immediately.
- Report result in µg/kg.

Please take all necessary safety precautions when handling this product. Phenova products are intended for use by laboratory professionals only and may be hazardous. Buyer/user shall ensure sufficient knowledge, training, facilities and skills necessary to safely handle and store products provided. Material Safety Data Sheets (MSDS) for all Phenova products are available upon request.

Soil / Hazardous Waste PT Concentration Ranges and PTRLs

PTRL NELAC Proficiency Testing Reporting Limits (PTRLs) are provided as guidance to laboratories analyzing NELAC PT samples. At a minimum, the laboratory should use a method that is sensitive enough to generate quantitative results at the PTRLs shown. (REF: NELAC PT FOT Tables)

NA Not Applicable (NA) has been applied to analytes where a PTRL is not applicable and to state specific analytes that have not had a PTRL determined by the applicable accrediting agency.

NELAC Code	Analyte	Units	Concentration Range	PTRL	
4315	Acetone	µg/kg	4000 - 20000	929	16,900
4375	Benzene	µg/kg	1000 - 10000	750	0
4395	Bromodichloromethane	µg/kg	1000 - 10000	650	0
4400	Bromoform	µg/kg	1000 - 10000	600	4000
4410	2-Butanone (MEK)	µg/kg	4000 - 20000	808	9600
4455	Carbon tetrachloride	µg/kg	1000 - 10000	480	0
4475	Chlorobenzene	µg/kg	1000 - 10000	750	7140
4575	Chlorodibromomethane	µg/kg	1000 - 10000	700	6180
4505	Chloroform	µg/kg	1000 - 10000	700	5570
4570	1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	2000 - 10000	1200	0
4585	1,2-Dibromoethane(EDB)	µg/kg	2000 - 10000	1200	2720
4595	Dibromomethane	µg/kg	2000 - 10000	1200	3940
4610	1,2-Dichlorobenzene	µg/kg	1000 - 10000	750	4210
4615	1,3-Dichlorobenzene	µg/kg	1000 - 10000	606	5710
4620	1,4-Dichlorobenzene	µg/kg	1000 - 10000	723	5800
4630	1,1-Dichloroethane	µg/kg	1000 - 10000	650	9820
4635	1,2-Dichloroethane	µg/kg	1500 - 10000	930	5560
4640	1,1-Dichloroethene	µg/kg	2000 - 10000	1000	0
4645	cis-1,2-Dichloroethene	µg/kg	2000 - 10000	1200	5010
4700	trans-1,2-Dichloroethene	µg/kg	2000 - 10000	1200	0
4655	1,2-Dichloropropane	µg/kg	2000 - 10000	1400	2220
4680	cis-1,3-Dichloropropene	µg/kg	2000 - 10000	1200	0
4685	trans-1,3-Dichloropropene	µg/kg	2000 - 10000	1200	4980
4765	Ethylbenzene	µg/kg	1000 - 10000	700	8340
4835	Hexachlorobutadiene	µg/kg	1500 - 15000	150	0
4840	Hexachloroethane	µg/kg	1500 - 15000	150	—
4860	2-Hexanone	µg/kg	4000 - 20000	2000	16,600
4975	Methylene chloride (Dichloromethane)	µg/kg	1000 - 10000	600	0
6385	2-Methylnaphthalene	µg/kg	1000 - 12000	100	—
5000	Methyl-tert-butyl ether (MTBE)	µg/kg	2000 - 10000	1400	7120
4995	4-Methyl-2-pentanone (MIBK)	µg/kg	4000 - 20000	2000	14,700
5005	Naphthalene	µg/kg	2000 - 10000	721	0
5015	Nitrobenzene	µg/kg	1500 - 15000	150	—

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NELAC Code	Analyte	Units	Concentration Range	PTRL
5100	Styrene	µg/kg	2000 - 10000	1200
5105	1,1,1,2-Tetrachloroethane	µg/kg	1000 - 10000	520
5110	1,1,2,2-Tetrachloroethane	µg/kg	1500 - 10000	455
5115	Tetrachloroethene	µg/kg	1000 - 10000	747
5140	Toluene	µg/kg	1000 - 10000	750
5155	1,2,4-Trichlorobenzene	µg/kg	2000 - 10000	1200
5160	1,1,1-Trichloroethane	µg/kg	1000 - 10000	600
5165	1,1,2-Trichloroethane	µg/kg	1000 - 10000	650
5170	Trichloroethene	µg/kg	1000 - 10000	643
5180	1,2,3-Trichloropropane	µg/kg	1500 - 10000	825
5260	Xylenes, total	µg/kg	2000 - 20000	700
4320	Acetonitrile	µg/kg	5000 - 15000	NA
4325	Acrolein	µg/kg	1000 - 15000	NA
4340	Acrylonitrile	µg/kg	1000 - 10000	NA
4385	Bromobenzene	µg/kg	2000 - 10000	NA
4390	Bromochloromethane	µg/kg	1000 - 10000	NA
4950	Bromomethane	µg/kg	2000 - 10000	NA
4435	n-Butylbenzene	µg/kg	1000 - 10000	NA
4440	sec-Butylbenzene	µg/kg	1000 - 10000	NA
4445	tert-Butylbenzene	µg/kg	1000 - 10000	NA
4450	Carbon disulfide	µg/kg	1000 - 15000	NA
4465	Chloroacetaldehyde	µg/kg	1000 - 15000	NA
4485	Chloroethane	µg/kg	2000 - 10000	NA
5765	bis(2-Chloroethyl)ether	µg/kg	1000 - 15000	NA
5760	bis(2-Chloroethoxy)methane	µg/kg	1000 - 15000	NA
4659	2,2'-Oxybis(1-Chloropropane)	µg/kg	1000 - 15000	NA
4500	2-Chloroethylvinylether	µg/kg	1000 - 15000	NA
4960	Chloromethane	µg/kg	2000 - 10000	NA
4535	2-Chlorotoluene	µg/kg	1000 - 10000	NA
4540	4-Chlorotoluene	µg/kg	1000 - 10000	NA
4625	Dichlorodifluoromethane	µg/kg	2000 - 10000	NA
4660	1,3-Dichloropropane	µg/kg	1000 - 10000	NA
4665	2,2-Dichloropropane	µg/kg	1000 - 10000	NA

Soil / Hazardous Waste PT Concentration Ranges and PTRLs

PTRL NELAC Proficiency Testing Reporting Limits (PTRLs) are provided as guidance to laboratories analyzing NELAC PT samples. At a minimum, the laboratory should use a method that is sensitive enough to generate quantitative results at the PTRLs shown. (REF: NELAC PT FOT Tables)

NA Not Applicable (NA) has been applied to analytes where a PTRL is not applicable and to state specific analytes that have not had a PTRL determined by the applicable accrediting agency.

NELAC Code	Analyte	Units	Concentration Range	PTRL
4670	1,1-Dichloropropene	µg/kg	1000 - 10000	NA
9375	DIPE	µg/kg	1000 - 10000	NA
5185	Freon 113	µg/kg	1000 - 15000	NA
4900	Isopropylbenzene	µg/kg	2000 - 10000	NA
4910	p-Isopropyltoluene	µg/kg	1000 - 10000	NA
5090	n-Propylbenzene	µg/kg	1000 - 15000	NA
4370	TAME	µg/kg	1000 - 10000	NA
5150	1,2,3-Trichlorobenzene	µg/kg	1000 - 10000	NA
5175	Trichlorofluoromethane	µg/kg	2000 - 10000	NA
5210	1,2,4-Trimethylbenzene	µg/kg	1000 - 10000	NA
5215	1,3,5-Trimethylbenzene	µg/kg	1000 - 10000	NA
5225	Vinyl acetate	µg/kg	1000 - 15000	NA
5235	Vinyl chloride	µg/kg	2000 - 10000	NA
5250	o-Xylene	µg/kg	1000 - 10000	NA
5240	m+p-Xylene	µg/kg	1000 - 10000	NA

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence: 9E31027 Instrument: VOA-GCMS3

Date: 05/31/19 12:56 Calibration: A9E3104

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9E31027-IBL1	Soil	QC	QC			A19C135	
2	9E31027-TUN1	Soil	QC	QC			A19C135	
3	9E31027-CCV1	Soil	QC	QC			A19C135	
4	9051463-BS1	Soil	QC	QC		9051463	A19C135	
5	9E31027-CCV2	Soil	QC	QC			A19C135	
6	9051463-BS2	Soil	QC	QC		9051463	A19C135	
7	9E31027-CCV3	Soil	QC	QC			A19C135	
8	9051463-BS3	Soil	QC	QC		9051463	A19C135	
9	9051463-BLK1	Soil	QC	QC		9051463	A19C135	
10	A9D0906-17	Soil	8260B Full List + Misc		06/03/19	9051463	A19C135	
"	"	Soil	8260C Full List	"	06/03/19	9051463	A19C135	
"	"	Soil	8260C Oxygenates	"	06/03/19	9051463	A19C135	
"	"	Soil	8260D Full List - Development Only	"	06/03/19	9051463	A19C135	
11	9E31027-IBL2	Soil	QC	QC			A19C135	
12	A9E0895-06	Soil	8260C Halogenated VOCs		06/04/19	9051463	A19C135	
"	"	Soil	8260B Full List + Misc	(QC Source)		9051463	A19C135	
"	"	Soil	8260C Full List	(QC Source)		9051463	A19C135	
"	"	Soil	8260C Oxygenates	(QC Source)		9051463	A19C135	
"	"	Soil	8260D Full List - Development Only	(QC Source)		9051463	A19C135	
"	"	Soil	NWTPH-Gx	(QC Source)		9051463	A19C135	
13	9051463-DUP1	Soil	QC	QC		9051463	A19C135	
14	A9E0895-07	Soil	8260C Halogenated VOCs		06/04/19	9051463	A19C135	
15	A9E0895-08	Soil	8260C Halogenated VOCs		06/04/19	9051463	A19C135	
16	A9E0895-09	Soil	8260C Halogenated VOCs		06/04/19	9051463	A19C135	
17	A9E0895-10	Soil	8260C Halogenated VOCs		06/04/19	9051463	A19C135	
18	A9E0895-11	Soil	8260C Halogenated VOCs		06/04/19	9051463	A19C135	
19	A9E0895-12	Soil	8260C Halogenated VOCs		06/04/19	9051463	A19C135	
20	A9E0895-13	Soil	8260C Halogenated VOCs		06/04/19	9051463	A19C135	
"	"	Soil	8260B Full List + Misc	(QC Source)		9051463	A19C135	
"	"	Soil	8260C Full List	(QC Source)		9051463	A19C135	
"	"	Soil	8260C Oxygenates	(QC Source)		9051463	A19C135	
"	"	Soil	8260D Full List - Development Only	(QC Source)		9051463	A19C135	
"	"	Soil	NWTPH-Gx	(QC Source)		9051463	A19C135	
21	9051463-MS1	Soil	QC	QC		9051463	A19C135	
22	9E31027-IBL3	Soil	QC	QC			A19C135	
23	A9E0929-01	Soil	8260C Full List		06/11/19	9051463	A19C135	
24	A9E0929-02	Soil	8260C Full List		06/11/19	9051463	A19C135	
25	A9E0929-03	Soil	8260C Full List		06/11/19	9051463	A19C135	
"	"	Soil	8260B Full List + Misc	(QC Source)		9051463	A19C135	
"	"	Soil	8260C Halogenated VOCs	(QC Source)		9051463	A19C135	
"	"	Soil	8260C Oxygenates	(QC Source)		9051463	A19C135	
"	"	Soil	8260D Full List - Development Only	(QC Source)		9051463	A19C135	
"	"	Soil	NWTPH-Gx	(QC Source)		9051463	A19C135	
26	9051463-MS2	Soil	QC	QC		9051463	A19C135	
27	A9E0902-01	Soil	8260C Full List	Hahn and Associates	06/03/19	9051463	A19C135	
"	"	Soil	NWTPH-Gx	"	06/03/19	9051463	A19C135	
28	9E31027-IBL4	Soil	QC	QC			A19C135	

Sequence:	**9E31027**	Instrument:	**VOA-GCMS3**
Date:	**05/31/19 12:56**	Calibration:	**A9E3104**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID

- Oxy is custom

Data Entered By: 6/3/19

Data Reviewed By: 6/4/19

Comments: TMDL = MRL for Cl_3FC ✓

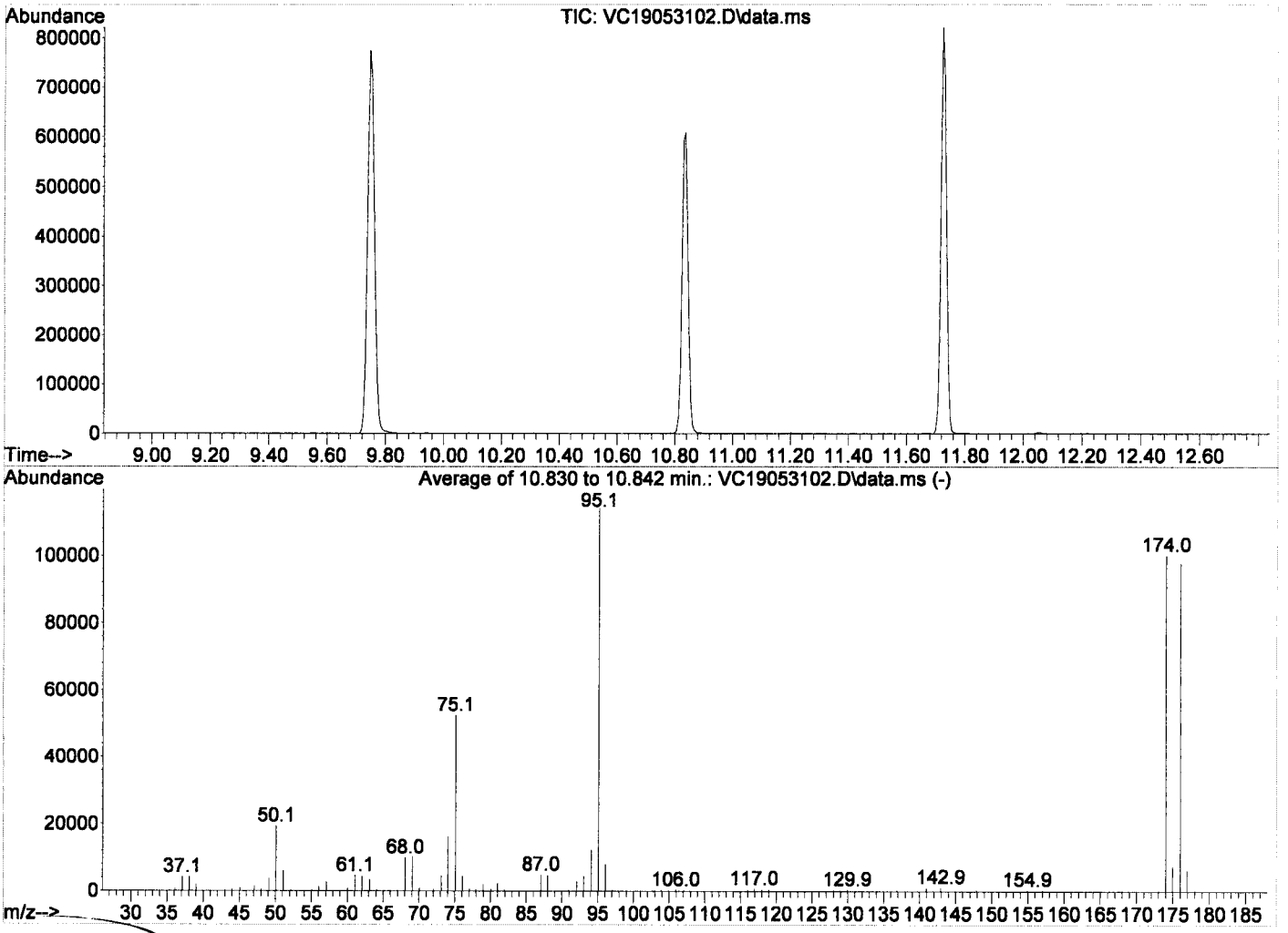
BFB

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053102.D
Acq On : 31 May 2019 1:28 pm
Operator : TB
Sample : 9E31027-TUN1
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\VC190529S.M
Title : EPA 8260: Volatile Organic Compounds
Last Update : Thu May 30 14:50:00 2019

6/3/19



AutoFind: Scans 1519, 1520, 1521; Background Corrected with Scan 1511

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	12	40	16.9	19329	PASS
75	95	30	60	46.0	52536	PASS
95	95	100	100	100.0	114200	PASS
96	95	5	9	7.1	8084	PASS
173	174	0.00	2	0.2	183	PASS
174	95	50	200	87.8	100221	PASS
175	174	5	9	7.4	7413	PASS
176	174	95	101	97.7	97914	PASS
177	176	5	9	6.4	6287	PASS

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053102.D
Acq On : 31 May 2019 1:28 pm
Operator : TB
Sample : 9E31027-TUN1
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:17 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

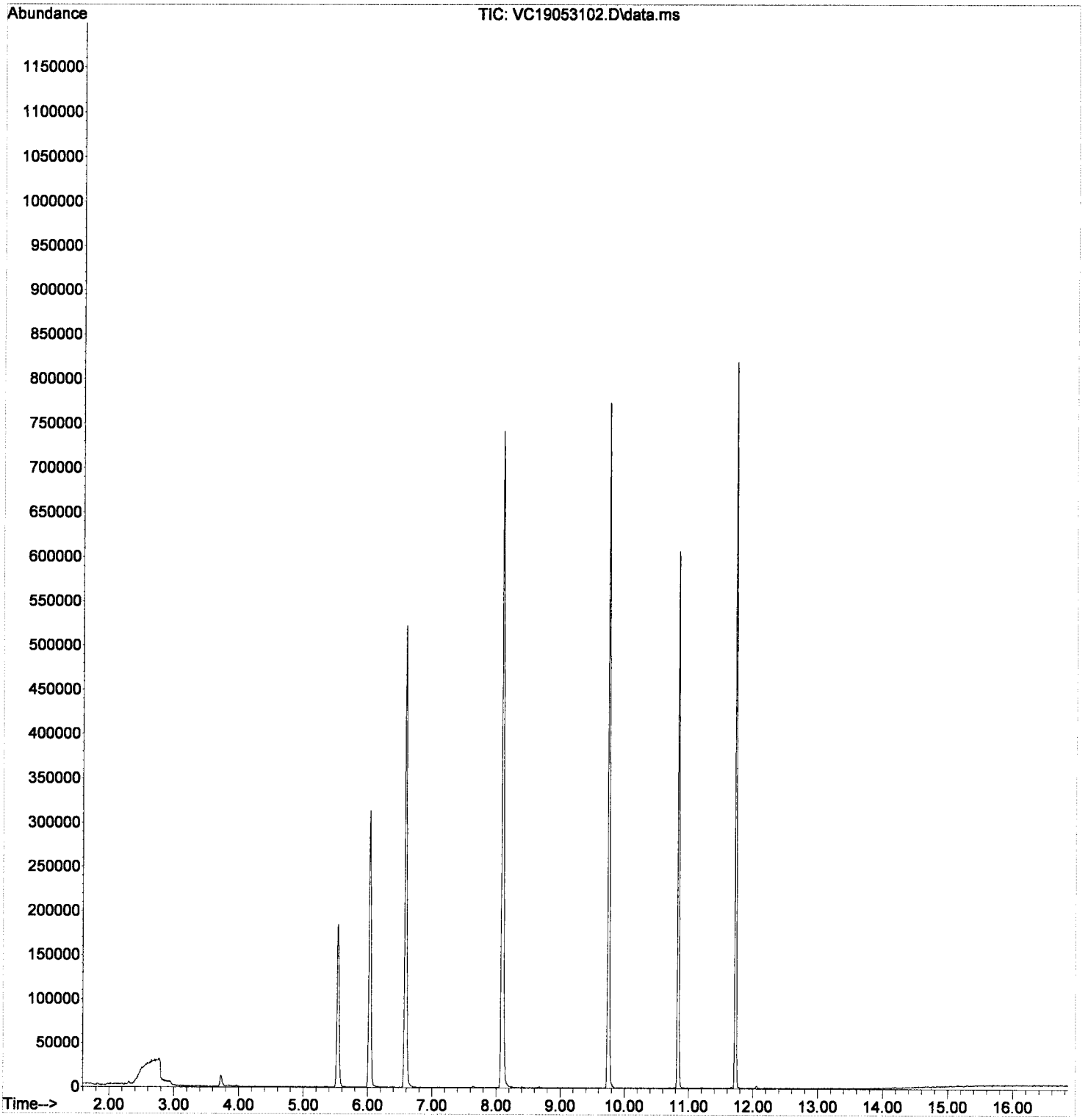
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.030	168	258414	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.747	117	443669	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.724	152	187881	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.538	111	129371	46.23	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.590	114	496500	49.95	ug/L		0.00
39) Toluene-d8 (S)	8.093	98	598892	49.90	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.836	174	162198	50.00	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.857	50	534	0.14	ug/L	#	48
5) Bromomethane	2.301	96	1465	0.99	ug/L	#	72
6) Chloroethane	2.478	64	103	0.10	ug/L	#	1
9) Carbon Disulfide	3.110	76	485	0.12	ug/L		77
12) Methylene Chloride	3.731	84	7347	Below Cal			93
13) Acetone	3.846	43	2112	1.81	ug/L		93
28) 2-Butanone (MEK)	5.738	43	282	0.14	ug/L		54
50) Ethylbenzene	9.753	91	992	0.08	ug/L	#	1

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053102.D
Acq On : 31 May 2019 1:28 pm
Operator : TB
Sample : 9E31027-TUN1
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:17 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\OXY\
Data File : VC19053103.D
Acq On : 31 May 2019 1:56 pm
Operator : TB
Sample : 9051463-BS1
Misc : 50X 5g/5mLx1000uL/50mL OXY+MeOH A19E350
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:44:48 2019
Quant Method : C:\msdchem\1\METHODS\VC190531OXY.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Fri May 31 14:50:42 2019
Response via : Initial Calibration

6/3/19

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Pentafluorobenzene (ISTD)	50.000	50.000	0.0	97	0.00
2		Ethanol	1250.000	1115.461	10.8	89	-0.02
3	P	tert-Butanol (TBA)	1250.000	1285.846	-2.9	89	-0.01
4		Diisopropyl ether (DIPE)	5.000	4.973	0.5	96	0.00
5		Ethyl-tert-butyl ether (ETB	5.000	4.993	0.1	95	0.00
6	S	Dibromofluoromethane (Surr)	50.000	51.094	-2.2	99	0.00
7		tert-Amyl methyl ether (TAM	5.000	4.729	5.4	91	0.00
8	S	1,4-Difluorobenzene (Surr)	50.000	49.754	0.5	96	0.00
9		tert-Amyl ethyl ether (TAEE	5.000	5.016	-0.3	95	0.00
10		Chlorobenzene-d5 (ISTD)	50.000	50.000	0.0	95	0.00
11	S	Toluene-d8 (Surr)	50.000	50.221	-0.4	96	0.00
12	I	1,4-Dichlorobenzene-d4 (IST	50.000	50.000	0.0	92	0.00
13	S	4-Bromofluorobenzene (Surr)	50.000	49.845	0.3	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\OXY\
Data File : VC19053103.D
Acq On : 31 May 2019 1:56 pm
Operator : TB
Sample : 9051463-BS1
Misc : 50X 5g/5mLx1000uL/50mL OXY+MeOH A19E350
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:44:48 2019
Quant Method : C:\msdchem\1\METHODS\VC190531OXY.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Fri May 31 14:50:42 2019
Response via : Initial Calibration

6/3/19

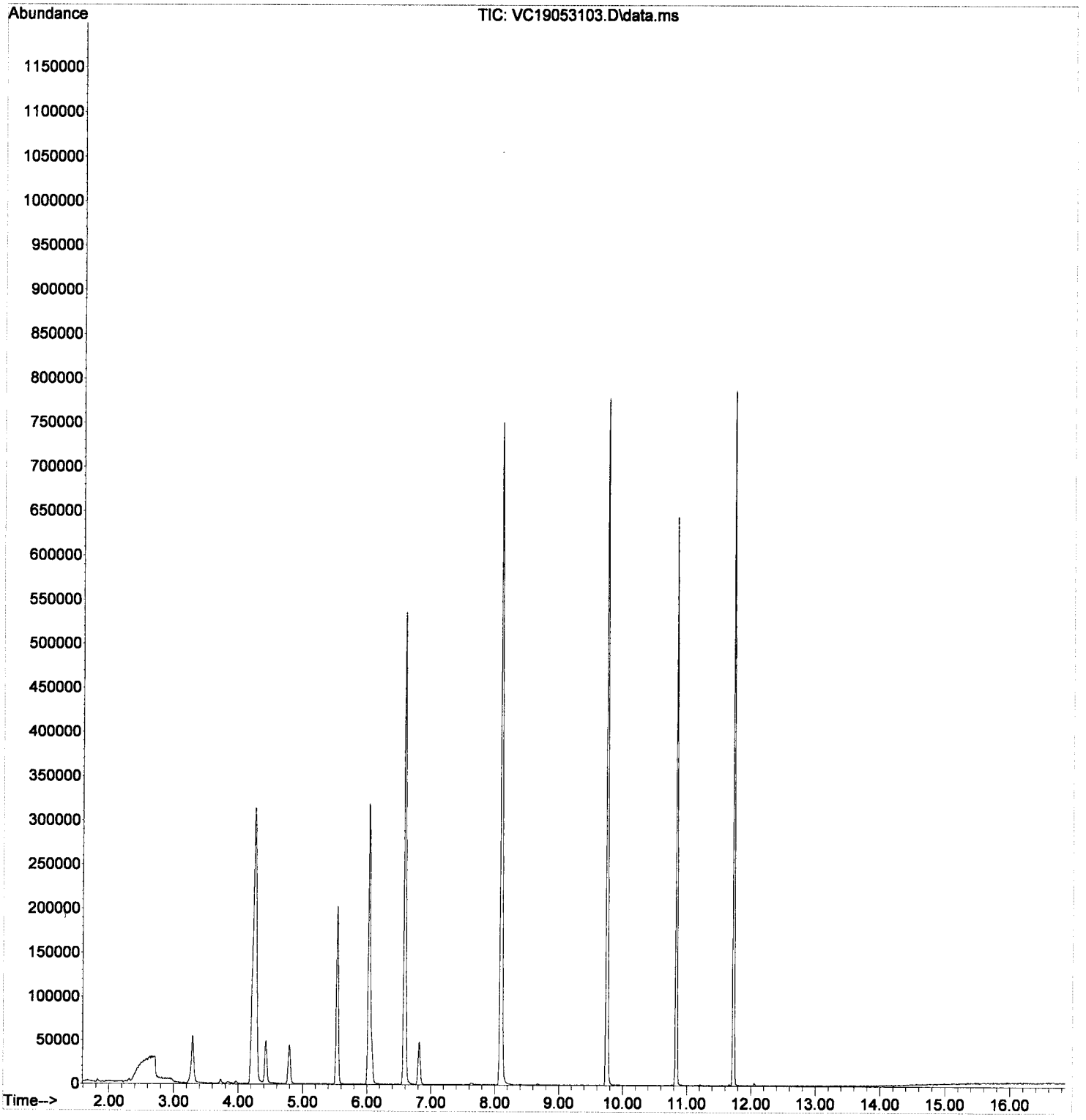
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (ISTD)	6.034	168	258381	50.00	ug/L	0.00
10) Chlorobenzene-d5 (ISTD)	9.751	117	448747	50.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.728	152	187634	50.00	ug/L	0.00
System Monitoring Compounds						
6) Dibromofluoromethane (...	5.535	111	138493	51.09	ug/L	0.00
8) 1,4-Difluorobenzene (S...	6.588	114	496405	49.75	ug/L	0.00
11) Toluene-d8 (Surr)	8.097	98	601121	50.22	ug/L	0.00
13) 4-Bromofluorobenzene (...	10.834	174	164124	49.85	ug/L	0.00
Target Compounds						Qvalue
2) Ethanol	3.291	45	85525	1115.46	ug/L	92
3) tert-Butanol (TBA)	4.258	59	701650	1285.85	ug/L	89
4) Diisopropyl ether (DIPE)	4.428	45	48892	4.97	ug/L	91
5) Ethyl-tert-butyl ether...	4.793	59	46799	4.99	ug/L	92
7) tert-Amyl methyl ether...	6.071	73	42877	4.73	ug/L	95
9) tert-Amyl ethyl ether ...	6.819	59	33699	5.02	ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053103.D
Acq On : 31 May 2019 1:56 pm
Operator : TB
Sample : 9051463-BS1
Misc : 50X 5g/5mLx1000uL/50mL OXY+MeOH A19E350
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:19 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053104.D
Acq On : 31 May 2019 2:24 pm
Operator : TB
Sample : 9051463-BS2
Misc : 50X 5g/5mLx1000uL/50mL VOV+MeOH A19E314
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

6/3/19

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)	
1	I	Pentafluorobenzene (I)	50.000	50.000	0.0	103	0.00	
2		Dichlorodifluoromethane	20.000	19.242	3.8	101	0.00	
3	P	Chloromethane	20.000	17.951	10.2	96	0.00	
4	C	Vinyl Chloride	20.000	18.169	9.2	93	0.00	
5		Bromomethane	20.000	20.182	-0.9	108	0.00	
6		Chloroethane	20.000	16.105	19.5	85	0.00	
7		Trichlorofluoromethane	20.000	15.115	24.4	76	-0.01	-Q55
8	C	1,1-Dichloroethene	20.000	20.458	-2.3	106	-0.01	
9		Carbon Disulfide	20.000	19.325	3.4	102	0.00	
10		Freon 113	20.000	18.602	7.0	102	0.00	
11		Iodomethane	20.000	13.841	30.8#	81	0.00	-NA
12		Methylene Chloride	20.000	16.407	18.0	91	0.00	
13		Acetone	40.000	43.112	-7.8	116	0.00	
14		t-1,2-Dichloroethene	20.000	20.496	-2.5	104	-0.01	
15		n-Hexane	20.000	18.398	8.0	101	0.00	
16		Methyl-tert-butyl-ether	20.000	19.939	0.3	102	0.00	
17	P	1,1-Dichloroethane	20.000	20.950	-4.7	106	0.00	
18		Acrylonitrile	20.000	21.485	-7.4	109	0.00	
19		c-1,2-Dichloroethene	20.000	20.155	-0.8	103	0.00	
20		2,2-Dichloropropane	20.000	22.041	-10.2	113	0.00	
21		Bromochloromethane	20.000	21.303	-6.5	108	0.00	
22	C	Chloroform	20.000	19.455	2.7	102	0.00	
23		Carbon Tetrachloride	20.000	19.893	0.5	103	-0.01	
24		Tetrahydrofuran	20.000	19.873	0.6	111	0.00	
25		1,1,1-Trichloroethane	20.000	20.249	-1.2	102	0.00	
26	S	Dibromofluoromethane (S)	50.000	50.686	-1.4	103	0.00	
27		1,1-Dichloropropene	20.000	19.236	3.8	102	0.00	
28		2-Butanone (MEK)	40.000	41.836	-4.6	108	0.00	
29		Benzene	20.000	19.761	1.2	103	0.00	
30		1,2-Dichloroethane (EDC)	20.000	20.041	-0.2	104	0.00	
31		iso-Butyl Alcohol	500.000	455.072	9.0	95	-0.02	
32	S	1,4-Difluorobenzene (S)	50.000	49.765	0.5	102	0.00	
33		Trichloroethene (TCE)	20.000	18.915	5.4	101	0.00	
34		Dibromomethane	20.000	20.692	-3.5	103	0.00	
35	C	1,2-Dichloropropane	20.000	20.420	-2.1	103	0.00	
36		Bromodichloromethane	20.000	20.473	-2.4	100	0.00	
37		Chlorobenzene-d5 (I)	50.000	50.000	0.0	103	0.00	
38		c-1,3-Dichloropropene	20.000	21.173	-5.9	101	0.00	
39	S	Toluene-d8 (S)	50.000	49.233	1.5	101	0.00	
40	C	Toluene	20.000	19.449	2.8	103	0.00	
41		Tetrachloroethene (PCE)	20.000	18.821	5.9	104	0.00	
42		4-Methyl-2-Pentanone (MIBK)	40.000	37.684	5.8	102	0.00	
43		t-1,3-Dichloropropene	20.000	21.236	-6.2	105	0.00	
44		1,1,2-Trichloroethane	20.000	20.398	-2.0	102	0.00	
45		Dibromochloromethane	20.000	17.786	11.1	103	0.00	
46		1,3-Dichloropropane	20.000	20.520	-2.6	104	0.00	
47		1,2-Dibromoethane (EDB)	20.000	21.661	-8.3	107	0.00	
48		2-Hexanone	40.000	39.205	2.0	100	0.00	
49	P	Chlorobenzene	20.000	19.453	2.7	103	0.00	
50	C	Ethylbenzene	20.000	19.597	2.0	103	0.00	

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053104.D
Acq On : 31 May 2019 2:24 pm
Operator : TB
Sample : 9051463-BS2
Misc : 50X 5g/5mLx1000uL/50mL VOV+MeOH A19E314
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
51		1,1,1,2-Tetrachloroethane	20.000	21.685	-8.4	106	0.00
52		m,p-Xylenes (2)	40.000	40.182	-0.5	103	0.00
53		o-Xylene	20.000	19.665	1.7	102	0.00
54		Styrene	20.000	21.067	-5.3	101	0.00
55	P	Bromoform	20.000	16.915	15.4	101	0.00
56		Isopropylbenzene	20.000	20.064	-0.3	103	0.00
57	I	1,4-Dichlorobenzene-d4 (I)	50.000	50.000	0.0	103	0.00
58	S	4-Bromofluorobenzene (S)	50.000	51.090	-2.2	104	0.00
59		Bromobenzene	20.000	21.033	-5.2	106	0.00
60		n-Propylbenzene	20.000	20.160	-0.8	105	0.00
61	P	1,1,2,2-Tetrachloroethane	20.000	20.624	-3.1	101	0.00
62		2-Chlorotoluene	20.000	20.277	-1.4	105	0.00
63		1,3,5-Trimethylbenzene	20.000	20.558	-2.8	103	0.00
64		1,2,3-Trichloropropane	20.000	20.428	-2.1	103	0.00
65		t-1,4-Dichloro-2-butene	20.000	17.941	10.3	97	0.00
66		4-Chlorotoluene	20.000	19.858	0.7	103	0.00
67		tert-Butylbenzene	20.000	19.568	2.2	103	0.00
68		1,2,4-Trimethylbenzene	20.000	20.181	-0.9	102	0.00
69		sec-Butylbenzene	20.000	19.784	1.1	102	0.00
70		4-Isopropyltoluene	20.000	20.503	-2.5	105	0.00
71		1,3-Dichlorobenzene	20.000	19.405	3.0	104	0.00
72		1,4-Dichlorobenzene	20.000	18.872	5.6	102	0.00
73		n-Butylbenzene	20.000	19.904	0.5	104	0.00
74		1,2-Dichlorobenzene	20.000	19.249	3.8	101	0.00
75		1,2-Dibromo-3-Chloropropane	20.000	18.369	8.2	93	0.00
76		Hexachlorobutadiene	20.000	20.256	-1.3	100	0.00
77		1,2,4-Trichlorobenzene	20.000	20.491	-2.5	106	0.00
78		Naphthalene	20.000	20.222	-1.1	97	0.00
79		1,2,3-Trichlorobenzene	20.000	20.814	-4.1	103	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053104.D
Acq On : 31 May 2019 2:24 pm
Operator : TB
Sample : 9051463-BS2
Misc : 50X 5g/5mLx1000uL/50mL VOV+MeOH A19E314
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

6/3/19

Quant Time: Jun 03 09:12:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.029	168	265297	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	463832	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.723	152	195645	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.531	111	145609	50.69	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.589	114	507811	49.76	ug/L		0.00
39) Toluene-d8 (S)	8.092	98	617762	49.23	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.835	174	172597	51.09	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.661	85	45827	19.24	ug/L		97
3) Chloromethane	1.856	50	70224	17.95	ug/L		99
4) Vinyl Chloride	1.947	62	49134	18.17	ug/L		99
5) Bromomethane	2.300	96	30784	20.18	ug/L		94
6) Chloroethane	2.434	64	16363	16.11	ug/L		78
7) Trichlorofluoromethane	2.556	101	22785	15.12	ug/L		99
8) 1,1-Dichloroethene	3.085	61	54912	20.46	ug/L		83
9) Carbon Disulfide	3.097	76	82334	19.32	ug/L		99
10) Freon 113	3.140	101	42390	18.60	ug/L		87
11) Iodomethane	3.237	142	15051	13.84	ug/L		92
12) Methylene Chloride	3.724	84	53069	16.41	ug/L		94
13) Acetone	3.827	43	51555	43.11	ug/L		99
14) t-1,2-Dichloroethene	3.882	61	63791	20.50	ug/L		97
15) n-Hexane	3.961	86	10145	18.40	ug/L	#	86
16) Methyl-tert-butyl-ether	4.034	73	183827	19.94	ug/L		98
17) 1,1-Dichloroethane	4.515	63	80359	20.95	ug/L		95
18) Acrylonitrile	4.594	53	33333	21.48	ug/L		88
19) c-1,2-Dichloroethene	5.068	61	70009	20.16	ug/L		98
20) 2,2-Dichloropropane	5.172	77	66251	22.04	ug/L		92
21) Bromochloromethane	5.263	49	43715	21.30	ug/L		97
22) Chloroform	5.348	83	88675	19.46	ug/L		100
23) Carbon Tetrachloride	5.470	117	48976	19.89	ug/L		98
24) Tetrahydrofuran	5.531	42	34510	19.87	ug/L		95
25) 1,1,1-Trichloroethane	5.549	97	70479	20.25	ug/L		98
27) 1,1-Dichloropropene	5.677	75	68920	19.24	ug/L		98
28) 2-Butanone (MEK)	5.683	43	89219	41.84	ug/L		97
29) Benzene	5.926	78	227866	19.76	ug/L		98
30) 1,2-Dichloroethane (EDC)	6.145	62	68894	20.04	ug/L		99
31) iso-Butyl Alcohol	6.248	43	120182	455.07	ug/L		91
33) Trichloroethene (TCE)	6.546	130	61179	18.92	ug/L		99
34) Dibromomethane	6.997	93	31893	20.69	ug/L		93
35) 1,2-Dichloropropane	7.106	63	60190	20.42	ug/L		96
36) Bromodichloromethane	7.185	83	53004	20.47	ug/L		98
38) c-1,3-Dichloropropene	7.885	75	77309	21.17	ug/L		97
40) Toluene	8.152	91	238639	19.45	ug/L		99
41) Tetrachloroethene (PCE)	8.597	166	53546	18.82	ug/L		96
42) 4-Methyl-2-Pentanone (...	8.615	43	142750	37.68	ug/L		96
43) t-1,3-Dichloropropene	8.645	75	71940	21.24	ug/L		99
44) 1,1,2-Trichloroethane	8.822	97	51130	20.40	ug/L		97
45) Dibromochloromethane	9.004	129	37356	17.79	ug/L		97
46) 1,3-Dichloropropane	9.108	76	95147	20.52	ug/L		95
47) 1,2-Dibromoethane (EDB)	9.241	107	53081	21.66	ug/L		99
48) 2-Hexanone	9.497	43	100683	39.20	ug/L		98

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053104.D
Acq On : 31 May 2019 2:24 pm
Operator : TB
Sample : 9051463-BS2
Misc : 50X 5g/5mLx1000uL/50mL VOV+MeOH A19E314
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

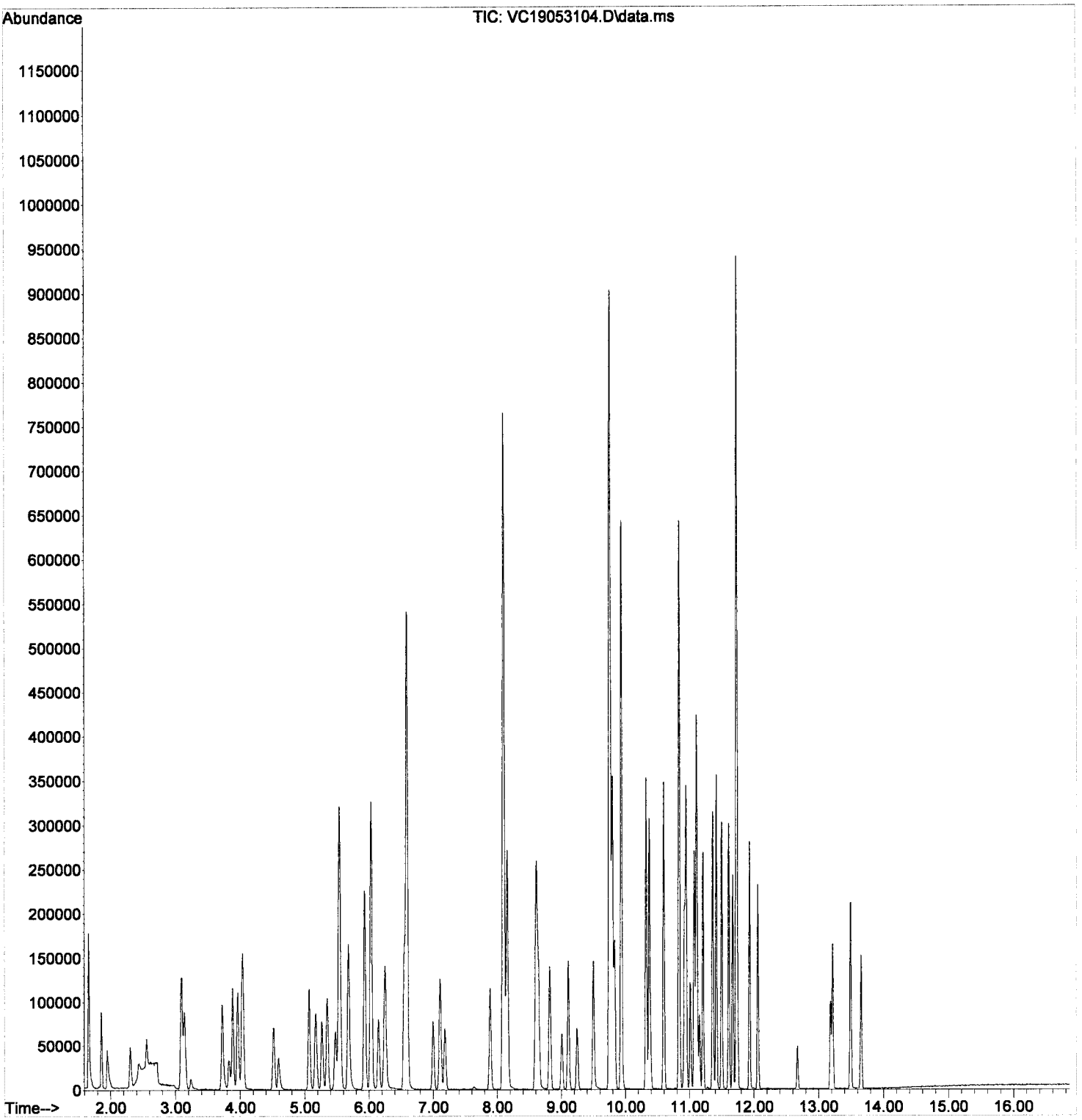
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.765	112	144775	19.45	ug/L		99
50) Ethylbenzene	9.795	91	244484	19.60	ug/L		98
51) 1,1,1,2-Tetrachloroethane	9.832	131	45527	21.69	ug/L		97
52) m,p-Xylenes (2)	9.929	91	361887	40.18	ug/L		97
53) o-Xylene	10.318	91	186161	19.67	ug/L		98
54) Styrene	10.367	104	139398	21.07	ug/L		98
55) Bromoform	10.391	173	20139	16.92	ug/L		97
56) Isopropylbenzene	10.592	105	217793	20.06	ug/L		98
59) Bromobenzene	10.920	156	54335	21.03	ug/L		95
60) n-Propylbenzene	10.939	91	237469	20.16	ug/L		96
61) 1,1,2,2-Tetrachloroethane	11.006	83	52866	20.62	ug/L		96
62) 2-Chlorotoluene	11.073	126	49444	20.28	ug/L		90
63) 1,3,5-Trimethylbenzene	11.103	105	163699	20.56	ug/L		97
64) 1,2,3-Trichloropropane	11.115	110	21592	20.43	ug/L	#	81
65) t-1,4-Dichloro-2-butene	11.152	88	6369	17.94	ug/L	#	86
66) 4-Chlorotoluene	11.206	91	139946	19.86	ug/L		98
67) tert-Butylbenzene	11.358	91	87328	19.57	ug/L		98
68) 1,2,4-Trimethylbenzene	11.413	105	164445	20.18	ug/L		99
69) sec-Butylbenzene	11.498	105	186693	19.78	ug/L		97
70) 4-Isopropyltoluene	11.608	119	157401	20.50	ug/L		98
71) 1,3-Dichlorobenzene	11.669	146	87973	19.40	ug/L		98
72) 1,4-Dichlorobenzene	11.736	146	85473	18.87	ug/L		98
73) n-Butylbenzene	11.930	91	129958	19.90	ug/L		99
74) 1,2-Dichlorobenzene	12.058	146	80152	19.25	ug/L		100
75) 1,2-Dibromo-3-Chloropr...	12.672	157	11151	18.37	ug/L		92
76) Hexachlorobutadiene	13.184	223	12211	20.26	ug/L		96
77) 1,2,4-Trichlorobenzene	13.214	180	49676	20.49	ug/L		97
78) Naphthalene	13.494	128	165054	20.22	ug/L		98
79) 1,2,3-Trichlorobenzene	13.652	180	47804	20.81	ug/L		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053104.D
Acq On : 31 May 2019 2:24 pm
Operator : TB
Sample : 9051463-BS2
Misc : 50X 5g/5mLx1000uL/50mL VOV+MeOH A19E314
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053105.D
Acq On : 31 May 2019 2:51 pm
Operator : TB
Sample : 9051463-BS3
Misc : 50X 5g/5mLx1000uL/50mL GX+MeOH A19E311
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:46:51 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

6/3/19

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Pentafluorobenzene (IS)	50.000	50.000	0.0	99	0.00
2	S	1,4-Difluorobenzene (Sur)	50.000	47.148	5.7	96	0.00
3	S	4-Bromofluorobenzene (Sur)	50.000	49.986	0.0	100	0.00
4	S	Chlorobenzene-d5 (NR)	-1.000	0.000	0.0	97	0.00
5	H	CA-LUFT (C5-C12)	500.000	512.312	-2.5	98	0.00
6	H	TPHg (C5-C9)	500.000	515.219	-3.0	97	0.00
7	H	TPHg (C6-C10)	500.000	522.376	-4.5	100	0.00
8	H	NWTPH-Gx	500.000	501.562	-0.3	99	0.00
9		Benzene (NR)	-1.000	0.000	0.0	97	0.00
10	S	Toluene-d8 (NR)	-1.000	0.000	0.0	99	0.00
11	C	Toluene (NR)	-1.000	0.000	0.0	96	0.00
12	S	1,4-Dichlorobenzene-d4 (NR)	-1.000	0.000	0.0	99	0.00
13		Naphthalene (NR)	-1.000	0.000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053105.D
Acq On : 31 May 2019 2:51 pm
Operator : TB
Sample : 9051463-BS3
Misc : 50X 5g/5mLx1000uL/50mL GX+MeOH A19E311
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

6/3/19

Quant Time: Jun 03 09:46:51 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

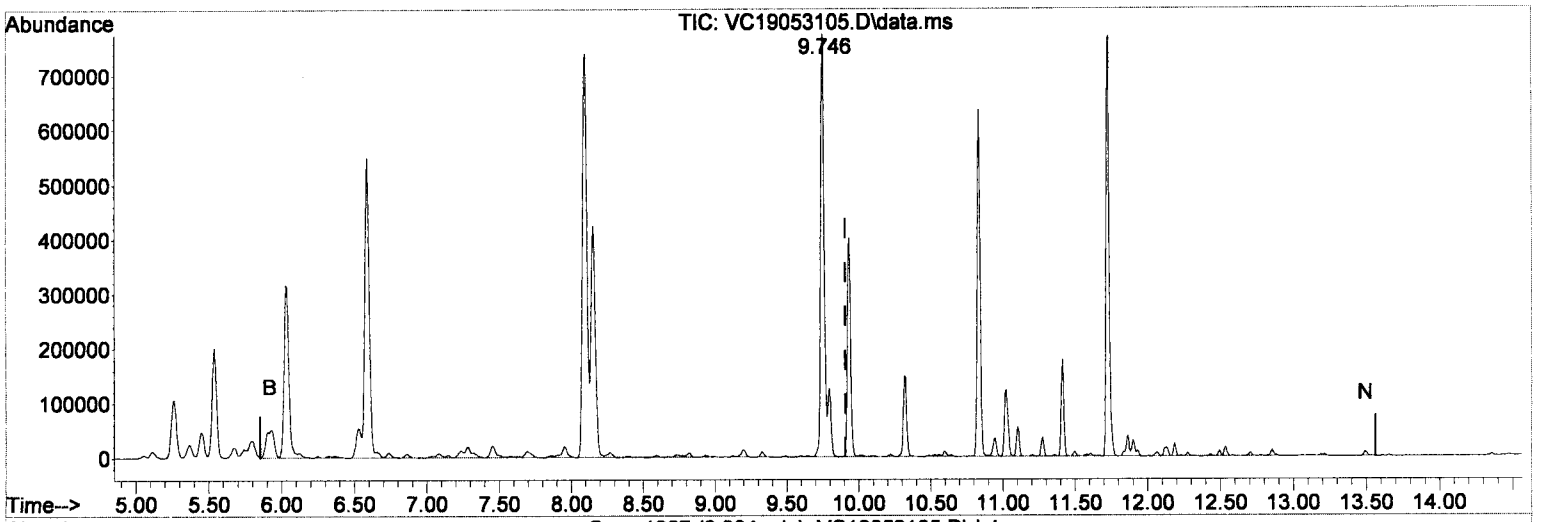
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.035	168	258660	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.589	TIC	1136528	47.15	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.835	TIC	900141	49.99	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.746	TIC	1338255	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.098	TIC	1615226	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.729	TIC	1129324	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	6441719m	512.31	ug/L	
6) TPHg (C5-C9)	9.906	TIC	5535636m	515.22	ug/L	
7) TPHg (C6-C10)	9.906	TIC	4379823m	522.38	ug/L	
8) NWTPH-Gx	9.906	TIC	3680638m	501.56	ug/L	

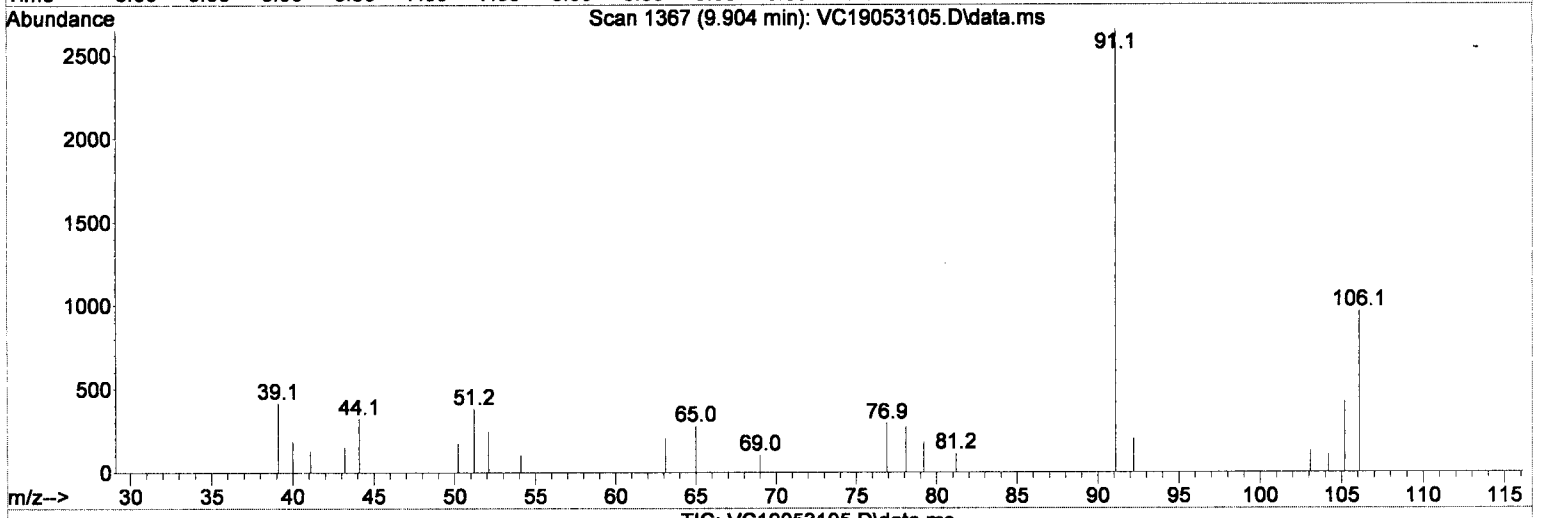
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053105.D
Acq On : 31 May 2019 2:51 pm
Operator : TB
Sample : 9051463-BS3
Misc : 50X 5g/5mLx1000uL/50mL GX+MeOH A19E311
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:46:51 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration





TIC: VC19053105.D\data.ms

(8) NWTPH-Gx (H)

9.906min (0.000) 501.56 ug/L m

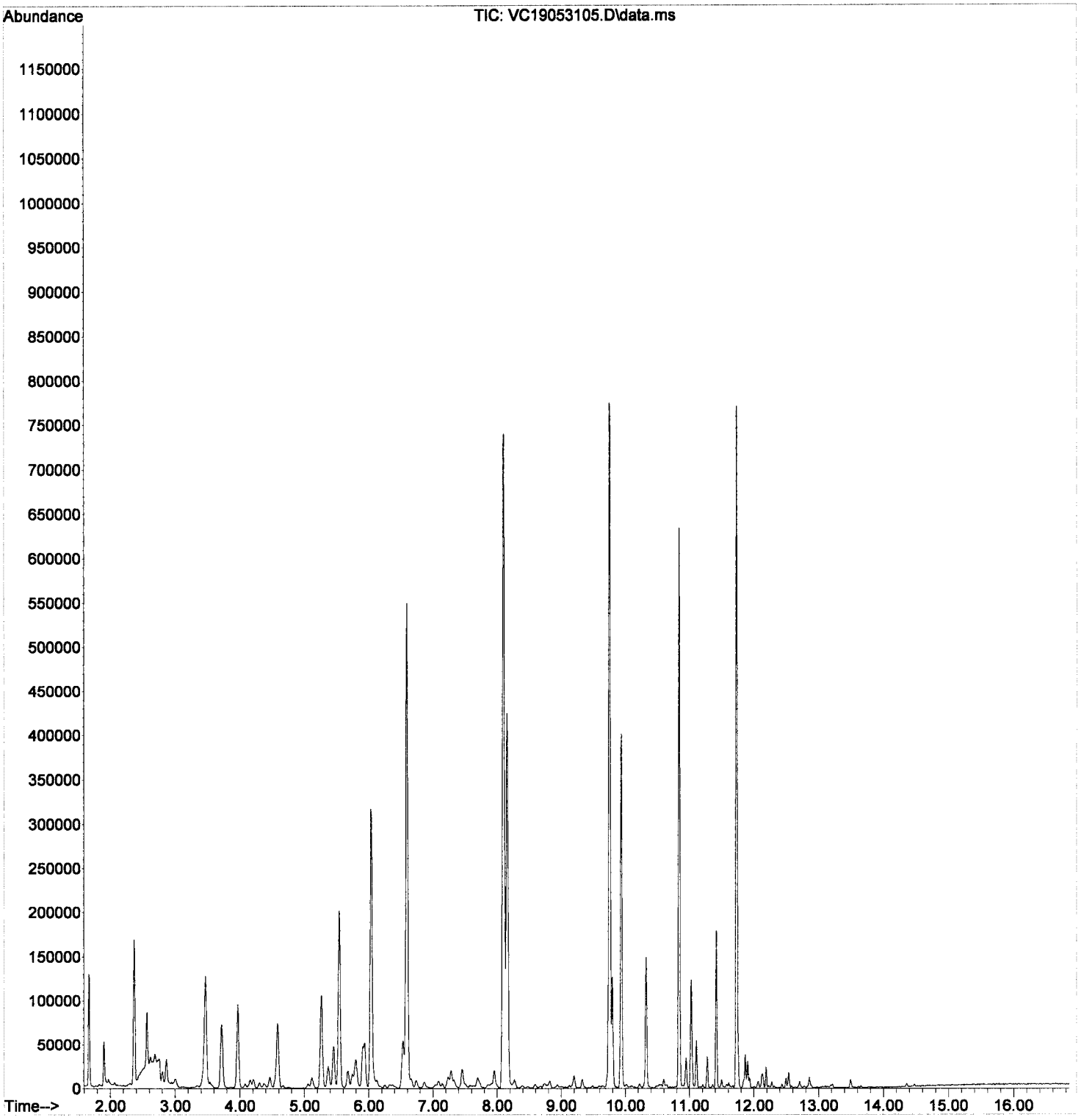
response 3680638

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.02#
0.00	0.00	0.01#
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053105.D
Acq On : 31 May 2019 2:51 pm
Operator : TB
Sample : 9051463-BS3
Misc : 50X 5g/5mLx1000uL/50mL GX+MeOH A19E311
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:23 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053106.D
Acq On : 31 May 2019 3:19 pm
Operator : TB
Sample : 9051463-BLK1
Misc : 50X 7.5g/5mLx1000uL/50mL DI+MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:46:54 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

6/3/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.028	168	262804	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.588	TIC	1138643	46.49	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.834	TIC	925823	50.60	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.752	TIC	1348408	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.097	TIC	1609803	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.729	TIC	1106407	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	704664m	13.60	ug/L	
6) TPHg (C5-C9)	9.906	TIC	698852m	19.14	ug/L	
7) TPHg (C6-C10)	9.906	TIC	441138m	10.82	ug/L	
8) NWTPH-Gx	9.906	TIC	11790m	14.10	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\OXY\
Data File : VC19053106.D
Acq On : 31 May 2019 3:19 pm
Operator : TB
Sample : 9051463-BLK1
Misc : 50X 7.5g/5mLx1000uL/50mL DI+MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

6/3/19

Quant Time: Jun 03 09:44:51 2019
Quant Method : C:\msdchem\1\METHODS\VC190531OXY.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Fri May 31 14:50:42 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (ISTD)	6.028	168	262804	50.00	ug/L		0.00
10) Chlorobenzene-d5 (ISTD)	9.752	117	457452	50.00	ug/L		0.00
12) 1,4-Dichlorobenzene-d4...	11.729	152	191483	50.00	ug/L		0.00
System Monitoring Compounds							
6) Dibromofluoromethane (...	5.536	111	137372	49.83	ug/L		0.00
8) 1,4-Difluorobenzene (S...	6.588	114	503557	49.62	ug/L		0.00
11) Toluene-d8 (Surr)	8.097	98	612876	50.23	ug/L		0.00
13) 4-Bromofluorobenzene (...	10.834	174	168712	50.21	ug/L		0.00
Target Compounds							Qvalue
2) Ethanol	3.315	45	1300	16.67	ug/L		84
3) tert-Butanol (TBA)	0.000		0	N.D.			
4) Diisopropyl ether (DIPE)	0.000		0	N.D.			
5) Ethyl-tert-butyl ether...	0.000		0	N.D.			
7) tert-Amyl methyl ether...	6.028	73	195	0.02	ug/L	#	1
9) tert-Amyl ethyl ether ...	0.000		0	N.D.			

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053106.D
Acq On : 31 May 2019 3:19 pm
Operator : TB
Sample : 9051463-BLK1
Misc : 50X 7.5g/5mLx1000uL/50mL DI+MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

6/3/19

Quant Time: Jun 03 09:12:25 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.028	168	262804	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	457452	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.729	152	191483	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.536	111	137372	48.27	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.588	114	503557	49.82	ug/L		0.00
39) Toluene-d8 (S)	8.097	98	612876	49.52	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.834	174	168712	51.03	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.861	50	764	0.20	ug/L		87
5) Bromomethane	2.305	96	1614	1.07	ug/L		86
6) Chloroethane	2.421	64	149	0.15	ug/L	#	1
11) Iodomethane	3.242	142	265	0.98	ug/L	#	47
12) Methylene Chloride	3.729	84	8728	Below Cal			95
13) Acetone	3.844	43	1629	1.38	ug/L		95
40) Toluene	8.158	91	1806	0.15	ug/L		88
52) m,p-Xylenes (2)	9.934	91	1452	0.16	ug/L		90
68) 1,2,4-Trimethylbenzene	11.418	105	862	0.11	ug/L		84
69) sec-Butylbenzene	11.497	105	783	0.08	ug/L		80
73) n-Butylbenzene	11.929	91	829	0.13	ug/L		91
77) 1,2,4-Trichlorobenzene	13.219	180	197	0.08	ug/L		77

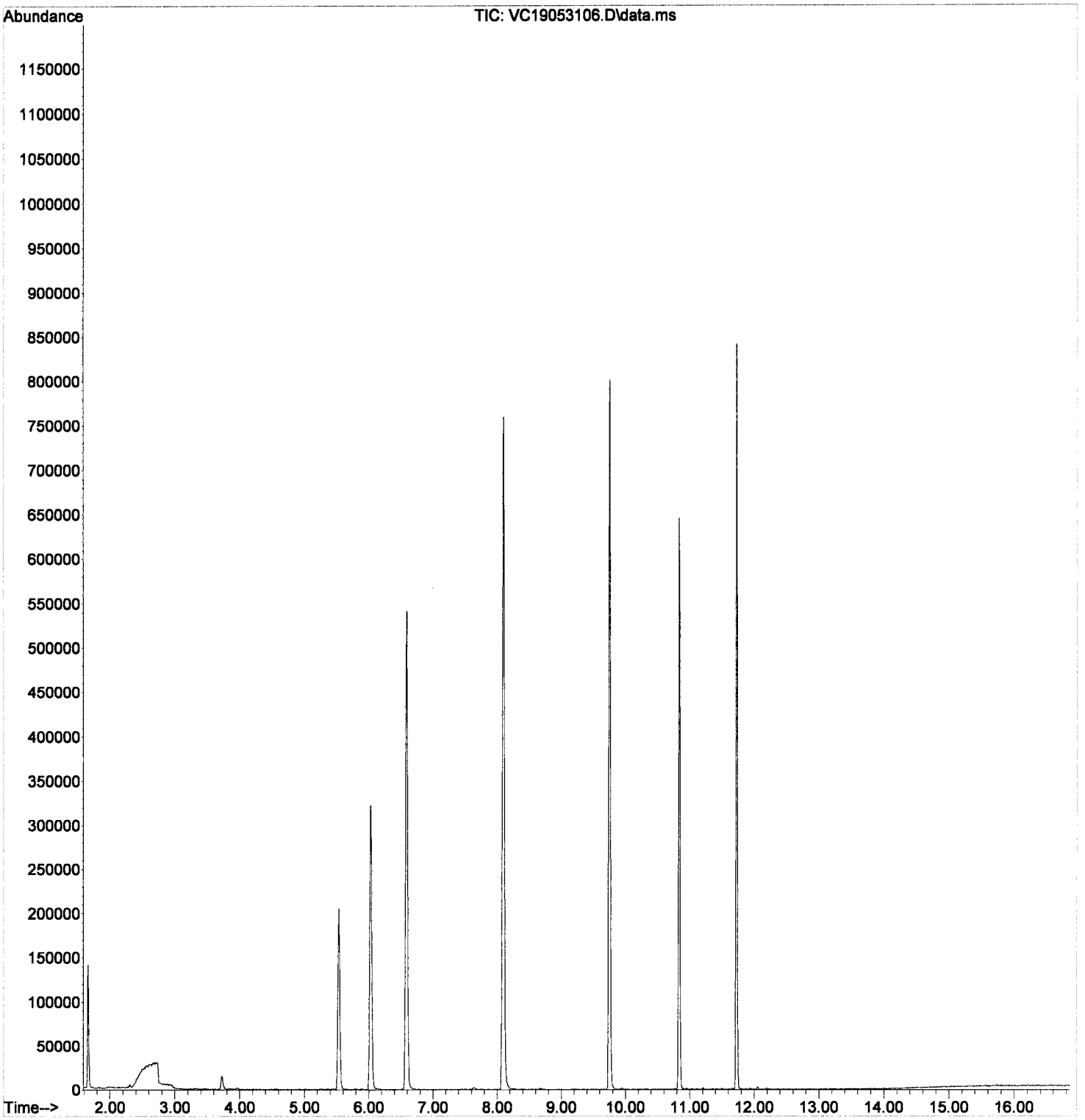
LMK

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053106.D
Acq On : 31 May 2019 3:19 pm
Operator : TB
Sample : 9051463-BLK1
Misc : 50X 7.5g/5mLx1000uL/50mL DI+MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:25 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053118.D
Acq On : 31 May 2019 8:51 pm
Operator : TB
Sample : 9051463-MS1
Misc : 50X 5g/5mLx1000uL/50mL E0895-13
ALS Vial : 18 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:49 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

6/3/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (I)	6.035	168	262813	50.00	ug/L	0.00
37) Chlorobenzene-d5 (I)	9.746	117	458747	50.00	ug/L	0.00
57) 1,4-Dichlorobenzene-d4...	11.724	152	203591	50.00	ug/L	0.00
System Monitoring Compounds						
26) Dibromofluoromethane (S)	5.531	111	152066	53.43	ug/L	0.00
32) 1,4-Difluorobenzene (S)	6.589	114	501466	49.61	ug/L	0.00
39) Toluene-d8 (S)	8.098	98	605925	48.82	ug/L	0.00
58) 4-Bromofluorobenzene (S)	10.835	174	179188	50.97	ug/L	0.00
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.661	85	51585	21.86	ug/L	97
3) Chloromethane	1.862	50	72609	18.74	ug/L	95
4) Vinyl Chloride	1.953	62	53948	20.14	ug/L	95
5) Bromomethane	2.300	96	30307	20.06	ug/L	97
6) Chloroethane	2.434	64	19909	19.78	ug/L	79
7) Trichlorofluoromethane	2.562	101	27571	18.46	ug/L	99
8) 1,1-Dichloroethene	3.103	61	57730	21.71	ug/L	89
9) Carbon Disulfide	3.115	76	85119	20.17	ug/L	97
10) Freon 113	3.152	101	44485	19.71	ug/L	87
11) Iodomethane	3.249	142	19494	17.74	ug/L	96
12) Methylene Chloride	3.730	84	50181	15.38	ug/L	93
13) Acetone	3.821	43	62037	52.37	ug/L	98
14) t-1,2-Dichloroethene	3.894	61	65038	21.09	ug/L	99
15) n-Hexane	3.973	86	10663	19.63	ug/L	96
16) Methyl-tert-butyl-ether	4.034	73	182651	20.00	ug/L	99
17) 1,1-Dichloroethane	4.521	63	88292	23.24	ug/L	98
18) Acrylonitrile	4.594	53	35121	22.85	ug/L	93
19) c-1,2-Dichloroethene	5.068	61	71851	20.88	ug/L	99
20) 2,2-Dichloropropane	5.172	77	58811	19.75	ug/L	92
21) Bromochloromethane	5.263	49	44352	21.82	ug/L	90
22) Chloroform	5.348	83	92331	20.45	ug/L	98
23) Carbon Tetrachloride	5.476	117	49512	20.30	ug/L	98
24) Tetrahydrofuran	5.531	42	36446	21.19	ug/L	93
25) 1,1,1-Trichloroethane	5.549	97	72271	20.96	ug/L	97
27) 1,1-Dichloropropene	5.677	75	70241	19.79	ug/L	99
28) 2-Butanone (MEK)	5.683	43	98295	46.53	ug/L	97
29) Benzene	5.932	78	229229	20.07	ug/L	98
30) 1,2-Dichloroethane (EDC)	6.145	62	70426	20.68	ug/L	95
31) iso-Butyl Alcohol	6.242	43	128201	490.02	ug/L	92
33) Trichloroethene (TCE)	6.547	130	61822	19.29	ug/L	97
34) Dibromomethane	6.997	93	33160	21.72	ug/L	85
35) 1,2-Dichloropropane	7.112	63	59459	20.36	ug/L	92
36) Bromodichloromethane	7.185	83	54100	21.07	ug/L	96
38) c-1,3-Dichloropropene	7.885	75	75636	20.94	ug/L	99
40) Toluene	8.153	91	239663	19.75	ug/L	98
41) Tetrachloroethene (PCE)	8.597	166	53097	18.87	ug/L	98
42) 4-Methyl-2-Pentanone (...	8.609	43	155257	41.44	ug/L	96
43) t-1,3-Dichloropropene	8.645	75	71053	21.21	ug/L	98
44) 1,1,2-Trichloroethane	8.822	97	53270	21.49	ug/L	96
45) Dibromochloromethane	9.004	129	38395	18.46	ug/L	96
46) 1,3-Dichloropropane	9.108	76	97492	21.26	ug/L	96
47) 1,2-Dibromoethane (EDB)	9.241	107	53671	22.14	ug/L	97
48) 2-Hexanone	9.497	43	110518	43.51	ug/L	98

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053118.D
Acq On : 31 May 2019 8:51 pm
Operator : TB
Sample : 9051463-MS1
Misc : 50X 5g/5mLx1000uL/50mL E0895-13
ALS Vial : 18 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:49 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

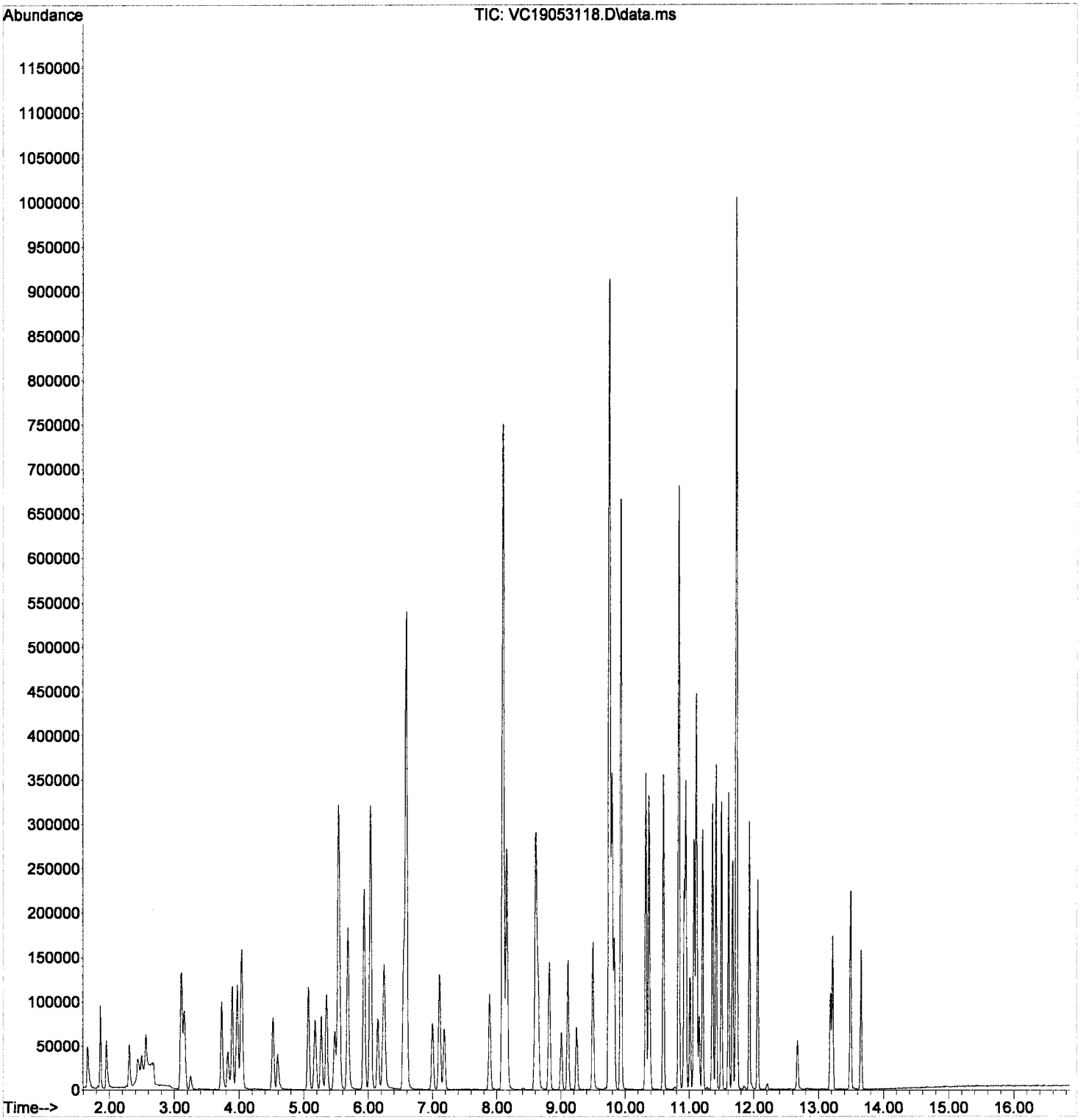
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.765	112	145902	19.82	ug/L		95
50) Ethylbenzene	9.795	91	248018	20.10	ug/L		99
51) 1,1,1,2-Tetrachloroethane	9.832	131	45148	21.74	ug/L		98
52) m,p-Xylenes (2)	9.929	91	369712	41.51	ug/L		98
53) o-Xylene	10.318	91	194519	20.78	ug/L		98
54) Styrene	10.367	104	147086	22.48	ug/L		97
55) Bromoform	10.385	173	21672	18.32	ug/L		99
56) Isopropylbenzene	10.592	105	222637	20.74	ug/L		99
59) Bromobenzene	10.921	156	58034	21.59	ug/L		93
60) n-Propylbenzene	10.945	91	245924	20.06	ug/L		99
61) 1,1,2,2-Tetrachloroethane	11.006	83	54811	20.55	ug/L		99
62) 2-Chlorotoluene	11.073	126	52772	20.80	ug/L		94
63) 1,3,5-Trimethylbenzene	11.103	105	171170	20.66	ug/L		98
64) 1,2,3-Trichloropropane	11.115	110	23050	20.96	ug/L		83
65) t-1,4-Dichloro-2-butene	11.152	88	6471	17.54	ug/L	#	91
66) 4-Chlorotoluene	11.206	91	151273	20.63	ug/L		98
67) tert-Butylbenzene	11.359	91	93027	20.03	ug/L		93
68) 1,2,4-Trimethylbenzene	11.413	105	173249	20.43	ug/L		99
69) sec-Butylbenzene	11.498	105	200277	20.40	ug/L		97
70) 4-Isopropyltoluene	11.608	119	163861	20.51	ug/L		98
71) 1,3-Dichlorobenzene	11.669	146	94665	20.07	ug/L		99
72) 1,4-Dichlorobenzene	11.736	146	95158	20.19	ug/L		98
73) n-Butylbenzene	11.930	91	139021	20.46	ug/L		96
74) 1,2-Dichlorobenzene	12.058	146	83361	19.24	ug/L		98
75) 1,2-Dibromo-3-Chloropr...	12.673	157	11826	18.70	ug/L		90
76) Hexachlorobutadiene	13.184	223	13349	21.28	ug/L		94
77) 1,2,4-Trichlorobenzene	13.214	180	51150	20.28	ug/L		98
78) Naphthalene	13.494	128	173598	20.44	ug/L		98
79) 1,2,3-Trichlorobenzene	13.652	180	48744	20.39	ug/L		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053118.D
Acq On : 31 May 2019 8:51 pm
Operator : TB
Sample : 9051463-MS1
Misc : 50X 5g/5mLx1000uL/50mL E0895-13
ALS Vial : 18 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:49 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053123.D
Acq On : 31 May 2019 11:08 pm
Operator : TB
Sample : 9051463-MS2
Misc : 50X 5g/5mLx1000uL/50mL E0929-03
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:47:02 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

NR

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.034	168	270725	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.588	TIC	1151981	45.66	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.834	TIC	921136	48.87	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.751	TIC	1349947	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.096	TIC	1605314	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.728	TIC	1106679	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	2442018m	155.71	ug/L	
6) TPHg (C5-C9)	9.906	TIC	2441425m	187.13	ug/L	
7) TPHg (C6-C10)	9.906	TIC	2155291m	221.31	ug/L	
8) NWTPH-Gx	9.906	TIC	222537m	40.83	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\OXY\
Data File : VC19053123.D
Acq On : 31 May 2019 11:08 pm
Operator : TB
Sample : 9051463-MS2
Misc : 50X 5g/5mLx1000uL/50mL E0929-03
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:45:03 2019
Quant Method : C:\msdchem\1\METHODS\VC190531OXY.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Fri May 31 14:50:42 2019
Response via : Initial Calibration

6/3/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (ISTD)	6.034	168	270725	50.00	ug/L	0.00
10) Chlorobenzene-d5 (ISTD)	9.751	117	460643	50.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.728	152	191650	50.00	ug/L	0.00
System Monitoring Compounds						
6) Dibromofluoromethane (...	5.535	111	137847	48.54	ug/L	0.00
8) 1,4-Difluorobenzene (S...	6.588	114	505784	48.38	ug/L	0.00
11) Toluene-d8 (Surr)	8.096	98	606026	49.32	ug/L	0.00
13) 4-Bromofluorobenzene (...	10.834	174	166460	49.50	ug/L	0.00
Target Compounds						Qvalue
2) Ethanol	3.339	45	86901	1081.73	ug/L	89
3) tert-Butanol (TBA)	4.288	59	697634	1220.19	ug/L	90
4) Diisopropyl ether (DIPE)	4.428	45	48427	4.70	ug/L	91
5) Ethyl-tert-butyl ether...	4.793	59	45898	4.67	ug/L	97
7) tert-Amyl methyl ether...	6.071	73	42580	4.48	ug/L	95
9) tert-Amyl ethyl ether ...	6.819	59	33233	4.72	ug/L	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053123.D
Acq On : 31 May 2019 11:08 pm
Operator : TB
Sample : 9051463-MS2
Misc : 50X 5g/5mLx1000uL/50mL E0929-03
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:59 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

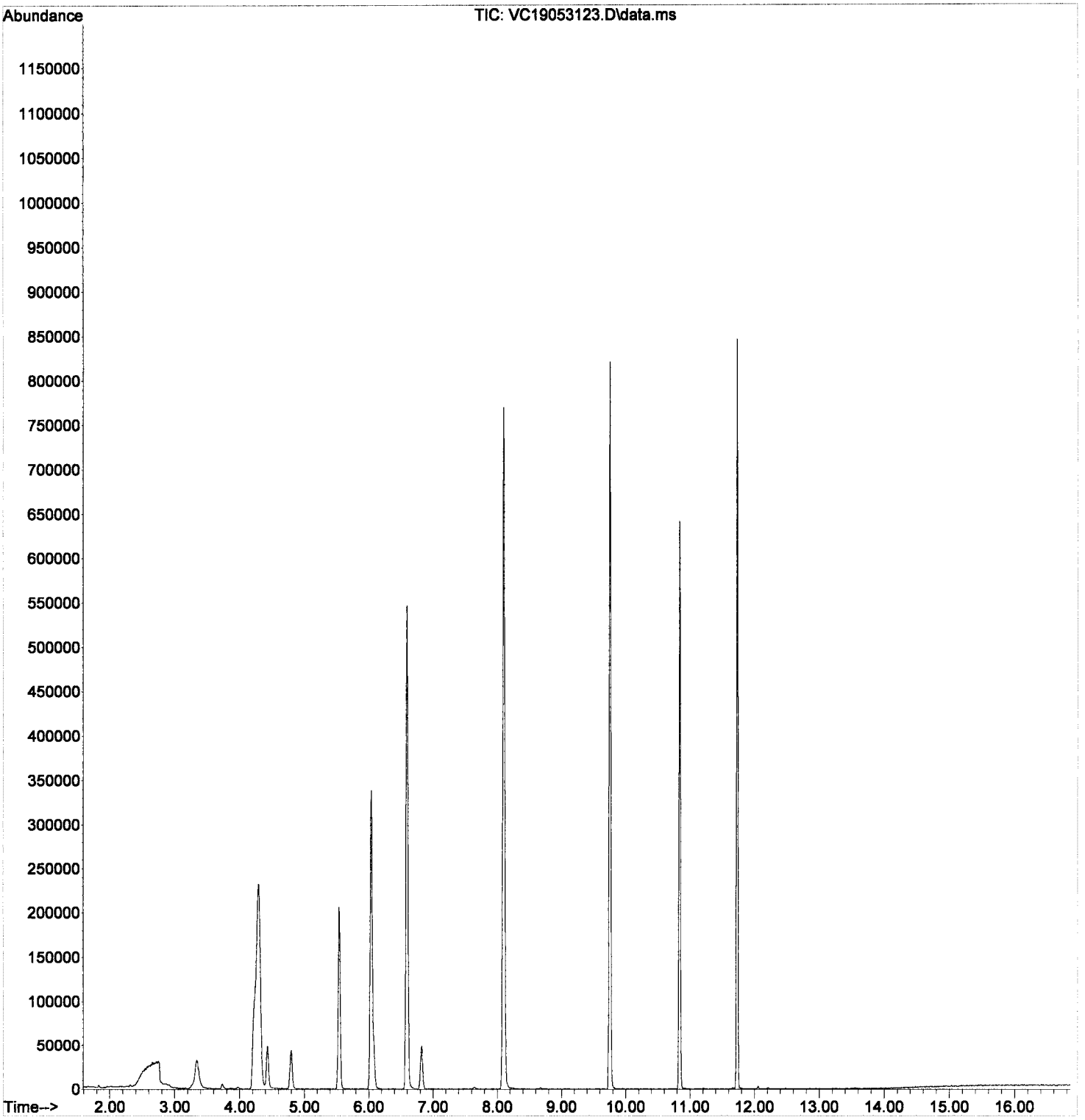
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.034	168	270725	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.751	117	460643	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.728	152	191650	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.535	111	137847	47.02	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.588	114	505784	48.57	ug/L		0.00
39) Toluene-d8 (S)	8.096	98	606026	48.63	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.834	174	166460	50.30	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.861	50	425	0.11	ug/L		73
5) Bromomethane	2.311	96	1148	0.74	ug/L		87
6) Chloroethane	2.506	64	203	0.20	ug/L	#	1
12) Methylene Chloride	3.728	84	2891	Below Cal			87
13) Acetone	3.850	43	527	0.43	ug/L	#	42
28) 2-Butanone (MEK)	5.748	43	323	0.15	ug/L		54

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053123.D
Acq On : 31 May 2019 11:08 pm
Operator : TB
Sample : 9051463-MS2
Misc : 50X 5g/5mLx1000uL/50mL E0929-03
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:12:59 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053124.D
Acq On : 31 May 2019 11:36 pm
Operator : TB
Sample : A9E0902-01@10000
Misc : 10000X 5g/5mLx5uL/50mL GX/8260
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

6/3/19

Quant Time: Jun 03 09:47:04 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

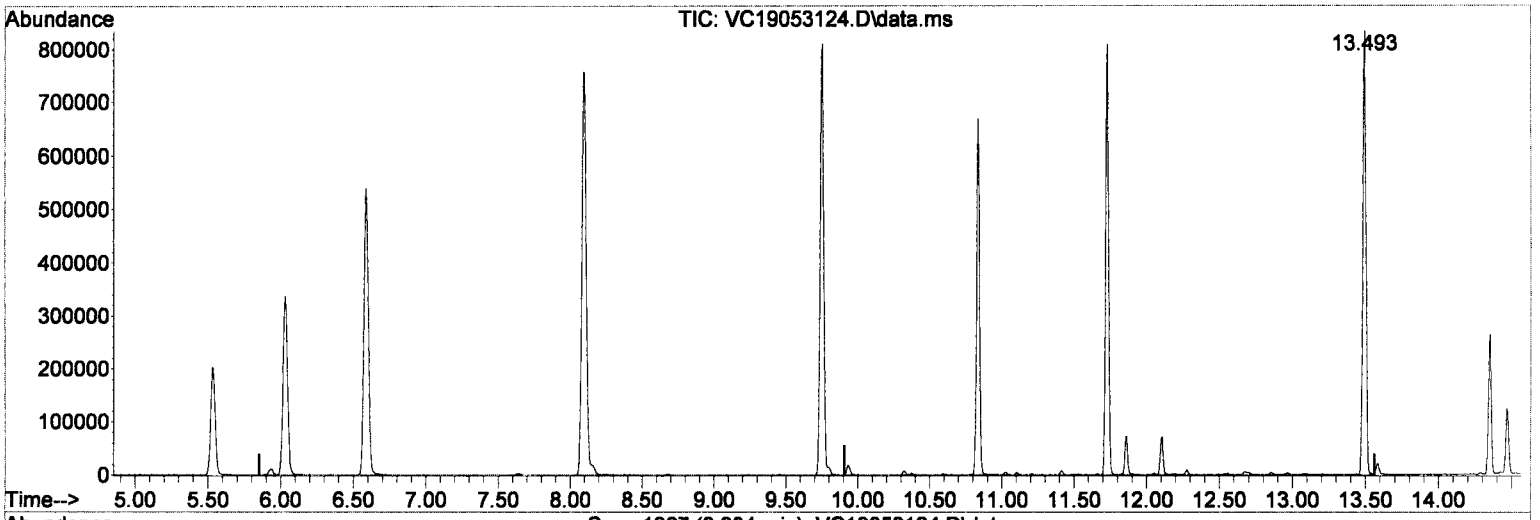
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.029	168	270110	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.589	TIC	1149156	45.65	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.835	TIC	938744	49.92	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.752	TIC	1383125	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.097	TIC	1638881	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.729	TIC	1123586	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	955924m	32.82	ug/L	
6) TPHg (C5-C9)	9.906	TIC	700508m	17.40	ug/L	
7) TPHg (C6-C10)	9.906	TIC	502523m	16.91	ug/L	
8) NWTPH-Gx	9.906	TIC	1582320m	213.99	ug/L	

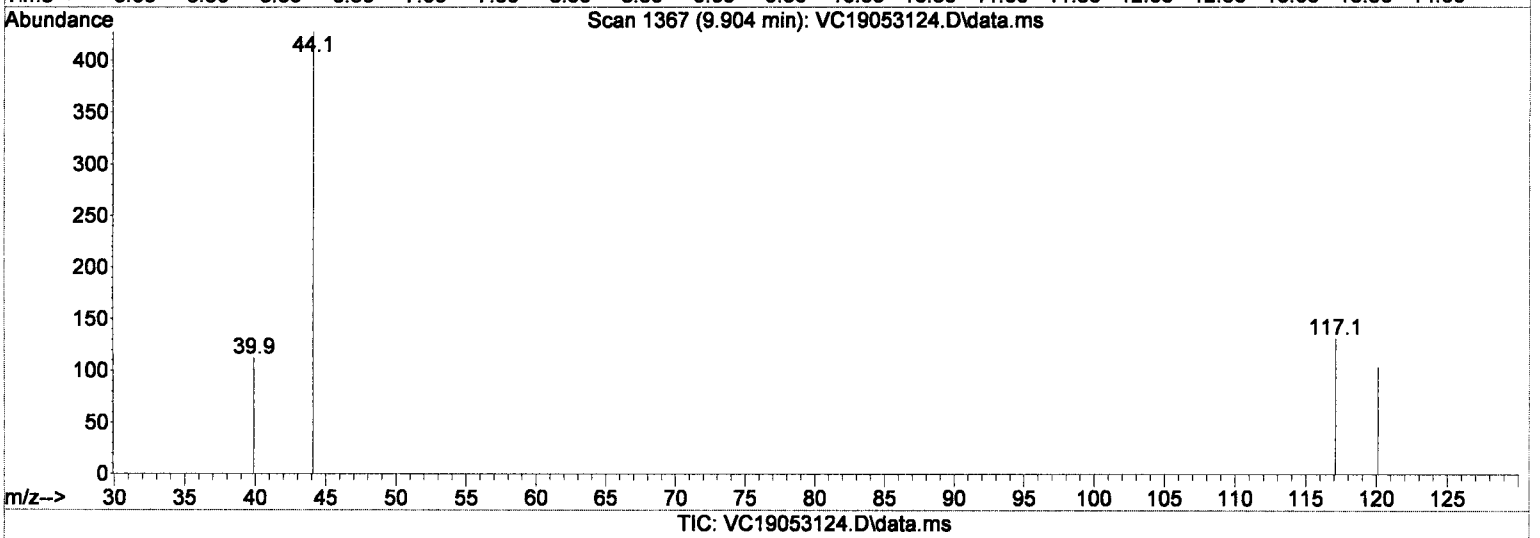
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053124.D
Acq On : 31 May 2019 11:36 pm
Operator : TB
Sample : A9E0902-01@10000
Misc : 10000X 5g/5mLx5uL/50mL GX/8260
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:47:04 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration





TIC: VC19053124.D\data.ms

(8) NWTPH-Gx (H)

9.906min (0.000) 213.99 ug/L m

response 1582320

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	3.33#
0.00	0.00	2.51#
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053124.D
Acq On : 31 May 2019 11:36 pm
Operator : TB
Sample : A9E0902-01@10000
Misc : 10000X 5g/5mLx5uL/50mL GX/8260
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

6/3/19

Quant Time: Jun 03 09:13:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.029	168	270110	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	462250	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.729	152	189210	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.536	111	138101	47.22	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.589	114	504901	48.60	ug/L		0.00
39) Toluene-d8 (S)	8.097	98	610144	48.79	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.835	174	169750	51.96	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.862	50	397	0.10	ug/L		77
5) Bromomethane	2.306	96	1320	0.85	ug/L		86
6) Chloroethane	2.428	64	143	0.14	ug/L	#	1
12) Methylene Chloride	3.723	84	2836	Below Cal			95
13) Acetone	3.821	43	105	0.09	ug/L	#	42
29) Benzene	5.938	78	10899	0.93	ug/L		93
40) Toluene	8.158	91	14170	1.16	ug/L		93
50) Ethylbenzene	9.801	91	9124	0.73	ug/L		97
52) m,p-Xylenes (2)	9.934	91	10576	1.18	ug/L		94
53) o-Xylene	10.324	91	4322	0.46	ug/L		94
54) Styrene	10.379	104	1575	0.24	ug/L		84
56) Isopropylbenzene	10.592	105	1159	0.11	ug/L		86
63) 1,3,5-Trimethylbenzene	11.103	105	2225	0.29	ug/L		88
67) tert-Butylbenzene	11.413	91	562	0.13	ug/L	#	28
68) 1,2,4-Trimethylbenzene	11.413	105	4182	0.53	ug/L		96
78) Naphthalene	13.493	128	612565	77.60	ug/L		100

<LMDL

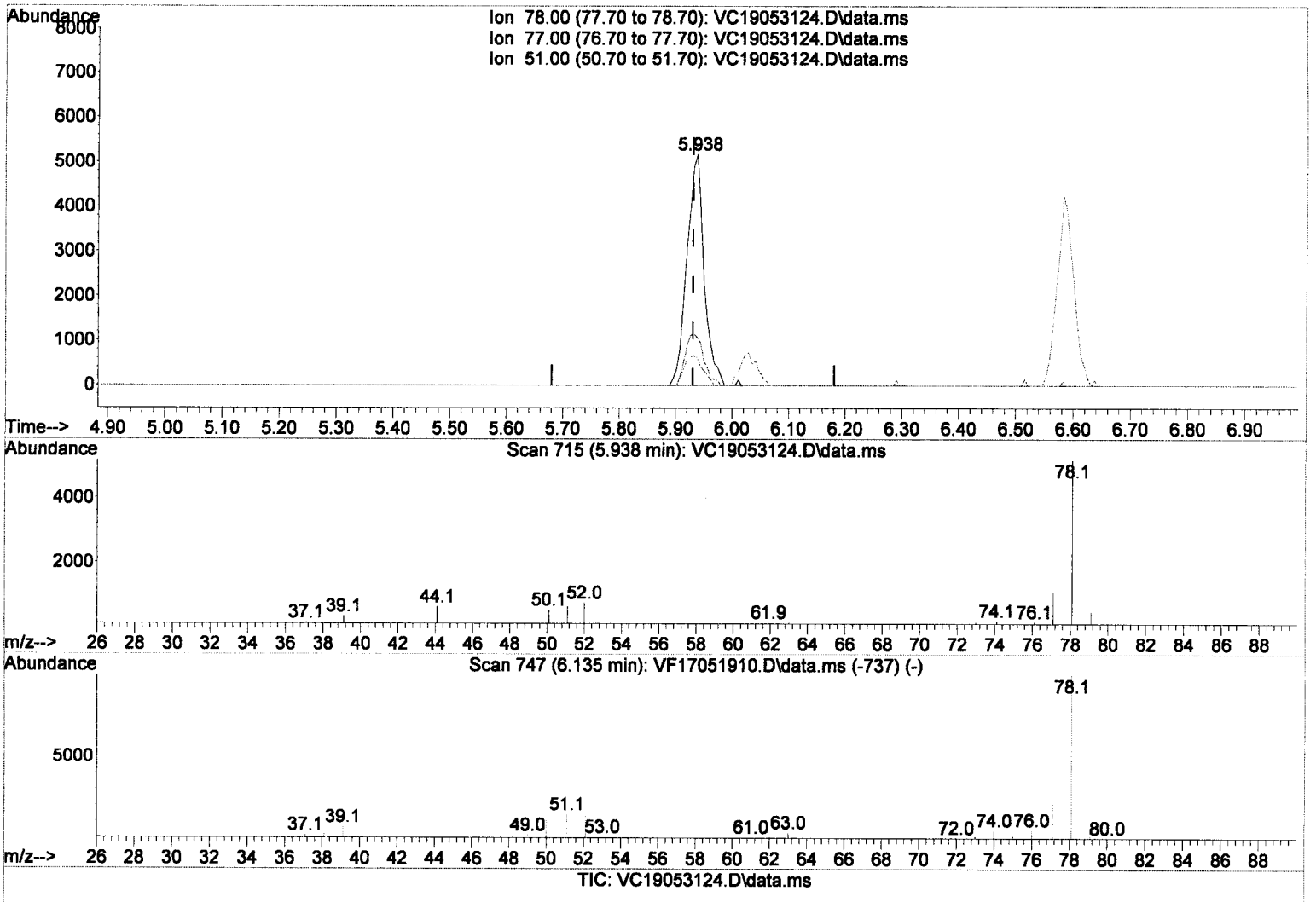
<LMDL

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053124.D
Acq On : 31 May 2019 11:36 pm
Operator : TB
Sample : A9E0902-01@10000
Misc : 10000X 5g/5mLx5uL/50mL GX/8260
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:13:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



TIC: VC19053124.D\data.ms

(29) Benzene

5.938min (+0.007) 0.93 ug/L

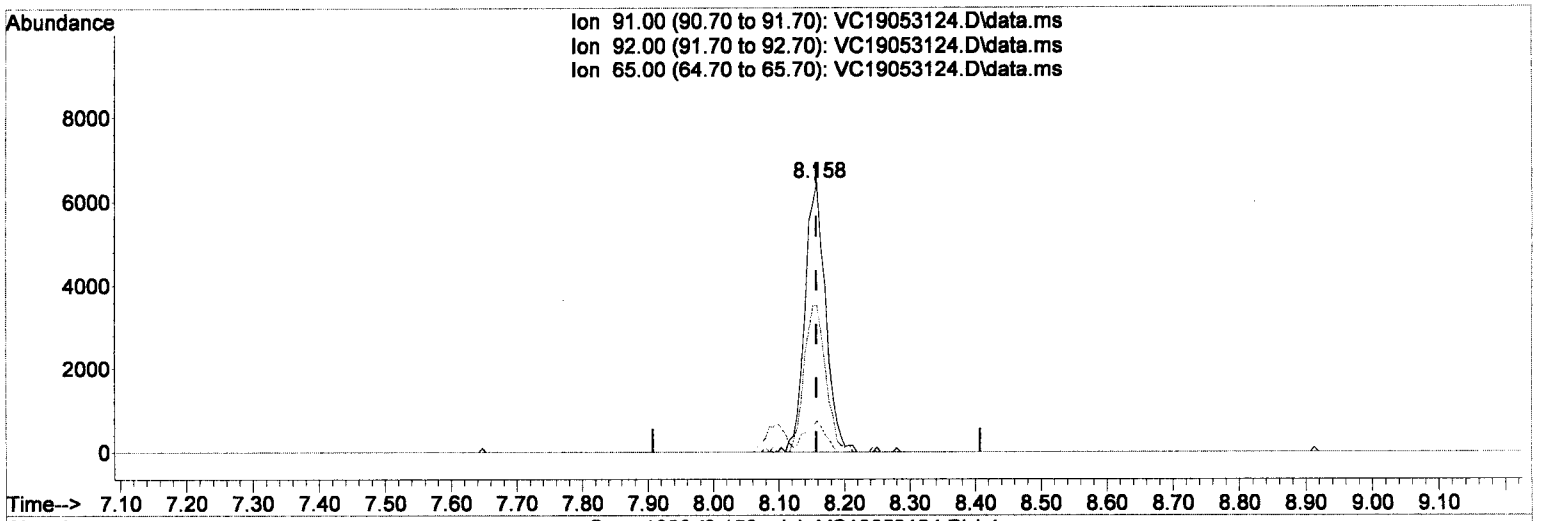
response 10899

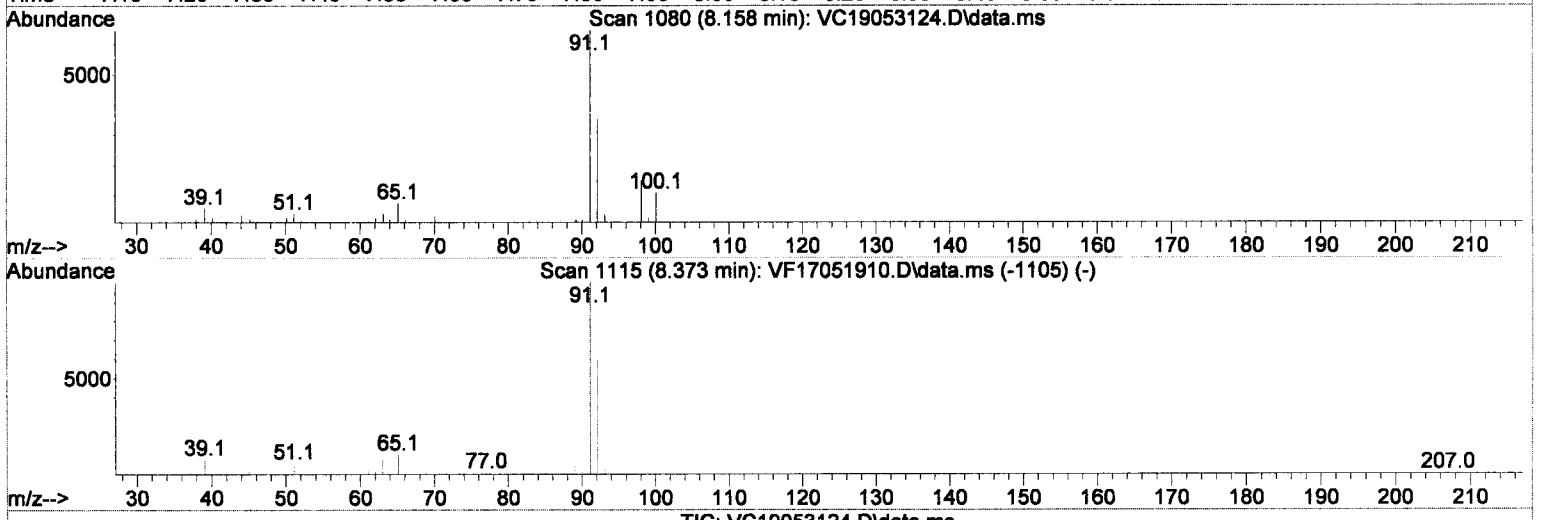
Ion	Exp%	Act%
78.00	100	100
77.00	23.20	20.58
51.00	15.50	11.98
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053124.D
Acq On : 31 May 2019 11:36 pm
Operator : TB
Sample : A9E0902-01@10000
Misc : 10000X 5g/5mLx5uL/50mL GX/8260
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:13:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration





TIC: VC19053124.D\data.ms

(40) Toluene (C)

8.158min (+0.001) 1.16 ug/L

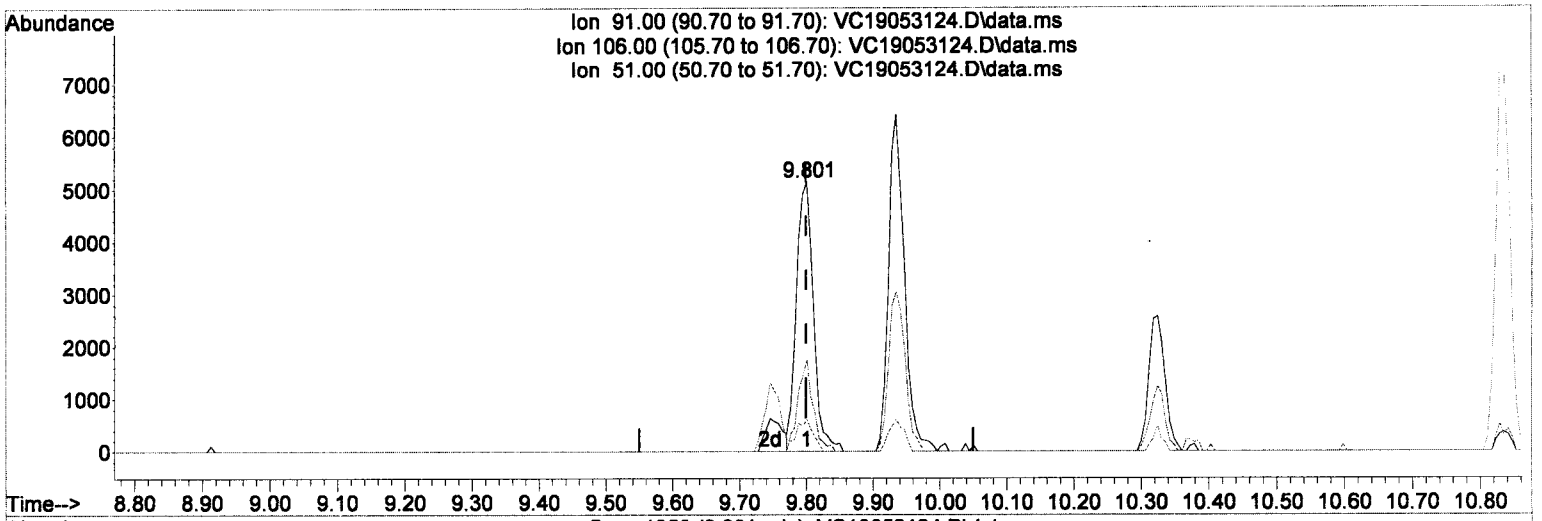
response 14170

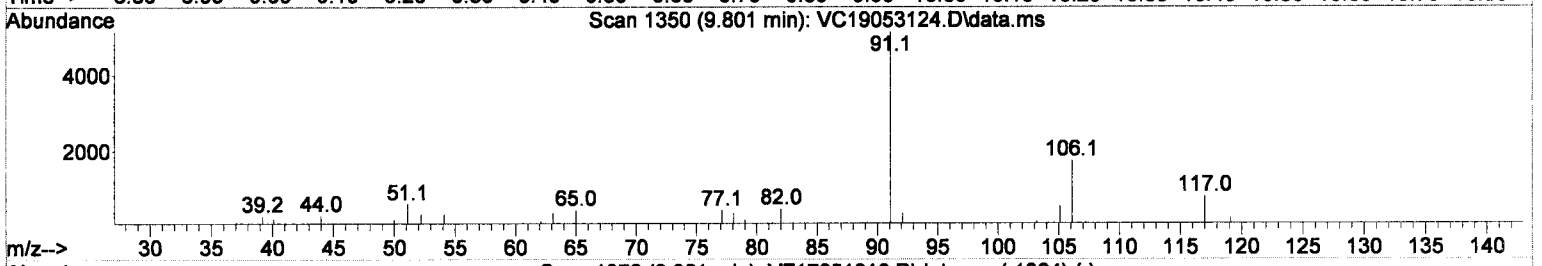
Ion	Exp%	Act%
91.00	100	100
92.00	60.20	54.33
65.00	11.90	11.41
0.00	0.00	0.00

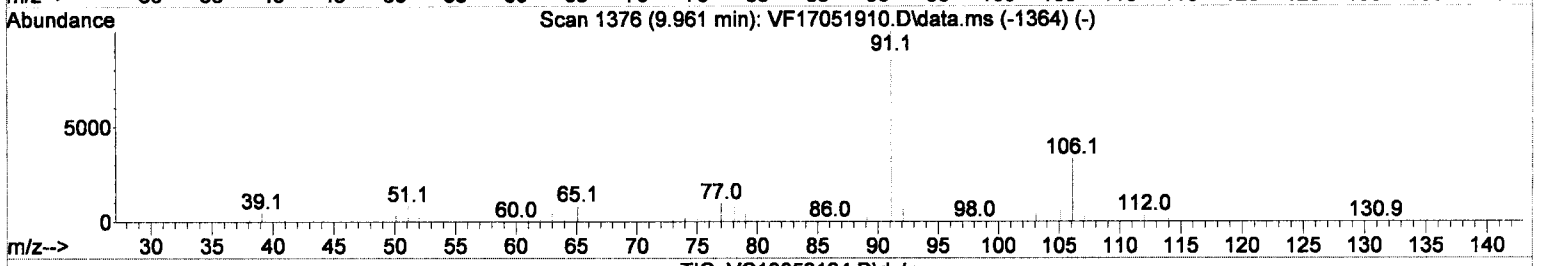
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053124.D
Acq On : 31 May 2019 11:36 pm
Operator : TB
Sample : A9E0902-01@10000
Misc : 10000X 5g/5mLx5uL/50mL GX/8260
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:13:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration







TIC: VC19053124.D\data.ms

(50) Ethylbenzene (C)

9.801min (+0.001) 0.73 ug/L

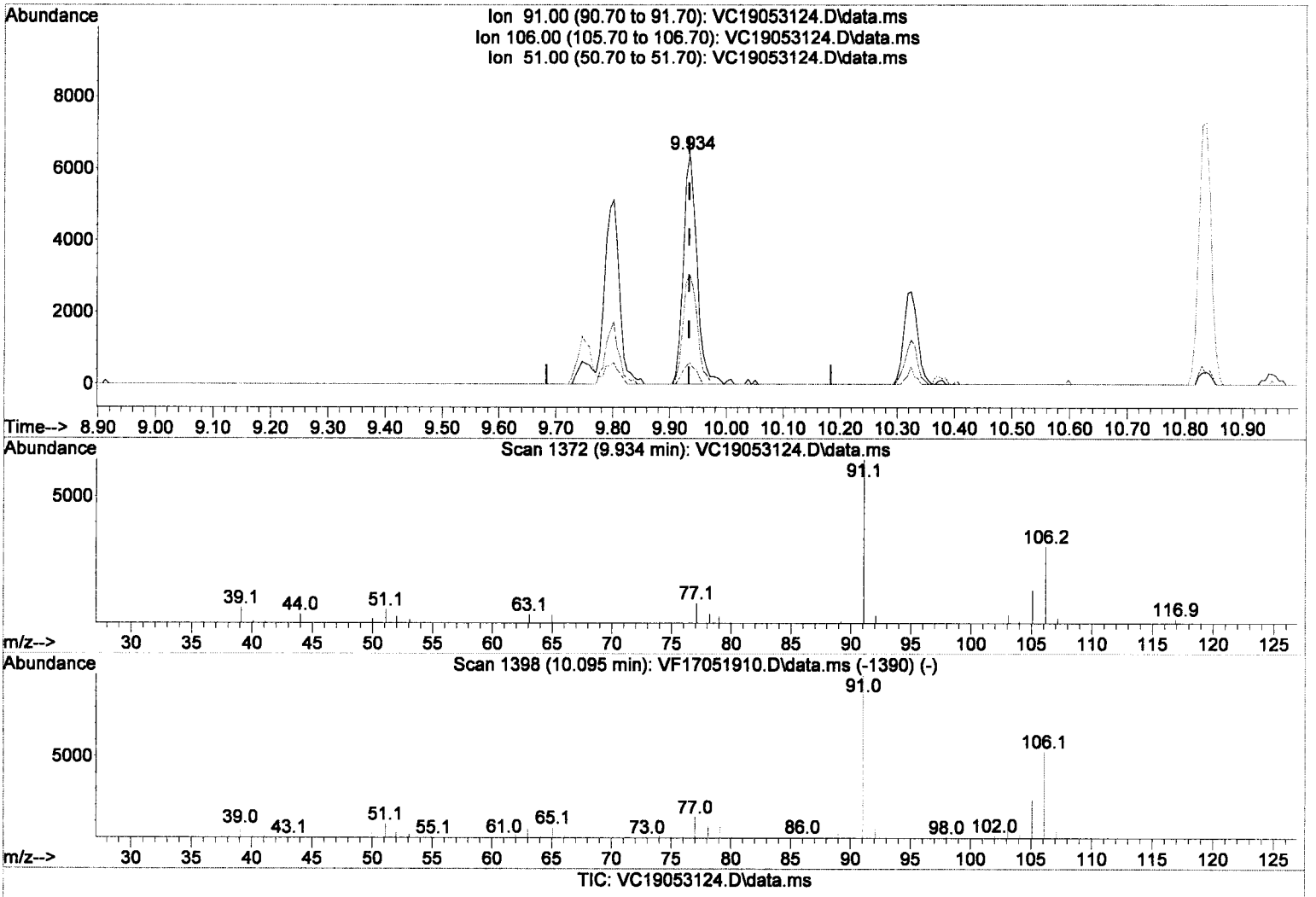
response 9124

Ion	Exp%	Act%
91.00	100	100
106.00	33.20	34.05
51.00	9.50	11.85
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053124.D
Acq On : 31 May 2019 11:36 pm
Operator : TB
Sample : A9E0902-01@10000
Misc : 10000X 5g/5mLx5uL/50mL GX/8260
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:13:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



TIC: VC19053124.D\data.ms

(52) m,p-Xylenes (2)

9.934min (+0.001) 1.18 ug/L

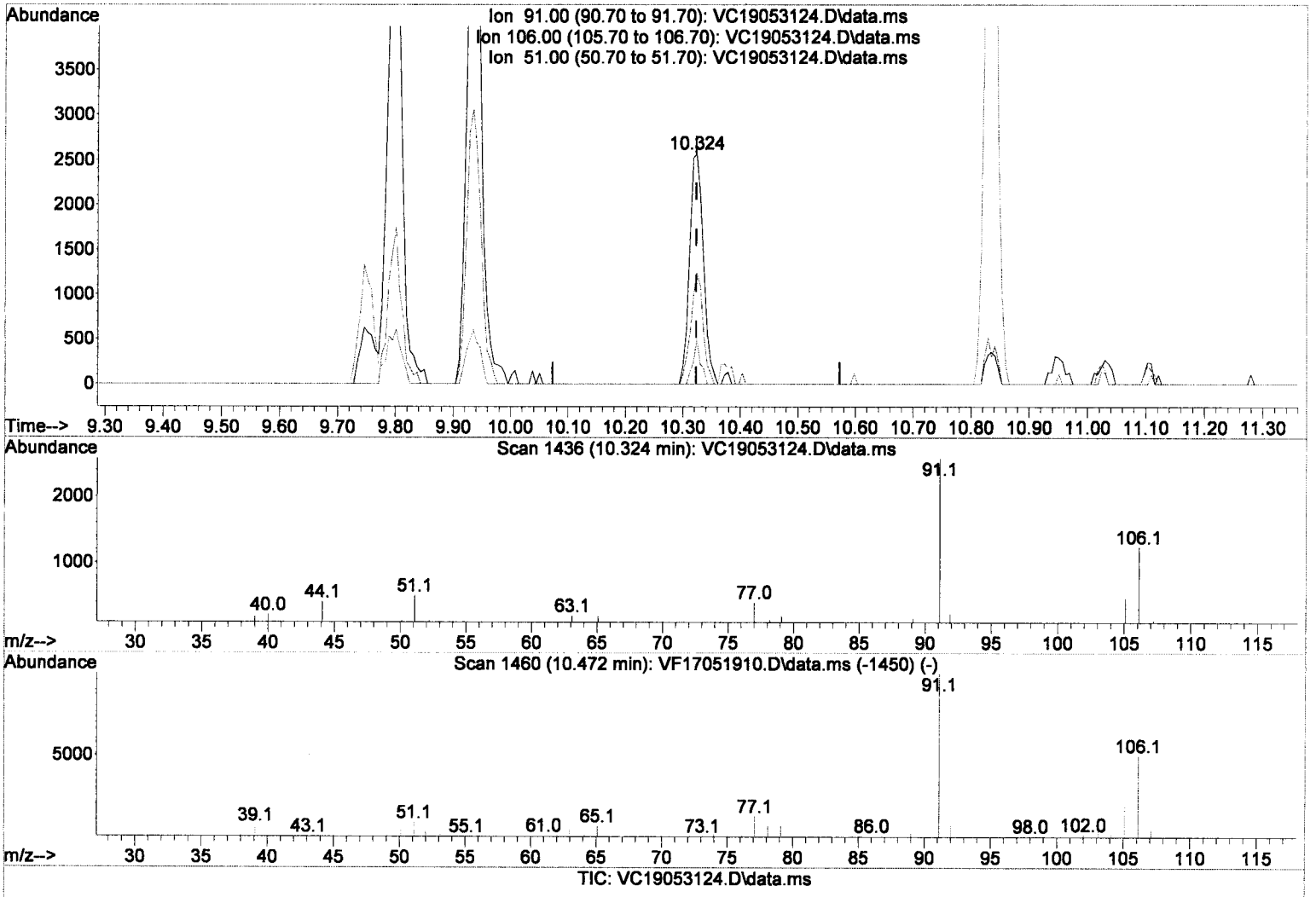
response 10576

Ion	Exp%	Act%
91.00	100	100
106.00	52.70	47.65
51.00	10.10	9.46
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053124.D
Acq On : 31 May 2019 11:36 pm
Operator : TB
Sample : A9E0902-01@10000
Misc : 10000X 5g/5mLx5uL/50mL GX/8260
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:13:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



TIC: VC19053124.D\data.ms

(53) o-Xylene

10.324min (+0.001) 0.46 ug/L

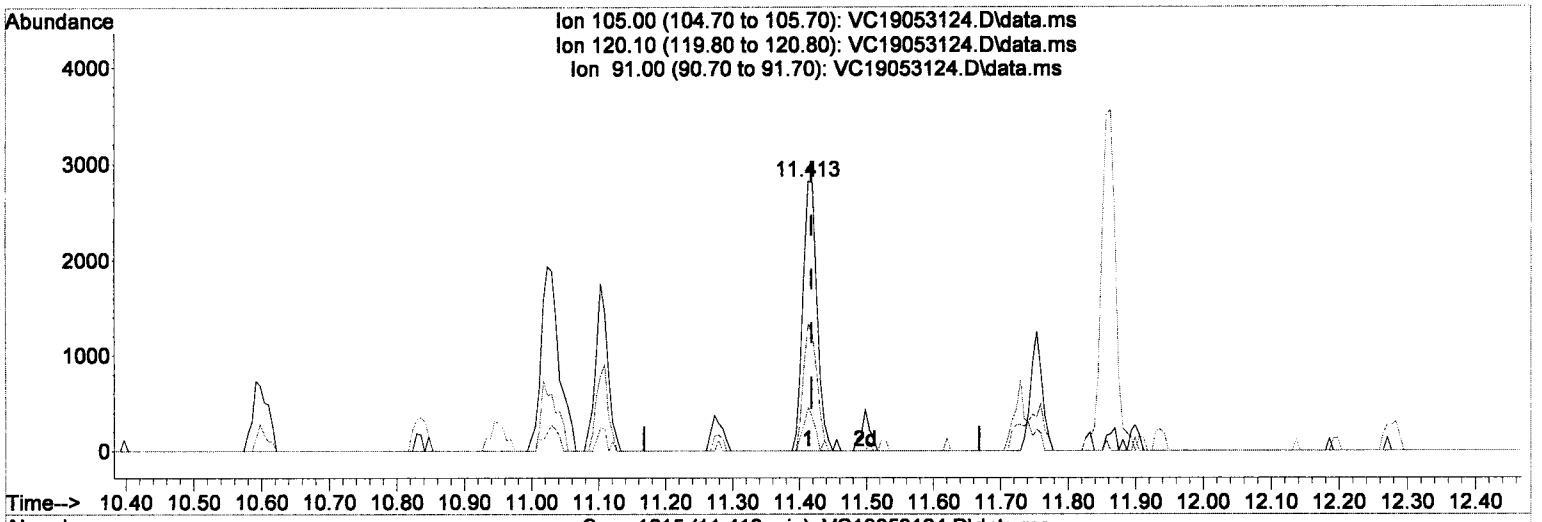
response 4322

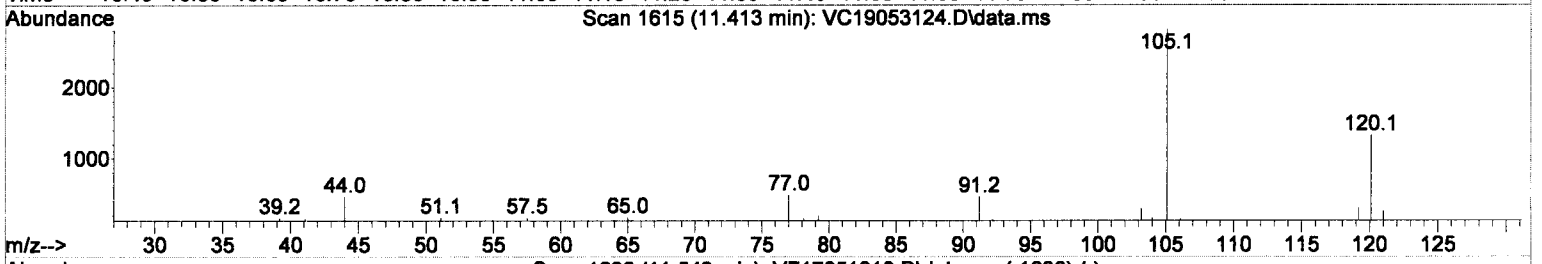
Ion	Exp%	Act%
91.00	100	100
106.00	49.40	48.15
51.00	10.00	19.29
0.00	0.00	0.00

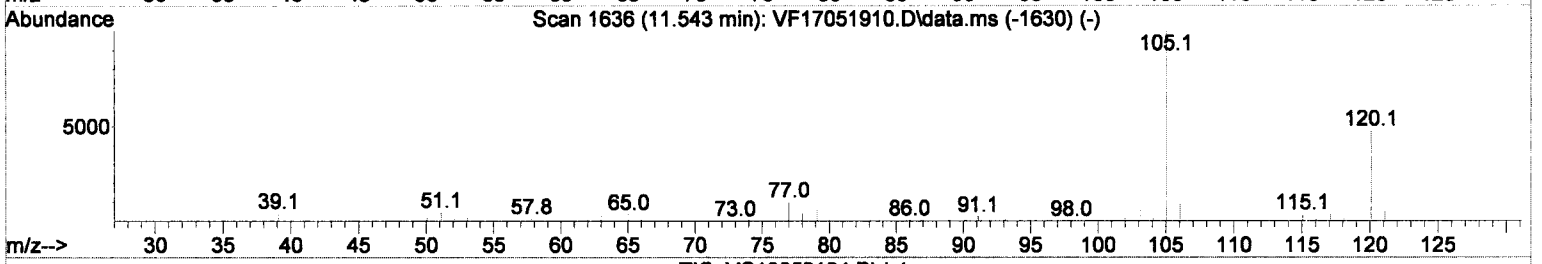
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053124.D
Acq On : 31 May 2019 11:36 pm
Operator : TB
Sample : A9E0902-01@10000
Misc : 10000X 5g/5mLx5uL/50mL GX/8260
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:13:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration







TIC: VC19053124.D\data.ms

(68) 1,2,4-Trimethylbenzene

11.413min (-0.005) 0.53 ug/L

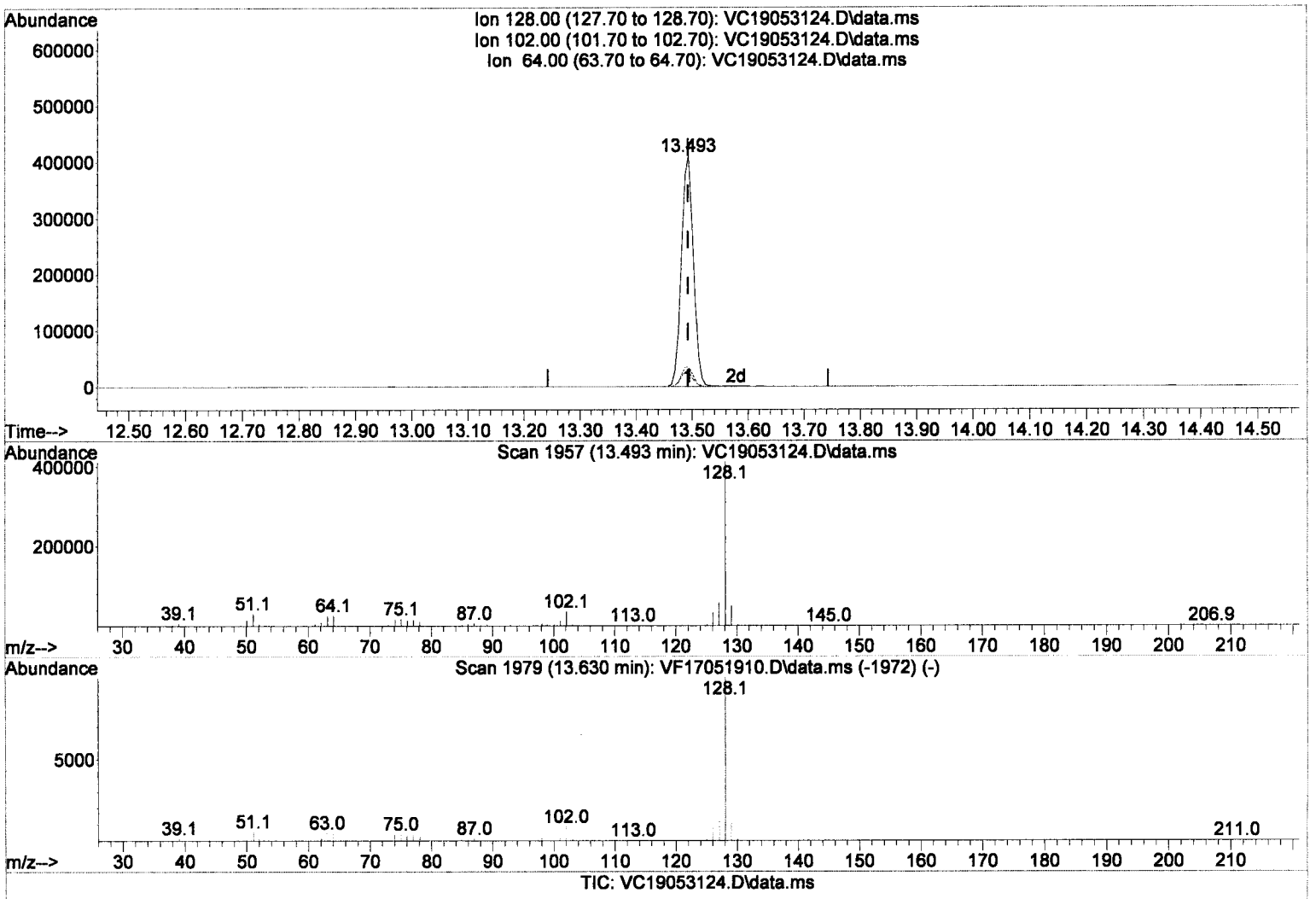
response 4182

Ion	Exp%	Act%
105.00	100	100
120.10	48.00	47.16
91.00	10.60	16.28
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053124.D
Acq On : 31 May 2019 11:36 pm
Operator : TB
Sample : A9E0902-01@10000
Misc : 10000X 5g/5mLx5uL/50mL GX/8260
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:13:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



TIC: VC19053124.D\data.ms

(78) Naphthalene

13.493min (+0.001) 77.60 ug/L

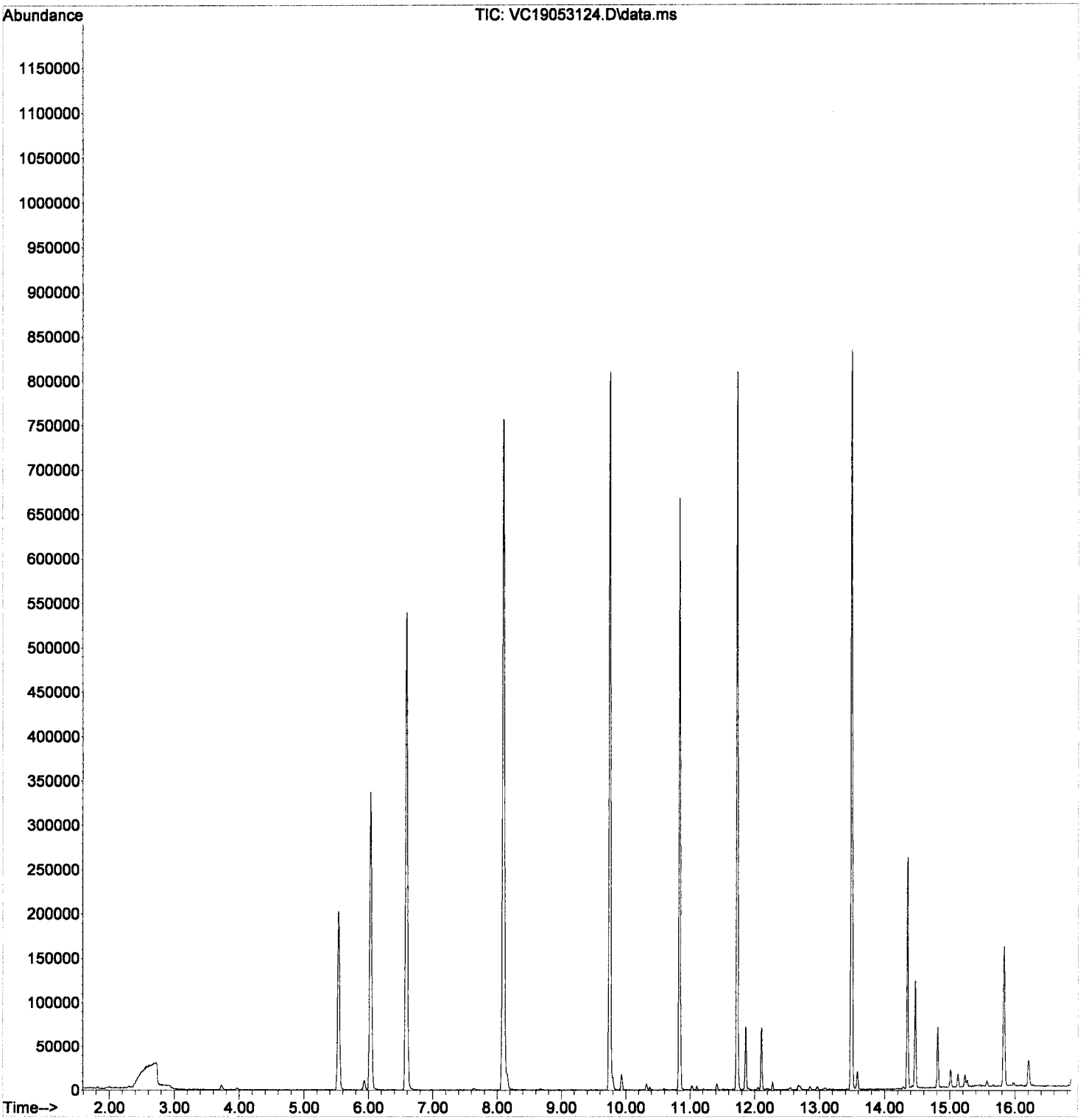
response 612565

Ion	Exp%	Act%
128.00	100	100
102.00	8.50	8.60
64.00	6.40	6.36
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E31027\
Data File : VC19053124.D
Acq On : 31 May 2019 11:36 pm
Operator : TB
Sample : A9E0902-01@10000
Misc : 10000X 5g/5mLx5uL/50mL GX/8260
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: Jun 03 09:13:21 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



APEX LABORATORIES, LLC
6700 SW Sandburg St. Tigard OR 97223 phone 503-718-2323

Volatile Organic Compounds by EPA 8260C

Calibration Data

Sequence 9E29058 (Cal ID A9E3104) VOA-GCMS3

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence:	9E29058	Instrument:	VOA-GCMS3
Date:	05/29/19 13:56	Calibration:	A9E3104

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9E29058-IBL1	Soil	QC	QC			A19C135	
2	9E29058-TUN1	Soil	QC	QC			A19C135	
3	9E29058-ICB1	Soil	QC	QC			A19C135	
4	9E29058-CAL1	Soil	QC	QC			A19C135	A19E361
5	9E29058-CAL2	Soil	QC	QC			A19C135	A19E362
6	9E29058-CAL3	Soil	QC	QC			A19C135	A19E363
7	9E29058-CAL4	Soil	QC	QC			A19C135	A19E364
8	9E29058-CAL5	Soil	QC	QC			A19C135	A19E365
9	9E29058-CAL6	Soil	QC	QC			A19C135	A19E366
10	9E29058-CAL7	Soil	QC	QC			A19C135	A19E367
11	9E29058-CAL8	Soil	QC	QC			A19C135	A19E368
12	9E29058-CAL9	Soil	QC	QC			A19C135	A19E369
13	9E29058-IBL2	Soil	QC	QC			A19C135	
14	9E29058-CALA	Soil	QC	QC			A19C135	A19E370
15	9E29058-IBL3	Soil	QC	QC			A19C135	
16	9E29058-CALB	Soil	QC	QC			A19C135	A19E371
17	9E29058-IBL4	Soil	QC	QC			A19C135	
18	9E29058-IBL5	Soil	QC	QC			A19C135	
19	9E29058-ICV1	Soil	QC	QC			A19C135	A19D180
20	9E29058-IBL6	Soil	QC	QC			A19C135	
21	9E29058-TUN2	Soil	QC	QC			A19C135	
22	9E29058-IBL7	Soil	QC	QC			A19C135	
23	9E29058-ICB2	Soil	QC	QC			A19C135	
24	9E29058-CALC	Soil	QC	QC			A19C135	A19E372
25	9E29058-CALD	Soil	QC	QC			A19C135	A19E373
26	9E29058-CALE	Soil	QC	QC			A19C135	A19E374
27	9E29058-CALF	Soil	QC	QC			A19C135	A19E375
28	9E29058-CALG	Soil	QC	QC			A19C135	A19E183
29	9E29058-CALH	Soil	QC	QC			A19C135	A19E184
30	9E29058-CALI	Soil	QC	QC			A19C135	A19E185
31	9E29058-CALJ	Soil	QC	QC			A19C135	A19E186
32	9E29058-IBL8	Soil	QC	QC			A19C135	
33	9E29058-IBL9	Soil	QC	QC			A19C135	
34	9E29058-ICV2	Soil	QC	QC			A19C135	A19B262
35	9E29058-IBLA	Soil	QC	QC			A19C135	

Data Entered By: 5/31/19

Data Reviewed By: 5/31/19

Comments:

Calibration Status Report VOA-GCMS3

Method Path : C:\msdchem\1\METHODS\
Method File : VC190529S.M
Title : EPA 8260: Volatile Organic Compounds
Last Update : Thu May 30 14:50:00 2019
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	-1	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052904.D
2	2	0	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052905.D
3	3	0	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052906.D
4	4	1	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052907.D
5	5	2	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052908.D
6	6	5	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052909.D
7	7	10	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052910.D
8	8	20	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052911.D
9	9	50	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052912.D
10	10	100	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052914.D
11	11	200	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052916.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	May 30 12:12 2019	May 30 11:57 2019	29 May 2019 3:40 pm
2	2	May 30 12:12 2019	May 30 12:04 2019	29 May 2019 4:07 pm
3	3	May 30 12:12 2019	May 30 12:05 2019	29 May 2019 4:35 pm
4	4	May 30 12:12 2019	May 30 12:06 2019	29 May 2019 5:02 pm
5	5	May 30 12:12 2019	May 30 11:45 2019	29 May 2019 5:30 pm
6	6	May 30 12:12 2019	May 30 11:45 2019	29 May 2019 5:57 pm
7	7	May 30 12:12 2019	May 30 11:45 2019	29 May 2019 6:25 pm
8	8	May 30 12:12 2019	May 30 11:45 2019	29 May 2019 6:52 pm
9	9	May 30 12:12 2019	May 30 11:46 2019	29 May 2019 7:20 pm
10	10	May 30 12:12 2019	May 30 11:46 2019	29 May 2019 8:15 pm
11	11	May 30 12:12 2019	May 30 11:46 2019	29 May 2019 9:10 pm

VC190529S.M Thu May 30 15:32:22 2019

Response Factor Report VOA-GCMS3

Method Path : C:\msdchem\1\METHODS\
Method File : VC190529S.M
Title : EPA 8260: Volatile Organic Compounds
Last Update : Thu May 30 14:50:00 2019
Response Via : Initial Calibration

Calibration Files
1 =VC19052904.D 2 =VC19052905.D 3 =VC19052906.D 4 =VC19052907.D 5 =VC19052908.D 6 =VC19052909.D
7 =VC19052910.D 8 =VC19052911.D 9 =VC19052912.D 10 =VC19052914.D 11 =VC19052916.D

		Compound	1	2	3	4	5	6	7	8	9	10	11	Avg	%RSD
1)	I	Pentafluorobenzene...	ISTD												
2)		Dichlorodifluo...	0.462	0.413	0.416	0.448	0.479	0.453	0.441	0.488	0.463	0.426	0.449		5.63
3)	P	Chloromethane		0.919	0.788	0.748	0.751	0.710	0.710	0.715	0.683	0.612	0.737		11.42
4)	C	Vinyl Chloride	0.501	0.520	0.508	0.516	0.529	0.502	0.513	0.527	0.510	0.470	0.510		3.26
5)		Bromomethane					0.356	0.322	0.277	0.267	0.250	0.253	0.287		14.87
6)		Chloroethane				0.197	0.206	0.182	0.187	0.191	0.203	0.176	0.191		5.76
7)		Trichlorofluor...		0.276	0.289	0.290	0.302	0.272	0.291	0.291	0.293	0.252	0.284		5.30
8)	C	1,1-Dichloroet...	0.444	0.556	0.503	0.480	0.511	0.513	0.507	0.538	0.515	0.493	0.506		6.03
9)		Carbon Disulfide	0.813	0.771	0.678	0.672	0.703	0.726	0.789	0.946	0.971	0.960	0.803		14.57
10)		Freon 113	0.587	0.460	0.437	0.383	0.410	0.409	0.407	0.419	0.399	0.384	0.429		13.96
11)		Iodomethane			0.143	0.148	0.133	0.155	0.180	0.235	0.267	0.288	0.194		31.41
12)		Methylene Chlo...				1.812	0.991	0.710	0.568	0.490	0.454	0.409	0.776		64.14
13)		Acetone				0.284	0.233	0.206	0.217	0.223	0.217	0.197	0.225		12.62
14)		t-1,2-Dichloro...	0.471	0.715	0.571	0.532	0.565	0.614	0.605	0.596	0.626	0.598	0.559	0.587	10.38
15)		n-Hexane				0.173	0.137	0.111	0.098	0.102	0.093	0.092	0.115		25.96
16)		Methyl-tert-bu...	1.793	1.755	1.807	1.734	1.721	1.760	1.742	1.752	1.781	1.699	1.570	1.738	3.66
17)	P	1,1-Dichloroet...		0.716	0.697	0.709	0.734	0.744	0.724	0.738	0.749	0.744	0.674	0.723	3.33
18)		Acrylonitrile				0.267	0.250	0.301	0.301	0.298	0.318	0.308	0.295	0.292	7.65
19)		c-1,2-Dichloro...	0.702	0.595	0.694	0.629	0.630	0.672	0.675	0.660	0.679	0.659	0.607	0.655	5.35
20)		2,2-Dichloropr...			0.574	0.545	0.539	0.566	0.585	0.573	0.593	0.574	0.548	0.566	3.26
21)		Bromochloromet...		0.441	0.324	0.379	0.376	0.400	0.402	0.394	0.402	0.388	0.360	0.387	7.92
22)	C	Chloroform			1.008	0.895	0.860	0.832	0.839	0.845	0.868	0.832	0.752	0.859	7.93
23)		Carbon Tetrach...				0.393	0.370	0.429	0.451	0.465	0.528	0.535	0.542	0.464	14.21
24)		Tetrahydrofuran			0.413	0.387	0.323	0.309	0.308	0.303	0.313	0.301	0.287	0.327	13.16
25)		1,1,1-Trichlor...		0.640	0.679	0.595	0.632	0.655	0.654	0.673	0.699	0.679	0.654	0.656	4.49
26)	S	Dibromofluorom...	0.537	0.532	0.521	0.521	0.550	0.536	0.538	0.553	0.574	0.553	0.542	0.541	2.83
27)		1,1-Dichloropr...		0.800	0.644	0.744	0.635	0.652	0.656	0.658	0.688	0.651	0.624	0.675	8.20
28)		2-Butanone (MEK)				0.453	0.361	0.413	0.402	0.403	0.416	0.392	0.376	0.402	6.86
29)		Benzene	2.357	2.260	2.235	2.284	2.147	2.202	2.176	2.160	2.184	2.046	1.856	2.173	6.11
30)		1,2-Dichloroet...		0.667	0.686	0.639	0.648	0.653	0.648	0.647	0.663	0.629	0.599	0.648	3.59
31)		iso-Butyl Alcohol						0.049	0.049	0.050	0.052	0.051	0.048	0.050	2.91
32)	S	1,4-Difluorobe...	1.899	1.916	1.909	1.926	1.948	1.932	1.903	1.931	1.951	1.905	1.934	1.923	0.93
33)		Trichloroethen...	0.689	0.758	0.518	0.610	0.611	0.597	0.585	0.590	0.613	0.587	0.547	0.610	10.65
34)		Dibromomethane			0.281	0.259	0.272	0.281	0.297	0.301	0.321	0.310	0.293	0.290	6.62
35)	C	1,2-Dichloropr...		0.580	0.525	0.530	0.550	0.566	0.554	0.570	0.581	0.565	0.534	0.556	3.68
36)		Bromodichlorom...		0.420	0.429	0.423	0.395	0.464	0.473	0.516	0.591	0.605	0.598	0.491	16.46
37)		Chlorobenzene-d5 (I)	ISTD												
38)		c-1,3-Dichloro...		0.337	0.319	0.357	0.343	0.385	0.402	0.426	0.458	0.460	0.448	0.394	13.50
39)	S	Toluene-d8 (S)	1.354	1.351	1.350	1.355	1.346	1.359	1.353	1.356	1.338	1.348	1.369	1.353	0.58
40)	C	Toluene			1.620	1.480	1.319	1.334	1.306	1.285	1.262	1.203	1.095	1.323	11.49

Method Path : C:\msdchem\1\METHODS\
Method File : VC190529S.M
Title : EPA 8260: Volatile Organic Compounds

41)		Tetrachloroeth...		0.391	0.374	0.304	0.268	0.297	0.294	0.285	0.293	0.284	0.277	0.307	13.47
42)		4-Methyl-2-Pen...	0.483	0.474	0.444	0.408	0.366	0.382	0.399	0.389	0.403	0.385	0.358	0.408	10.15
43)		t-1,3-Dichloro...				0.310	0.285	0.325	0.360	0.382	0.419	0.424	0.416	0.365	14.76
44)		1,1,2-Trichlor...	0.255	0.283	0.258	0.261	0.251	0.278	0.275	0.278	0.285	0.278	0.269	0.270	4.39
45)		Dibromochlorom...		0.096	0.155	0.161	0.159	0.167	0.184	0.202	0.247	0.262	0.269	0.190	28.85
46)		1,3-Dichloropr...	0.488	0.553	0.528	0.476	0.473	0.501	0.501	0.508	0.508	0.496	0.465	0.500	5.06
47)		1,2-Dibromoeth...			0.225	0.248	0.231	0.259	0.274	0.277	0.295	0.289	0.280	0.264	9.51
48)		2-Hexanone				0.286	0.236	0.279	0.281	0.281	0.294	0.287	0.271	0.277	6.49
49)	P	Chlorobenzene		0.905	0.888	0.847	0.807	0.796	0.785	0.777	0.782	0.750	0.685	0.802	8.07
50)	C	Ethylbenzene		1.620	1.527	1.400	1.310	1.368	1.323	1.322	1.292	1.213	1.073	1.345	11.33
51)		1,1,1,2-Tetrac...			0.170	0.210	0.196	0.216	0.226	0.239	0.260	0.263	0.257	0.226	13.96
52)		m,p-Xylenes (2)		1.188	1.079	1.009	0.952	0.987	0.976	0.976	0.942	0.866	0.733	0.971	12.37
53)		o-Xylene		1.249	1.064	1.050	0.966	1.027	1.002	1.014	1.017	0.963	0.852	1.020	9.82
54)		Styrene				0.640	0.657	0.644	0.715	0.737	0.767	0.786	0.776	0.697	0.713	8.05
55)	P	Bromoform				0.053	0.072	0.075	0.091	0.099	0.111	0.144	0.159	0.168	0.108	37.80
56)		Isopropylbenzene	1.476	1.245	1.162	1.148	1.125	1.192	1.163	1.170	1.145	1.090	0.955	1.170	10.65
57)	I	1,4-Dichlorobenzen...	----------			ISTD	----------								
58)	S	4-Bromofluorob...	0.863	0.866	0.866	0.863	0.857	0.868	0.866	0.868	0.859	0.873	0.848	0.863	0.78
59)		Bromobenzene	0.455	0.670	0.691	0.705	0.677	0.700	0.693	0.673	0.687	0.686	0.625	0.660	10.81
60)		n-Propylbenzene	4.019	3.245	3.148	2.876	2.838	3.062	2.971	2.971	2.888	2.761	2.334	3.010	13.61
61)	P	1,1,2,2-Tetrac...	0.684	0.574	0.663	0.618	0.596	0.654	0.680	0.683	0.696	0.686	0.673	0.655	6.23
62)		2-Chlorotoluene	0.668	0.699	0.604	0.621	0.567	0.638	0.637	0.617	0.618	0.624	0.562	0.623	6.33
63)		1,3,5-Trimethy...		2.321	2.080	2.113	1.864	2.110	2.087	2.073	2.032	1.958	1.712	2.035	8.02
64)		1,2,3-Trichlor...		0.188	0.331	0.267	0.282	0.274	0.277	0.275	0.281	0.268	0.258	0.270	12.92
65)		t-1,4-Dichloro...				0.049	0.041	0.068	0.076	0.086	0.098	0.102	0.105	0.078	30.92
66)		4-Chlorotoluene		2.196	1.930	1.869	1.722	1.793	1.744	1.782	1.769	1.715	1.491	1.801	10.00
67)		tert-Butylbenzene	1.233	1.579	1.114	1.137	1.032	1.101	1.106	1.110	1.105	1.078	0.950	1.141	14.09
68)		1,2,4-Trimethy...	2.480	2.104	2.243	2.133	1.972	2.077	2.098	2.106	2.049	1.967	1.678	2.082	9.34
69)		sec-Butylbenzene	3.073	2.707	2.500	2.410	2.140	2.408	2.374	2.404	2.360	2.234	1.917	2.412	12.35
70)		4-Isopropyltol...		2.286	2.096	1.876	1.881	1.984	1.985	1.973	1.981	1.901	1.656	1.962	8.25
71)		1,3-Dichlorobe...	1.567	1.212	1.229	1.101	1.124	1.119	1.116	1.110	1.116	1.076	0.975	1.159	13.03
72)		1,4-Dichlorobe...		1.506	1.268	1.188	1.118	1.147	1.122	1.099	1.096	1.058	0.974	1.157	12.50
73)		n-Butylbenzene		2.179	1.783	1.756	1.570	1.646	1.648	1.636	1.604	1.512	1.354	1.669	12.96
74)		1,2-Dichlorobe...	1.370	1.089	1.162	1.034	0.981	1.055	1.026	1.036	1.033	0.994	0.927	1.064	11.05
75)		1,2-Dibromo-3-...				0.100	0.106	0.127	0.147	0.157	0.185	0.204	0.215	0.155	27.97
76)		Hexachlorobuta...				0.177	0.160	0.148	0.143	0.161	0.154	0.146	0.144	0.154	7.55
77)		1,2,4-Trichlor...		0.757	0.538	0.621	0.574	0.604	0.621	0.612	0.649	0.619	0.600	0.620	9.18
78)		Naphthalene				1.870	1.797	2.024	2.133	2.235	2.312	2.257	2.059	2.086	8.86
79)		1,2,3-Trichlor...			0.563	0.568	0.553	0.570	0.602	0.610	0.615	0.611	0.591	0.587	4.01

(#) = Out of Range

Compound List Report VOA-GCMS3

Method Path : C:\msdchem\1\METHODS\
Method File : VC190529S.M
Title : EPA 8260: Volatile Organic Compounds
Last Update : Thu May 30 14:50:00 2019
Response Via : Initial Calibration

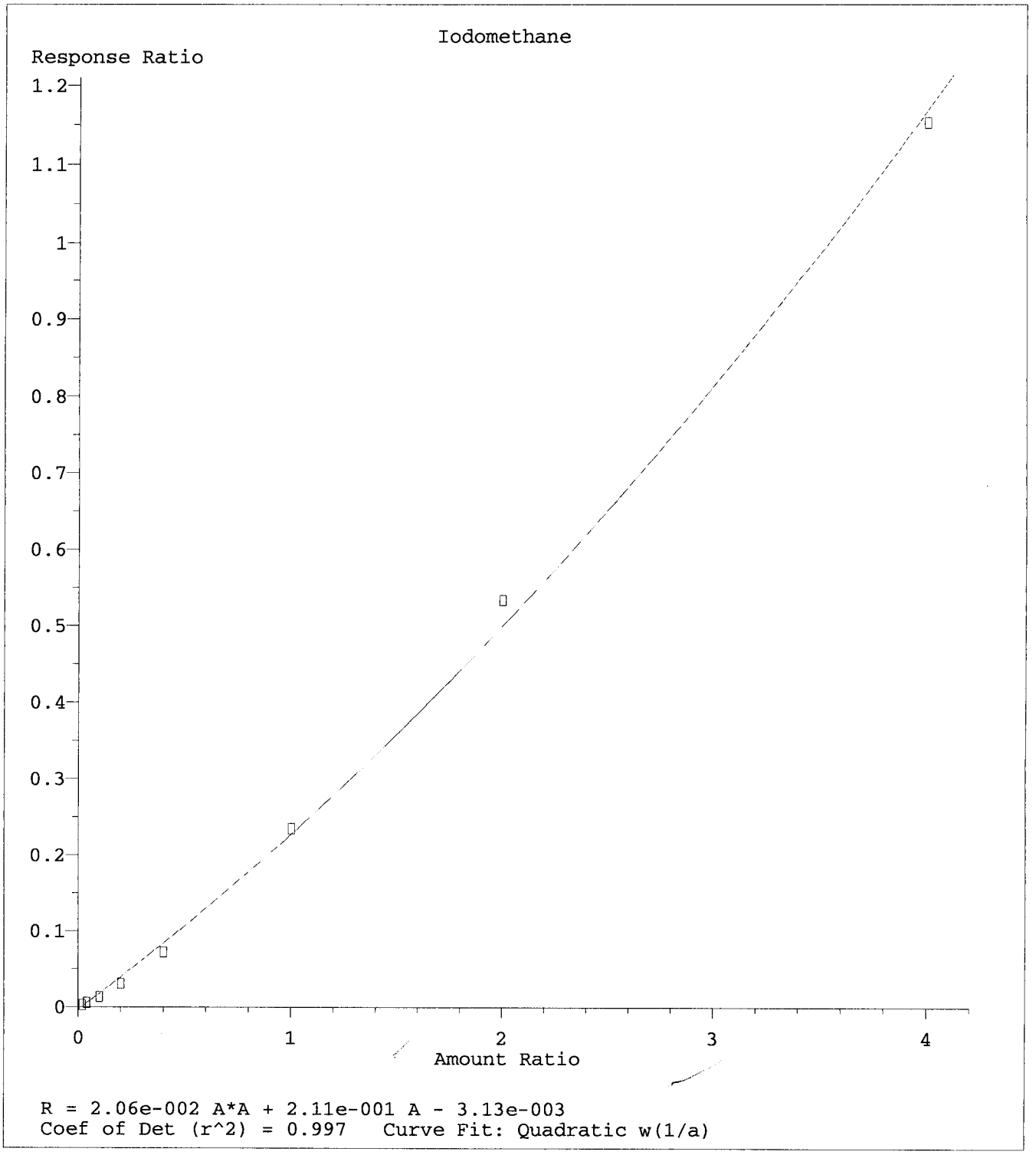
Total Cpnds : 79

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	Pentafluorobenzene (I)	168	6.034	1.000	A	2	A	R
2		Dichlorodifluoromethane	85	1.660	0.275	A	2	A	R
3	P	Chloromethane	50	1.861	0.308	A	2	A	R
4	C	Vinyl Chloride	62	1.952	0.324	A	2	A	R
5		Bromomethane	96	2.305	0.382	A	2	A	R
6		Chloroethane	64	2.438	0.404	A	2	A	R
7		Trichlorofluoromethane	101	2.567	0.425	A	2	A	R
8	C	1,1-Dichloroethene	61	3.096	0.513	A	2	A	R
9		Carbon Disulfide	76	3.107	0.515	A	2	A	R
10		Freon 113	101	3.144	0.521	A	2	A	R
11		Iodomethane	142	3.247	0.538	Q 1/a	2	A	R
12		Methylene Chloride	84	3.728	0.618	Q 1/a	2	A	R
13		Acetone	43	3.831	0.635	A	1	A	R
14		t-1,2-Dichloroethene	61	3.893	0.645	A	2	A	R
15		n-Hexane	86	3.965	0.657	Q 1/a	3	A	R
16		Methyl-tert-butyl-ether	73	4.038	0.669	A	3	A	R
17	P	1,1-Dichloroethane	63	4.519	0.749	A	2	A	R
18		Acrylonitrile	53	4.598	0.762	A	2	A	R
19		c-1,2-Dichloroethene	61	5.067	0.840	A	2	A	R
20		2,2-Dichloropropane	77	5.170	0.857	A	2	A	R
21		Bromochloromethane	49	5.268	0.873	A	2	A	R
22	C	Chloroform	83	5.353	0.887	A	2	A	R
23		Carbon Tetrachloride	117	5.480	0.908	A	2	A	R
24		Tetrahydrofuran	42	5.535	0.917	A	2	A	R
25		1,1,1-Trichloroethane	97	5.554	0.920	A	2	A	R
26	S	Dibromofluoromethane (S)	111	5.535	0.917	A	2	A	R
27		1,1-Dichloropropene	75	5.681	0.942	A	2	A	R
28		2-Butanone (MEK)	43	5.687	0.943	A	2	A	R
29		Benzene	78	5.931	0.983	A	2	A	R
30		1,2-Dichloroethane (EDC)	62	6.150	1.019	A	2	A	R
31		iso-Butyl Alcohol	43	6.265	1.038	A	2	A	R
32	S	1,4-Difluorobenzene (S)	114	6.588	1.092	A	2	A	R
33		Trichloroethene (TCE)	130	6.551	1.086	A	2	A	R
34		Dibromomethane	93	7.001	1.160	A	2	A	R
35	C	1,2-Dichloropropane	63	7.111	1.178	A	2	A	R
36		Bromodichloromethane	83	7.183	1.190	Q 1/a2	2	A	R
37	I	Chlorobenzene-d5 (I)	117	9.751	1.000	A	2	A	R
38		c-1,3-Dichloropropene	75	7.889	0.809	A	2	A	R
39	S	Toluene-d8 (S)	98	8.096	0.830	A	2	A	R
40	C	Toluene	91	8.157	0.837	A	2	A	R
41		Tetrachloroethene (PCE)	166	8.601	0.882	A	2	A	R
42		4-Methyl-2-Pentanone (MIBK)	43	8.620	0.884	A	2	A	R
43		t-1,3-Dichloropropene	75	8.643	0.886	A	2	A	R
44		1,1,2-Trichloroethane	97	8.820	0.905	A	2	A	R
45		Dibromochloromethane	129	9.008	0.924	Q 1/a	2	A	R
46		1,3-Dichloropropane	76	9.106	0.934	A	2	A	R
47		1,2-Dibromoethane (EDB)	107	9.246	0.948	A	2	A	R
48		2-Hexanone	43	9.502	0.974	A	2	A	R
49	P	Chlorobenzene	112	9.769	1.002	A	2	A	R
50	C	Ethylbenzene	91	9.800	1.005	A	2	A	R
51		1,1,1,2-Tetrachloroethane	131	9.830	1.008	A	2	A	R
52		m,p-Xylenes (2)	91	9.934	1.019	A	2	A	R
53		o-Xylene	91	10.323	1.059	A	2	A	R
54		Styrene	104	10.371	1.064	A	2	A	R
55	P	Bromoform	173	10.389	1.065	Q 1/a	2	A	R

56		Isopropylbenzene	105	10.597	1.087	A	2	A	R
57	I	1,4-Dichlorobenzene-d4 (I)	152	11.728	1.000	A	2	A	R
58	S	4-Bromofluorobenzene (S)	174	10.840	0.924	A	2	A	R
59		Bromobenzene	156	10.919	0.931	A	2	A	R
60		n-Propylbenzene	91	10.943	0.933	A	2	A	R
61	P	1,1,2,2-Tetrachloroethane	83	11.010	0.939	A	2	A	R
62		2-Chlorotoluene	126	11.071	0.944	A	2	A	R
63		1,3,5-Trimethylbenzene	105	11.108	0.947	A	2	A	R
64		1,2,3-Trichloropropane	110	11.120	0.948	A	2	A	R
65		t-1,4-Dichloro-2-butene	88	11.150	0.951	Q	3	A	R
66		4-Chlorotoluene	91	11.205	0.955	A	2	A	R
67		tert-Butylbenzene	91	11.357	0.968	A	2	A	R
68		1,2,4-Trimethylbenzene	105	11.418	0.974	A	2	A	R
69		sec-Butylbenzene	105	11.497	0.980	A	2	A	R
70		4-Isopropyltoluene	119	11.613	0.990	A	2	A	R
71		1,3-Dichlorobenzene	146	11.673	0.995	A	2	A	R
72		1,4-Dichlorobenzene	146	11.740	1.001	A	2	A	R
73		n-Butylbenzene	91	11.929	1.017	A	2	A	R
74		1,2-Dichlorobenzene	146	12.063	1.029	A	2	A	R
75		1,2-Dibromo-3-Chloropropane	157	12.677	1.081	Q	2	A	R
76		Hexachlorobutadiene	223	13.182	1.124	A	3	A	R
77		1,2,4-Trichlorobenzene	180	13.219	1.127	A	2	A	R
78		Naphthalene	128	13.492	1.150	A	2	A	R
79		1,2,3-Trichlorobenzene	180	13.656	1.164	A	2	A	R

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

VC190529S.M Thu May 30 15:32:16 2019



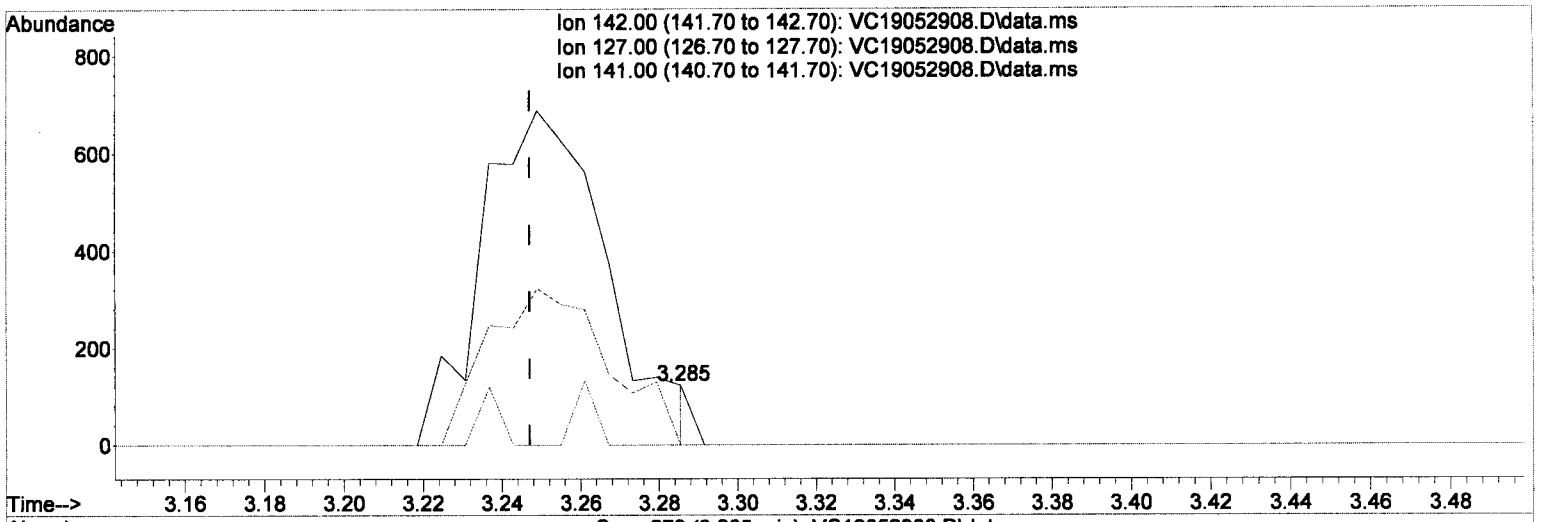
Method Name: C:\msdchem\1\METHODS\VC190529S.M
Calibration Table Last Updated: Thu May 30 14:50:00 2019

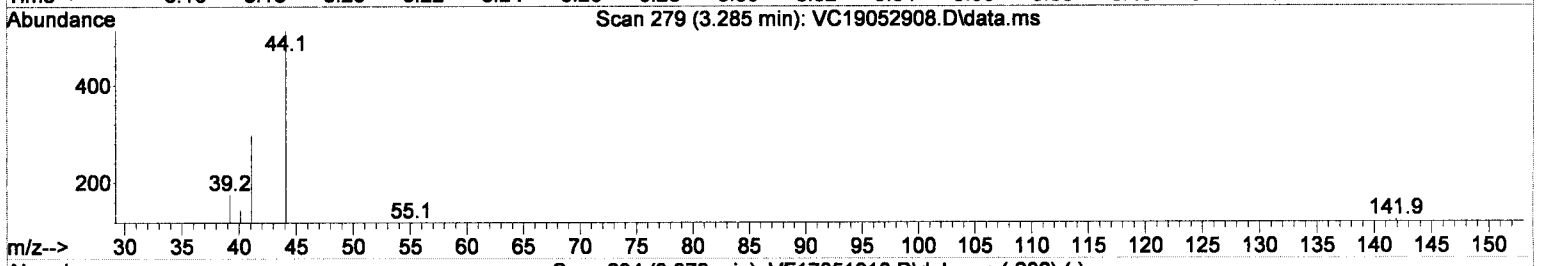
Int = 0.74 ✓

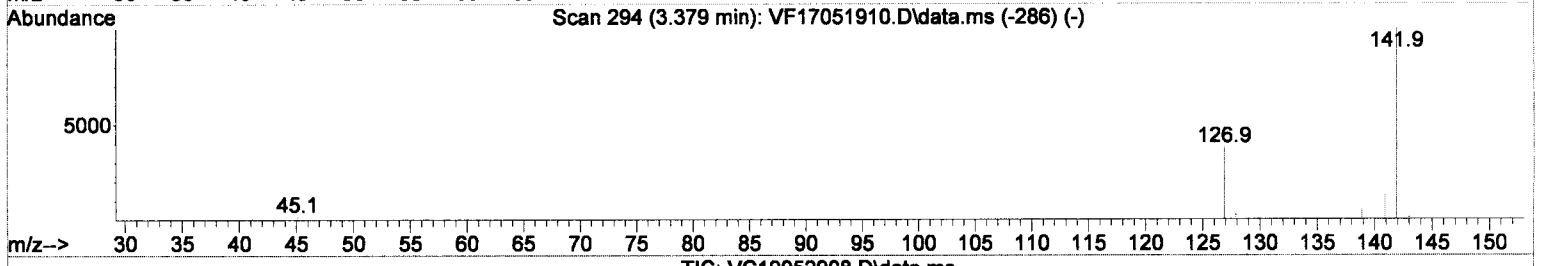
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\requant\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 14:51:31 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration







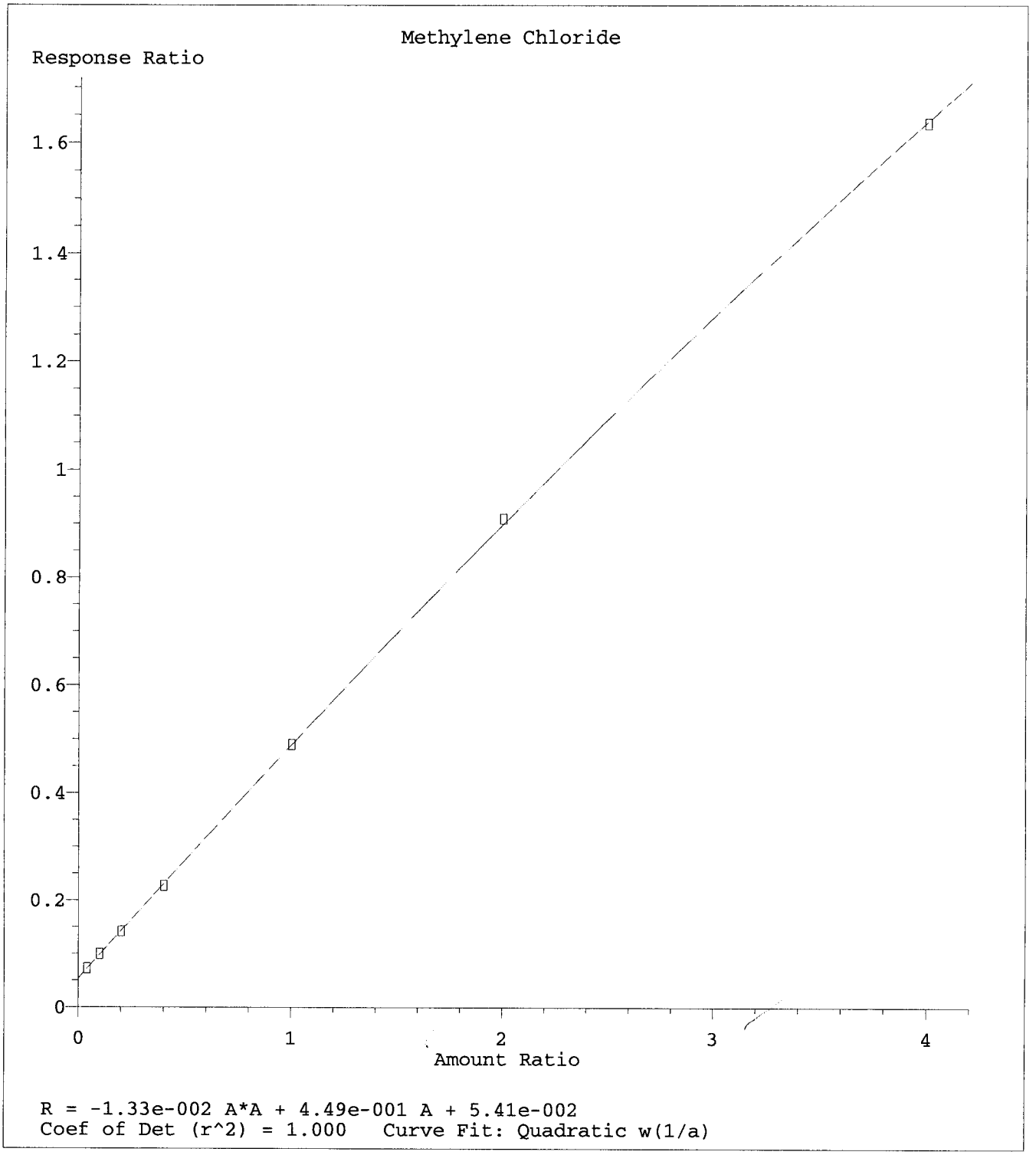
TIC: VC19052908.D\data.ms

(11) Iodomethane

3.285min (+0.038) 0.74 ug/L m

response 0

Ion	Exp%	Act%
142.00	100	0.00
127.00	35.00	0.00#
141.00	15.00	0.00#
0.00	0.00	0.00



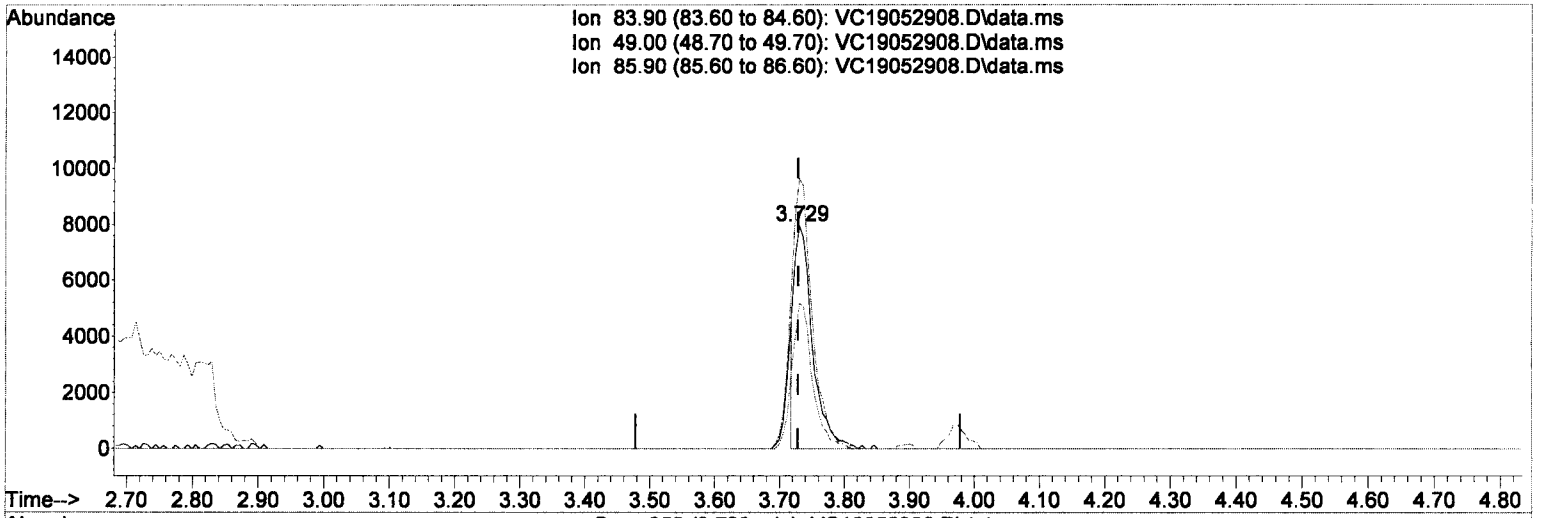
Method Name: C:\msdchem\1\METHODS\VC190529S.M
Calibration Table Last Updated: Thu May 30 14:50:00 2019

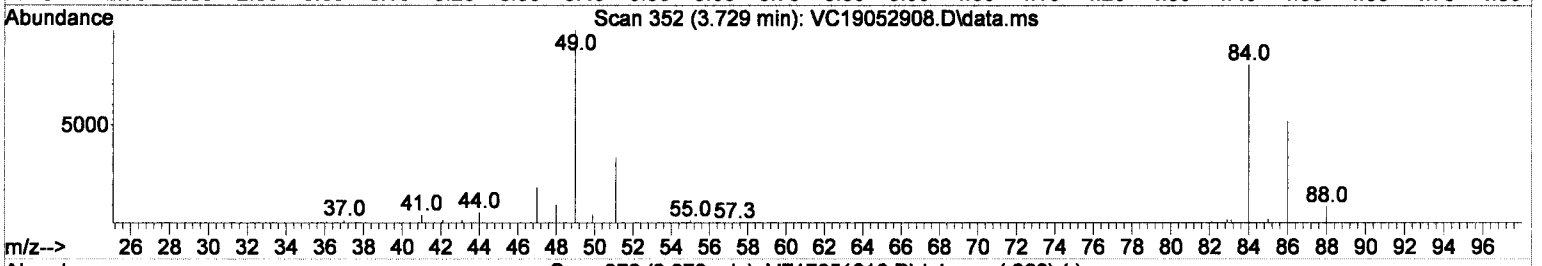
Int = (-)

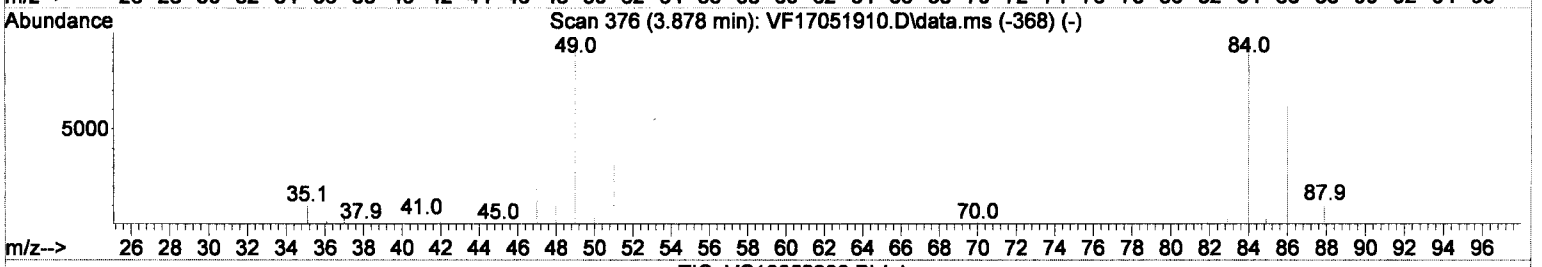
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\requant\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 14:51:31 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration







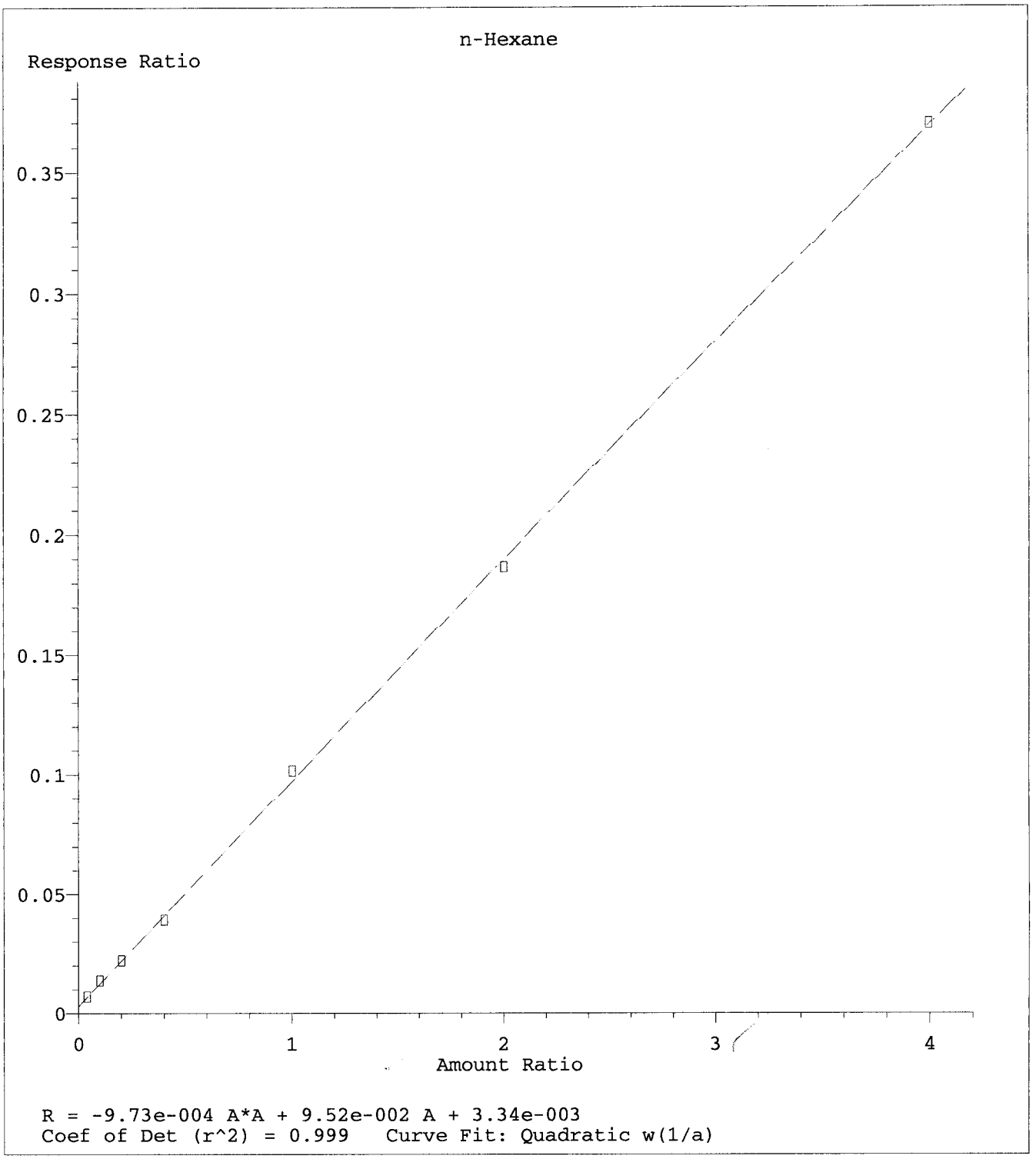
TIC: VC19052908.D\data.ms

(12) Methylene Chloride

3.729min (+0.001) 0.63 ug/L m

response 15220

Ion	Exp%	Act%
83.90	100	100
49.00	121.90	121.44
85.90	60.10	65.11
0.00	0.00	0.00



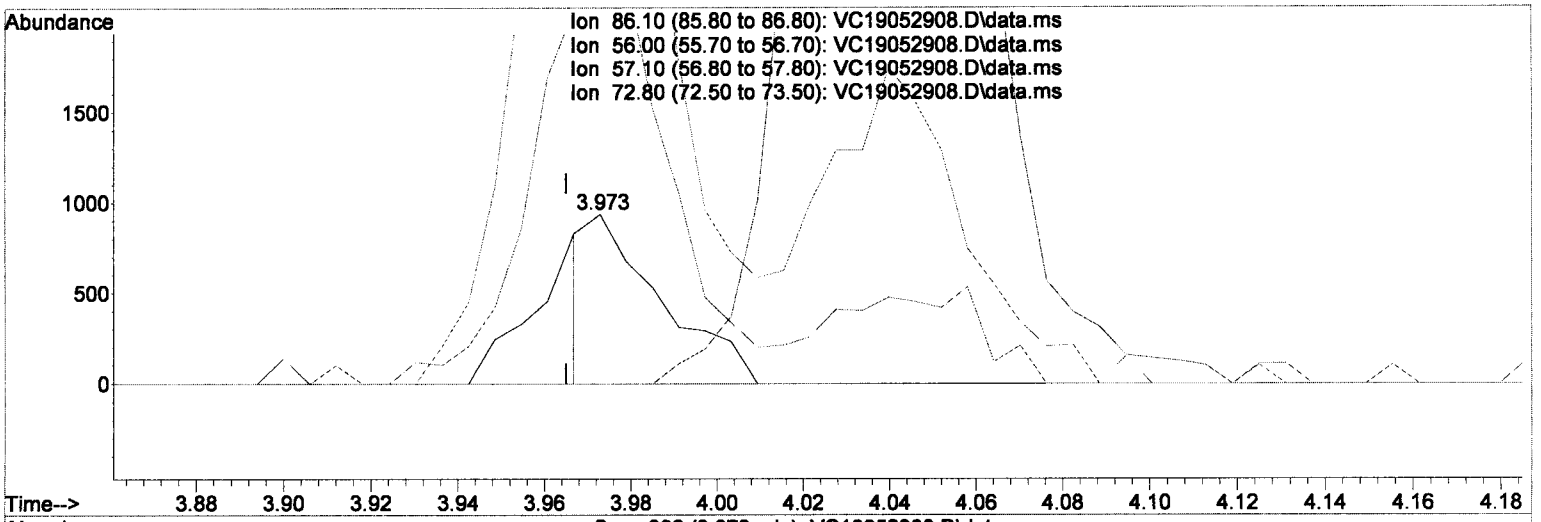
Method Name: C:\msdchem\1\METHODS\VC190529S.M
Calibration Table Last Updated: Thu May 30 14:50:00 2019

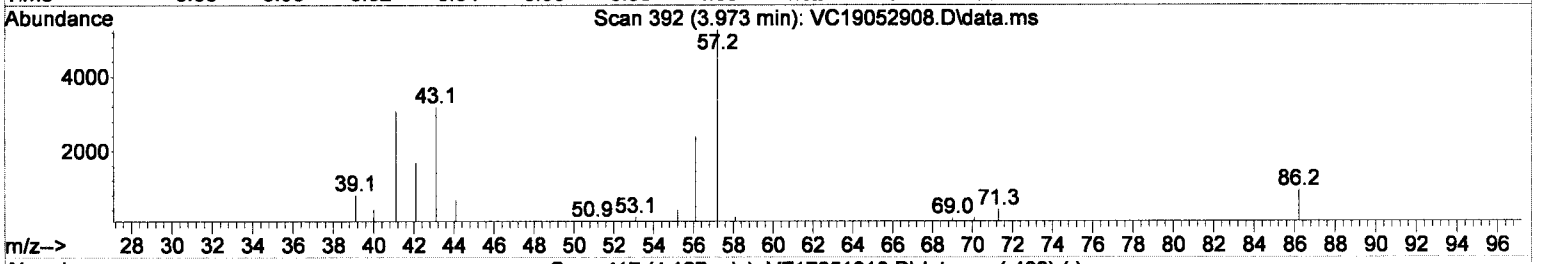
Int = (-)

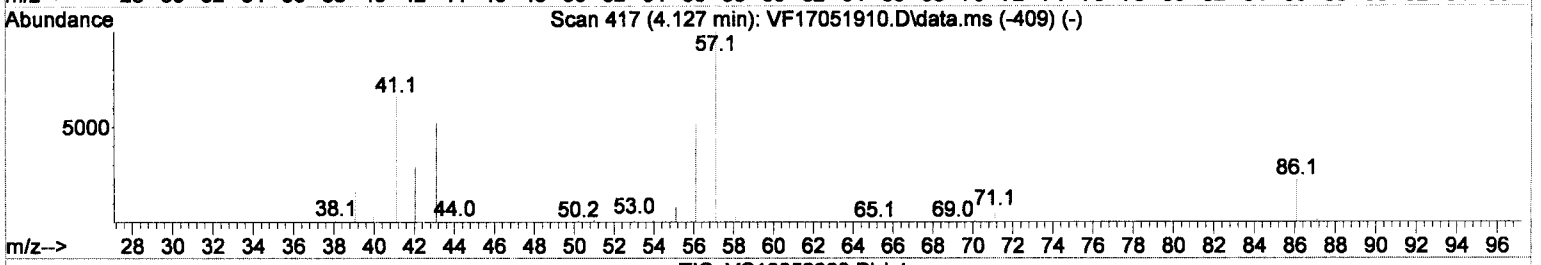
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\requant\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 14:51:31 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration







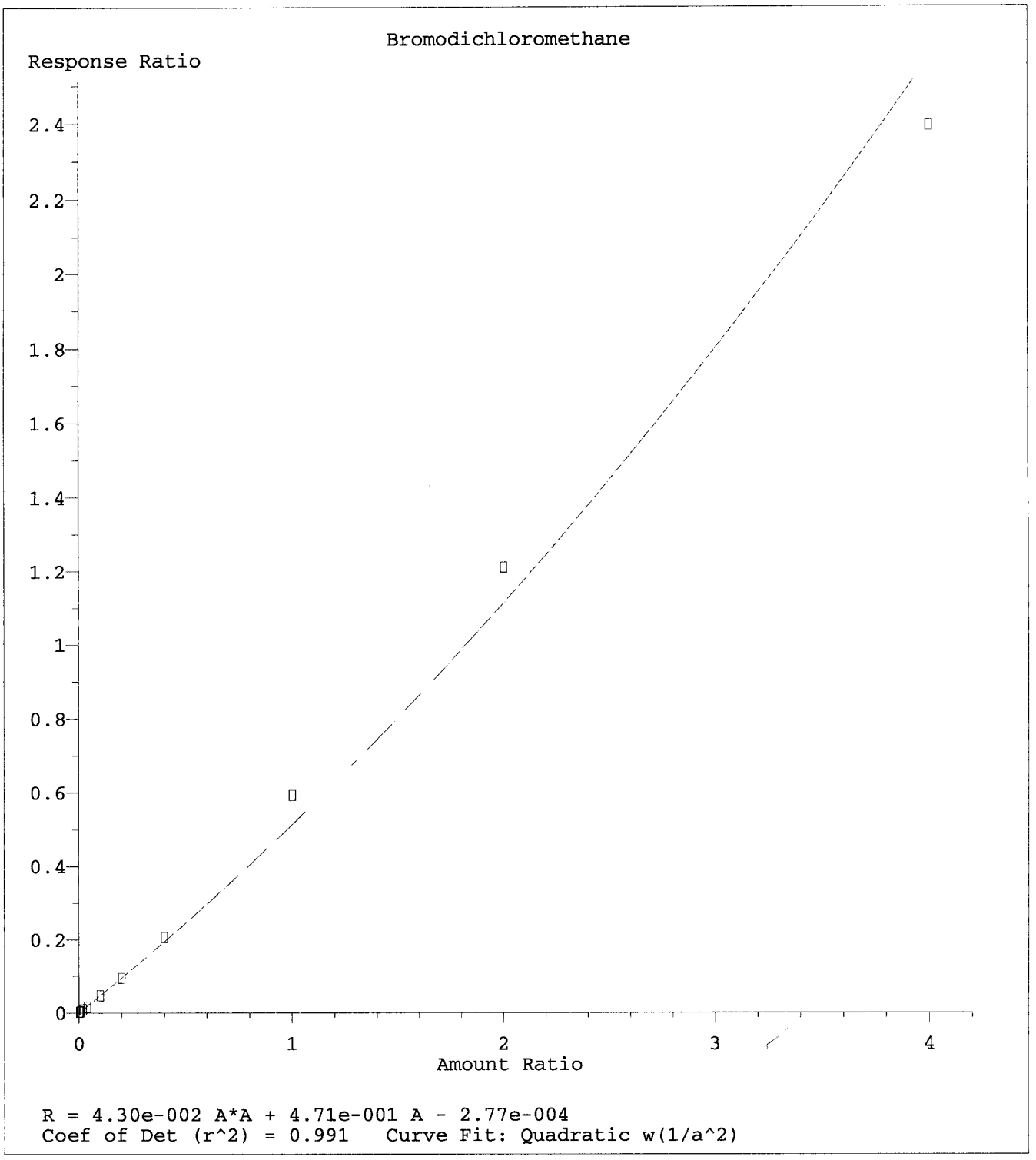
TIC: VC19052908.D\data.ms

(15) n-Hexane

3.973min (+0.008) 0.49 ug/L m

response 1088

Ion	Exp%	Act%
86.10	100	100
56.00	275.70	255.13#
57.10	523.30	562.18#
72.80	1.70	0.00



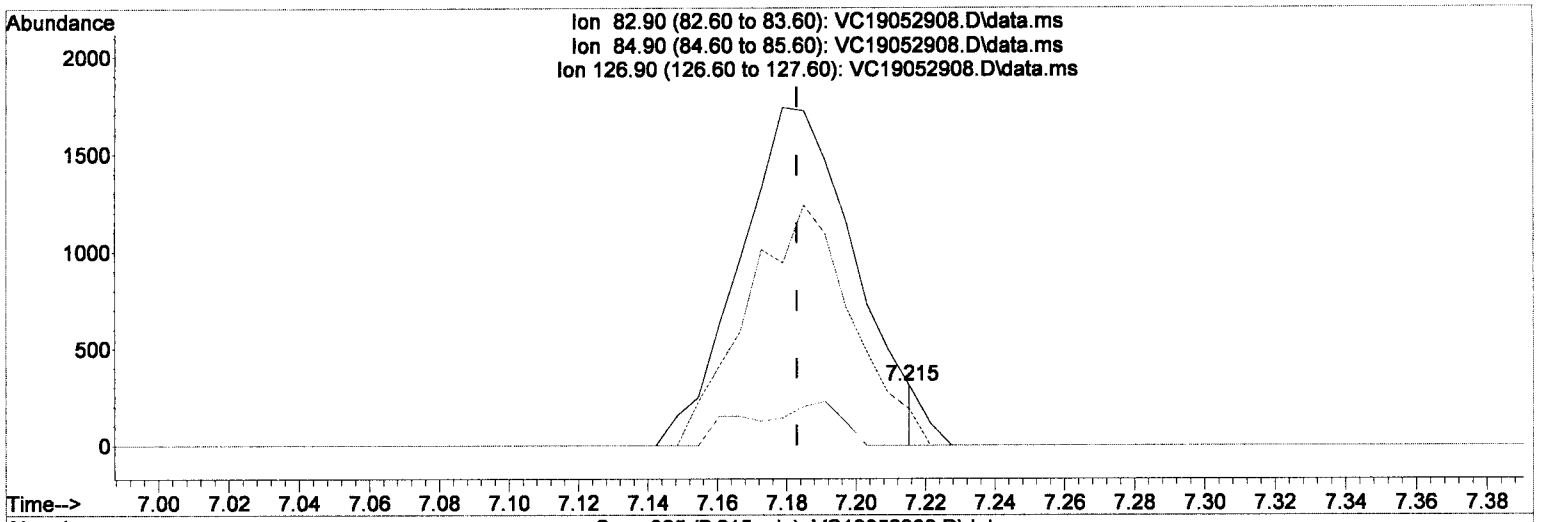
Method Name: C:\msdchem\1\METHODS\VC190529S.M
Calibration Table Last Updated: Thu May 30 14:50:00 2019

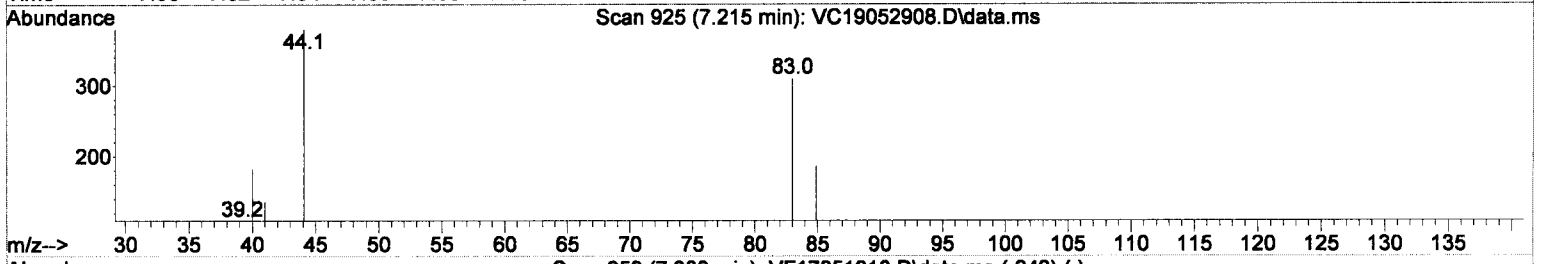
INT= 0.05

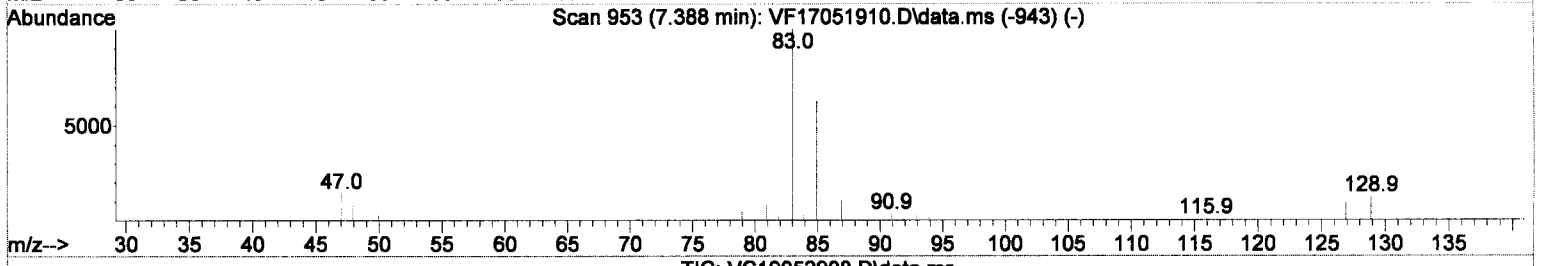
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\requant\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 14:51:31 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration







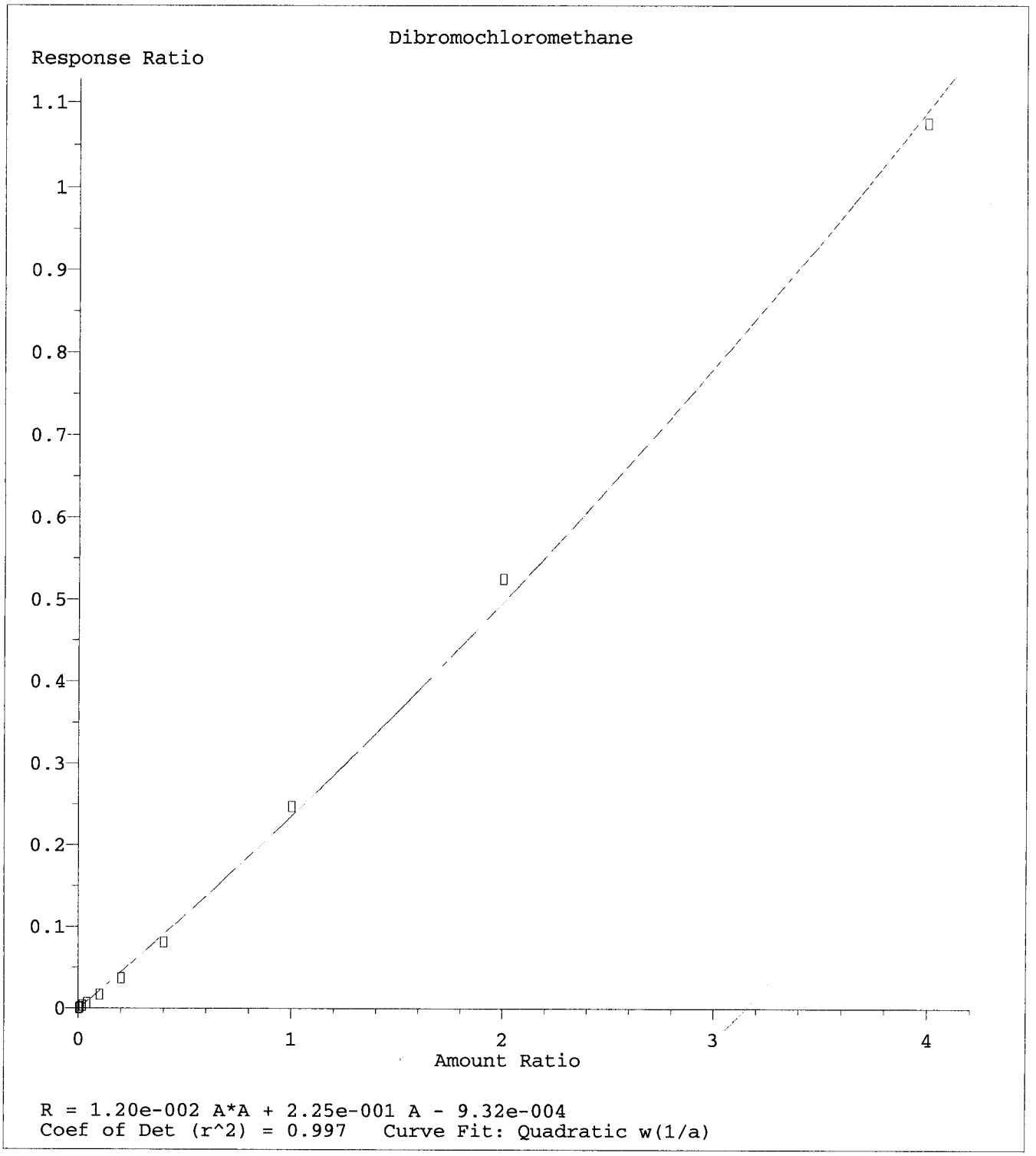
TIC: VC19052908.D\data.ms

(36) Bromodichloromethane

7.215min (+0.032) 0.05 ug/L m

response 41

Ion	Exp%	Act%
82.90	100	100
84.90	63.00	60.00
126.90	9.30	0.00
0.00	0.00	0.00



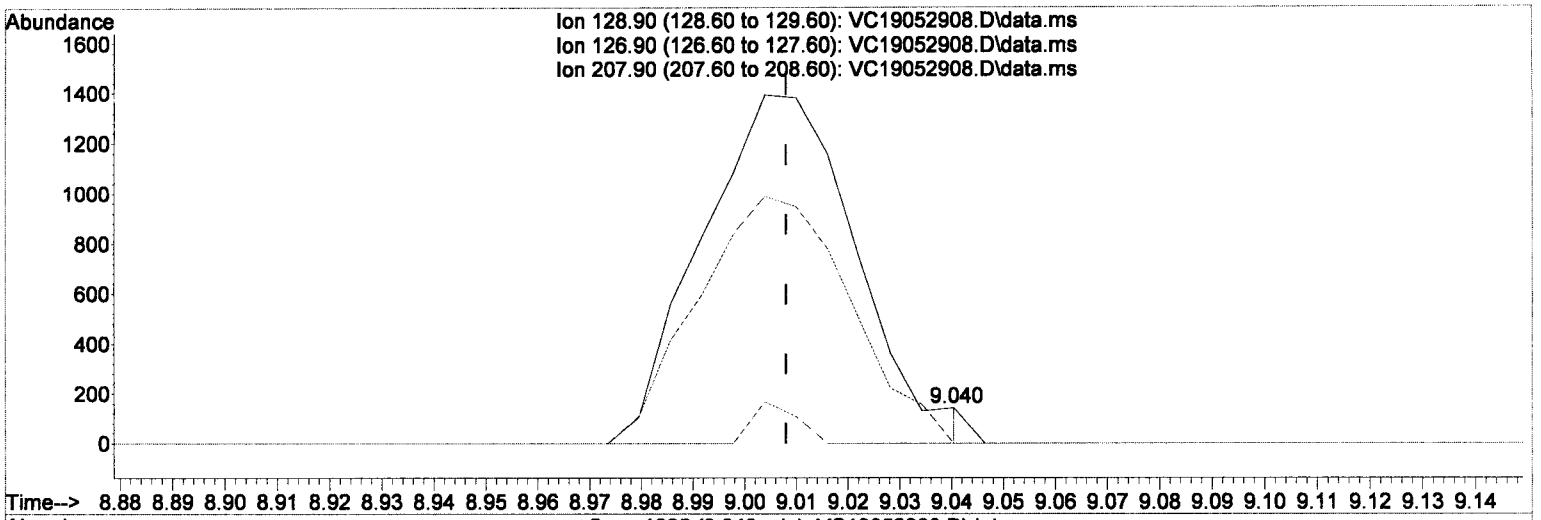
Method Name: C:\msdchem\1\METHODS\VC190529S.M
Calibration Table Last Updated: Thu May 30 14:50:00 2019

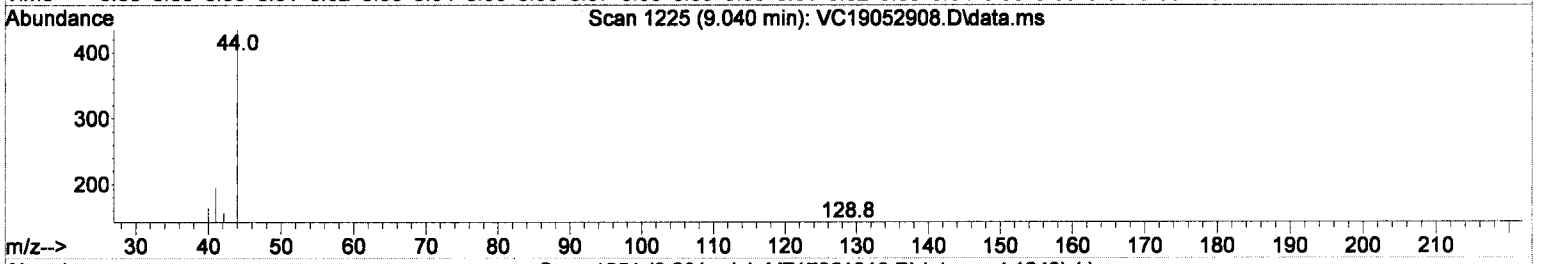
Int = 0.21

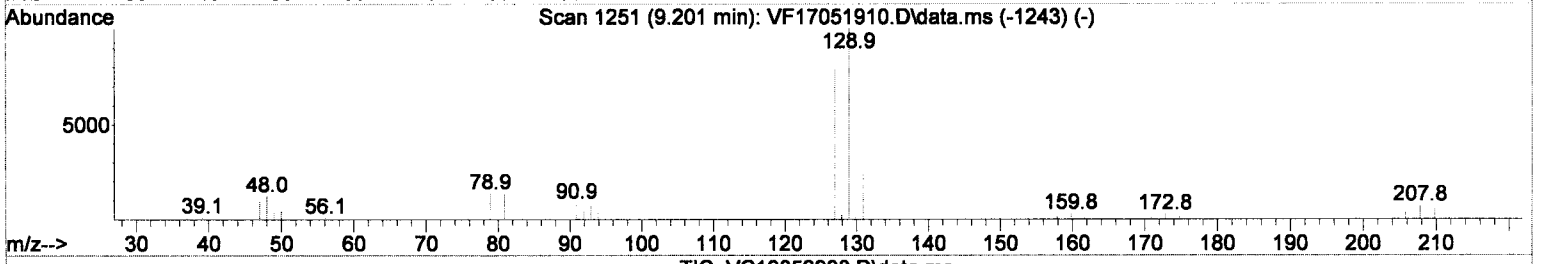
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\requant\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 14:51:31 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration







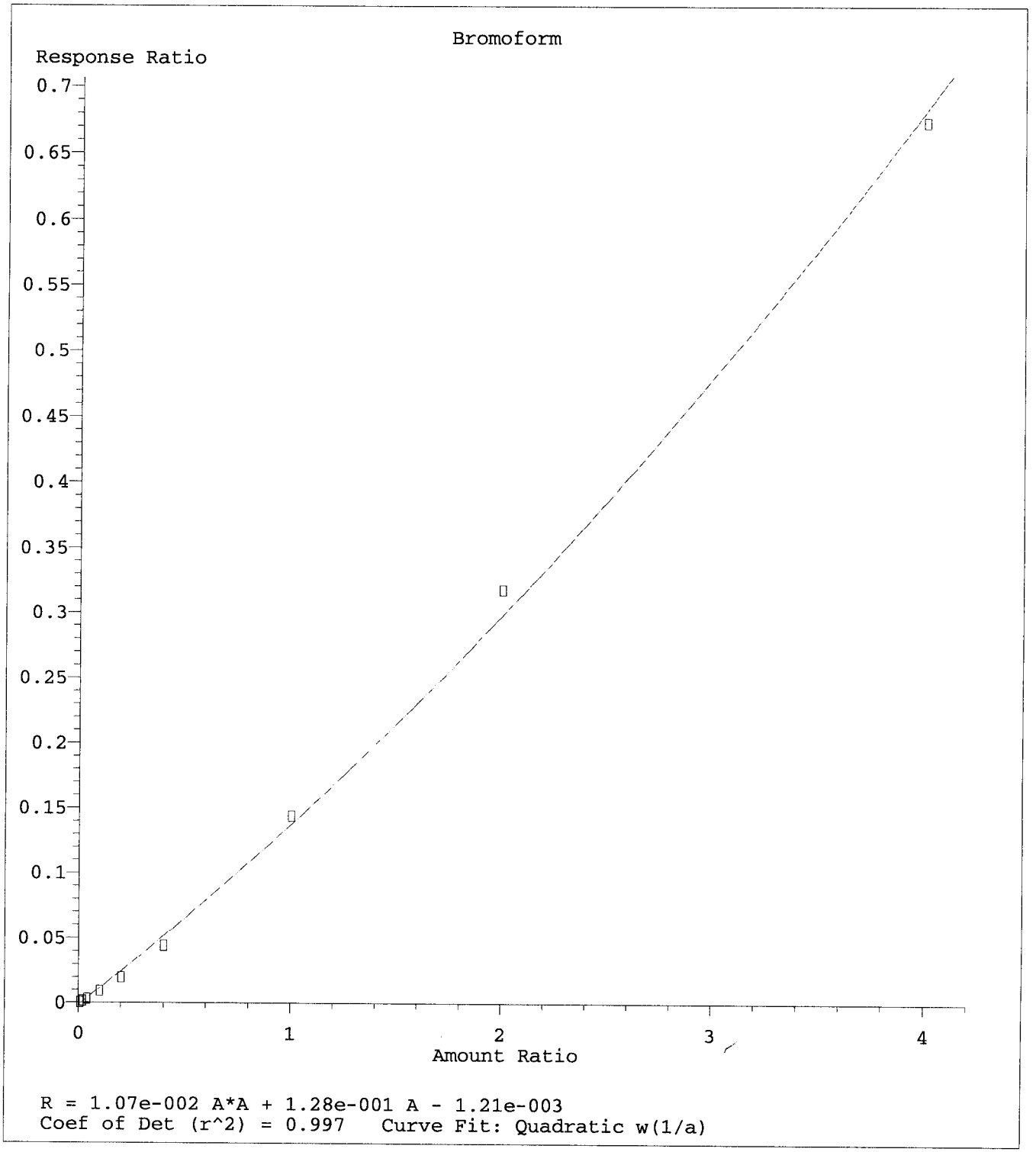
TIC: VC19052908.D\data.ms

(45) Dibromochloromethane

9.040min (+0.032) 0.21 ug/L m

response 0

Ion	Exp%	Act%
128.90	100	0.00
126.90	81.20	0.00#
207.90	7.40	0.00
0.00	0.00	0.00



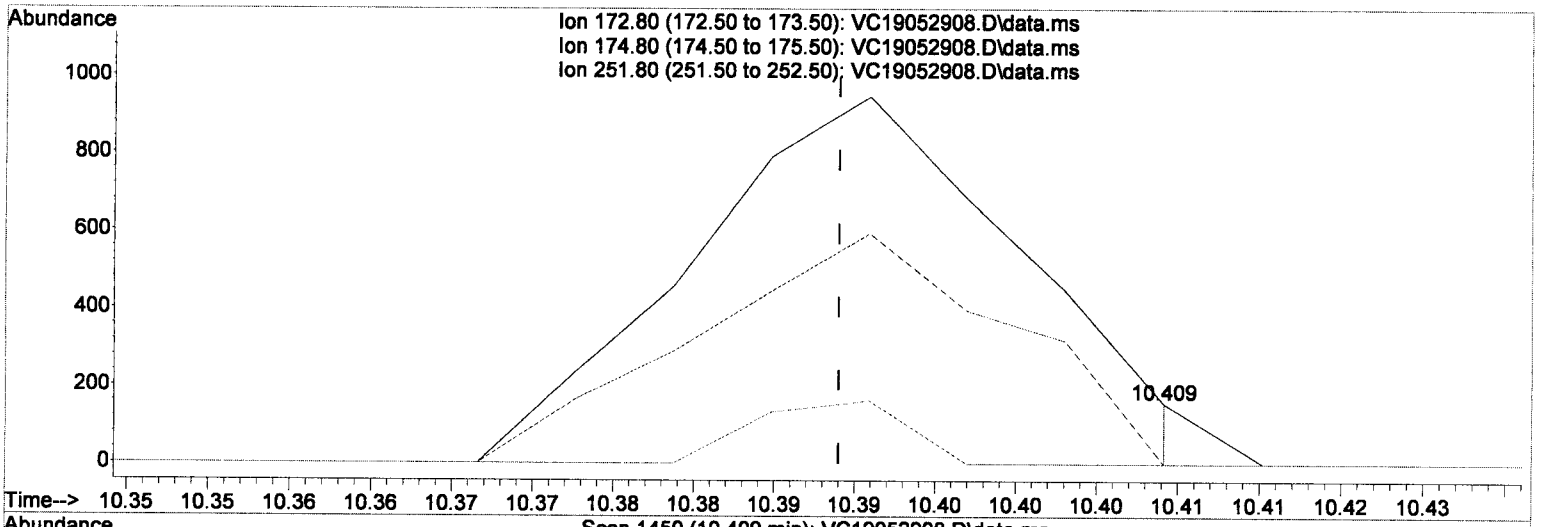
Method Name: C:\msdchem\1\METHODS\VC190529S.M
Calibration Table Last Updated: Thu May 30 14:50:00 2019

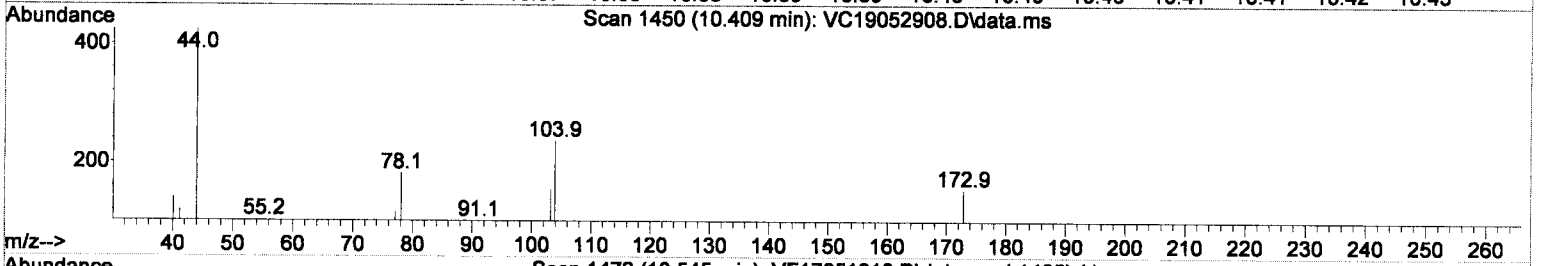
Int = 0.47

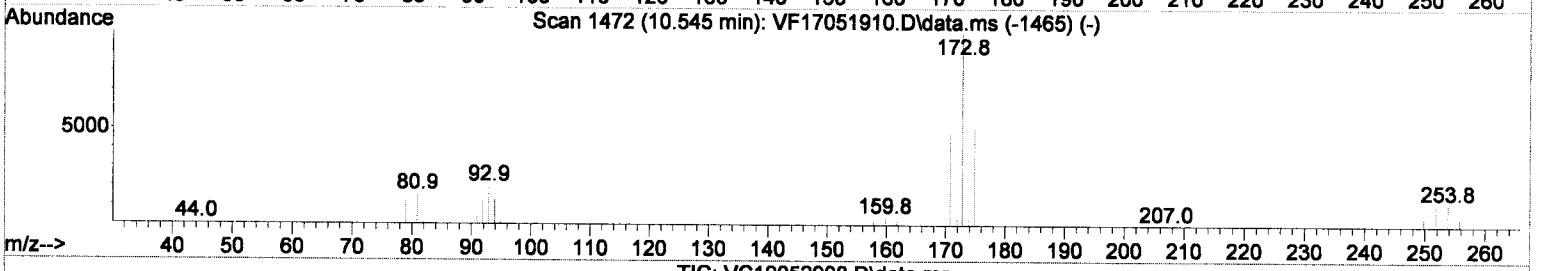
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\requant\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 14:51:31 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration







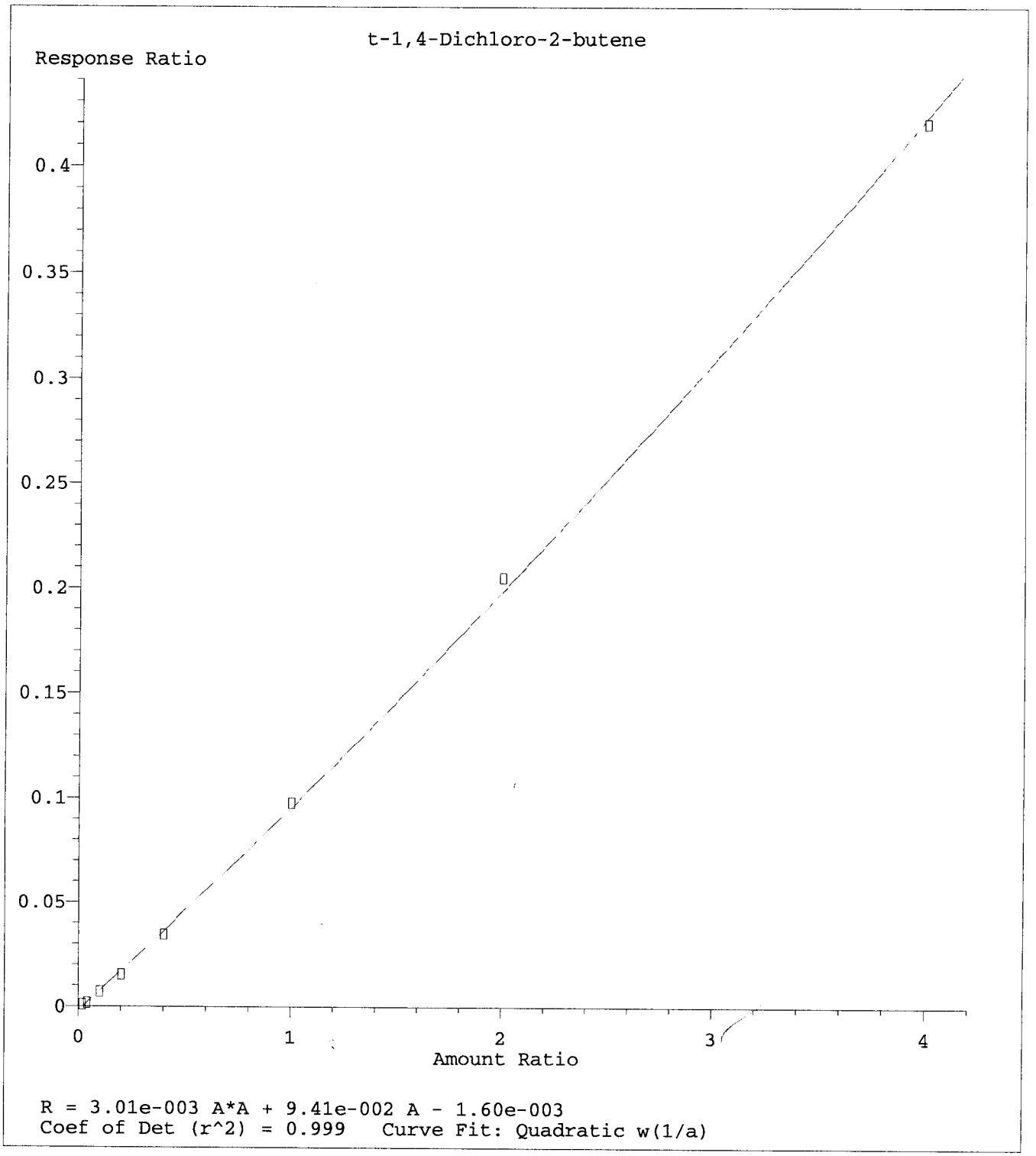
TIC: VC19052908.D\data.ms

(55) Bromoform (P)

10.409min (+0.020) 0.47 ug/L m

response 0

Ion	Exp%	Act%
172.80	100	0.00
174.80	49.10	0.00#
251.80	12.50	0.00
0.00	0.00	0.00



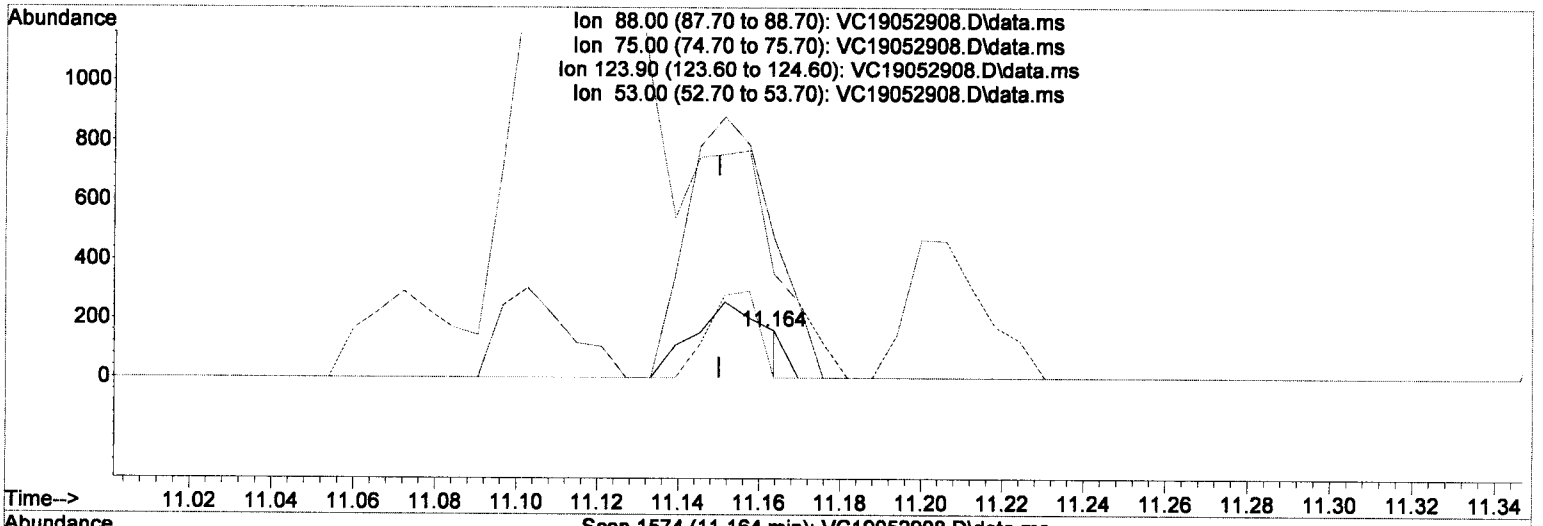
Method Name: C:\msdchem\1\METHODS\VC190529S.M
Calibration Table Last Updated: Thu May 30 14:50:00 2019

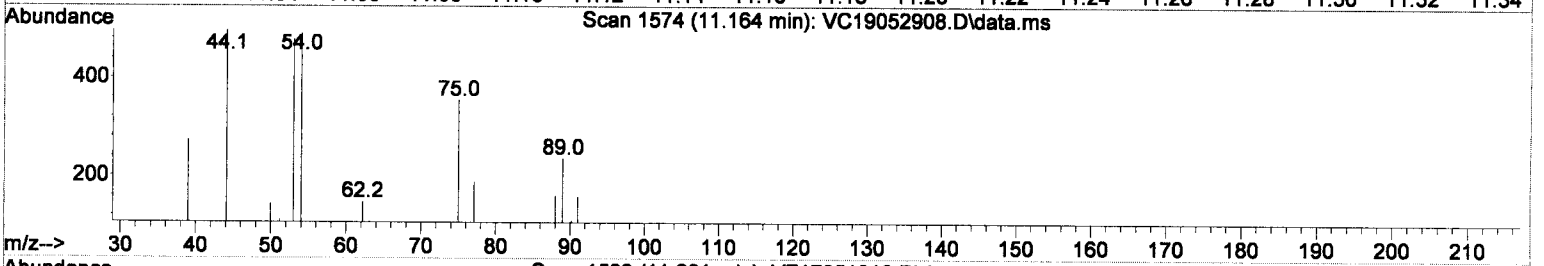
Int=0.85

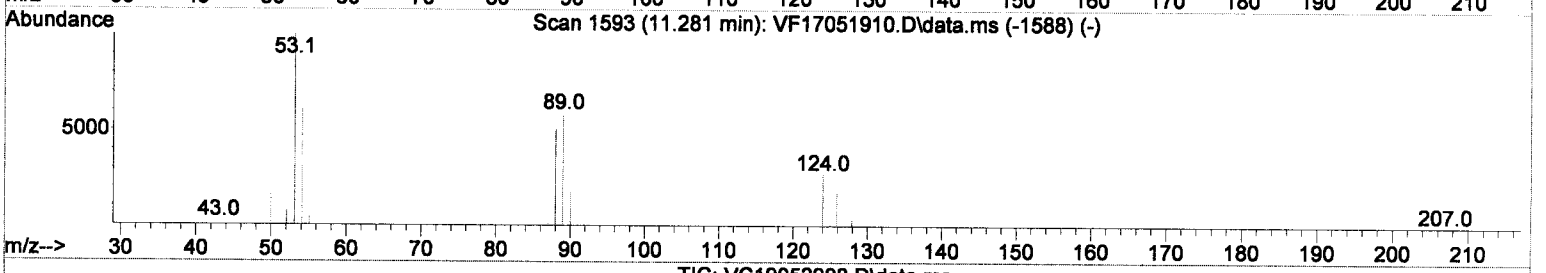
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\requant\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 14:51:31 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration







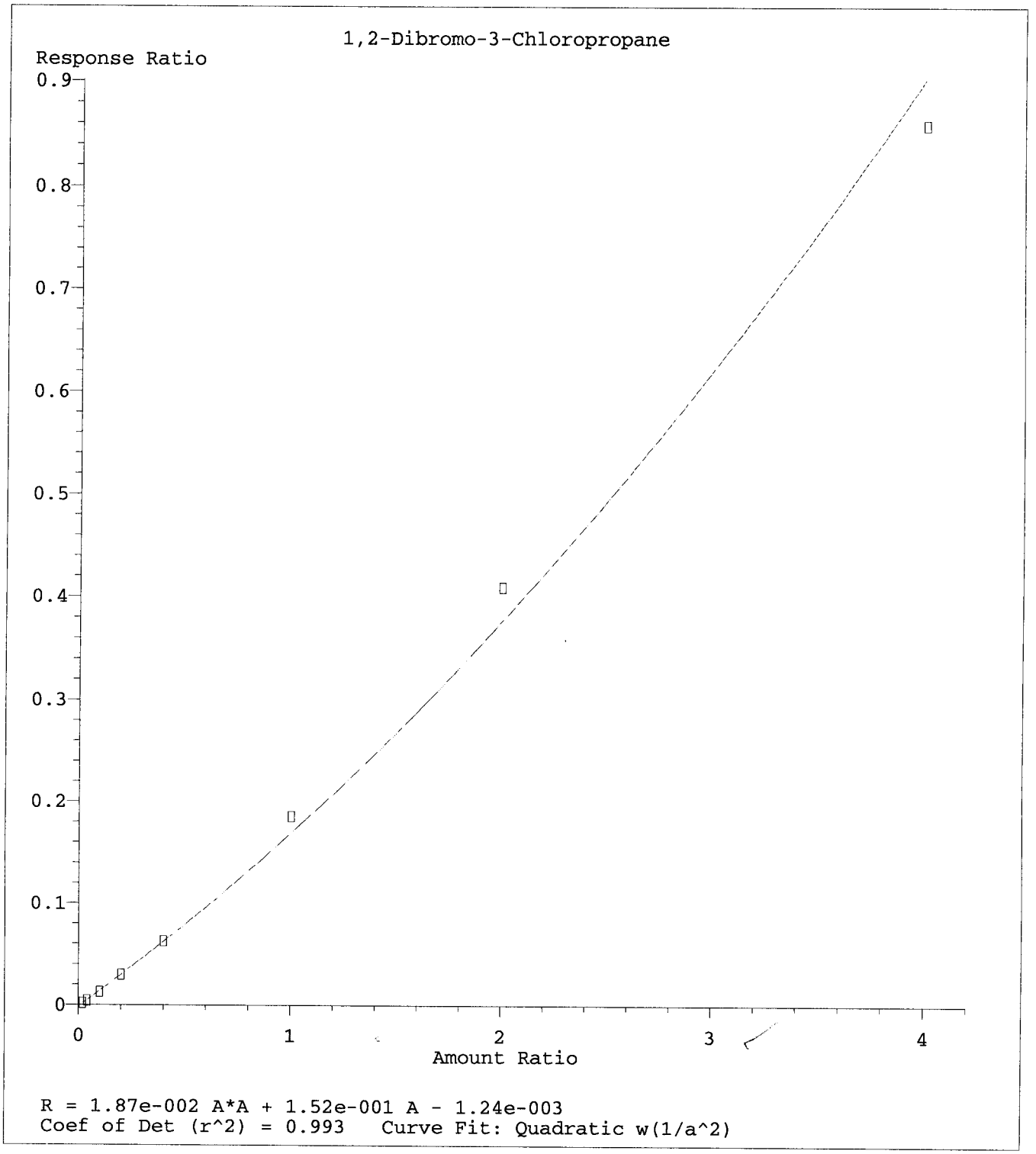
TIC: VC19052908.D\data.ms

(65) t-1,4-Dichloro-2-butene

11.164min (+0.014) 0.85 ug/L m

response 0

Ion	Exp%	Act%
88.00	100	0.00
75.00	240.20	0.00#
123.90	48.30	0.00#
53.00	249.20	0.00#



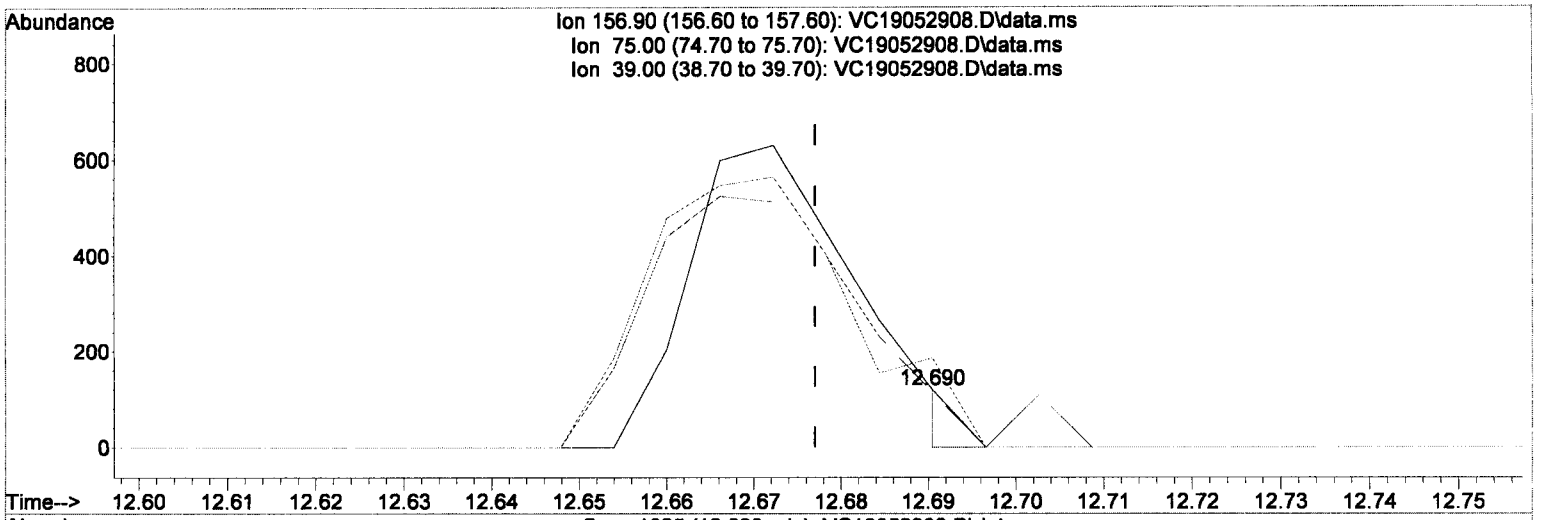
Method Name: C:\msdchem\1\METHODS\VC190529S.M
Calibration Table Last Updated: Thu May 30 14:50:00 2019

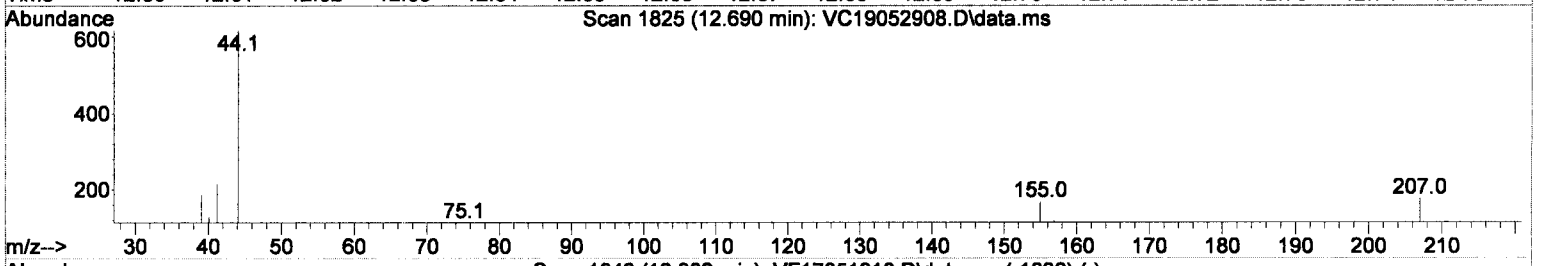
Int- 0.41

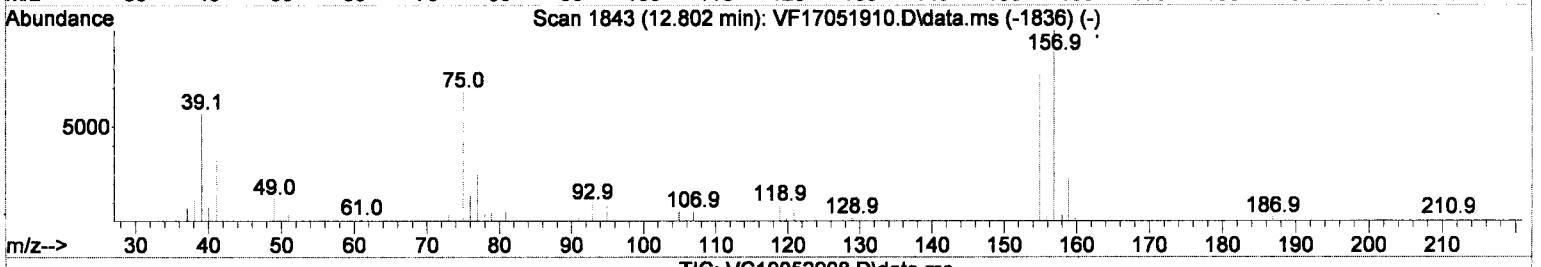
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\requant\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 14:51:31 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration







TIC: VC19052908.D\data.ms

(75) 1,2-Dibromo-3-Chloropropane

12.690min (+0.013) 0.41 ug/L m

response 0

Ion	Exp%	Act%
156.90	100	0.00
75.00	79.00	0.00#
39.00	63.10	0.00#
0.00	0.00	0.00

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9E29058

Analysis Included
8260C Full List
8260C Iodomethane Add On

INSTRUMENT SEQUENCE LOG

SampleID	SampleName	Matrix	STDID	ISTD_ID	Analyzed	
9E29058-TUN1	MS Tune	Soil		A19C135	5/29/2019	2:45:00PM
9E29058-ICB1	Initial Cal Blank	Soil		A19C135	5/29/2019	3:12:00PM
9E29058-CAL1	Cal Standard	Soil	A19E361	"	5/29/2019	3:40:00PM
9E29058-CAL2	Cal Standard	Soil	A19E362	"	5/29/2019	4:07:00PM
9E29058-CAL3	Cal Standard	Soil	A19E363	"	5/29/2019	4:35:00PM
9E29058-CAL4	Cal Standard	Soil	A19E364	"	5/29/2019	5:02:00PM
9E29058-CAL5	Cal Standard	Soil	A19E365	"	5/29/2019	5:30:00PM
9E29058-CAL6	Cal Standard	Soil	A19E366	"	5/29/2019	5:57:00PM
9E29058-CAL7	Cal Standard	Soil	A19E367	"	5/29/2019	6:25:00PM
9E29058-CAL8	Cal Standard	Soil	A19E368	"	5/29/2019	6:52:00PM
9E29058-CAL9	Cal Standard	Soil	A19E369	"	5/29/2019	7:20:00PM
9E29058-CALA	Cal Standard	Soil	A19E370	"	5/29/2019	8:15:00PM
9E29058-CALB	Cal Standard	Soil	A19E371	"	5/29/2019	9:10:00PM
9E29058-ICV1	Initial Cal Check	Soil	A19D180	"	5/29/2019	10:32:00PM

CALIBRATION STANDARD RECOVERIES

Calibration: **A9E3104** Instrument: **VOA-GCMS3**

8260C Full List Sequence: **9E29058** Matrix: **Soil**

9E29058-CAL1	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E29058-CAL2	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E29058-CAL3	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E29058-CAL4	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E29058-CAL5	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E29058-CAL6	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E29058-CAL7	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E29058-CAL8	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E29058-CAL9	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E29058-CALA	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E29058-CALB	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9E29058

Compounds listed above have recalculated recoveries outside 70-130% of the true values, and the calibration levels are above the reporting level. If no compounds are listed, all are OK. Please see the next section for quadatic fit compounds.

Analytes With Quadratic Curve Fits

Qualifier	iMDL	iMRL	Spike Amt	%Difference	OK?	Raise MRL to ?
				———	☐	☐ ———

Analytes listed above have quadratic curve fits. If they are using a weighting otpion, they must be checked against the requanted curve points to determine if the recalculated results are within limits (70-130 or as specified).

ICV RECOVERIES

Calibration: **A9E3104** Instrument: **VOA-GCMS3**

8260C Full List Sequence: **9E29058** Matrix: **Soil**

9E29058-ICV1	Inst. MRL	ICV Level	Result	%Rec.	Qual

Compounds listed above have Initial Calibration Verification standard recoveries outside 70-130% of the true values. If no compounds are listed, all have passing recoveries.

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052919.D
Acq On : 29 May 2019 10:32 pm
Operator : TB
Sample : 9E29058-ICV1
Misc : 1X 5mL 20ppb VOC DI+MeOH
ALS Vial : 19 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:45 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

5/30/19

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Pentafluorobenzene (I)	50.000	50.000	0.0	104	0.00
2		Dichlorodifluoromethane	20.000	16.601	17.0	88	0.00
3	P	Chloromethane	20.000	18.769	6.2	102	0.00
4	C	Vinyl Chloride	20.000	19.402	3.0	100	0.00
5		Bromomethane	20.000	20.910	-4.6	113	0.00
6		Chloroethane	20.000	21.410	-7.1	114	0.00
7		Trichlorofluoromethane	20.000	18.012	9.9	91	0.00
8	C	1,1-Dichloroethene	20.000	25.349	-26.7#	132	0.00
9		Carbon Disulfide	20.000	19.569	2.2	104	0.00
10		Freon 113	20.000	19.526	2.4	107	0.00
11		Iodomethane	20.000	15.925	20.4	95	0.00
12		Methylene Chloride	20.000	18.268	8.7	99	0.00
13		Acetone	40.000	40.374	-0.9	109	0.00
14		t-1,2-Dichloroethene	20.000	24.328	-21.6	125	0.00
15		n-Hexane	20.000	21.522	-7.6	117	0.00
16		Methyl-tert-butyl-ether	20.000	20.311	-1.6	105	0.00
17	P	1,1-Dichloroethane	20.000	24.105	-20.5	123	0.00
18		Acrylonitrile	20.000	20.919	-4.6	107	0.00
19		c-1,2-Dichloroethene	20.000	21.549	-7.7	111	0.00
20		2,2-Dichloropropane	20.000	19.541	2.3	101	0.00
21		Bromochloromethane	20.000	21.674	-8.4	111	0.00
22	C	Chloroform	20.000	20.682	-3.4	109	0.00
23		Carbon Tetrachloride	20.000	21.742	-8.7	113	0.00
24		Tetrahydrofuran	20.000	18.311	8.4	103	0.00
25		1,1,1-Trichloroethane	20.000	22.507	-12.5	114	0.00
26	S	Dibromofluoromethane (S)	50.000	52.205	-4.4	107	0.00
27		1,1-Dichloropropene	20.000	20.651	-3.3	110	0.00
28		2-Butanone (MEK)	40.000	40.499	-1.2	105	0.00
29		Benzene	20.000	21.213	-6.1	111	0.00
30		1,2-Dichloroethane (EDC)	20.000	21.381	-6.9	111	0.00
31		iso-Butyl Alcohol	500.000	505.534	-1.1	106	0.00
32	S	1,4-Difluorobenzene (S)	50.000	50.316	-0.6	104	0.00
33		Trichloroethene (TCE)	20.000	20.429	-2.1	110	0.00
34		Dibromomethane	20.000	21.333	-6.7	107	0.00
35	C	1,2-Dichloropropane	20.000	21.040	-5.2	107	0.00
36		Bromodichloromethane	20.000	21.954	-9.8	108	0.00
37		Chlorobenzene-d5 (I)	50.000	50.000	0.0	104	0.00
38		c-1,3-Dichloropropene	20.000	21.998	-10.0	106	0.00
39	S	Toluene-d8 (S)	50.000	49.494	1.0	103	0.00
40	C	Toluene	20.000	19.867	0.7	107	0.00
41		Tetrachloroethene (PCE)	20.000	19.350	3.2	108	0.00
42		4-Methyl-2-Pentanone (MIBK)	40.000	38.786	3.0	106	0.00
43		t-1,3-Dichloropropene	20.000	21.766	-8.8	108	0.00
44		1,1,2-Trichloroethane	20.000	21.448	-7.2	109	0.00
45		Dibromochloromethane	20.000	18.920	5.4	111	0.00
46		1,3-Dichloropropane	20.000	20.691	-3.5	106	0.00
47		1,2-Dibromoethane (EDB)	20.000	21.849	-9.2	109	0.00
48		2-Hexanone	40.000	40.703	-1.8	105	0.00
49	P	Chlorobenzene	20.000	20.140	-0.7	108	0.00
50	C	Ethylbenzene	20.000	19.824	0.9	105	0.00

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052919.D
Acq On : 29 May 2019 10:32 pm
Operator : TB
Sample : 9E29058-ICV1
Misc : 1X 5mL 20ppb VOC DI+MeOH
ALS Vial : 19 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:45 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
51		1,1,1,2-Tetrachloroethane	20.000	22.006	-10.0	109	0.00
52		m,p-Xylenes (2)	40.000	40.543	-1.4	105	0.00
53		o-Xylene	20.000	20.062	-0.3	105	0.00
54		Styrene	20.000	21.470	-7.3	104	0.00
55	P	Bromoform	20.000	18.669	6.7	114	0.00
56		Isopropylbenzene	20.000	19.716	1.4	103	0.00
57	I	1,4-Dichlorobenzene-d4 (I)	50.000	50.000	0.0	104	0.00
58	S	4-Bromofluorobenzene (S)	50.000	50.070	-0.1	104	0.00
59		Bromobenzene	20.000	21.439	-7.2	110	0.00
60		n-Propylbenzene	20.000	19.707	1.5	104	0.00
61	P	1,1,2,2-Tetrachloroethane	20.000	21.542	-7.7	108	0.00
62		2-Chlorotoluene	20.000	20.119	-0.6	106	0.00
63		1,3,5-Trimethylbenzene	20.000	20.761	-3.8	106	0.00
64		1,2,3-Trichloropropane	20.000	20.337	-1.7	104	0.00
65		t-1,4-Dichloro-2-butene	20.000	19.171	4.1	106	0.00
66		4-Chlorotoluene	20.000	20.304	-1.5	107	0.00
67		tert-Butylbenzene	20.000	19.432	2.8	104	0.00
68		1,2,4-Trimethylbenzene	20.000	20.219	-1.1	104	0.00
69		sec-Butylbenzene	20.000	20.188	-0.9	106	0.00
70		4-Isopropyltoluene	20.000	21.024	-5.1	109	0.00
71		1,3-Dichlorobenzene	20.000	19.621	1.9	107	0.00
72		1,4-Dichlorobenzene	20.000	19.523	2.4	107	0.00
73		n-Butylbenzene	20.000	20.206	-1.0	108	0.00
74		1,2-Dichlorobenzene	20.000	19.718	1.4	106	0.00
75		1,2-Dibromo-3-Chloropropane	20.000	20.020	-0.1	104	0.00
76		Hexachlorobutadiene	20.000	21.571	-7.9	108	0.00
77		1,2,4-Trichlorobenzene	20.000	20.935	-4.7	111	0.00
78		Naphthalene	20.000	21.666	-8.3	106	0.00
79		1,2,3-Trichlorobenzene	20.000	20.922	-4.6	105	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1

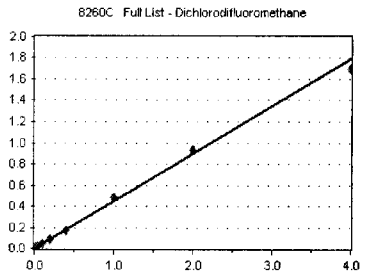
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

Dichlorodifluoromethane

Curve Fit: **AVERAGE RF**

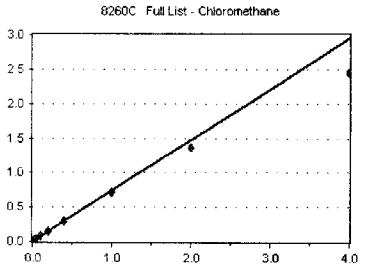


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	475	0.462	1.67
9E29058-CAL3	0.4	840	0.413	1.66
9E29058-CAL4	1	2045	0.416	1.66
9E29058-CAL5	2	4563	0.448	1.67
9E29058-CAL6	5	12196	0.479	1.67
9E29058-CAL7	10	22760	0.453	1.66
9E29058-CAL8	20	45253	0.441	1.66
9E29058-CAL9	50	122313	0.488	1.66
9E29058-CALA	100	241195	0.463	1.65
9E29058-CALB	200	453681	0.426	1.66

AVE RF **0.449** RF RSD **5.63** AVE RT **1.66**

Chloromethane

Curve Fit: **AVERAGE RF**

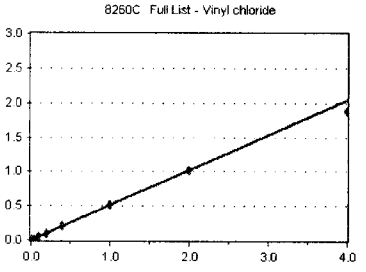


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~835~~	~~1.607~~	~~1.86~~
~~9E29058-CAL2~~	~~0.2~~	~~1572~~	~~1.531~~	~~1.87~~
9E29058-CAL3	0.4	1870	0.919	1.86
9E29058-CAL4	1	3872	0.788	1.86
9E29058-CAL5	2	7629	0.748	1.86
9E29058-CAL6	5	19122	0.751	1.86
9E29058-CAL7	10	35625	0.710	1.86
9E29058-CAL8	20	72826	0.710	1.86
9E29058-CAL9	50	179217	0.715	1.86
9E29058-CALA	100	355923	0.683	1.85
9E29058-CALB	200	652609	0.612	1.86

AVE RF **0.737** RF RSD **11.42** AVE RT **1.86**

Vinyl chloride

Curve Fit: **AVERAGE RF**

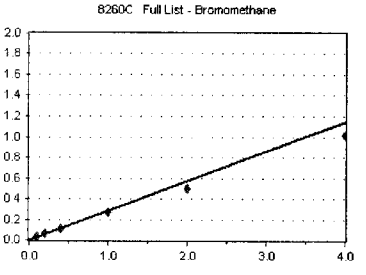


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	515	0.501	1.95
9E29058-CAL3	0.4	1058	0.520	1.96
9E29058-CAL4	1	2495	0.508	1.95
9E29058-CAL5	2	5260	0.516	1.95
9E29058-CAL6	5	13474	0.529	1.95
9E29058-CAL7	10	25219	0.502	1.94
9E29058-CAL8	20	52612	0.513	1.95
9E29058-CAL9	50	132089	0.527	1.95
9E29058-CALA	100	265790	0.510	1.94
9E29058-CALB	200	501566	0.470	1.94

AVE RF **0.510** RF RSD **3.26** AVE RT **1.95**

Bromomethane

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~1488~~	~~2.863~~	~~2.31~~
~~9E29058-CAL2~~	~~0.2~~	~~1803~~	~~1.756~~	~~2.31~~
~~9E29058-CAL3~~	~~0.4~~	~~2178~~	~~1.071~~	~~2.31~~
~~9E29058-CAL4~~	~~1~~	~~2456~~	~~0.500~~	~~2.30~~
~~9E29058-CAL5~~	~~2~~	~~4475~~	~~0.439~~	~~2.31~~
9E29058-CAL6	5	9080	0.356	2.31
9E29058-CAL7	10	16179	0.322	2.30
9E29058-CAL8	20	28393	0.277	2.30
9E29058-CAL9	50	66982	0.267	2.30
9E29058-CALA	100	130087	0.250	2.30
9E29058-CALB	200	269576	0.253	2.29

AVE RF **0.287** RF RSD **14.87** AVE RT **2.30**

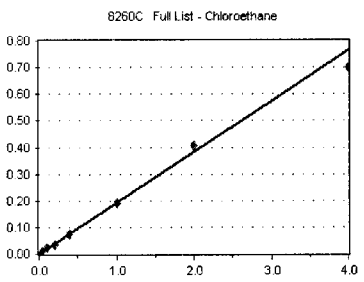
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

Chloroethane

Curve Fit: **AVERAGE RF**

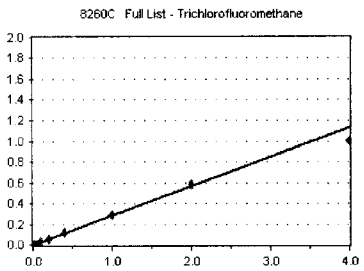


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL4~~	~~1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL5	2	2003	0.197	2.44
9E29058-CAL6	5	5245	0.206	2.45
9E29058-CAL7	10	9117	0.182	2.44
9E29058-CAL8	20	19192	0.187	2.45
9E29058-CAL9	50	47938	0.191	2.45
9E29058-CALA	100	105670	0.203	2.44
9E29058-CALB	200	187116	0.176	2.43

AVE RF **0.191** RF RSD **5.76** AVE RT **2.44**

Trichlorofluoromethane

Curve Fit: **AVERAGE RF**

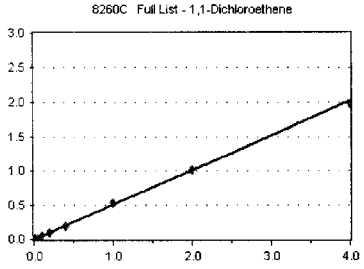


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL3	0.4	561	0.276	2.58
9E29058-CAL4	1	1421	0.289	2.57
9E29058-CAL5	2	2958	0.290	2.58
9E29058-CAL6	5	7697	0.302	2.58
9E29058-CAL7	10	13672	0.272	2.57
9E29058-CAL8	20	29898	0.291	2.58
9E29058-CAL9	50	73023	0.291	2.58
9E29058-CALA	100	152590	0.293	2.57
9E29058-CALB	200	268497	0.252	2.57

AVE RF **0.284** RF RSD **5.30** AVE RT **2.57**

1,1-Dichloroethene

Curve Fit: **AVERAGE RF**

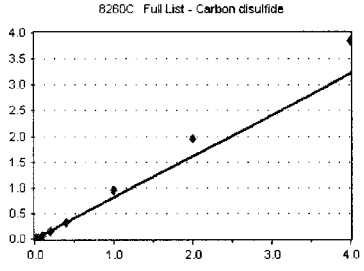


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	456	0.444	3.10
9E29058-CAL3	0.4	1130	0.556	3.11
9E29058-CAL4	1	2472	0.503	3.10
9E29058-CAL5	2	4891	0.480	3.10
9E29058-CAL6	5	13008	0.511	3.10
9E29058-CAL7	10	25751	0.513	3.09
9E29058-CAL8	20	51985	0.507	3.09
9E29058-CAL9	50	135031	0.538	3.10
9E29058-CALA	100	268375	0.515	3.09
9E29058-CALB	200	525278	0.493	3.09

AVE RF **0.506** RF RSD **6.03** AVE RT **3.10**

Carbon disulfide

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	835	0.813	3.12
9E29058-CAL3	0.4	1568	0.771	3.12
9E29058-CAL4	1	3330	0.678	3.11
9E29058-CAL5	2	6854	0.672	3.12
9E29058-CAL6	5	17910	0.703	3.11
9E29058-CAL7	10	36451	0.726	3.11
9E29058-CAL8	20	80999	0.789	3.11
9E29058-CAL9	50	237187	0.946	3.11
9E29058-CALA	100	506056	0.971	3.10
9E29058-CALB	200	1024014	0.960	3.10

AVE RF **0.803** RF RSD **14.57** AVE RT **3.11**

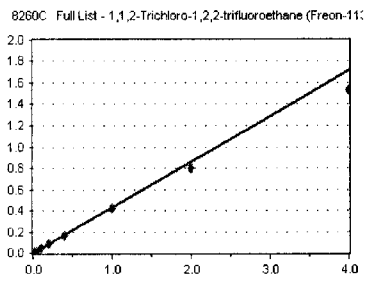
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

1,1,2-Trichloro-1,2,2-trifluoroetha

Curve Fit: **AVERAGE RF**

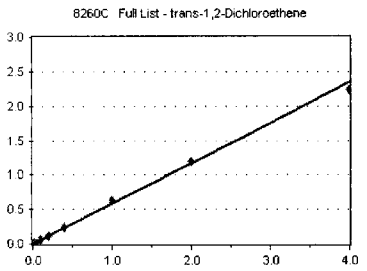


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	603	0.587	3.16
9E29058-CAL3	0.4	935	0.460	3.17
9E29058-CAL4	1	2147	0.437	3.14
9E29058-CAL5	2	3908	0.383	3.15
9E29058-CAL6	5	10435	0.410	3.15
9E29058-CAL7	10	20551	0.409	3.15
9E29058-CAL8	20	41761	0.407	3.15
9E29058-CAL9	50	104970	0.419	3.15
9E29058-CALA	100	207803	0.399	3.14
9E29058-CALB	200	409831	0.384	3.14

AVE RF **0.429** RF RSD **13.96** AVE RT **3.15**

trans-1,2-Dichloroethene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	245	0.471	0.00
9E29058-CAL2	0.2	734	0.715	3.89
9E29058-CAL3	0.4	1162	0.571	3.90
9E29058-CAL4	1	2611	0.532	3.89
9E29058-CAL5	2	5764	0.565	3.89
9E29058-CAL6	5	15650	0.614	3.89
9E29058-CAL7	10	30362	0.605	3.88
9E29058-CAL8	20	61167	0.596	3.88
9E29058-CAL9	50	157053	0.626	3.89
9E29058-CALA	100	311743	0.598	3.88
9E29058-CALB	200	595457	0.559	3.88

AVE RF **0.587** RF RSD **10.38** AVE RT **3.54**

Methylene chloride

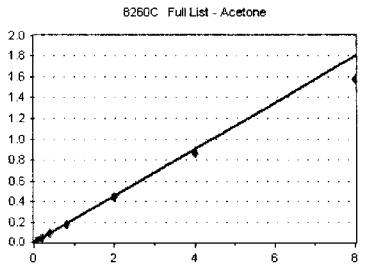
Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~5028~~	~~9.674~~	~~3.72~~
~~9E29058-CAL2~~	~~0.2~~	~~14589~~	~~14.205~~	~~3.73~~
~~9E29058-CAL3~~	~~0.4~~	~~15095~~	~~7.421~~	~~3.73~~
~~9E29058-CAL4~~	~~1~~	~~15763~~	~~3.210~~	~~3.73~~
9E29058-CAL5	2	18469	1.812	3.73
9E29058-CAL6	5	25250	0.991	3.74
9E29058-CAL7	10	35620	0.710	3.72
9E29058-CAL8	20	58329	0.568	3.73
9E29058-CAL9	50	122804	0.490	3.73
9E29058-CALA	100	236890	0.454	3.72
9E29058-CALB	200	435629	0.409	3.72

AVE RF **0.776** RF RSD **64.14** AVE RT **3.73**

Acetone

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL3~~	~~0.8~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL4~~	~~2~~	~~3386~~	~~0.345~~	~~3.86~~
9E29058-CAL5	4	5795	0.284	3.85
9E29058-CAL6	10	11897	0.233	3.85
9E29058-CAL7	20	20645	0.206	3.84
9E29058-CAL8	40	44627	0.217	3.84
9E29058-CAL9	100	111792	0.223	3.84
9E29058-CALA	200	225817	0.217	3.83
9E29058-CALB	400	420741	0.197	3.83

AVE RF **0.225** RF RSD **12.62** AVE RT **3.84**

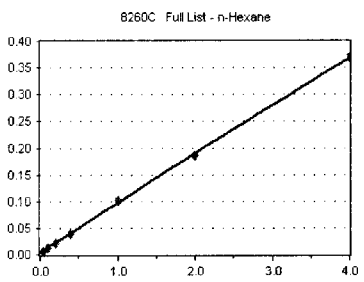
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

n-Hexane

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

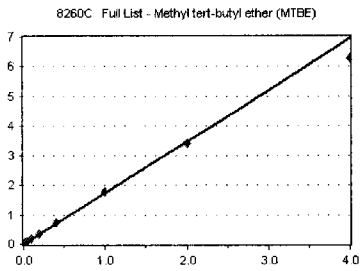


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~856~~	~~1.647~~	~~3.97~~
~~9E29058-CAL2~~	~~0.2~~	~~874~~	~~0.851~~	~~3.97~~
~~9E29058-CAL3~~	~~0.4~~	~~1123~~	~~0.552~~	~~3.98~~
~~9E29058-CAL4~~	~~1~~	~~1382~~	~~0.281~~	~~3.97~~
9E29058-CAL5	2	1767	0.173	3.97
9E29058-CAL6	5	3499	0.137	3.97
9E29058-CAL7	10	5559	0.111	3.96
9E29058-CAL8	20	10080	9.824	3.96
9E29058-CAL9	50	25466	0.102	3.97
9E29058-CALA	100	48610	9.325	3.96
9E29058-CALB	200	98461	9.235	3.96

AVE RF **0.115** RF RSD **25.96** AVE RT **3.97**

Methyl tert-butyl ether (MTBE)

Curve Fit: **AVERAGE RF**

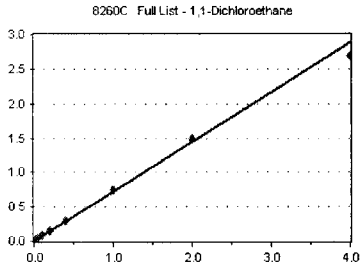


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	932	1.793	4.03
9E29058-CAL2	0.2	1802	1.755	4.03
9E29058-CAL3	0.4	3675	1.807	4.04
9E29058-CAL4	1	8517	1.734	4.03
9E29058-CAL5	2	17541	1.721	4.03
9E29058-CAL6	5	44834	1.760	4.04
9E29058-CAL7	10	87421	1.742	4.04
9E29058-CAL8	20	179725	1.752	4.04
9E29058-CAL9	50	446710	1.781	4.04
9E29058-CALA	100	885758	1.699	4.03
9E29058-CALB	200	1674237	1.570	4.03

AVE RF **1.738** RF RSD **3.66** AVE RT **4.03**

1,1-Dichloroethane

Curve Fit: **AVERAGE RF**

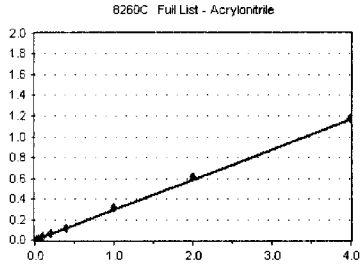


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	735	0.716	4.53
9E29058-CAL3	0.4	1418	0.697	4.53
9E29058-CAL4	1	3481	0.709	4.52
9E29058-CAL5	2	7479	0.734	4.52
9E29058-CAL6	5	18960	0.744	4.53
9E29058-CAL7	10	36342	0.724	4.52
9E29058-CAL8	20	75709	0.738	4.52
9E29058-CAL9	50	187888	0.749	4.52
9E29058-CALA	100	388015	0.744	4.52
9E29058-CALB	200	718862	0.674	4.51

AVE RF **0.723** RF RSD **3.33** AVE RT **4.52**

Acrylonitrile

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL3~~	~~0.4~~	~~342~~	~~0.168~~	~~4.62~~
9E29058-CAL4	1	1313	0.267	4.61
9E29058-CAL5	2	2550	0.250	4.61
9E29058-CAL6	5	7679	0.301	4.61
9E29058-CAL7	10	15131	0.301	4.60
9E29058-CAL8	20	30627	0.298	4.60
9E29058-CAL9	50	79642	0.318	4.60
9E29058-CALA	100	160664	0.308	4.59
9E29058-CALB	200	314097	0.295	4.59

AVE RF **0.292** RF RSD **7.65** AVE RT **4.60**

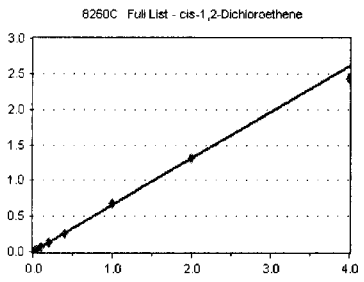
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

cis-1,2-Dichloroethene

Curve Fit: **AVERAGE RF**

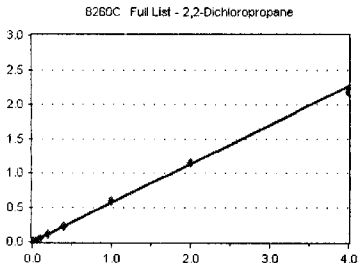


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	365	0.702	5.07
9E29058-CAL2	0.2	611	0.595	5.07
9E29058-CAL3	0.4	1412	0.694	5.08
9E29058-CAL4	1	3087	0.629	5.07
9E29058-CAL5	2	6425	0.630	5.07
9E29058-CAL6	5	17123	0.672	5.07
9E29058-CAL7	10	33881	0.675	5.07
9E29058-CAL8	20	67717	0.660	5.07
9E29058-CAL9	50	170168	0.679	5.07
9E29058-CALA	100	343281	0.659	5.06
9E29058-CALB	200	647004	0.607	5.06

AVE RF **0.655** RF RSD **5.35** AVE RT **5.07**

2,2-Dichloropropane

Curve Fit: **AVERAGE RF**

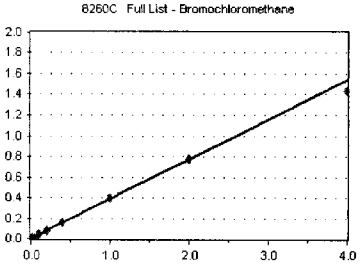


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL3	0.4	1168	0.574	5.18
9E29058-CAL4	1	2678	0.545	5.18
9E29058-CAL5	2	5498	0.539	5.18
9E29058-CAL6	5	14424	0.566	5.18
9E29058-CAL7	10	29348	0.585	5.17
9E29058-CAL8	20	58827	0.573	5.17
9E29058-CAL9	50	148829	0.593	5.17
9E29058-CALA	100	299040	0.574	5.17
9E29058-CALB	200	584639	0.548	5.17

AVE RF **0.566** RF RSD **3.26** AVE RT **5.17**

Bromochloromethane

Curve Fit: **AVERAGE RF**

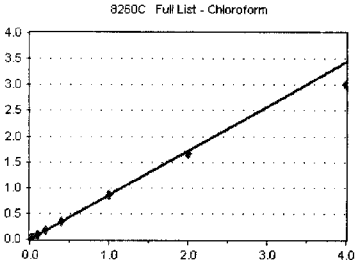


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	453	0.441	5.27
9E29058-CAL3	0.4	660	0.324	5.27
9E29058-CAL4	1	1861	0.379	5.27
9E29058-CAL5	2	3833	0.376	5.27
9E29058-CAL6	5	10200	0.400	5.27
9E29058-CAL7	10	20180	0.402	5.26
9E29058-CAL8	20	40396	0.394	5.26
9E29058-CAL9	50	100930	0.402	5.27
9E29058-CALA	100	202481	0.388	5.26
9E29058-CALB	200	383923	0.360	5.26

AVE RF **0.387** RF RSD **7.92** AVE RT **5.27**

Chloroform

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~862~~	~~1.659~~	~~5.35~~
~~9E29058-CAL2~~	~~0.2~~	~~1314~~	~~1.279~~	~~5.35~~
9E29058-CAL3	0.4	2051	1.008	5.36
9E29058-CAL4	1	4395	0.895	5.35
9E29058-CAL5	2	8763	0.860	5.35
9E29058-CAL6	5	21196	0.832	5.35
9E29058-CAL7	10	42125	0.839	5.34
9E29058-CAL8	20	86712	0.845	5.35
9E29058-CAL9	50	217722	0.868	5.35
9E29058-CALA	100	433579	0.832	5.34
9E29058-CALB	200	802076	0.752	5.35

AVE RF **0.859** RF RSD **7.93** AVE RT **5.35**

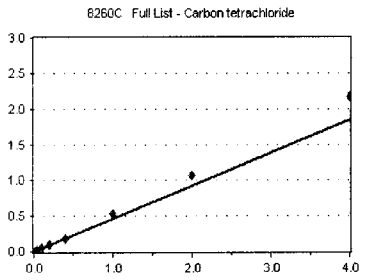
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

Carbon tetrachloride

Curve Fit: **AVERAGE RF**

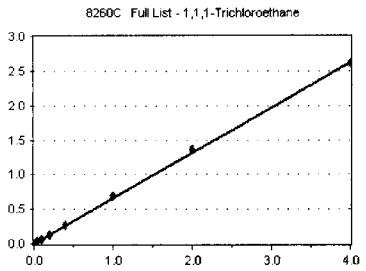


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~416~~	~~0.405~~	~~5.49~~
~~9E29058-CAL3~~	~~0.4~~	~~700~~	~~0.344~~	~~5.47~~
9E29058-CAL4	1	1931	0.393	5.47
9E29058-CAL5	2	3774	0.370	5.48
9E29058-CAL6	5	10919	0.429	5.48
9E29058-CAL7	10	22616	0.451	5.48
9E29058-CAL8	20	47689	0.465	5.48
9E29058-CAL9	50	132426	0.528	5.48
9E29058-CALA	100	278862	0.535	5.47
9E29058-CALB	200	577566	0.542	5.48

AVE RF **0.464** RF RSD **14.21** AVE RT **5.48**

1,1,1-Trichloroethane

Curve Fit: **AVERAGE RF**

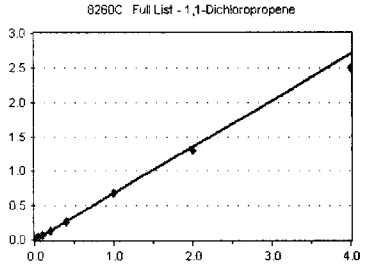


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~303~~	~~0.583~~	~~5.54~~
9E29058-CAL2	0.2	657	0.640	5.54
9E29058-CAL3	0.4	1382	0.679	5.55
9E29058-CAL4	1	2923	0.595	5.55
9E29058-CAL5	2	6438	0.632	5.55
9E29058-CAL6	5	16696	0.655	5.56
9E29058-CAL7	10	32805	0.654	5.54
9E29058-CAL8	20	69031	0.673	5.55
9E29058-CAL9	50	175402	0.699	5.55
9E29058-CALA	100	353917	0.679	5.54
9E29058-CALB	200	697341	0.654	5.54

AVE RF **0.656** RF RSD **4.49** AVE RT **5.55**

1,1-Dichloropropene

Curve Fit: **AVERAGE RF**

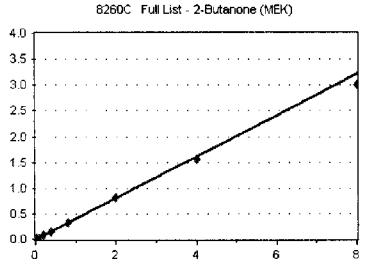


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	822	0.800	5.69
9E29058-CAL3	0.4	1310	0.644	5.69
9E29058-CAL4	1	3655	0.744	5.68
9E29058-CAL5	2	6475	0.635	5.68
9E29058-CAL6	5	16613	0.652	5.68
9E29058-CAL7	10	32947	0.656	5.67
9E29058-CAL8	20	67566	0.658	5.68
9E29058-CAL9	50	172418	0.688	5.68
9E29058-CALA	100	339212	0.651	5.67
9E29058-CALB	200	664805	0.624	5.67

AVE RF **0.675** RF RSD **8.20** AVE RT **5.68**

2-Butanone (MEK)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL3~~	~~0.8~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL4	2	4450	0.453	5.71
9E29058-CAL5	4	7369	0.361	5.70
9E29058-CAL6	10	21043	0.413	5.70
9E29058-CAL7	20	40332	0.402	5.69
9E29058-CAL8	40	82660	0.403	5.69
9E29058-CAL9	100	208404	0.416	5.68
9E29058-CALA	200	408448	0.392	5.68
9E29058-CALB	400	802082	0.376	5.68

AVE RF **0.402** RF RSD **6.86** AVE RT **5.69**

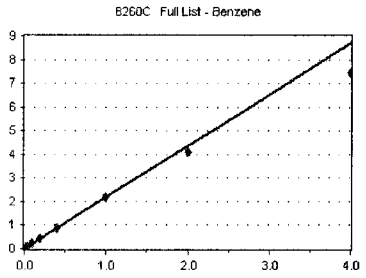
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

Benzene

Curve Fit: **AVERAGE RF**

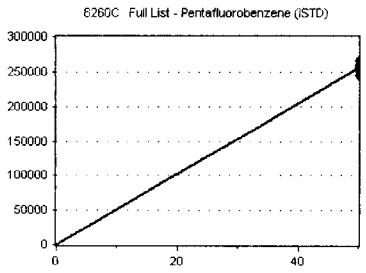


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	1225	2.357	5.94
9E29058-CAL2	0.2	2321	2.260	5.93
9E29058-CAL3	0.4	4546	2.235	5.93
9E29058-CAL4	1	11217	2.284	5.94
9E29058-CAL5	2	21880	2.147	5.94
9E29058-CAL6	5	56100	2.202	5.93
9E29058-CAL7	10	109245	2.176	5.93
9E29058-CAL8	20	221601	2.160	5.93
9E29058-CAL9	50	547822	2.184	5.93
9E29058-CALA	100	1066556	2.046	5.93
9E29058-CALB	200	1978560	1.856	5.93

AVE RF **2.173** RF RSD **6.11** AVE RT **5.93**

Pentafluorobenzene (ISTD)

Curve Fit: **AVERAGE RF**

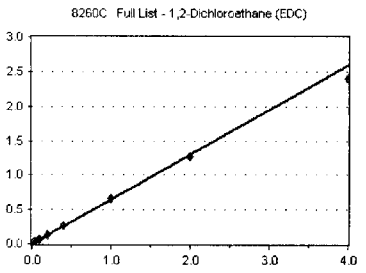


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	50	259869	5197.380	6.03
9E29058-CAL2	50	256759	5135.180	6.04
9E29058-CAL3	50	254275	5085.500	6.03
9E29058-CAL4	50	245560	4911.200	6.03
9E29058-CAL5	50	254825	5096.500	6.04
9E29058-CAL6	50	254773	5095.460	6.04
9E29058-CAL7	50	250992	5019.840	6.03
9E29058-CAL8	50	256524	5130.480	6.03
9E29058-CAL9	50	250786	5015.720	6.03
9E29058-CALA	50	260650	5213.000	6.03
9E29058-CALB	50	266542	5330.840	6.03

AVE RF **5111.918** RF RSD **2.19** AVE RT **6.03**

1,2-Dichloroethane (EDC)

Curve Fit: **AVERAGE RF**

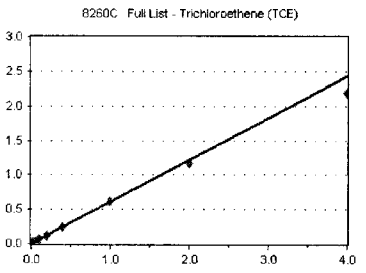


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	685	0.667	6.15
9E29058-CAL3	0.4	1395	0.686	6.15
9E29058-CAL4	1	3138	0.639	6.16
9E29058-CAL5	2	6601	0.648	6.15
9E29058-CAL6	5	16641	0.653	6.15
9E29058-CAL7	10	32514	0.648	6.15
9E29058-CAL8	20	66416	0.647	6.15
9E29058-CAL9	50	166385	0.663	6.15
9E29058-CALA	100	327724	0.629	6.15
9E29058-CALB	200	639082	0.599	6.14

AVE RF **0.648** RF RSD **3.59** AVE RT **6.15**

Trichloroethene (TCE)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	358	0.689	6.56
9E29058-CAL2	0.2	778	0.758	6.55
9E29058-CAL3	0.4	1054	0.518	6.56
9E29058-CAL4	1	2995	0.610	6.55
9E29058-CAL5	2	6232	0.611	6.55
9E29058-CAL6	5	15220	0.597	6.55
9E29058-CAL7	10	29345	0.585	6.55
9E29058-CAL8	20	60590	0.590	6.55
9E29058-CAL9	50	153840	0.613	6.55
9E29058-CALA	100	306069	0.587	6.55
9E29058-CALB	200	582863	0.547	6.55

AVE RF **0.610** RF RSD **10.65** AVE RT **6.55**

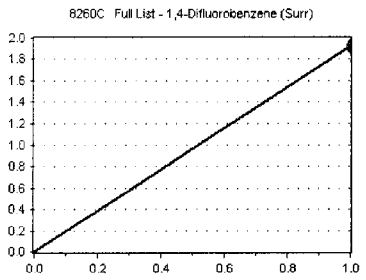
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

1,4-Difluorobenzene (Surr)

Curve Fit: **AVERAGE RF**

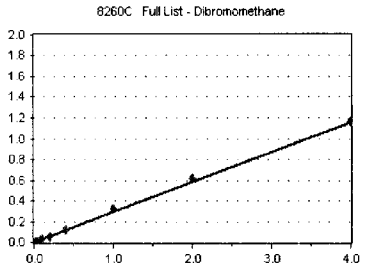


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	50	493490	1.899	6.59
9E29058-CAL2	50	491851	1.916	6.59
9E29058-CAL3	50	485518	1.909	6.59
9E29058-CAL4	50	472967	1.926	6.59
9E29058-CAL5	50	496387	1.948	6.59
9E29058-CAL6	50	492217	1.932	6.59
9E29058-CAL7	50	477661	1.903	6.58
9E29058-CAL8	50	495460	1.931	6.58
9E29058-CAL9	50	489311	1.951	6.59
9E29058-CALA	50	496661	1.905	6.58
9E29058-CALB	50	515449	1.934	6.58

AVE RF **1.923** RF RSD **0.93** AVE RT **6.59**

Dibromomethane

Curve Fit: **AVERAGE RF**

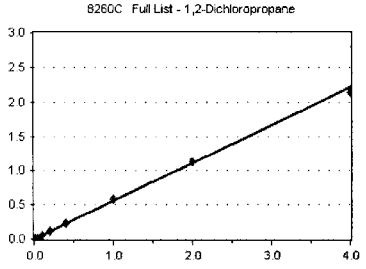


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~150~~	~~0.146~~	~~7.00~~
9E29058-CAL3	0.4	572	0.281	7.00
9E29058-CAL4	1	1272	0.259	7.00
9E29058-CAL5	2	2771	0.272	7.00
9E29058-CAL6	5	7159	0.281	7.00
9E29058-CAL7	10	14902	0.297	7.00
9E29058-CAL8	20	30886	0.301	7.00
9E29058-CAL9	50	80383	0.321	7.00
9E29058-CALA	100	161634	0.310	6.99
9E29058-CALB	200	312313	0.293	7.00

AVE RF **0.290** RF RSD **6.62** AVE RT **7.00**

1,2-Dichloropropane

Curve Fit: **AVERAGE RF**

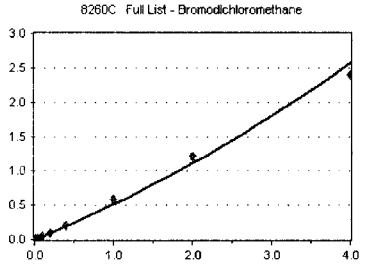


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	596	0.580	7.11
9E29058-CAL3	0.4	1068	0.525	7.11
9E29058-CAL4	1	2601	0.530	7.11
9E29058-CAL5	2	5608	0.550	7.11
9E29058-CAL6	5	14430	0.566	7.11
9E29058-CAL7	10	27791	0.554	7.11
9E29058-CAL8	20	58485	0.570	7.11
9E29058-CAL9	50	145741	0.581	7.11
9E29058-CALA	100	294477	0.565	7.10
9E29058-CALB	200	569634	0.534	7.11

AVE RF **0.556** RF RSD **3.68** AVE RT **7.11**

Bromodichloromethane

Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	431	0.420	7.19
9E29058-CAL3	0.4	872	0.429	7.18
9E29058-CAL4	1	2077	0.423	7.18
9E29058-CAL5	2	4030	0.395	7.18
9E29058-CAL6	5	11827	0.464	7.19
9E29058-CAL7	10	23755	0.473	7.17
9E29058-CAL8	20	52937	0.516	7.18
9E29058-CAL9	50	148293	0.591	7.18
9E29058-CALA	100	315200	0.605	7.18
9E29058-CALB	200	637695	0.598	7.18

AVE RF **0.491** RF RSD **16.46** AVE RT **7.18**

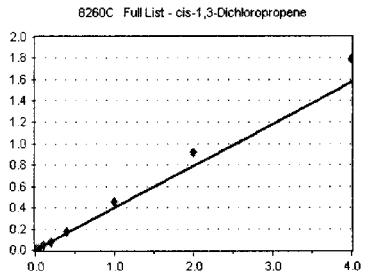
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

cis-1,3-Dichloropropene

Curve Fit: **AVERAGE RF**

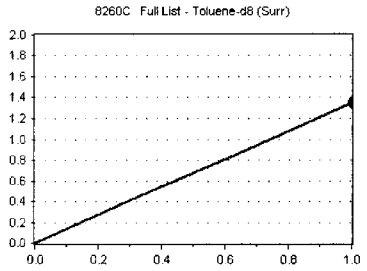


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	602	0.337	7.89
9E29058-CAL3	0.4	1128	0.319	7.90
9E29058-CAL4	1	3081	0.357	7.89
9E29058-CAL5	2	6187	0.343	7.89
9E29058-CAL6	5	17156	0.385	7.89
9E29058-CAL7	10	35060	0.402	7.89
9E29058-CAL8	20	76771	0.426	7.89
9E29058-CAL9	50	206054	0.458	7.89
9E29058-CALA	100	423217	0.460	7.89
9E29058-CALB	200	831235	0.448	7.88

AVE RF **0.394** RF RSD **13.50** AVE RT **7.89**

Toluene-d8 (Surr)

Curve Fit: **AVERAGE RF**

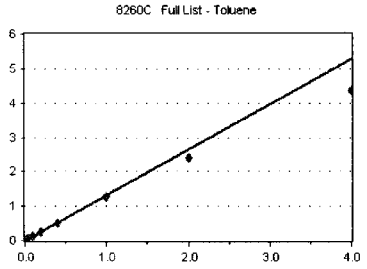


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	50	607580	1.354	8.10
9E29058-CAL2	50	603494	1.351	8.10
9E29058-CAL3	50	596173	1.350	8.09
9E29058-CAL4	50	583864	1.355	8.10
9E29058-CAL5	50	607810	1.346	8.10
9E29058-CAL6	50	604964	1.359	8.10
9E29058-CAL7	50	590419	1.353	8.09
9E29058-CAL8	50	610484	1.356	8.09
9E29058-CAL9	50	601358	1.338	8.09
9E29058-CALA	50	619571	1.348	8.09
9E29058-CALB	50	635623	1.369	8.09

AVE RF **1.353** RF RSD **0.58** AVE RT **8.09**

Toluene

Curve Fit: **AVERAGE RF**

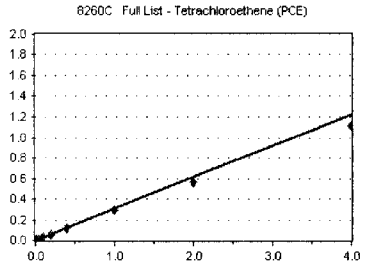


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~2496~~	~~2.781~~	~~8.15~~
~~9E29058-CAL2~~	~~0.2~~	~~3425~~	~~1.917~~	~~8.15~~
9E29058-CAL3	0.4	5721	1.620	8.16
9E29058-CAL4	1	12756	1.480	8.16
9E29058-CAL5	2	23832	1.319	8.15
9E29058-CAL6	5	59374	1.334	8.15
9E29058-CAL7	10	113987	1.306	8.15
9E29058-CAL8	20	231426	1.285	8.15
9E29058-CAL9	50	567186	1.262	8.15
9E29058-CALA	100	1105825	1.203	8.15
9E29058-CALB	200	2033618	1.095	8.15

AVE RF **1.323** RF RSD **11.49** AVE RT **8.15**

Tetrachloroethene (PCE)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~338~~	~~0.377~~	~~8.60~~
9E29058-CAL2	0.2	698	0.391	8.60
9E29058-CAL3	0.4	1321	0.374	8.61
9E29058-CAL4	1	2616	0.304	8.60
9E29058-CAL5	2	4849	0.268	8.60
9E29058-CAL6	5	13201	0.297	8.60
9E29058-CAL7	10	25684	0.294	8.60
9E29058-CAL8	20	51386	0.285	8.60
9E29058-CAL9	50	131806	0.293	8.60
9E29058-CALA	100	260817	0.284	8.60
9E29058-CALB	200	514549	0.277	8.60

AVE RF **0.307** RF RSD **13.47** AVE RT **8.60**

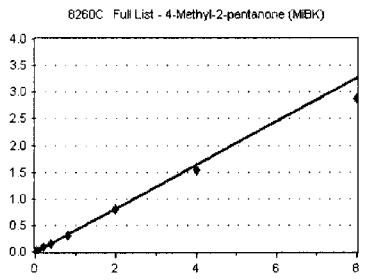
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

4-Methyl-2-pentanone (MiBK)

Curve Fit: **AVERAGE RF**

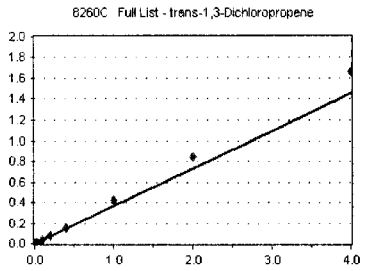


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.2	867	0.483	8.62
9E29058-CAL2	0.4	1694	0.474	8.62
9E29058-CAL3	0.8	3139	0.444	8.62
9E29058-CAL4	2	7035	0.408	8.63
9E29058-CAL5	4	13222	0.366	8.62
9E29058-CAL6	10	34042	0.382	8.62
9E29058-CAL7	20	69619	0.399	8.62
9E29058-CAL8	40	140164	0.389	8.62
9E29058-CAL9	100	362001	0.403	8.62
9E29058-CALA	200	707759	0.385	8.62
9E29058-CALB	400	1330786	0.358	8.61

AVE RF **0.408** RF RSD **10.15** AVE RT **8.62**

trans-1,3-Dichloropropene

Curve Fit: **AVERAGE RF**

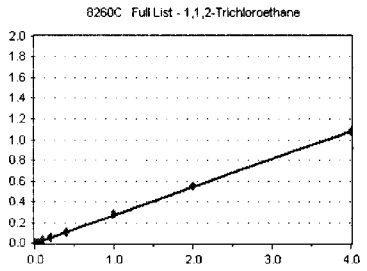


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~268~~	~~0.299~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~575~~	~~0.322~~	~~8.66~~
~~9E29058-CAL3~~	~~0.4~~	~~908~~	~~0.257~~	~~8.65~~
9E29058-CAL4	1	2671	0.310	8.64
9E29058-CAL5	2	5147	0.285	8.65
9E29058-CAL6	5	14478	0.325	8.65
9E29058-CAL7	10	31437	0.360	8.65
9E29058-CAL8	20	68797	0.382	8.64
9E29058-CAL9	50	188244	0.419	8.64
9E29058-CALA	100	389918	0.424	8.64
9E29058-CALB	200	772812	0.416	8.64

AVE RF **0.365** RF RSD **14.76** AVE RT **8.64**

1,1,2-Trichloroethane

Curve Fit: **AVERAGE RF**

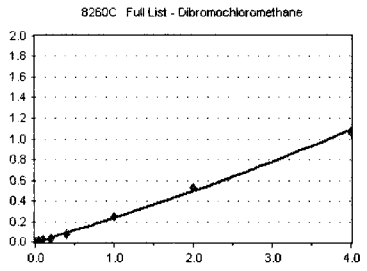


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	229	0.255	8.82
9E29058-CAL2	0.2	506	0.283	8.83
9E29058-CAL3	0.4	911	0.258	8.82
9E29058-CAL4	1	2251	0.261	8.83
9E29058-CAL5	2	4541	0.251	8.82
9E29058-CAL6	5	12374	0.278	8.82
9E29058-CAL7	10	24039	0.275	8.82
9E29058-CAL8	20	50104	0.278	8.82
9E29058-CAL9	50	128045	0.285	8.82
9E29058-CALA	100	255240	0.278	8.82
9E29058-CALB	200	500164	0.269	8.82

AVE RF **0.270** RF RSD **4.39** AVE RT **8.82**

Dibromochloromethane

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	172	9.626	9.03
9E29058-CAL3	0.4	549	0.155	9.01
9E29058-CAL4	1	1390	0.161	9.01
9E29058-CAL5	2	2873	0.159	9.00
9E29058-CAL6	5	7443	0.167	9.00
9E29058-CAL7	10	16078	0.184	9.01
9E29058-CAL8	20	36395	0.202	9.01
9E29058-CAL9	50	110966	0.247	9.01
9E29058-CALA	100	241274	0.262	9.01
9E29058-CALB	200	499033	0.269	9.00

AVE RF **0.190** RF RSD **28.85** AVE RT **9.01**

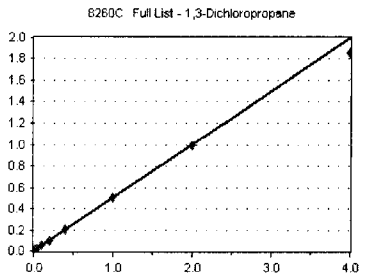
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

1,3-Dichloropropane

Curve Fit: **AVERAGE RF**

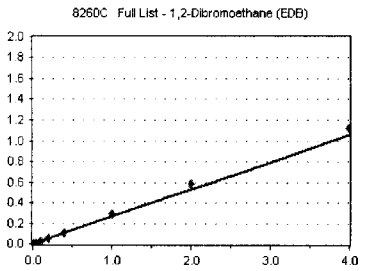


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	438	0.488	9.11
9E29058-CAL2	0.2	988	0.553	9.12
9E29058-CAL3	0.4	1866	0.528	9.12
9E29058-CAL4	1	4104	0.476	9.11
9E29058-CAL5	2	8546	0.473	9.11
9E29058-CAL6	5	22298	0.501	9.11
9E29058-CAL7	10	43756	0.501	9.10
9E29058-CAL8	20	91532	0.508	9.11
9E29058-CAL9	50	228171	0.508	9.11
9E29058-CALA	100	456442	0.496	9.10
9E29058-CALB	200	863655	0.465	9.11

AVE RF **0.500** RF RSD **5.06** AVE RT **9.11**

1,2-Dibromoethane (EDB)

Curve Fit: **AVERAGE RF**

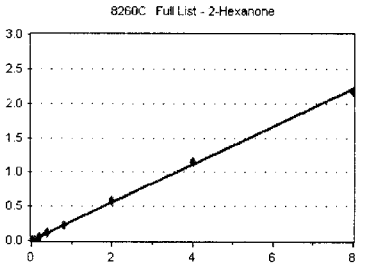


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~186~~	~~0.207~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~298~~	~~0.167~~	~~9.25~~
9E29058-CAL3	0.4	794	0.225	9.26
9E29058-CAL4	1	2135	0.248	9.24
9E29058-CAL5	2	4166	0.231	9.24
9E29058-CAL6	5	11552	0.259	9.25
9E29058-CAL7	10	23883	0.274	9.24
9E29058-CAL8	20	49836	0.277	9.24
9E29058-CAL9	50	132585	0.295	9.24
9E29058-CALA	100	266180	0.289	9.24
9E29058-CALB	200	519720	0.280	9.24

AVE RF **0.264** RF RSD **9.51** AVE RT **9.24**

2-Hexanone

Curve Fit: **AVERAGE RF**

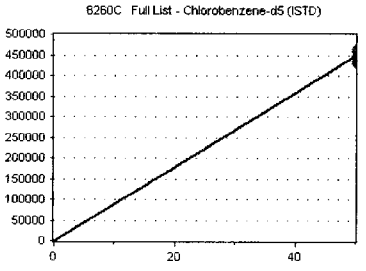


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.2~~	~~443~~	~~0.247~~	~~9.51~~
~~9E29058-CAL2~~	~~0.4~~	~~765~~	~~0.214~~	~~9.51~~
~~9E29058-CAL3~~	~~0.8~~	~~1839~~	~~0.260~~	~~9.51~~
9E29058-CAL4	2	4936	0.286	9.51
9E29058-CAL5	4	8511	0.236	9.51
9E29058-CAL6	10	24821	0.279	9.50
9E29058-CAL7	20	49008	0.281	9.50
9E29058-CAL8	40	101065	0.281	9.50
9E29058-CAL9	100	264271	0.294	9.50
9E29058-CALA	200	528430	0.287	9.50
9E29058-CALB	400	1007307	0.271	9.50

AVE RF **0.277** RF RSD **6.49** AVE RT **9.50**

Chlorobenzene-d5 (ISTD)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	50	448840	8976.800	9.75
9E29058-CAL2	50	446684	8933.680	9.75
9E29058-CAL3	50	441530	8830.600	9.75
9E29058-CAL4	50	430913	8618.260	9.75
9E29058-CAL5	50	451536	9030.720	9.75
9E29058-CAL6	50	445170	8903.400	9.75
9E29058-CAL7	50	436340	8726.800	9.75
9E29058-CAL8	50	450201	9004.020	9.75
9E29058-CAL9	50	449432	8988.640	9.75
9E29058-CALA	50	459775	9195.500	9.75
9E29058-CALB	50	464260	9285.200	9.75

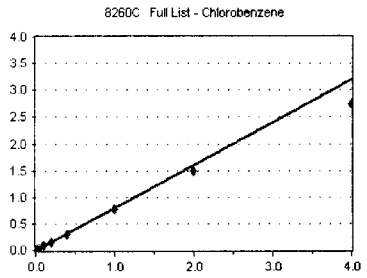
AVE RF **8953.965** RF RSD **2.12** AVE RT **9.75**

Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

Chlorobenzene

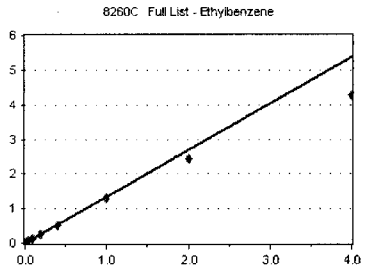


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~1131~~	~~1.260~~	~~9.76~~
9E29058-CAL2	0.2	1617	0.905	9.77
9E29058-CAL3	0.4	3136	0.888	9.77
9E29058-CAL4	1	7300	0.847	9.77
9E29058-CAL5	2	14584	0.807	9.76
9E29058-CAL6	5	35456	0.796	9.77
9E29058-CAL7	10	68508	0.785	9.77
9E29058-CAL8	20	139988	0.777	9.77
9E29058-CAL9	50	351235	0.782	9.77
9E29058-CALA	100	689400	0.750	9.77
9E29058-CALB	200	1272416	0.685	9.76

AVE RF **0.802** RF RSD **8.07** AVE RT **9.77**

Ethylbenzene

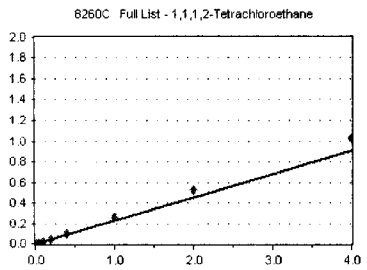


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~1694~~	~~1.887~~	~~9.80~~
9E29058-CAL2	0.2	2895	1.620	9.80
9E29058-CAL3	0.4	5392	1.527	9.80
9E29058-CAL4	1	12069	1.400	9.80
9E29058-CAL5	2	23660	1.310	9.80
9E29058-CAL6	5	60912	1.368	9.80
9E29058-CAL7	10	115497	1.323	9.80
9E29058-CAL8	20	238085	1.322	9.80
9E29058-CAL9	50	580649	1.292	9.80
9E29058-CALA	100	1114972	1.213	9.79
9E29058-CALB	200	1992124	1.073	9.79

AVE RF **1.345** RF RSD **11.33** AVE RT **9.80**

1,1,1,2-Tetrachloroethane

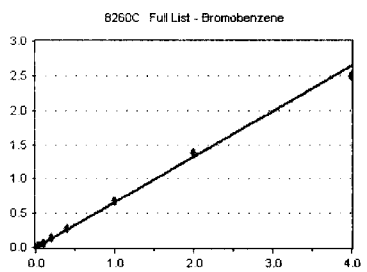


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~318~~	~~0.178~~	~~9.84~~
9E29058-CAL3	0.4	602	0.170	9.83
9E29058-CAL4	1	1810	0.210	9.82
9E29058-CAL5	2	3542	0.196	9.83
9E29058-CAL6	5	9596	0.216	9.83
9E29058-CAL7	10	19728	0.226	9.83
9E29058-CAL8	20	42996	0.239	9.83
9E29058-CAL9	50	116780	0.260	9.83
9E29058-CALA	100	242014	0.263	9.83
9E29058-CALB	200	477013	0.257	9.83

AVE RF **0.226** RF RSD **13.96** AVE RT **9.83**

Bromobenzene



Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	177	0.455	0.00
9E29058-CAL2	0.2	513	0.670	10.92
9E29058-CAL3	0.4	1043	0.691	10.92
9E29058-CAL4	1	2592	0.705	10.92
9E29058-CAL5	2	5277	0.677	10.92
9E29058-CAL6	5	13190	0.700	10.92
9E29058-CAL7	10	25871	0.693	10.92
9E29058-CAL8	20	51348	0.673	10.92
9E29058-CAL9	50	134239	0.687	10.92
9E29058-CALA	100	271067	0.686	10.92
9E29058-CALB	200	503576	0.625	10.92

AVE RF **0.660** RF RSD **10.81** AVE RT **9.93**

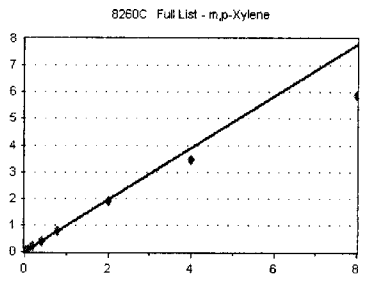
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

m,p-Xylene

Curve Fit: **AVERAGE RF**

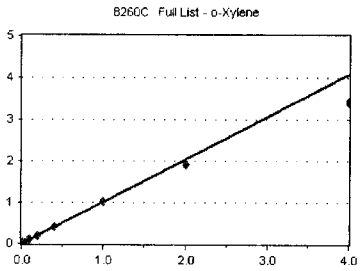


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.2~~	~~2487~~	~~1.385~~	~~9.94~~
9E29058-CAL2	0.4	4246	1.188	9.94
9E29058-CAL3	0.8	7624	1.079	9.94
9E29058-CAL4	2	17400	1.009	9.93
9E29058-CAL5	4	34407	0.952	9.94
9E29058-CAL6	10	87900	0.987	9.94
9E29058-CAL7	20	170308	0.976	9.93
9E29058-CAL8	40	351394	0.976	9.93
9E29058-CAL9	100	846663	0.942	9.93
9E29058-CALA	200	1592559	0.866	9.93
9E29058-CALB	400	2720941	0.733	9.93

AVE RF **0.971** RF RSD **12.37** AVE RT **9.93**

o-Xylene

Curve Fit: **AVERAGE RF**

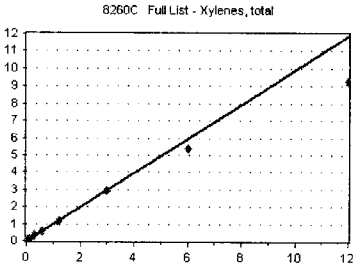


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~1273~~	~~1.418~~	~~10.32~~
9E29058-CAL2	0.2	2232	1.249	10.33
9E29058-CAL3	0.4	3760	1.064	10.33
9E29058-CAL4	1	9051	1.050	10.32
9E29058-CAL5	2	17445	0.966	10.32
9E29058-CAL6	5	45708	1.027	10.32
9E29058-CAL7	10	87450	1.002	10.32
9E29058-CAL8	20	182582	1.014	10.32
9E29058-CAL9	50	457250	1.017	10.32
9E29058-CALA	100	885817	0.963	10.32
9E29058-CALB	200	1581408	0.852	10.32

AVE RF **1.020** RF RSD **9.82** AVE RT **10.32**

Xylenes, total

Curve Fit: **AVERAGE RF**

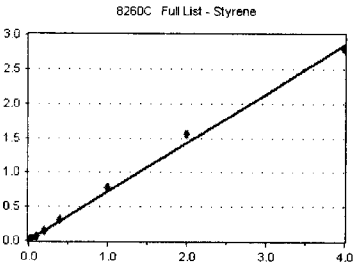


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.3~~	~~3760~~	~~1.396~~	~~10.32~~
9E29058-CAL2	0.6	6478	1.209	10.33
9E29058-CAL3	1.2	11384	1.074	10.33
9E29058-CAL4	3	26451	1.023	10.32
9E29058-CAL5	6	51852	0.957	10.32
9E29058-CAL6	15	133608	1.000	10.32
9E29058-CAL7	30	257758	0.985	10.32
9E29058-CAL8	60	533976	0.988	10.32
9E29058-CAL9	150	1303913	0.967	10.32
9E29058-CALA	300	2478376	0.898	10.32
9E29058-CALB	600	4302349	0.772	10.32

AVE RF **0.987** RF RSD **11.37** AVE RT **10.32**

Styrene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~585~~	~~0.652~~	~~10.38~~
~~9E29058-CAL2~~	~~0.2~~	~~1051~~	~~0.588~~	~~10.37~~
9E29058-CAL3	0.4	2262	0.640	10.38
9E29058-CAL4	1	5658	0.657	10.38
9E29058-CAL5	2	11631	0.644	10.37
9E29058-CAL6	5	31844	0.715	10.37
9E29058-CAL7	10	64308	0.737	10.37
9E29058-CAL8	20	138152	0.767	10.37
9E29058-CAL9	50	353430	0.786	10.37
9E29058-CALA	100	713586	0.776	10.37
9E29058-CALB	200	1293977	0.697	10.37

AVE RF **0.713** RF RSD **8.05** AVE RT **10.37**

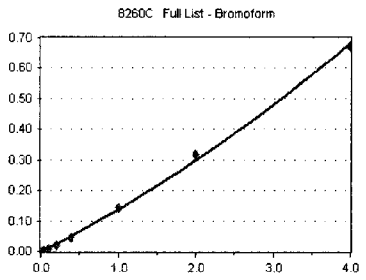
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

Bromoform

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

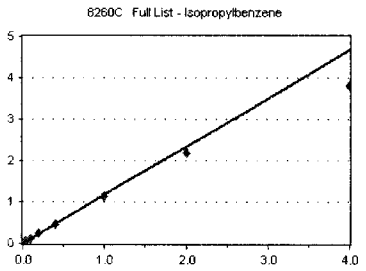


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL3	0.4	186	0.053	10.39
9E29058-CAL4	1	619	7.182	10.38
9E29058-CAL5	2	1354	7.497	10.39
9E29058-CAL6	5	4070	9.143	10.39
9E29058-CAL7	10	8679	9.945	10.39
9E29058-CAL8	20	19903	0.111	10.39
9E29058-CAL9	50	64724	0.144	10.39
9E29058-CALA	100	146040	0.159	10.39
9E29058-CALB	200	312567	0.168	10.39

AVE RF **0.108** RF RSD **37.80** AVE RT **10.39**

Isopropylbenzene

Curve Fit: **AVERAGE RF**

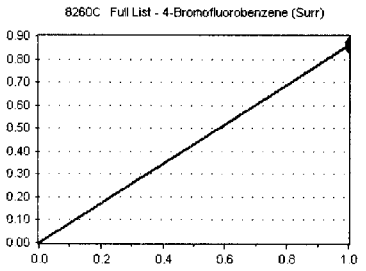


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	1325	1.476	10.60
9E29058-CAL2	0.2	2225	1.245	10.59
9E29058-CAL3	0.4	4105	1.162	10.59
9E29058-CAL4	1	9890	1.148	10.60
9E29058-CAL5	2	20325	1.125	10.60
9E29058-CAL6	5	53051	1.192	10.60
9E29058-CAL7	10	101485	1.163	10.59
9E29058-CAL8	20	210609	1.170	10.59
9E29058-CAL9	50	514735	1.145	10.59
9E29058-CALA	100	1002570	1.090	10.59
9E29058-CALB	200	1774164	0.955	10.60

AVE RF **1.170** RF RSD **10.65** AVE RT **10.60**

4-Bromofluorobenzene (Surr)

Curve Fit: **AVERAGE RF**

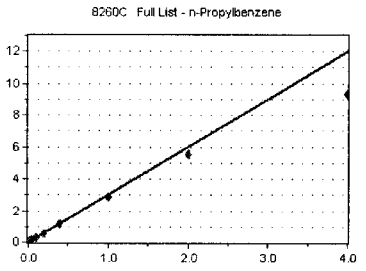


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	50	167905	0.863	10.84
9E29058-CAL2	50	165726	0.866	10.84
9E29058-CAL3	50	163321	0.866	10.84
9E29058-CAL4	50	158686	0.863	10.83
9E29058-CAL5	50	166852	0.857	10.84
9E29058-CAL6	50	163573	0.868	10.84
9E29058-CAL7	50	161677	0.866	10.84
9E29058-CAL8	50	165674	0.868	10.84
9E29058-CAL9	50	167723	0.859	10.84
9E29058-CALA	50	172526	0.873	10.84
9E29058-CALB	50	170853	0.848	10.83

AVE RF **0.863** RF RSD **0.78** AVE RT **10.84**

n-Propylbenzene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	1564	4.019	10.94
9E29058-CAL2	0.2	2483	3.245	10.95
9E29058-CAL3	0.4	4750	3.148	10.95
9E29058-CAL4	1	10579	2.876	10.94
9E29058-CAL5	2	22107	2.838	10.95
9E29058-CAL6	5	57721	3.062	10.95
9E29058-CAL7	10	110989	2.971	10.94
9E29058-CAL8	20	226710	2.971	10.94
9E29058-CAL9	50	564190	2.888	10.94
9E29058-CALA	100	1090767	2.761	10.94
9E29058-CALB	200	1879841	2.334	10.94

AVE RF **3.010** RF RSD **13.61** AVE RT **10.94**

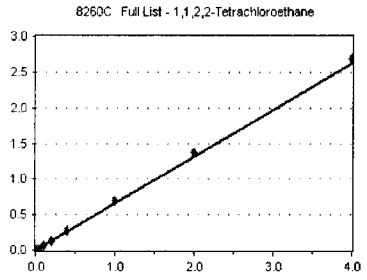
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

1,1,2,2-Tetrachloroethane

Curve Fit: **AVERAGE RF**

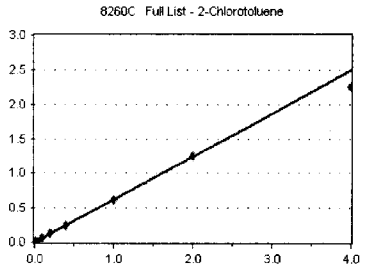


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	266	0.684	11.01
9E29058-CAL2	0.2	439	0.574	11.01
9E29058-CAL3	0.4	1001	0.663	11.01
9E29058-CAL4	1	2272	0.618	11.01
9E29058-CAL5	2	4646	0.596	11.01
9E29058-CAL6	5	12322	0.654	11.01
9E29058-CAL7	10	25383	0.680	11.01
9E29058-CAL8	20	52097	0.683	11.01
9E29058-CAL9	50	135917	0.696	11.01
9E29058-CALA	100	271157	0.686	11.01
9E29058-CALB	200	542178	0.673	11.01

AVE RF **0.655** RF RSD **6.23** AVE RT **11.01**

2-Chlorotoluene

Curve Fit: **AVERAGE RF**

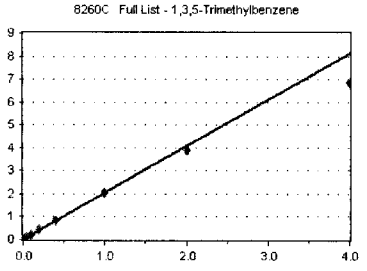


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	260	0.668	11.07
9E29058-CAL2	0.2	535	0.699	11.09
9E29058-CAL3	0.4	911	0.604	11.07
9E29058-CAL4	1	2285	0.621	11.07
9E29058-CAL5	2	4419	0.567	11.07
9E29058-CAL6	5	12024	0.638	11.07
9E29058-CAL7	10	23789	0.637	11.07
9E29058-CAL8	20	47080	0.617	11.07
9E29058-CAL9	50	120765	0.618	11.07
9E29058-CALA	100	246373	0.624	11.07
9E29058-CALB	200	452526	0.562	11.07

AVE RF **0.623** RF RSD **6.33** AVE RT **11.07**

1,3,5-Trimethylbenzene

Curve Fit: **AVERAGE RF**

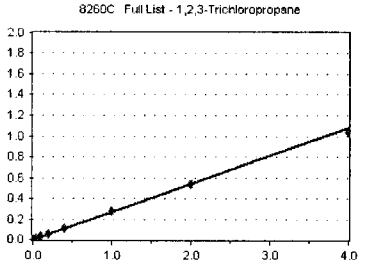


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~1305~~	~~3.353~~	~~11.11~~
9E29058-CAL2	0.2	1776	2.321	11.10
9E29058-CAL3	0.4	3139	2.080	11.11
9E29058-CAL4	1	7772	2.113	11.11
9E29058-CAL5	2	14521	1.864	11.10
9E29058-CAL6	5	39774	2.110	11.10
9E29058-CAL7	10	77961	2.087	11.10
9E29058-CAL8	20	158194	2.073	11.10
9E29058-CAL9	50	396913	2.032	11.11
9E29058-CALA	100	773425	1.958	11.10
9E29058-CALB	200	1378879	1.712	11.10

AVE RF **2.035** RF RSD **8.02** AVE RT **11.10**

1,2,3-Trichloropropane

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL2	0.2	144	0.188	11.12
9E29058-CAL3	0.4	500	0.331	11.12
9E29058-CAL4	1	983	0.267	11.11
9E29058-CAL5	2	2200	0.282	11.12
9E29058-CAL6	5	5164	0.274	11.12
9E29058-CAL7	10	10336	0.277	11.12
9E29058-CAL8	20	20960	0.275	11.12
9E29058-CAL9	50	54793	0.281	11.12
9E29058-CALA	100	105916	0.268	11.12
9E29058-CALB	200	207925	0.258	11.11

AVE RF **0.270** RF RSD **12.92** AVE RT **11.12**

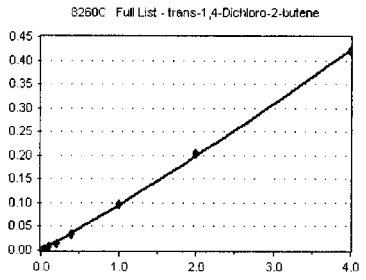
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

trans-1,4-Dichloro-2-butene

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

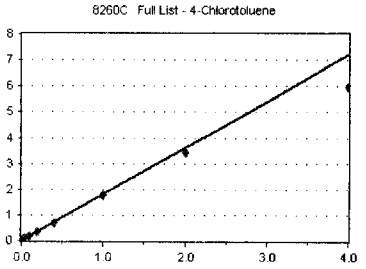


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL4	1	180	4.894	11.15
9E29058-CAL5	2	320	4.108	11.15
9E29058-CAL6	5	1285	6.817	11.15
9E29058-CAL7	10	2829	7.573	11.15
9E29058-CAL8	20	6571	8.611	11.15
9E29058-CAL9	50	19084	9.770	11.15
9E29058-CALA	100	40488	0.102	11.15
9E29058-CALB	200	84511	0.105	11.15

AVE RF **7.814** RF RSD **30.92** AVE RT **11.15**

4-Chlorotoluene

Curve Fit: **AVERAGE RF**

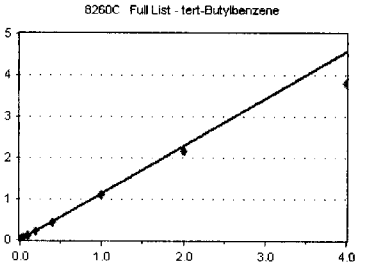


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~1133~~	~~2.911~~	~~11.21~~
9E29058-CAL2	0.2	1680	2.196	11.21
9E29058-CAL3	0.4	2912	1.930	11.21
9E29058-CAL4	1	6874	1.869	11.21
9E29058-CAL5	2	13410	1.722	11.21
9E29058-CAL6	5	33806	1.793	11.21
9E29058-CAL7	10	65138	1.744	11.21
9E29058-CAL8	20	135968	1.782	11.20
9E29058-CAL9	50	345630	1.769	11.20
9E29058-CALA	100	677786	1.715	11.21
9E29058-CALB	200	1200687	1.491	11.21

AVE RF **1.801** RF RSD **10.00** AVE RT **11.21**

tert-Butylbenzene

Curve Fit: **AVERAGE RF**

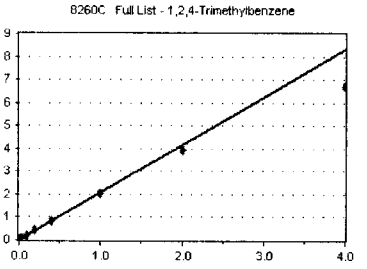


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	480	1.233	11.36
9E29058-CAL2	0.2	1208	1.579	11.36
9E29058-CAL3	0.4	1681	1.114	11.36
9E29058-CAL4	1	4182	1.137	11.36
9E29058-CAL5	2	8037	1.032	11.36
9E29058-CAL6	5	20763	1.101	11.36
9E29058-CAL7	10	41310	1.106	11.35
9E29058-CAL8	20	84715	1.110	11.35
9E29058-CAL9	50	215868	1.105	11.36
9E29058-CALA	100	425964	1.078	11.35
9E29058-CALB	200	765557	0.950	11.36

AVE RF **1.141** RF RSD **14.09** AVE RT **11.36**

1,2,4-Trimethylbenzene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	965	2.480	11.41
9E29058-CAL2	0.2	1610	2.104	11.41
9E29058-CAL3	0.4	3385	2.243	11.42
9E29058-CAL4	1	7847	2.133	11.41
9E29058-CAL5	2	15360	1.972	11.41
9E29058-CAL6	5	39159	2.077	11.41
9E29058-CAL7	10	78362	2.098	11.42
9E29058-CAL8	20	160708	2.106	11.42
9E29058-CAL9	50	400305	2.049	11.42
9E29058-CALA	100	777007	1.967	11.41
9E29058-CALB	200	1351532	1.678	11.41

AVE RF **2.082** RF RSD **9.34** AVE RT **11.41**

Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

sec-Butylbenzene

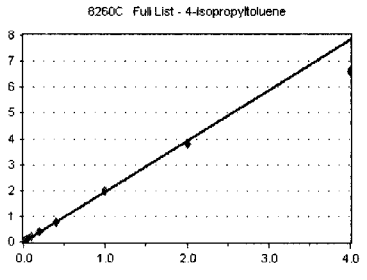
Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	1196	3.073	11.50
9E29058-CAL2	0.2	2071	2.707	11.50
9E29058-CAL3	0.4	3773	2.500	11.50
9E29058-CAL4	1	8865	2.410	11.50
9E29058-CAL5	2	16671	2.140	11.50
9E29058-CAL6	5	45399	2.408	11.50
9E29058-CAL7	10	88679	2.374	11.50
9E29058-CAL8	20	183450	2.404	11.49
9E29058-CAL9	50	461029	2.360	11.49
9E29058-CALA	100	882609	2.234	11.50
9E29058-CALB	200	1543796	1.917	11.50

AVE RF **2.412** RF RSD **12.35** AVE RT **11.50**

4-Isopropyltoluene

Curve Fit: **AVERAGE RF**

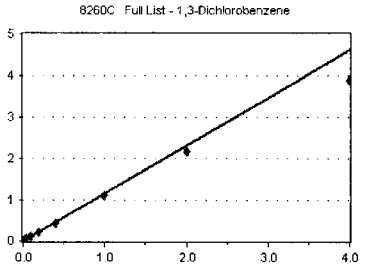


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~1072~~	~~2.755~~	~~11.61~~
9E29058-CAL2	0.2	1749	2.286	11.61
9E29058-CAL3	0.4	3163	2.096	11.61
9E29058-CAL4	1	6901	1.876	11.61
9E29058-CAL5	2	14651	1.881	11.61
9E29058-CAL6	5	37395	1.984	11.61
9E29058-CAL7	10	74162	1.985	11.61
9E29058-CAL8	20	150593	1.973	11.61
9E29058-CAL9	50	386921	1.981	11.61
9E29058-CALA	100	751233	1.901	11.61
9E29058-CALB	200	1333607	1.656	11.61

AVE RF **1.962** RF RSD **8.25** AVE RT **11.61**

1,3-Dichlorobenzene

Curve Fit: **AVERAGE RF**

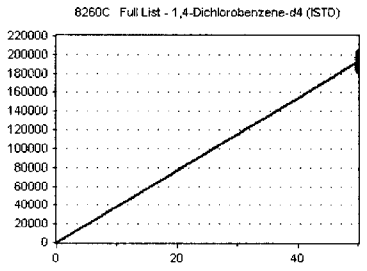


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	610	1.567	11.67
9E29058-CAL2	0.2	927	1.212	11.68
9E29058-CAL3	0.4	1855	1.229	11.68
9E29058-CAL4	1	4049	1.101	11.67
9E29058-CAL5	2	8756	1.124	11.68
9E29058-CAL6	5	21090	1.119	11.67
9E29058-CAL7	10	41681	1.116	11.67
9E29058-CAL8	20	84703	1.110	11.67
9E29058-CAL9	50	218010	1.116	11.67
9E29058-CALA	100	425300	1.076	11.67
9E29058-CALB	200	784949	0.975	11.67

AVE RF **1.159** RF RSD **13.03** AVE RT **11.67**

1,4-Dichlorobenzene-d4 (ISTD)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	50	194580	3891.600	11.73
9E29058-CAL2	50	191276	3825.520	11.73
9E29058-CAL3	50	188614	3772.280	11.73
9E29058-CAL4	50	183911	3678.220	11.73
9E29058-CAL5	50	194740	3894.800	11.73
9E29058-CAL6	50	188506	3770.120	11.73
9E29058-CAL7	50	186773	3735.460	11.73
9E29058-CAL8	50	190782	3815.640	11.73
9E29058-CAL9	50	195329	3906.580	11.73
9E29058-CALA	50	197554	3951.080	11.73
9E29058-CALB	50	201371	4027.420	11.73

AVE RF **3842.611** RF RSD **2.66** AVE RT **11.73**

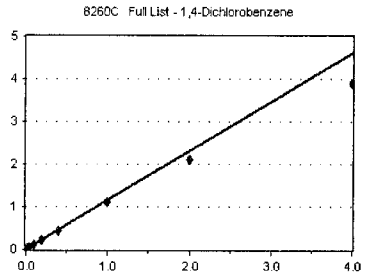
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

1,4-Dichlorobenzene

Curve Fit: **AVERAGE RF**

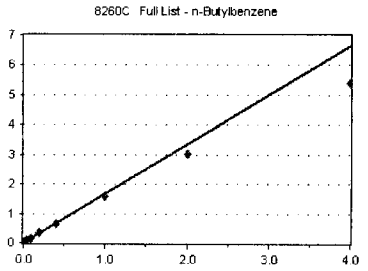


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~690~~	~~1.773~~	~~11.74~~
9E29058-CAL2	0.2	1152	1.506	11.74
9E29058-CAL3	0.4	1914	1.268	11.74
9E29058-CAL4	1	4368	1.188	11.74
9E29058-CAL5	2	8705	1.118	11.74
9E29058-CAL6	5	21623	1.147	11.74
9E29058-CAL7	10	41926	1.122	11.74
9E29058-CAL8	20	83842	1.099	11.74
9E29058-CAL9	50	214078	1.096	11.74
9E29058-CALA	100	418076	1.058	11.74
9E29058-CALB	200	784148	0.974	11.74

AVE RF **1.157** RF RSD **12.50** AVE RT **11.74**

n-Butylbenzene

Curve Fit: **AVERAGE RF**

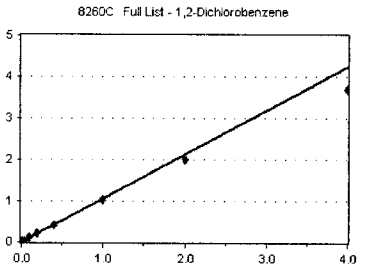


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~1118~~	~~2.873~~	~~11.93~~
9E29058-CAL2	0.2	1667	2.179	11.94
9E29058-CAL3	0.4	2690	1.783	11.93
9E29058-CAL4	1	6459	1.756	11.93
9E29058-CAL5	2	12230	1.570	11.93
9E29058-CAL6	5	31024	1.646	11.93
9E29058-CAL7	10	61550	1.648	11.93
9E29058-CAL8	20	124826	1.636	11.93
9E29058-CAL9	50	313322	1.604	11.93
9E29058-CALA	100	597386	1.512	11.93
9E29058-CALB	200	1090372	1.354	11.93

AVE RF **1.669** RF RSD **12.96** AVE RT **11.93**

1,2-Dichlorobenzene

Curve Fit: **AVERAGE RF**

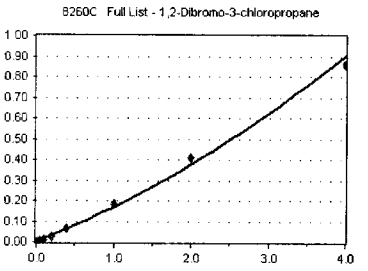


Standard	Concentration	Response	Response Factor	RT
9E29058-CAL1	0.1	533	1.370	12.06
9E29058-CAL2	0.2	833	1.089	12.06
9E29058-CAL3	0.4	1753	1.162	12.06
9E29058-CAL4	1	3804	1.034	12.06
9E29058-CAL5	2	7643	0.981	12.06
9E29058-CAL6	5	19883	1.055	12.06
9E29058-CAL7	10	38321	1.026	12.06
9E29058-CAL8	20	79024	1.036	12.06
9E29058-CAL9	50	201831	1.033	12.06
9E29058-CALA	100	392931	0.994	12.06
9E29058-CALB	200	746324	0.927	12.06

AVE RF **1.064** RF RSD **11.05** AVE RT **12.06**

1,2-Dibromo-3-chloropropane

Curve Fit: **QUADRATIC: Weighting: (1/a^2), Origin: Ignore**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~0~~	~~0.000~~	~~0.00~~
~~9E29058-CAL3~~	~~0.4~~	~~0~~	~~0.000~~	~~0.00~~
9E29058-CAL4	1	368	0.100	12.67
9E29058-CAL5	2	826	0.106	12.67
9E29058-CAL6	5	2389	0.127	12.67
9E29058-CAL7	10	5509	0.147	12.67
9E29058-CAL8	20	11948	0.157	12.67
9E29058-CAL9	50	36171	0.185	12.67
9E29058-CALA	100	80792	0.204	12.67
9E29058-CALB	200	172847	0.215	12.67

AVE RF **0.155** RF RSD **27.97** AVE RT **12.67**

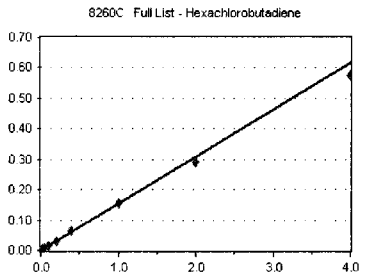
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8260C Full List** Instrument Cal ID: **VC190529S.M VC190529G.**

Hexachlorobutadiene

Curve Fit: **AVERAGE RF**

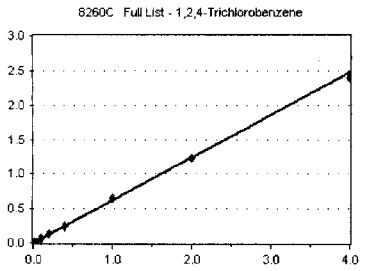


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~235~~	~~0.604~~	~~13.18~~
~~9E29058-CAL2~~	~~0.2~~	~~296~~	~~0.387~~	~~13.18~~
~~9E29058-CAL3~~	~~0.4~~	~~375~~	~~0.249~~	~~13.19~~
9E29058-CAL4	1	652	0.177	13.18
9E29058-CAL5	2	1244	0.160	13.18
9E29058-CAL6	5	2782	0.148	13.18
9E29058-CAL7	10	5351	0.143	13.18
9E29058-CAL8	20	12267	0.161	13.19
9E29058-CAL9	50	30150	0.154	13.18
9E29058-CALA	100	57553	0.146	13.19
9E29058-CALB	200	115944	0.144	13.18

AVE RF **0.154** RF RSD **7.55** AVE RT **13.18**

1,2,4-Trichlorobenzene

Curve Fit: **AVERAGE RF**

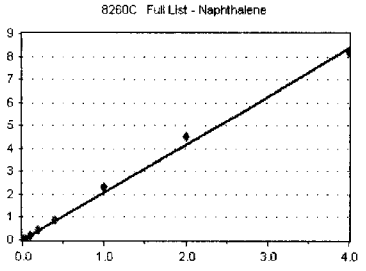


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~358~~	~~0.920~~	~~13.21~~
9E29058-CAL2	0.2	579	0.757	13.22
9E29058-CAL3	0.4	812	0.538	13.22
9E29058-CAL4	1	2286	0.621	13.22
9E29058-CAL5	2	4471	0.574	13.21
9E29058-CAL6	5	11381	0.604	13.21
9E29058-CAL7	10	23206	0.621	13.22
9E29058-CAL8	20	46713	0.612	13.22
9E29058-CAL9	50	126759	0.649	13.22
9E29058-CALA	100	244685	0.619	13.22
9E29058-CALB	200	483143	0.600	13.21

AVE RF **0.620** RF RSD **9.18** AVE RT **13.22**

Naphthalene

Curve Fit: **AVERAGE RF**

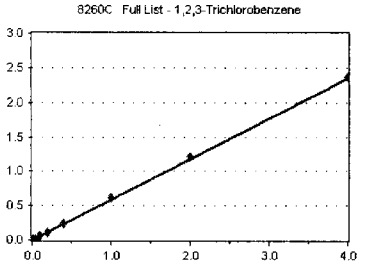


Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~706~~	~~1.814~~	~~13.49~~
~~9E29058-CAL2~~	~~0.2~~	~~1368~~	~~1.788~~	~~13.50~~
~~9E29058-CAL3~~	~~0.4~~	~~2785~~	~~1.846~~	~~13.50~~
9E29058-CAL4	1	6879	1.870	13.49
9E29058-CAL5	2	14001	1.797	13.49
9E29058-CAL6	5	38161	2.024	13.49
9E29058-CAL7	10	79664	2.133	13.50
9E29058-CAL8	20	170582	2.235	13.49
9E29058-CAL9	50	451629	2.312	13.49
9E29058-CALA	100	891724	2.257	13.49
9E29058-CALB	200	1658112	2.059	13.49

AVE RF **2.086** RF RSD **8.86** AVE RT **13.49**

1,2,3-Trichlorobenzene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
~~9E29058-CAL1~~	~~0.1~~	~~105~~	~~0.270~~	~~0.00~~
~~9E29058-CAL2~~	~~0.2~~	~~532~~	~~0.695~~	~~13.66~~
9E29058-CAL3	0.4	850	0.563	13.66
9E29058-CAL4	1	2090	0.568	13.66
9E29058-CAL5	2	4310	0.553	13.65
9E29058-CAL6	5	10740	0.570	13.65
9E29058-CAL7	10	22472	0.602	13.65
9E29058-CAL8	20	46516	0.610	13.65
9E29058-CAL9	50	120109	0.615	13.65
9E29058-CALA	100	241375	0.611	13.65
9E29058-CALB	200	476195	0.591	13.65

AVE RF **0.587** RF RSD **4.01** AVE RT **13.65**

Calibration Status Report VOA-GCMS3

Method Path : C:\msdchem\1\METHODS\
Method File : VC190529G.M
Title : NWTPH-Gx by GC/MS
Last Update : Thu May 30 15:52:54 2019
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	50	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052924.D
2	2	100	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052925.D
3	3	250	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052926.D
4	4	500	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052927.D
5	5	1000	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052928.D
6	6	2500	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052929.D
7	7	5000	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052930.D
8	8	10000	50	C:\msdchem\1\DATA\2019-05\9E29058\VC19052931.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	May 30 15:51 2019	May 30 15:47 2019	30 May 2019 12:49 am
2	2	May 30 15:51 2019	May 30 15:47 2019	30 May 2019 1:17 am
3	3	May 30 15:51 2019	May 30 15:47 2019	30 May 2019 1:44 am
4	4	May 30 15:51 2019	May 30 15:47 2019	30 May 2019 2:12 am
5	5	May 30 15:51 2019	May 30 15:47 2019	30 May 2019 2:39 am
6	6	May 30 15:51 2019	May 30 15:47 2019	30 May 2019 3:07 am
7	7	May 30 15:51 2019	May 30 15:50 2019	30 May 2019 3:34 am
8	8	May 30 15:51 2019	May 30 15:47 2019	30 May 2019 4:02 am

VC190529G.M Thu May 30 16:04:30 2019

Method Path : C:\msdchem\1\METHODS\
Method File : VC190529G.M
Title : NWTPH-Gx by GC/MS
Last Update : Thu May 30 15:52:54 2019
Response Via : Initial Calibration

Calibration Files
1 =VC19052924.D 2 =VC19052925.D 3 =VC19052926.D 4 =VC19052927.D 5 =VC19052928.D 6 =VC19052929.D
7 =VC19052930.D 8 =VC19052931.D

		Compound	1	2	3	4	5	6	7	8	Avg	%RSD
1)	I	Pentafluorobenzene...	----------	ISTD	----------							
2)	S	1,4-Difluorobe...	4.431	4.451	4.465	4.507	4.485	4.512	4.962	5.466	4.660	7.91
3)	S	4-Bromofluorob...	3.476	3.515	3.488	3.444	3.505	3.487	3.469	3.464	3.481	0.65
4)	S	Chlorobenzene-...									0.000	-1.00
5)	H	CA-LUFT (C5-C12)	4.380	3.196	2.608	2.520	2.348	2.108	2.313	2.163	2.705	28.02
6)	H	TPHg (C5-C9)	3.731	2.910	2.274	2.172	2.014	1.781	1.924	1.785	2.324	29.06
7)	H	TPHg (C6-C10)	2.853	2.200	1.709	1.673	1.577	1.412	1.544	1.443	1.801	27.25
8)	H	NWTPH-Gx	1.312	1.169	1.303	1.417	1.416	1.369	1.544	1.467	1.375	8.34
9)		Benzene (NR)									0.000	-1.00
10)	S	Toluene-d8 (NR)									0.000	-1.00
11)	C	Toluene (NR)									0.000	-1.00
12)	S	1,4-Dichlorobe...									0.000	-1.00
13)		Naphthalene (NR)									0.000	-1.00

(#) = Out of Range

Compound List Report VOA-GCMS3

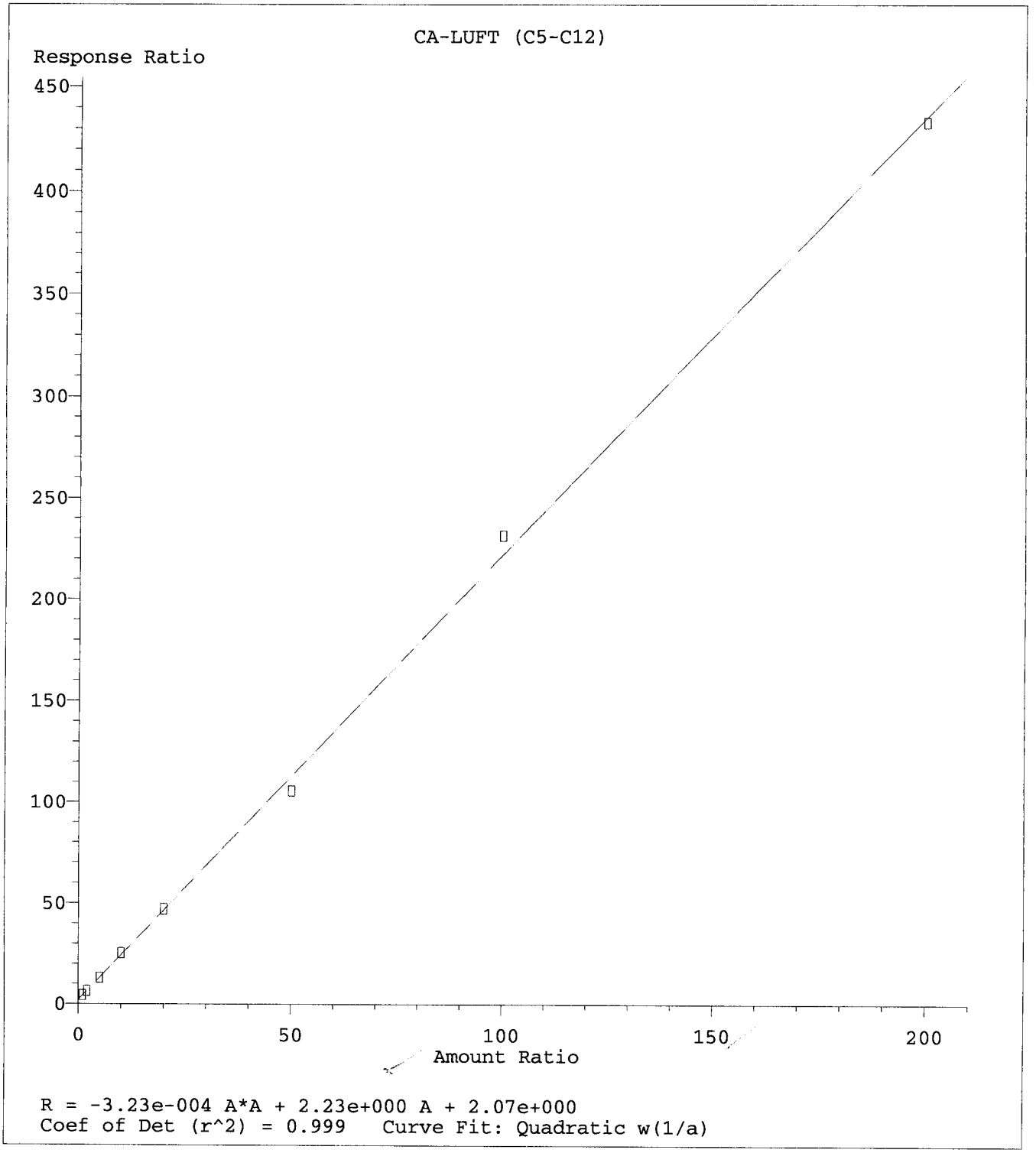
Method Path : C:\msdchem\1\METHODS\
Method File : VC190529G.M
Title : NWTPH-Gx by GC/MS
Last Update : Thu May 30 15:52:54 2019
Response Via : Initial Calibration

Total Cpnds : 13

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	Pentafluorobenzene (IS)	168	6.030	1.000	A	2	A	A
2	S	1,4-Difluorobenzene (Sur)	TIC	6.583	1.092	A	2	A	A
3	S	4-Bromofluorobenzene (Sur)	TIC	10.834	1.797	A	2	A	A
4	S	Chlorobenzene-d5 (NR)	TIC	9.751	1.617	A	2	A	A
5	H	CA-LUFT (C5-C12)	TIC	9.906	1.643	Q1/a	0	A	A
6	H	TPHg (C5-C9)	TIC	9.906	1.643	Q1/a	0	A	A
7	H	TPHg (C6-C10)	TIC	9.906	1.643	Q1/a	0	A	A
8	H	NWTPH-Gx	TIC	9.906	1.643	Q1/a	0	A	A
9		Benzene (NR)	78	5.932	0.984	A	2	A	A
10	S	Toluene-d8 (NR)	TIC	8.091	1.342	A	2	A	A
11	C	Toluene (NR)	91	8.152	1.352	A	2	A	A
12	S	1,4-Dichlorobenzene-d4 (NR)	TIC	11.728	1.945	A	2	A	A
13		Naphthalene (NR)	128	13.491	2.238	A	2	A	A

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

VC190529G.M Thu May 30 16:04:34 2019



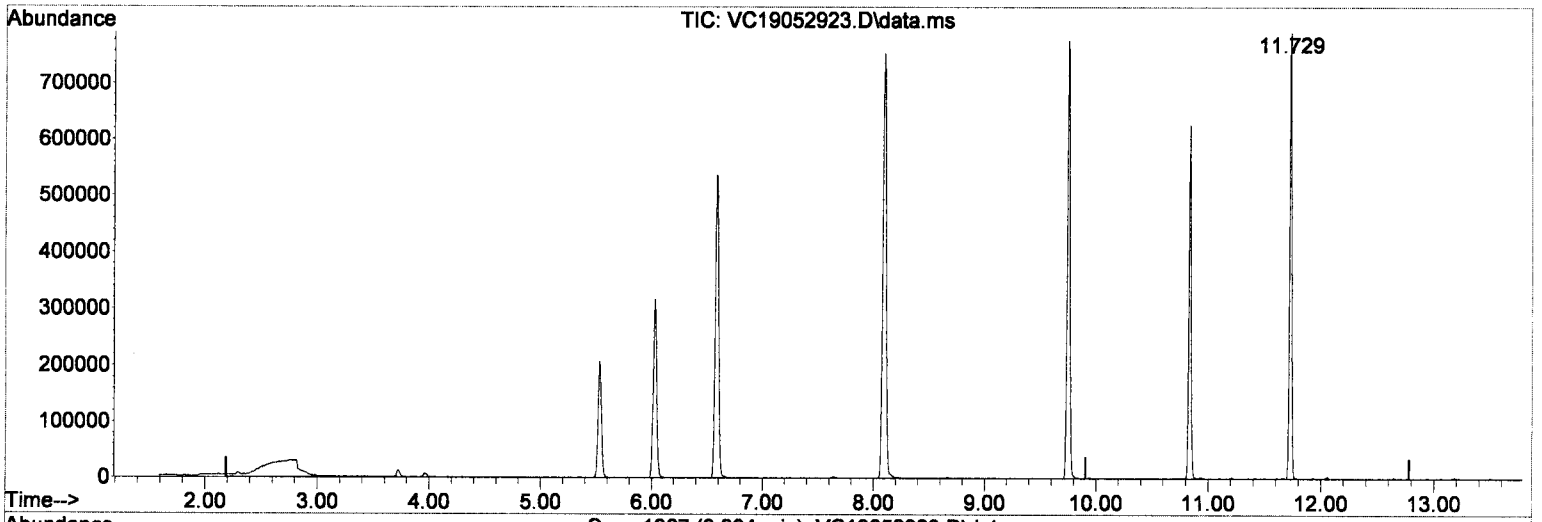
Method Name: C:\msdchem\1\METHODS\VC190529G.M
Calibration Table Last Updated: Thu May 30 15:52:54 2019

IWT= 9.28

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052923.D
Acq On : 30 May 2019 12:22 am
Operator : TB
Sample : 9E29058-ICB2
Misc : 1X 5mL DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:56 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration



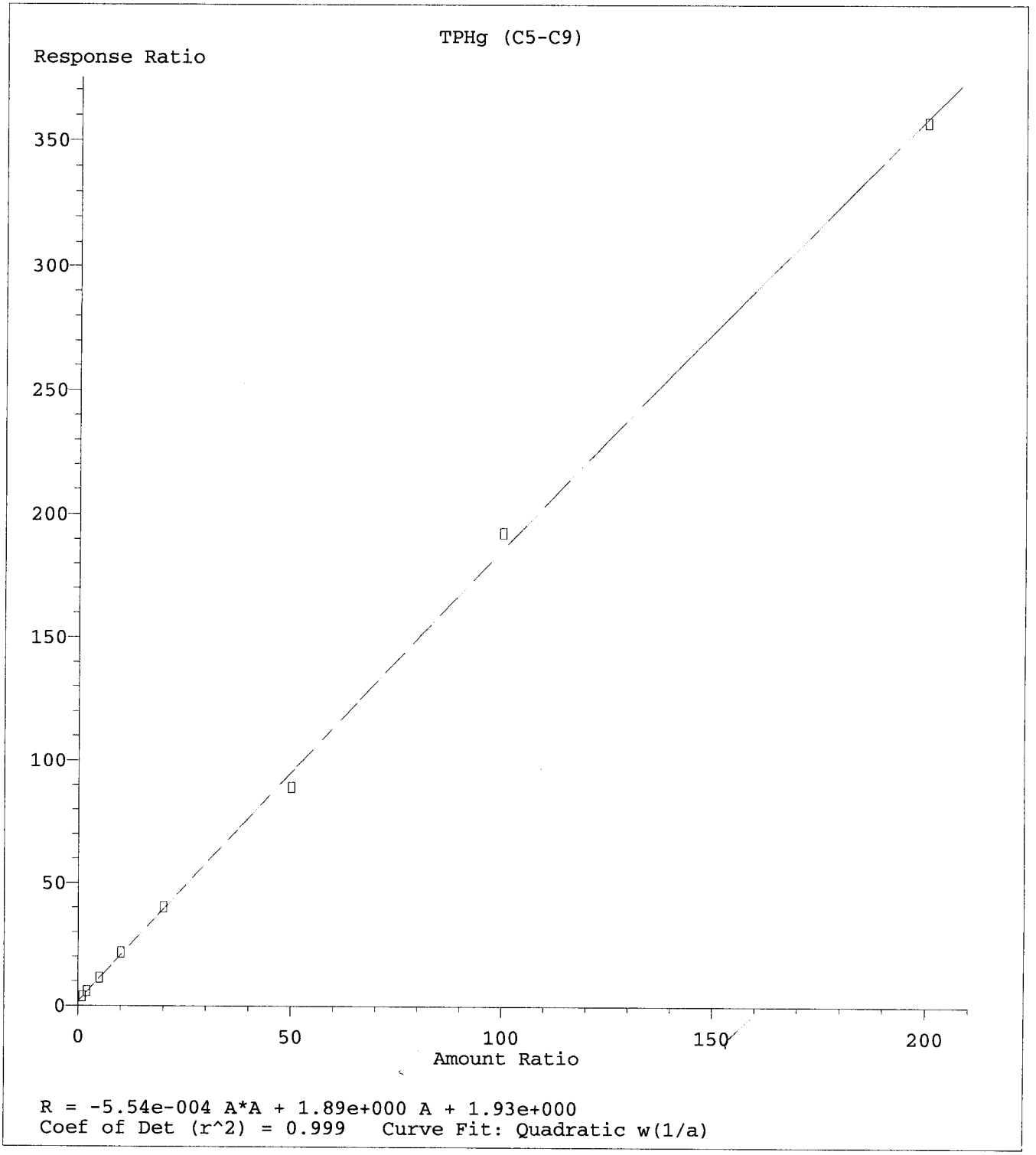
TIC: VC19052923.D\data.ms

(5) CA-LUFT (C5-C12) (H)

9.906min (0.000) 9.28 ug/L m

response 651712

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00



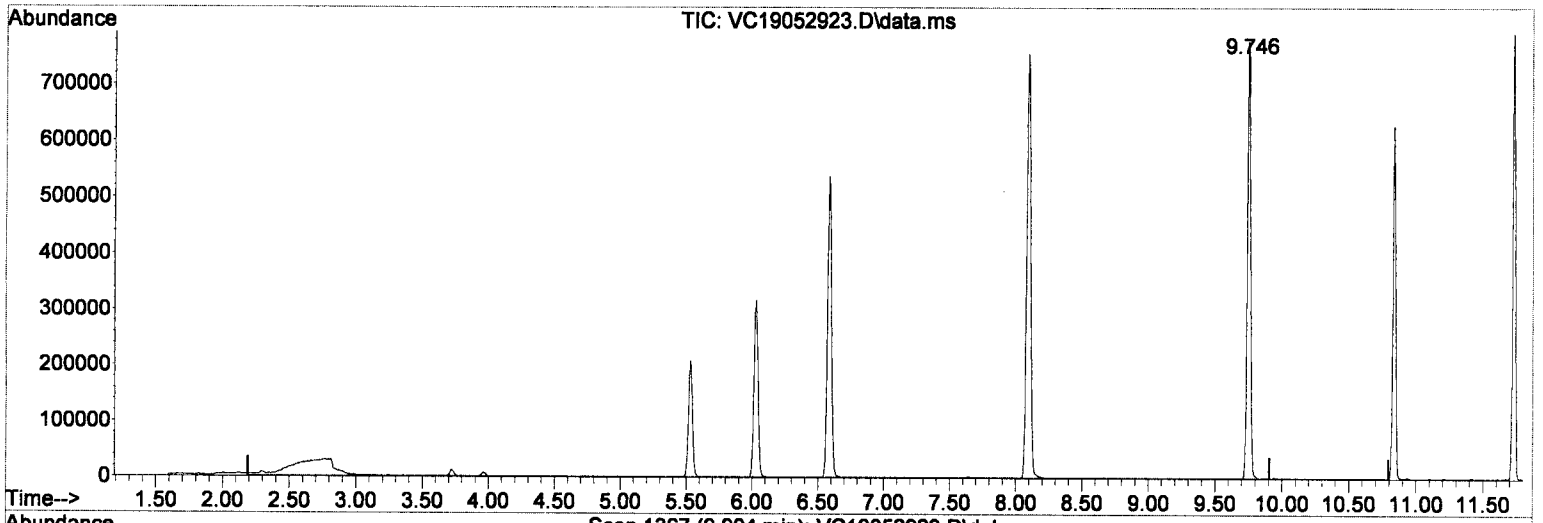
Method Name: C:\msdchem\1\METHODS\VC190529G.M
Calibration Table Last Updated: Thu May 30 15:52:54 2019

INT = 14.63

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052923.D
Acq On : 30 May 2019 12:22 am
Operator : TB
Sample : 9E29058-ICB2
Misc : 1X 5mL DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:56 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration



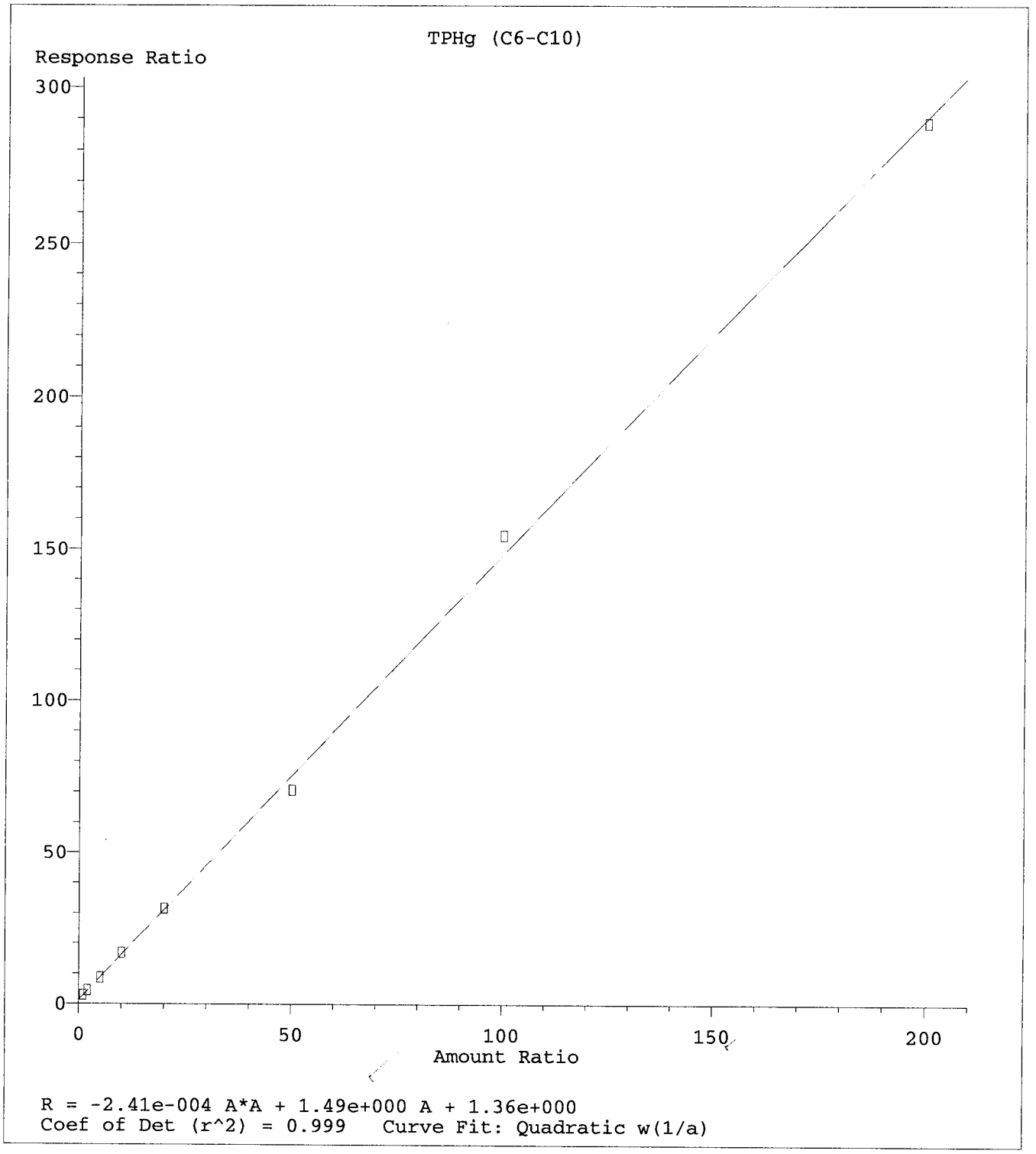
TIC: VC19052923.D\data.ms

(6) TPHg (C5-C9) (H)

9.906min (0.000) 14.63 ug/L m

response 651712

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00



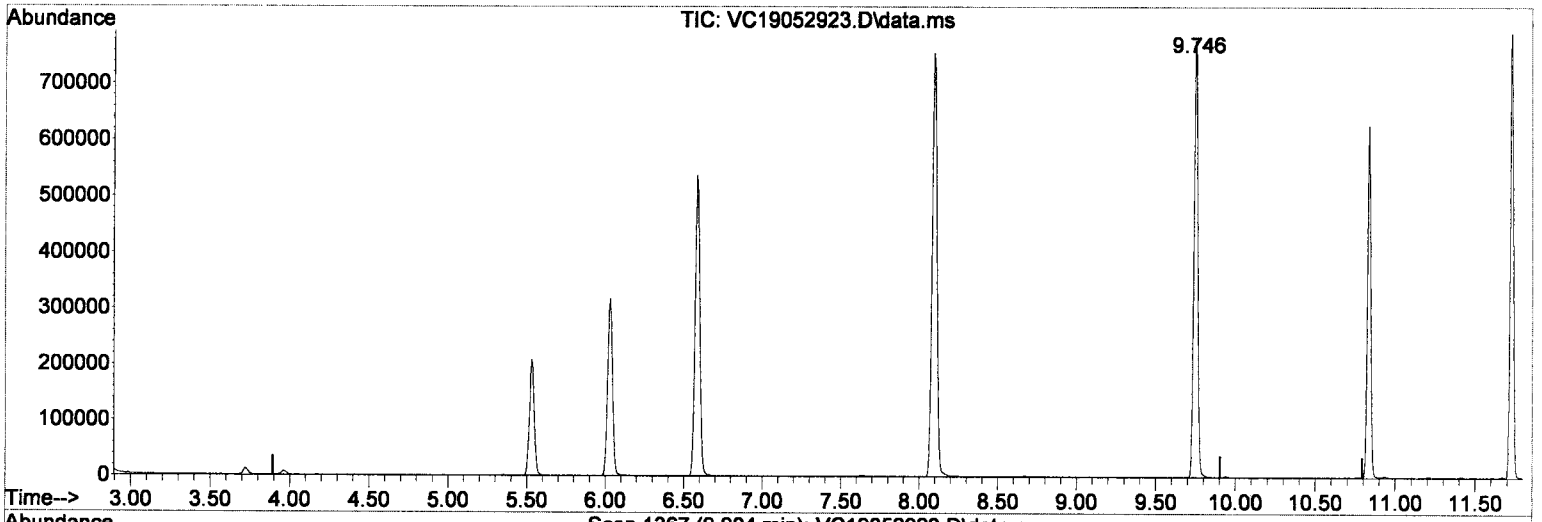
Method Name: C:\msdchem\1\METHODS\VC190529G.M
Calibration Table Last Updated: Thu May 30 15:52:54 2019

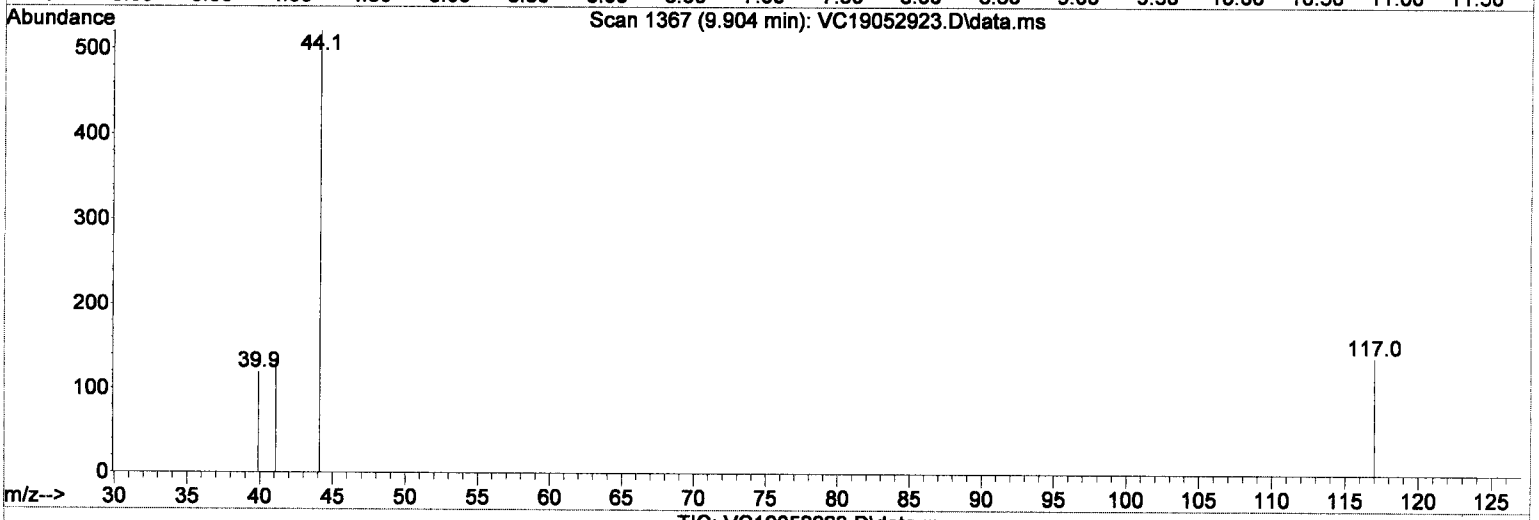
Fut = 14.02

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052923.D
Acq On : 30 May 2019 12:22 am
Operator : TB
Sample : 9E29058-ICB2
Misc : 1X 5mL DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:56 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration





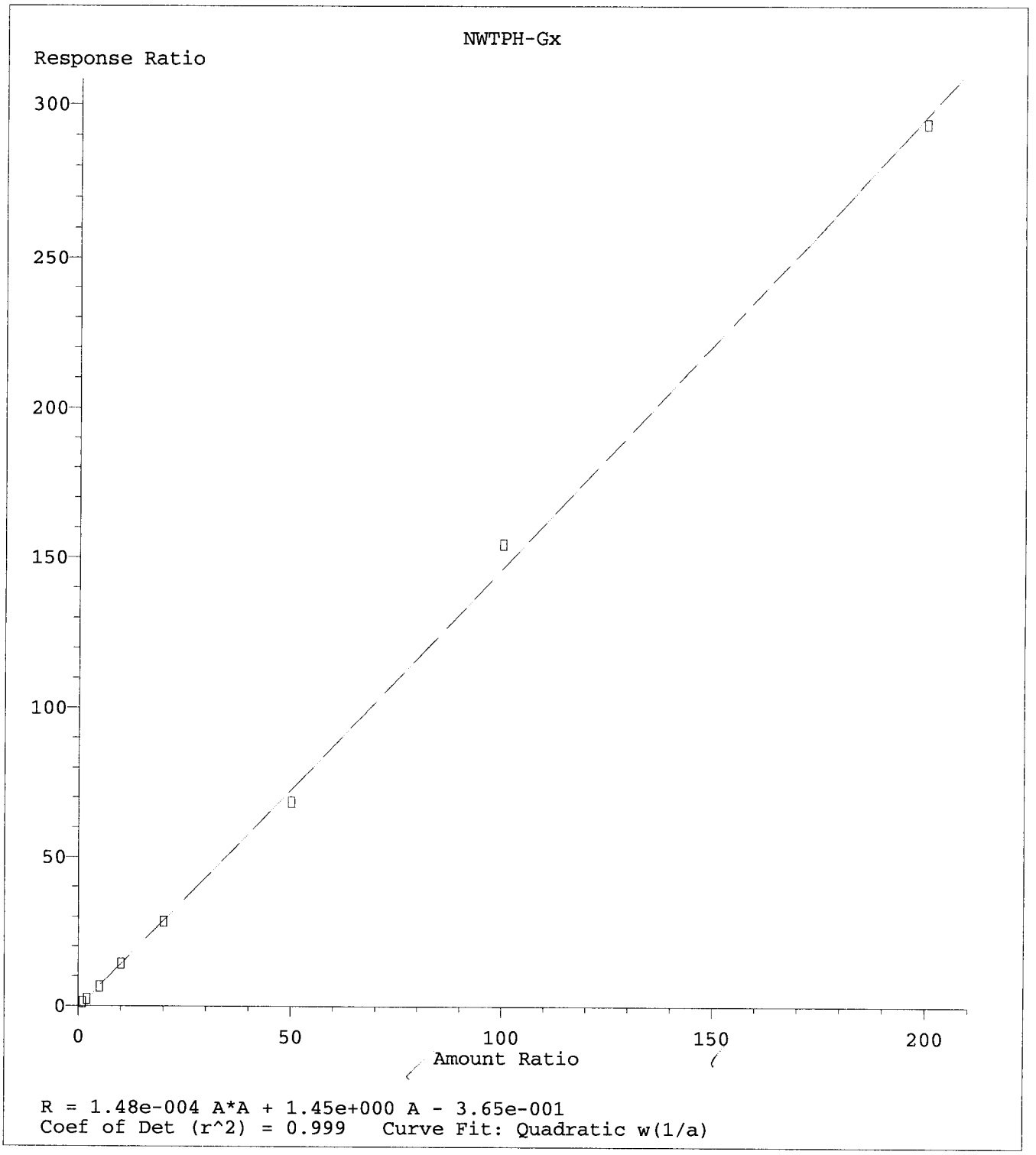
TIC: VC19052923.D\data.ms

(7) TPHg (C6-C10) (H)

9.906min (0.000) 14.02 ug/L m

response 464649

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00



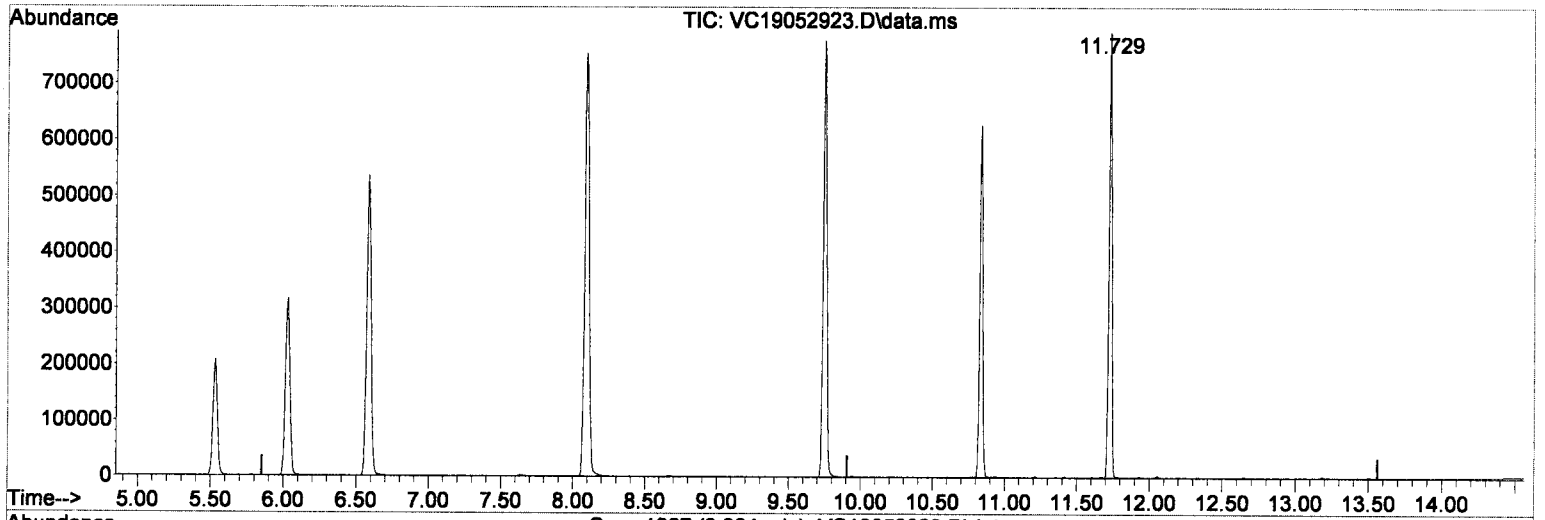
Method Name: C:\msdchem\1\METHODS\VC190529G.M
Calibration Table Last Updated: Thu May 30 15:52:54 2019

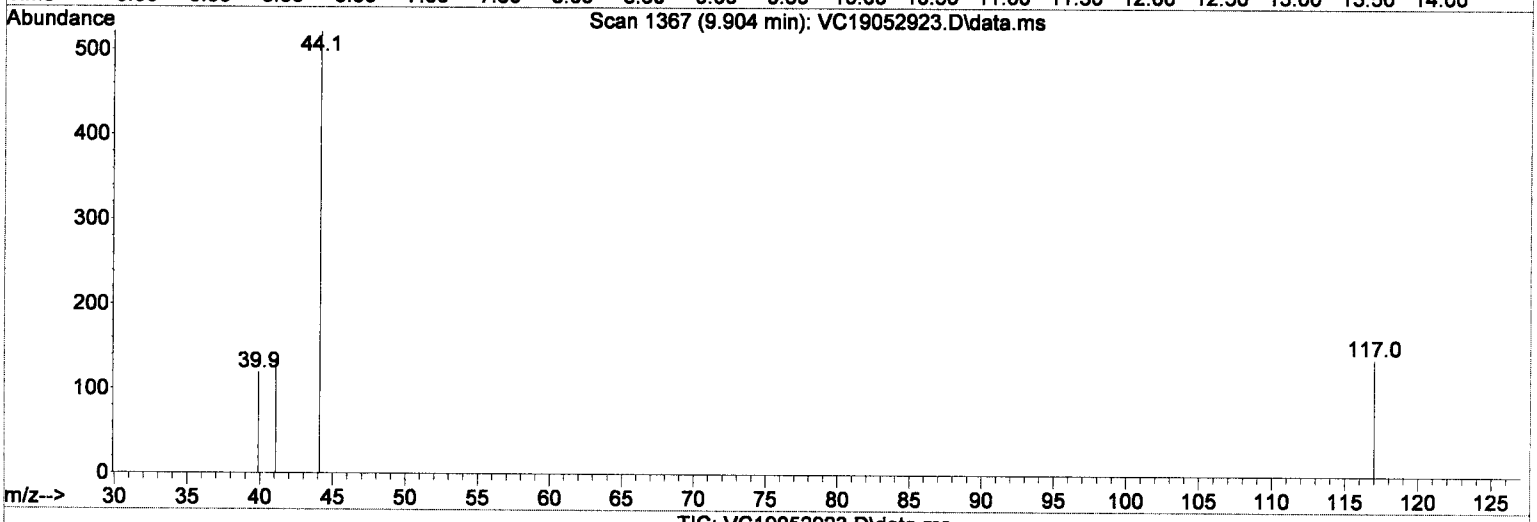
Int = 13.72

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052923.D
Acq On : 30 May 2019 12:22 am
Operator : TB
Sample : 9E29058-ICB2
Misc : 1X 5mL DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:56 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration





TIC: VC19052923.D\data.ms

(8) NWTPH-Gx (H)

9.906min (0.000) 13.72 ug/L m

response 8855

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9E29058

Analysis Included
8015D-Mod Gasoline (C6-C10) by GC/MS
CA LUFT GRO
NWTPH-Gx

INSTRUMENT SEQUENCE LOG

SampleID	SampleName	Matrix	STDID	ISTD_ID	Analyzed
9E29058-TUN2	MS Tune	Soil		A19C135	5/29/2019 11:27:00PM
9E29058-ICB2	Initial Cal Blank	Soil		A19C135	5/30/2019 12:22:00AM
9E29058-CALC	Cal Standard	Soil	A19E372	"	5/30/2019 12:49:00AM
9E29058-CALD	Cal Standard	Soil	A19E373	"	5/30/2019 1:17:00AM
9E29058-CALE	Cal Standard	Soil	A19E374	"	5/30/2019 1:44:00AM
9E29058-CALF	Cal Standard	Soil	A19E375	"	5/30/2019 2:12:00AM
9E29058-CALG	Cal Standard	Soil	A19E183	"	5/30/2019 2:39:00AM
9E29058-CALH	Cal Standard	Soil	A19E184	"	5/30/2019 3:07:00AM
9E29058-CALI	Cal Standard	Soil	A19E185	"	5/30/2019 3:34:00AM
9E29058-CALJ	Cal Standard	Soil	A19E186	"	5/30/2019 4:02:00AM
9E29058-ICV2	Initial Cal Check	Soil	A19B262	"	5/30/2019 5:25:00AM

CALIBRATION STANDARD RECOVERIES

Calibration: **A9E3104** Instrument: **VOA-GCMS3**

8015D-Mod Gasoline (C6-C10 Sequence: **9E29058** Matrix: **Soil**

9E29058-CALC	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E29058-CALD	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E29058-CALE	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E29058-CALF	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E29058-CALG	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E29058-CALH	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E29058-CALI	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**
9E29058-CALJ	**Inst. MRL**	**Recalc Res.**	**Cal Level**	**%Rec.**	**Qual**

Compounds listed above have recalculated recoveries outside 70-130% of the true values, and the calibration levels are above the reporting level. If no compounds are listed, all are OK. Please see the next section for quadatic fit compounds.

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9E29058

Analytes With Quadratic Curve Fits

Qualifier	iMDL	iMRL	Spike Amt	%Difference	OK?	Raise MRL to ?
				———	☐	☐ ———

Analytes listed above have quadratic curve fits. If they are using a weighting otpion, they must be checked against the requanted curve points to determine if the recalculated results are within limits (70-130 or as specified).

ICV RECOVERIES

Calibration: **A9E3104** Instrument: **VOA-GCMS3**

CA LUFT GRO Sequence: **9E29058** Matrix: **Soil**

9E29058-ICV2	Inst. MRL	ICV Level	Result	%Rec.	Qual

Compounds listed above have Initial Calibration Verification standard recoveries outside 70-130% of the true values. If no compounds are listed, all have passing recoveries.

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052934.D
Acq On : 30 May 2019 5:25 am
Operator : TB
Sample : 9E29058-ICV2
Misc : 1X 5mL 500ppb GX DI+MeOH
ALS Vial : 34 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 16:00:02 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

5/30/19

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Pentafluorobenzene (IS)	50.000	50.000	0.0	108	0.00
2	S	1,4-Difluorobenzene (Sur)	50.000	46.602	6.8	104	0.00
3	S	4-Bromofluorobenzene (Sur)	50.000	49.352	1.3	108	0.00
4	S	Chlorobenzene-d5 (NR)	-1.000	0.000	0.0	106	0.00
5	H	CA-LUFT (C5-C12)	500.000	529.625	-5.9	110	0.00
6	H	TPHg (C5-C9)	500.000	526.029	-5.2	108	0.00
7	H	TPHg (C6-C10)	500.000	535.493	-7.1	112	0.00
8	H	NWTPH-Gx	500.000	533.680	-6.7	115	0.00
9		Benzene (NR)	-1.000	0.000	0.0	113	0.00
10	S	Toluene-d8 (NR)	-1.000	0.000	0.0	106	0.00
11	C	Toluene (NR)	-1.000	0.000	0.0	114	0.00
12	S	1,4-Dichlorobenzene-d4 (NR)	-1.000	0.000	0.0	108	0.00
13		Naphthalene (NR)	-1.000	0.000	0.0	119	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

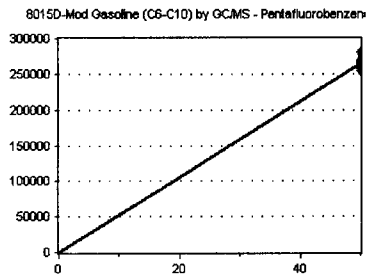
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **8015D-Mod Gasoline (C6-C1** Instrument Cal ID: **A9E3104**

Pentafluorobenzene (IS)

Curve Fit: **AVERAGE RF**

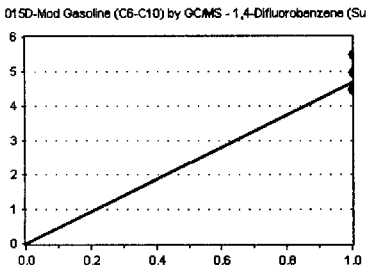


Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	257140	5142.800	6.03
9E29058-CALD	50	254092	5081.840	6.03
9E29058-CALE	50	264662	5293.240	6.03
9E29058-CALF	50	261529	5230.580	6.03
9E29058-CALG	50	261111	5222.220	6.03
9E29058-CALH	50	268653	5373.060	6.03
9E29058-CALI	50	266073	5321.460	6.04
9E29058-CALJ	50	280943	5618.860	6.03

AVE RF **5285.508** RF RSD **3.11** AVE RT **6.03**

1,4-Difluorobenzene (Sur)

Curve Fit: **AVERAGE RF**

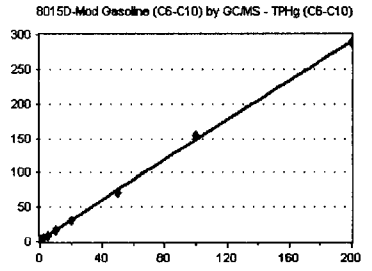


Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	1139443	4.431	6.59
9E29058-CALD	50	1130909	4.451	6.59
9E29058-CALE	50	1181697	4.465	6.59
9E29058-CALF	50	1178596	4.507	6.59
9E29058-CALG	50	1170992	4.485	6.59
9E29058-CALH	50	1212113	4.512	6.59
9E29058-CALI	50	1320230	4.962	6.59
9E29058-CALJ	50	1535644	5.466	6.58

AVE RF **4.660** RF RSD **7.91** AVE RT **6.59**

TPHg (C6-C10)

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

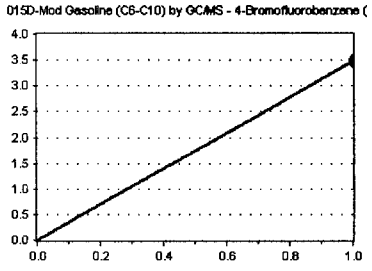


Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	733539	2.853	9.91
9E29058-CALD	100	1118241	2.200	9.91
9E29058-CALE	250	2261282	1.709	9.91
9E29058-CALF	500	4374724	1.673	9.91
9E29058-CALG	1000	8234768	1.577	9.91
9E29058-CALH	2500	1.896308E+07	1.412	9.91
9E29058-CALI	5000	4.107088E+07	1.544	9.91
9E29058-CALJ	10000	8.10639E+07	1.443	9.91

AVE RF **1.801** RF RSD **27.25** AVE RT **9.91**

4-Bromofluorobenzene (Sur)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	893711	3.476	10.84
9E29058-CALD	50	893010	3.515	10.84
9E29058-CALE	50	923159	3.488	10.83
9E29058-CALF	50	900724	3.444	10.84
9E29058-CALG	50	915240	3.505	10.84
9E29058-CALH	50	936867	3.487	10.83
9E29058-CALI	50	922982	3.469	10.84
9E29058-CALJ	50	973205	3.464	10.84

AVE RF **3.481** RF RSD **0.65** AVE RT **10.84**

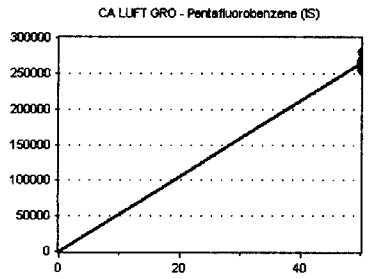
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **CA LUFT GRO** Instrument Cal ID: **A9E3104**

Pentafluorobenzene (IS)

Curve Fit: **AVERAGE RF**

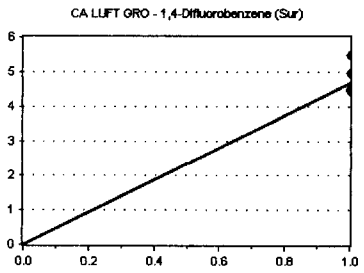


Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	257140	5142.800	6.03
9E29058-CALD	50	254092	5081.840	6.03
9E29058-CALE	50	264662	5293.240	6.03
9E29058-CALF	50	261529	5230.580	6.03
9E29058-CALG	50	261111	5222.220	6.03
9E29058-CALH	50	268653	5373.060	6.03
9E29058-CALI	50	266073	5321.460	6.04
9E29058-CALJ	50	280943	5618.860	6.03

AVE RF **5285.508** RF RSD **3.11** AVE RT **6.03**

1,4-Difluorobenzene (Sur)

Curve Fit: **AVERAGE RF**

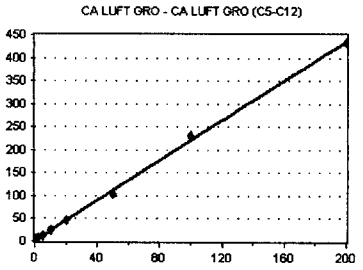


Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	1139443	4.431	6.59
9E29058-CALD	50	1130909	4.451	6.59
9E29058-CALE	50	1181697	4.465	6.59
9E29058-CALF	50	1178596	4.507	6.59
9E29058-CALG	50	1170992	4.485	6.59
9E29058-CALH	50	1212113	4.512	6.59
9E29058-CALI	50	1320230	4.962	6.59
9E29058-CALJ	50	1535644	5.466	6.58

AVE RF **4.660** RF RSD **7.91** AVE RT **6.59**

CA LUFT GRO (C5-C12)

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

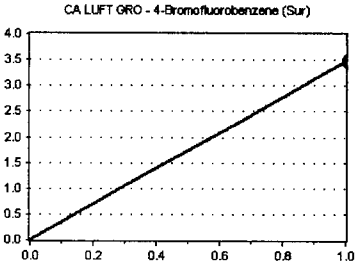


Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	1126234	4.380	9.91
9E29058-CALD	100	1624353	3.196	9.91
9E29058-CALE	250	3450881	2.608	9.91
9E29058-CALF	500	6589983	2.520	9.91
9E29058-CALG	1000	1.2264E+07	2.348	9.91
9E29058-CALH	2500	2.832011E+07	2.108	9.91
9E29058-CALI	5000	6.154367E+07	2.313	9.91
9E29058-CALJ	10000	1.215222E+08	2.163	9.91

AVE RF **2.705** RF RSD **28.02** AVE RT **9.91**

4-Bromofluorobenzene (Sur)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	893711	3.476	10.84
9E29058-CALD	50	893010	3.515	10.84
9E29058-CALE	50	923159	3.488	10.83
9E29058-CALF	50	900724	3.444	10.84
9E29058-CALG	50	915240	3.505	10.84
9E29058-CALH	50	936867	3.487	10.83
9E29058-CALI	50	922982	3.469	10.84
9E29058-CALJ	50	973205	3.464	10.84

AVE RF **3.481** RF RSD **0.65** AVE RT **10.84**

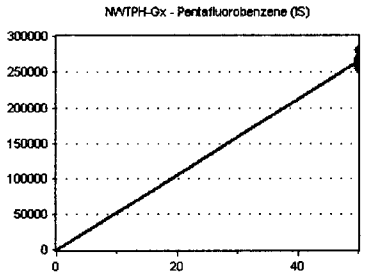
Element Calibration Review Sheet

Calibration ID: **A9E3104** Instrument: **VOA-GCMS3** Calibration Date: **05/31/2019**

Analysis: **NWTPH-Gx** Instrument Cal ID: **A9E3104**

Pentafluorobenzene (IS)

Curve Fit: **AVERAGE RF**

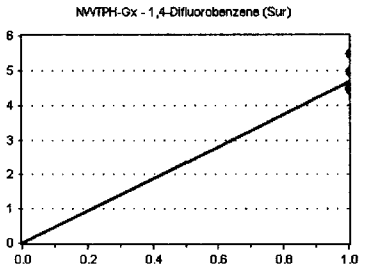


Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	257140	5142.800	6.03
9E29058-CALD	50	254092	5081.840	6.03
9E29058-CALE	50	264662	5293.240	6.03
9E29058-CALF	50	261529	5230.580	6.03
9E29058-CALG	50	261111	5222.220	6.03
9E29058-CALH	50	268653	5373.060	6.03
9E29058-CALI	50	266073	5321.460	6.04
9E29058-CALJ	50	280943	5618.860	6.03

AVE RF **5285.508** RF RSD **3.11** AVE RT **6.03**

1,4-Difluorobenzene (Sur)

Curve Fit: **AVERAGE RF**

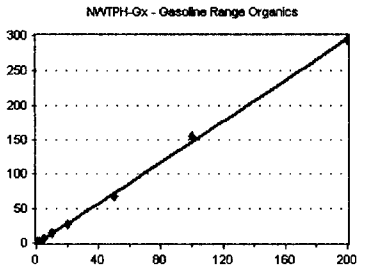


Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	1139443	4.431	6.59
9E29058-CALD	50	1130909	4.451	6.59
9E29058-CALE	50	1181697	4.465	6.59
9E29058-CALF	50	1178596	4.507	6.59
9E29058-CALG	50	1170992	4.485	6.59
9E29058-CALH	50	1212113	4.512	6.59
9E29058-CALI	50	1320230	4.962	6.59
9E29058-CALJ	50	1535644	5.466	6.58

AVE RF **4.660** RF RSD **7.91** AVE RT **6.59**

Gasoline Range Organics

Curve Fit: **QUADRATIC: Weighting: (1/a), Origin: Ignore**

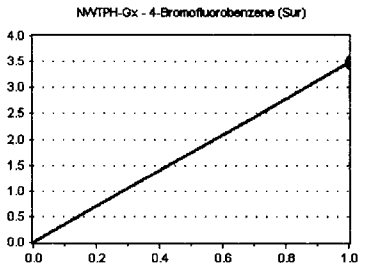


Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	337341	1.312	9.91
9E29058-CALD	100	594153	1.169	9.91
9E29058-CALE	250	1724074	1.303	9.91
9E29058-CALF	500	3706703	1.417	9.91
9E29058-CALG	1000	7396048	1.416	9.91
9E29058-CALH	2500	1.838528E+07	1.369	9.91
9E29058-CALI	5000	4.106911E+07	1.544	9.91
9E29058-CALJ	10000	8.243122E+07	1.467	9.91

AVE RF **1.375** RF RSD **8.34** AVE RT **9.91**

4-Bromofluorobenzene (Sur)

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E29058-CALC	50	893711	3.476	10.84
9E29058-CALD	50	893010	3.515	10.84
9E29058-CALE	50	923159	3.488	10.83
9E29058-CALF	50	900724	3.444	10.84
9E29058-CALG	50	915240	3.505	10.84
9E29058-CALH	50	936867	3.487	10.83
9E29058-CALI	50	922982	3.469	10.84
9E29058-CALJ	50	973205	3.464	10.84

AVE RF **3.481** RF RSD **0.65** AVE RT **10.84**

Injection Log

Directory: j:\DATA\2019-05\9E29058

Line	Vial	FileName	Multiplier	SampleName		Misc Info	Injected
1	1	Vc19052901.d	1.	9E29058-IBL1		1X 5mL DI+MeOH	29 May 2019 14:17
2	2	Vc19052902.d	1.	9E29058-TUN1		A19C135 BFB (IS/...	29 May 2019 14:45
3	3	Vc19052903.d	1.	9E29058-ICB1		1X 5mL DI+MeOH	29 May 2019 15:12
4	4	Vc19052904.d	1.	9E29058-CAL1		1X 5mL 0.1ppb VO...	29 May 2019 15:40
5	5	Vc19052905.d	1.	9E29058-CAL2		1X 5mL 0.2ppb VO...	29 May 2019 16:07
6	6	Vc19052906.d	1.	9E29058-CAL3		1X 5mL 0.4ppb VO...	29 May 2019 16:35
7	7	Vc19052907.d	1.	9E29058-CAL4		1X 5mL 1ppb VOC ...	29 May 2019 17:02
8	8	Vc19052908.d	1.	9E29058-CAL5		1X 5mL 2ppb VOC ...	29 May 2019 17:30
9	9	Vc19052909.d	1.	9E29058-CAL6		1X 5mL 5ppb VOC ...	29 May 2019 17:57
10	10	Vc19052910.d	1.	9E29058-CAL7		1X 5mL 10ppb VOC...	29 May 2019 18:25
11	11	Vc19052911.d	1.	9E29058-CAL8		1X 5mL 20ppb VOC...	29 May 2019 18:52
12	12	Vc19052912.d	1.	9E29058-CAL9		1X 5mL 50ppb VOC...	29 May 2019 19:20
13	13	Vc19052913.d	1.	9E29058-IBL2		1X 5mL DI+MeOH	29 May 2019 19:47
14	14	Vc19052914.d	1.	9E29058-CALA		1X 5mL 100ppb VO...	29 May 2019 20:15
15	15	Vc19052915.d	1.	9E29058-IBL3		1X 5mL DI+MeOH	29 May 2019 20:42
16	16	Vc19052916.d	1.	9E29058-CALB		1X 5mL 200ppb VO...	29 May 2019 21:10
17	17	Vc19052917.d	1.	9E29058-IBL4		1X 5mL DI+MeOH	29 May 2019 21:37
18	18	Vc19052918.d	1.	9E29058-IBL5		1X 5mL DI+MeOH	29 May 2019 22:05
19	19	Vc19052919.d	1.	9E29058-ICV1		1X 5mL 20ppb VOC...	29 May 2019 22:32
20	20	Vc19052920.d	1.	9E29058-IBL6		1X 5mL DI+MeOH	29 May 2019 22:59
21	21	Vc19052921.d	1.	9E29058-TUN2	RT	A19C135 BFB (IS/...	29 May 2019 23:27
22	22	Vc19052922.d	1.	9E29058-IBL7		1X 5mL DI+MeOH	29 May 2019 23:54
23	23	Vc19052923.d	1.	9E29058-ICB2		1X 5mL DI+MeOH	30 May 2019 00:22
24	24	Vc19052924.d	1.	9E29058-CALC		1X 5mL 50ppb GX ...	30 May 2019 00:49
25	25	Vc19052925.d	1.	9E29058-CALD		1X 5mL 100ppb GX...	30 May 2019 01:17
26	26	Vc19052926.d	1.	9E29058-CALE		1X 5mL 250ppb GX...	30 May 2019 01:44
27	27	Vc19052927.d	1.	9E29058-CALF		1X 5mL 500ppb GX...	30 May 2019 02:12
28	28	Vc19052928.d	1.	9E29058-CALG		1X 5mL 1000ppb G...	30 May 2019 02:39
29	29	Vc19052929.d	1.	9E29058-CALH		1X 5mL 2500ppb G...	30 May 2019 03:07
30	30	Vc19052930.d	1.	9E29058-CALI		1X 5mL 5000ppb G...	30 May 2019 03:34
31	31	Vc19052931.d	1.	9E29058-CALJ		1X 5mL 10000ppb ...	30 May 2019 04:02
32	32	Vc19052932.d	1.	9E29058-IBL8		1X 5mL DI+MeOH	30 May 2019 04:29
33	33	Vc19052933.d	1.	9E29058-IBL9		1X 5mL DI+MeOH	30 May 2019 04:57
34	34	Vc19052934.d	1.	9E29058-ICV2		1X 5mL 500ppb GX...	30 May 2019 05:25
35	35	Vc19052935.d	1.	9E29058-IBLA		1X 5mL DI+MeOH	30 May 2019 05:52

5/30/19

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052901.D
Acq On : 29 May 2019 2:17 pm
Operator : TB
Sample : 9E29058-IBL1
Misc : 1X 5mL DI+MeOH
ALS Vial : 1 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:31 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

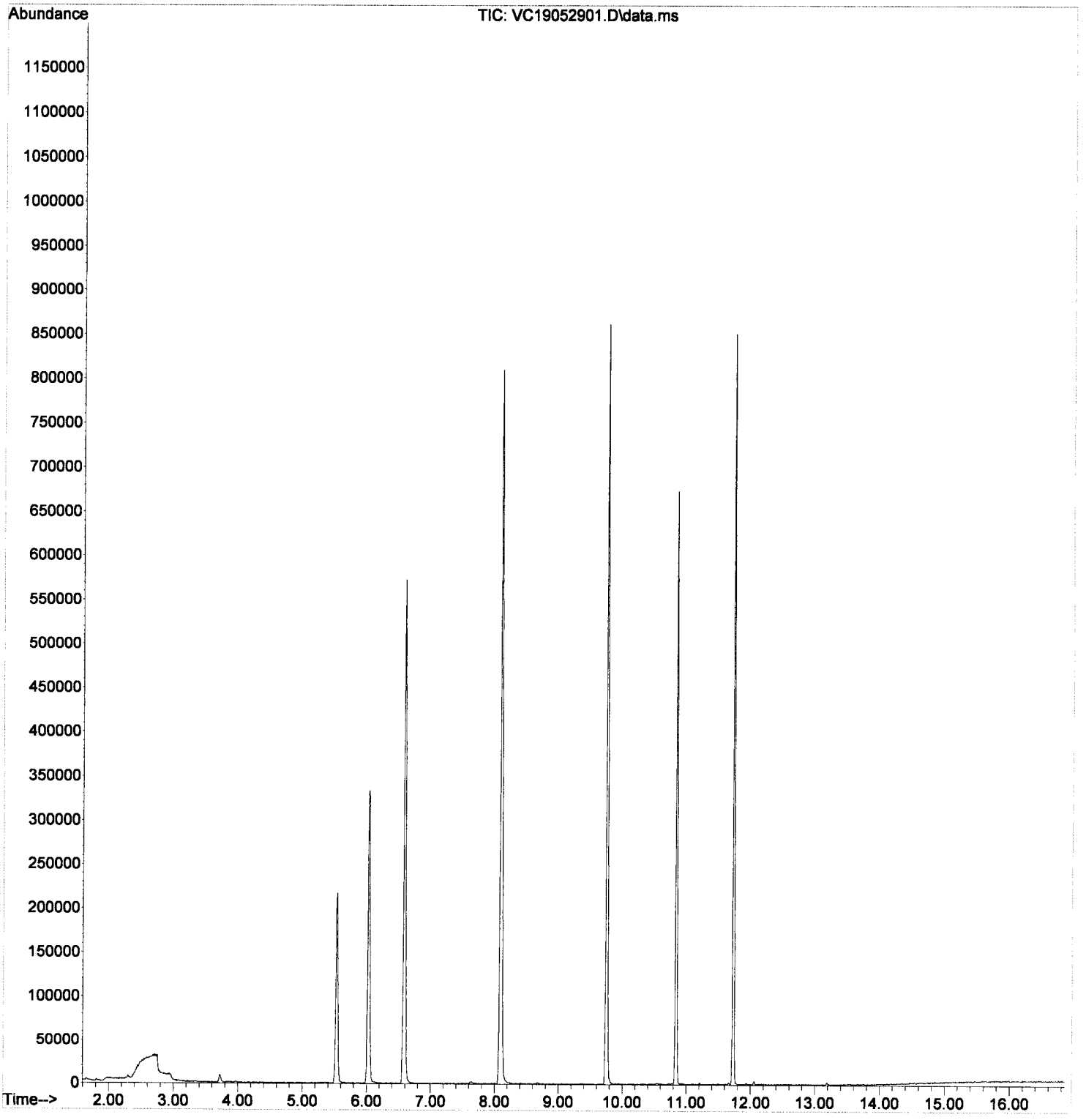
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.031	168	279040	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.748	117	484013	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.725	152	202813	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.532	111	149073	49.34	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.584	114	533928	49.75	ug/L		0.00
39) Toluene-d8 (S)	8.093	98	650638	49.69	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.837	174	177320	50.63	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.851	50	998	0.24	ug/L		88
5) Bromomethane	2.302	96	2128	1.33	ug/L		96
6) Chloroethane	2.435	64	170	0.16	ug/L	#	1
9) Carbon Disulfide	3.111	76	570	0.13	ug/L		77
11) Iodomethane	3.226	142	606	1.26	ug/L	#	33
12) Methylene Chloride	3.719	84	4593	Below Cal			90
13) Acetone	3.847	43	1940	1.54	ug/L		95
73) n-Butylbenzene	11.938	91	860	0.13	ug/L	#	71
76) Hexachlorobutadiene	13.191	223	353	0.56	ug/L	#	74

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052901.D
Acq On : 29 May 2019 2:17 pm
Operator : TB
Sample : 9E29058-IBL1
Misc : 1X 5mL DI+MeOH
ALS Vial : 1 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:31 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



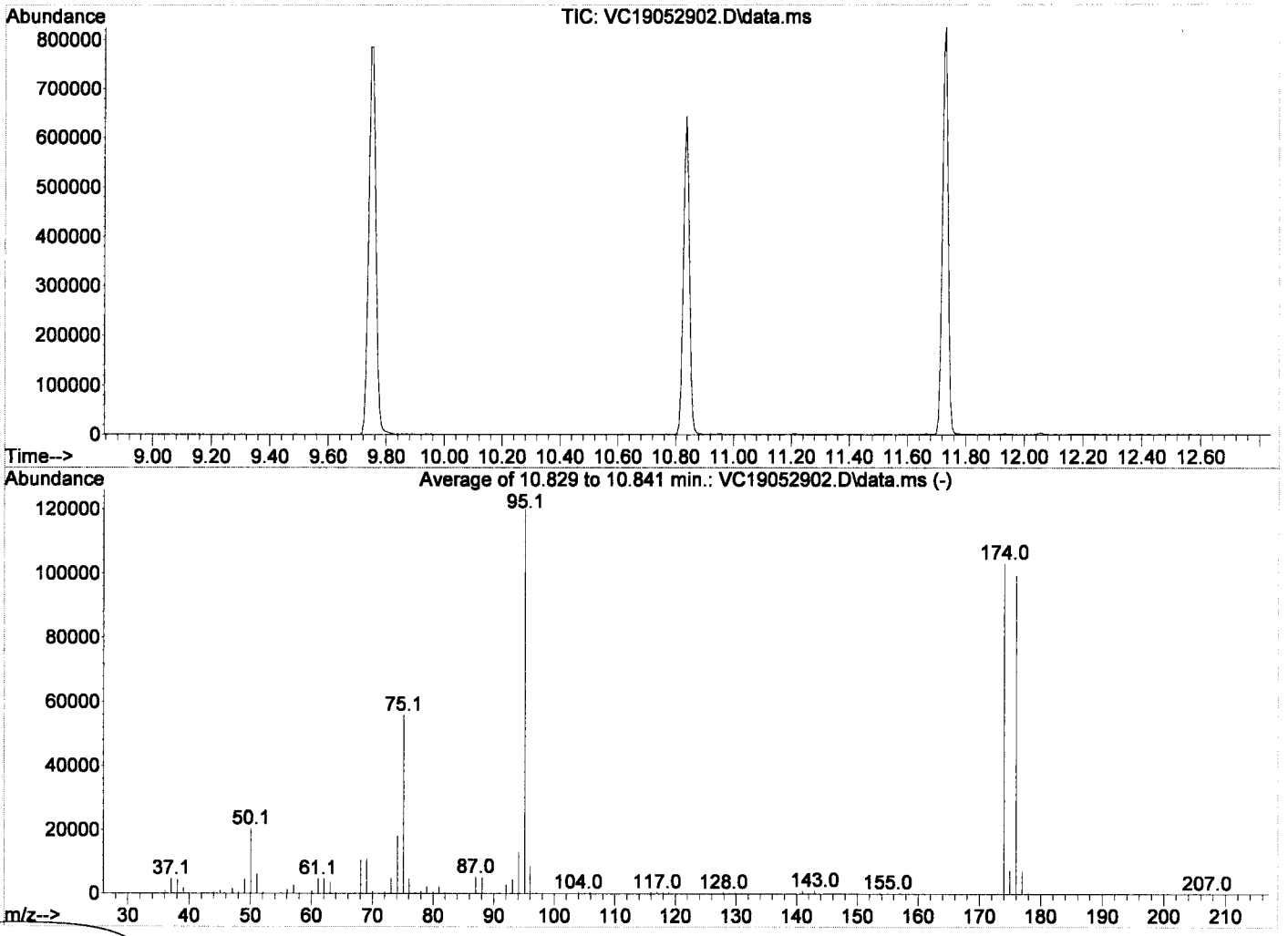
BFB

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052902.D
Acq On : 29 May 2019 2:45 pm
Operator : TB
Sample : 9E29058-TUN1
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\VC190529S.M
Title : EPA 8260: Volatile Organic Compounds
Last Update : Thu May 30 14:50:00 2019

5/30/19



AutoFind: Scans 1519, 1520, 1521; Background Corrected with Scan 1511

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	12	40	17.0	20413	PASS
75	95	30	60	46.6	55912	PASS
95	95	100	100	100.0	119877	PASS
96	95	5	9	7.3	8724	PASS
173	174	0.00	2	0.2	243	PASS
174	95	50	200	86.1	103224	PASS
175	174	5	9	7.3	7533	PASS
176	174	95	101	96.3	99416	PASS
177	176	5	9	7.2	7119	PASS

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052902.D
Acq On : 29 May 2019 2:45 pm
Operator : TB
Sample : 9E29058-TUN1
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:33 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

5/30/19

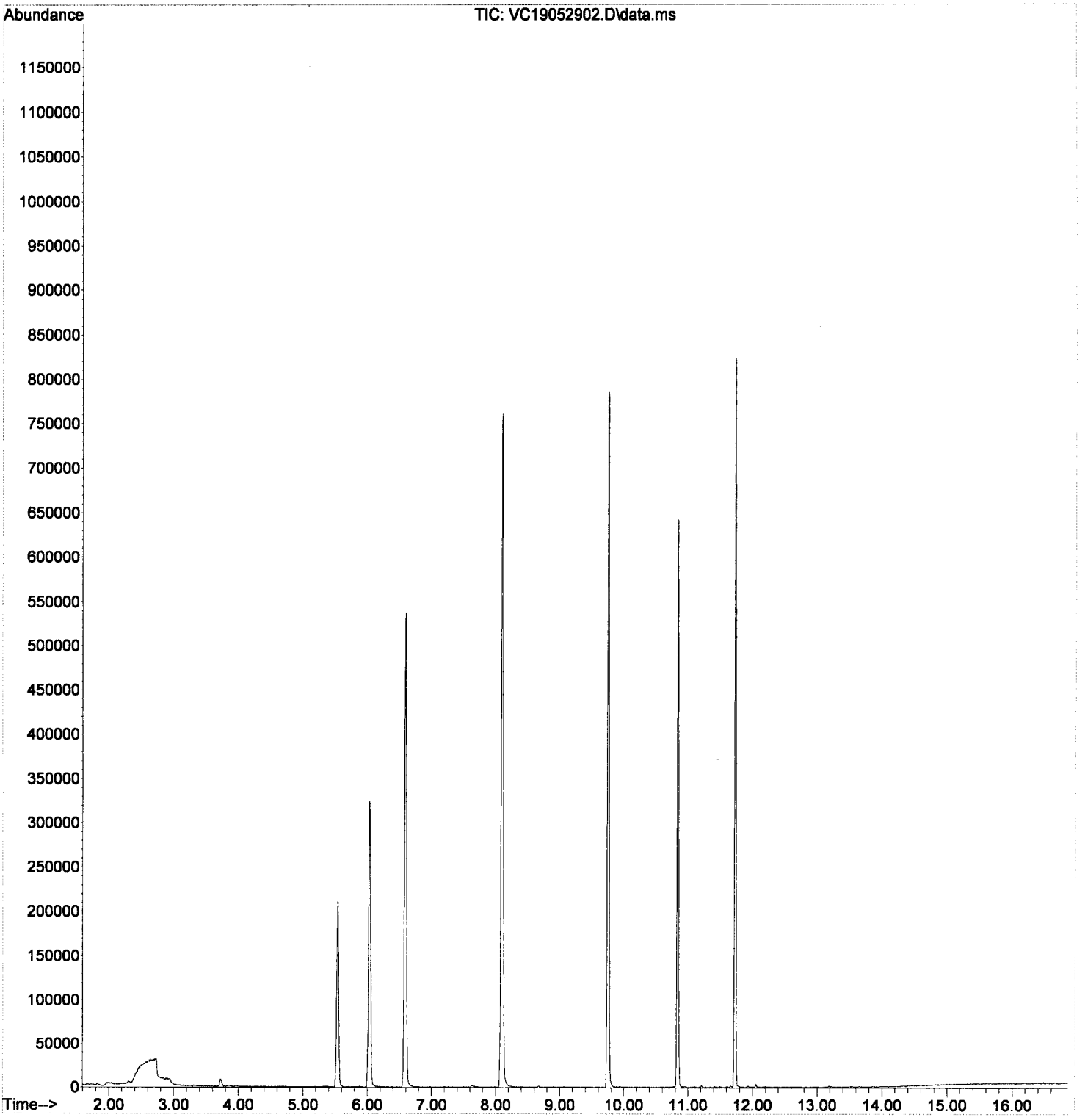
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.029	168	268009	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	467811	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.730	152	195372	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.537	111	142792	49.20	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.589	114	506916	49.17	ug/L		0.00
39) Toluene-d8 (S)	8.098	98	624549	49.35	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.835	174	171404	50.81	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.856	50	829	0.21	ug/L		90
5) Bromomethane	2.306	96	1688	1.10	ug/L		84
6) Chloroethane	2.428	64	226	0.22	ug/L	#	1
9) Carbon Disulfide	3.115	76	490	0.11	ug/L		77
11) Iodomethane	3.255	142	488	1.17	ug/L	#	47
12) Methylene Chloride	3.730	84	4955	Below Cal			82
13) Acetone	3.851	43	2013	1.67	ug/L		81
31) iso-Butyl Alcohol	6.267	43	180	0.67	ug/L	#	17
40) Toluene	8.146	91	1018	0.08	ug/L		93
52) m,p-Xylenes (2)	9.935	91	847	0.09	ug/L		94
70) 4-Isopropyltoluene	11.608	119	747	0.10	ug/L		80
73) n-Butylbenzene	11.936	91	1010	0.15	ug/L		84
76) Hexachlorobutadiene	13.183	223	275	0.46	ug/L	#	69
77) 1,2,4-Trichlorobenzene	13.226	180	236	0.10	ug/L		79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052902.D
Acq On : 29 May 2019 2:45 pm
Operator : TB
Sample : 9E29058-TUN1
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 2 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:33 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052903.D
Acq On : 29 May 2019 3:12 pm
Operator : TB
Sample : 9E29058-ICB1
Misc : 1X 5mL DI+MeOH
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:35 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

5/30/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.035	168	264985	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	454941	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.730	152	191224	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.537	111	144484	50.35	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.589	114	505611	49.61	ug/L		0.00
39) Toluene-d8 (S)	8.098	98	616289	50.08	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.835	174	168509	51.03	ug/L		0.00
Target Compounds							Qvalue
3) Chloromethane	1.862	50	752	0.19	ug/L		85
5) Bromomethane	2.318	96	1622	1.06	ug/L	#	70
6) Chloroethane	2.446	64	201	0.20	ug/L	#	1
9) Carbon Disulfide	3.109	76	430	0.10	ug/L		77
11) Iodomethane	3.261	142	356	1.06	ug/L	#	70
12) Methylene Chloride	3.730	84	14774	0.19	ug/L		93
13) Acetone	3.839	43	519	0.43	ug/L		94
15) n-Hexane	3.973	86	571	Below Cal		#	70
40) Toluene	8.159	91	1411	0.12	ug/L		93
52) m,p-Xylenes (2)	9.935	91	769	0.09	ug/L		77
73) n-Butylbenzene	11.930	91	689	0.11	ug/L		82

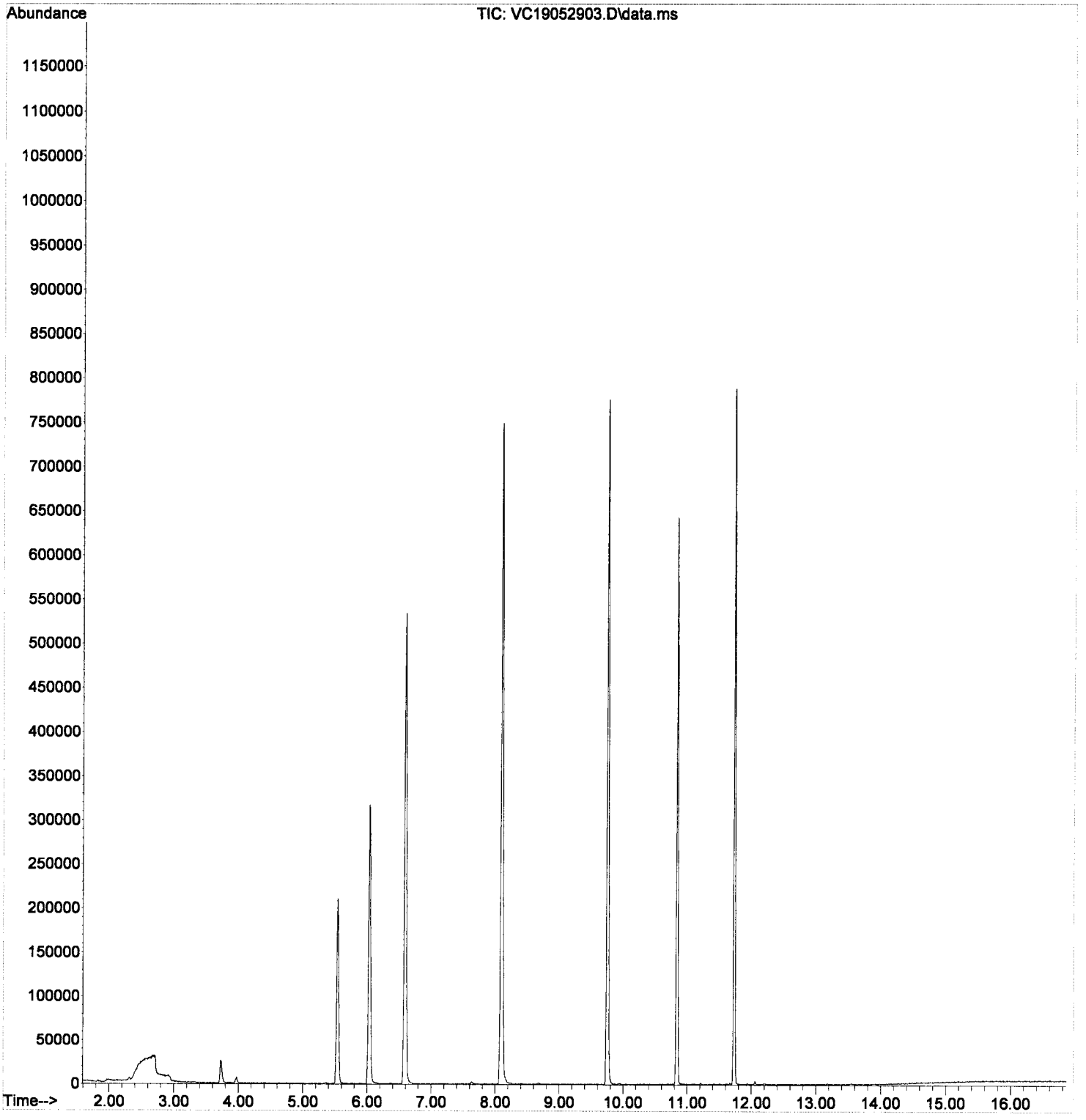
< mdl

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052903.D
Acq On : 29 May 2019 3:12 pm
Operator : TB
Sample : 9E29058-ICB1
Misc : 1X 5mL DI+MeOH
ALS Vial : 3 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:35 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052904.D
Acq On : 29 May 2019 3:40 pm
Operator : TB
Sample : 9E29058-CAL1
Misc : 1X 5mL 0.1ppb VOC DI+MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:57:18 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

post 5/30/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.029	168	259869	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	448840	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.729	152	194580	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.536	111	139535	48.58	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.588	114	493490	49.16	ug/L		0.00
39) Toluene-d8 (S)	8.097	98	607580	49.91	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.835	174	167905	49.68	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	d		
3) Chloromethane	1.855	50	835	0.23	ug/L		87
4) Vinyl Chloride	0.000		0	N.D.	d		
5) Bromomethane	2.306	96	1488	1.03	ug/L		89
6) Chloroethane	0.000		0	N.D.	d		
7) Trichlorofluoromethane	0.000		0	N.D.			
8) 1,1-Dichloroethene	0.000		0	N.D.	d		
9) Carbon Disulfide	0.000		0	N.D.	d		
10) Freon 113	0.000		0	N.D.	d		
11) Iodomethane	0.000		0	N.D.	d		
12) Methylene Chloride	3.723	84	5028	1.70	ug/L		93
13) Acetone	0.000		0	N.D.	d		
14) t-1,2-Dichloroethene	3.887	61	245	0.08	ug/L	#	37
15) n-Hexane	3.972	86	856	1.68	ug/L	#	89
16) Methyl-tert-butyl-ether	4.033	73	932	0.10	ug/L		75
17) 1,1-Dichloroethane	0.000		0	N.D.	d		
18) Acrylonitrile	0.000		0	N.D.			
19) c-1,2-Dichloroethene	5.067	61	365	0.11	ug/L	#	56
20) 2,2-Dichloropropane	0.000		0	N.D.	d		
21) Bromochloromethane	0.000		0	N.D.	d		
22) Chloroform	5.347	83	862	0.20	ug/L		67
23) Carbon Tetrachloride	0.000		0	N.D.	d		
24) Tetrahydrofuran	0.000		0	N.D.	d		
25) 1,1,1-Trichloroethane	5.542	97	303	0.09	ug/L	#	65
27) 1,1-Dichloropropene	0.000		0	N.D.	d		
28) 2-Butanone (MEK)	0.000		0	N.D.	d		
29) Benzene	5.937	78	1225	0.11	ug/L		76
30) 1,2-Dichloroethane (EDC)	0.000		0	N.D.	d		
31) iso-Butyl Alcohol	0.000		0	N.D.	d		
33) Trichloroethene (TCE)	6.558	130	358	0.12	ug/L	#	57
34) Dibromomethane	0.000		0	N.D.			
35) 1,2-Dichloropropane	0.000		0	N.D.	d		
36) Bromodichloromethane	0.000		0	N.D.	d		
38) c-1,3-Dichloropropene	0.000		0	N.D.			
40) Toluene	8.152	91	2496	0.22	ug/L		77
41) Tetrachloroethene (PCE)	8.602	166	338	0.13	ug/L	#	56
42) 4-Methyl-2-Pentanone (...	8.620	43	867	0.25	ug/L	#	41
43) t-1,3-Dichloropropene	8.657	75	268	0.08	ug/L		47
44) 1,1,2-Trichloroethane	8.821	97	229	0.09	ug/L	#	13
45) Dibromochloromethane	0.000		0	N.D.			
46) 1,3-Dichloropropane	9.113	76	438	0.10	ug/L	#	40
47) 1,2-Dibromoethane (EDB)	9.253	107	186	0.07	ug/L		78
48) 2-Hexanone	9.508	43	443	0.18	ug/L		71

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052904.D
Acq On : 29 May 2019 3:40 pm
Operator : TB
Sample : 9E29058-CAL1
Misc : 1X 5mL 0.1ppb VOC DI+MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:57:18 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

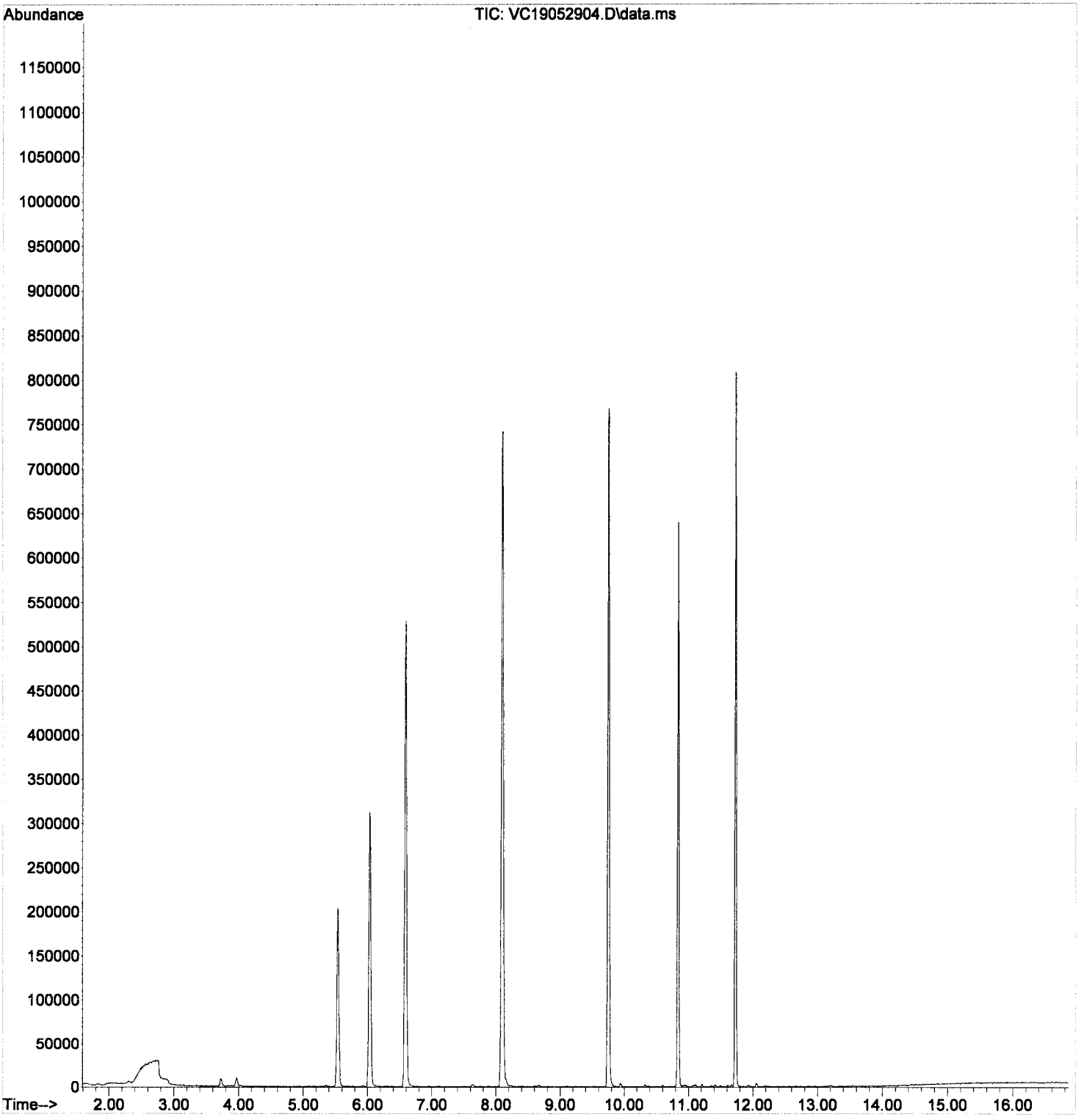
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.764	112	1131	0.16	ug/L	#	1
50) Ethylbenzene	9.800	91	1694	0.14	ug/L		86
51) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.			
52) m,p-Xylenes (2)	9.940	91	2487	0.28	ug/L		90
53) o-Xylene	10.324	91	1273	0.14	ug/L		92
54) Styrene	10.378	104	585	0.08	ug/L		78
55) Bromoform	0.000		0	N.D.			
56) Isopropylbenzene	10.597	105	1325	0.13	ug/L		83
59) Bromobenzene	10.926	156	177	0.07	ug/L		87
60) n-Propylbenzene	10.944	91	1564	0.14	ug/L		86
61) 1,1,2,2-Tetrachloroethane	11.005	83	266	0.10	ug/L	#	25
62) 2-Chlorotoluene	11.072	126	260	0.11	ug/L	#	75
63) 1,3,5-Trimethylbenzene	11.108	105	1305	0.16	ug/L		84
64) 1,2,3-Trichloropropane	0.000		0	N.D.			
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.			
66) 4-Chlorotoluene	11.206	91	1133	0.16	ug/L		76
67) tert-Butylbenzene	11.358	91	480	0.11	ug/L	#	75
68) 1,2,4-Trimethylbenzene	11.412	105	965	0.12	ug/L		80
69) sec-Butylbenzene	11.504	105	1196	0.13	ug/L		89
70) 4-Isopropyltoluene	11.607	119	1072	0.14	ug/L		93
71) 1,3-Dichlorobenzene	11.674	146	610	0.14	ug/L		85
72) 1,4-Dichlorobenzene	11.741	146	690	0.16	ug/L	#	25
73) n-Butylbenzene	11.930	91	1118	0.18	ug/L		93
74) 1,2-Dichlorobenzene	12.063	146	533	0.13	ug/L		93
75) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.			
76) Hexachlorobutadiene	13.183	223	235	0.38	ug/L	#	72
77) 1,2,4-Trichlorobenzene	13.213	180	358	0.15	ug/L		72
78) Naphthalene	13.493	128	706	0.08	ug/L		78
79) 1,2,3-Trichlorobenzene	13.663	180	105	0.04	ug/L		66

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052904.D
Acq On : 29 May 2019 3:40 pm
Operator : TB
Sample : 9E29058-CAL1
Misc : 1X 5mL 0.1ppb VOC DI+MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:57:18 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052904.D
Acq On : 29 May 2019 3:40 pm
Operator : TB
Sample : 9E29058-CAL1
Misc : 1X 5mL 0.1ppb VOC DI+MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:44 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

pre 5/30/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.029	168	259869	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	448840	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.729	152	194580	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.536	111	139535	48.58	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.588	114	493490	49.16	ug/L		0.00
39) Toluene-d8 (S)	8.097	98	607580	49.91	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.835	174	167905	49.68	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.673	85	220	0.10	ug/L	#	50
3) Chloromethane	1.855	50	835	0.23	ug/L		87
4) Vinyl Chloride	1.953	62	263	0.10	ug/L	#	48
5) Bromomethane	2.306	96	1488	1.03	ug/L		89
6) Chloroethane	2.439	64	459	0.47	ug/L	#	1
7) Trichlorofluoromethane	0.000		0	N.D.			
8) 1,1-Dichloroethene	3.084	61	199	0.08	ug/L	#	63
9) Carbon Disulfide	3.109	76	586	0.14	ug/L		46
10) Freon 113	3.145	101	290	0.14	ug/L	#	18
11) Iodomethane	3.242	142	333	0.36	ug/L	#	47
12) Methylene Chloride	3.723	84	5028	1.70	ug/L		93
13) Acetone	3.808	43	123	0.11	ug/L	#	42
14) t-1,2-Dichloroethene	3.887	61	245	0.08	ug/L	#	37
15) n-Hexane	3.972	86	856	1.68	ug/L	#	89
16) Methyl-tert-butyl-ether	4.033	73	932	0.10	ug/L		75
17) 1,1-Dichloroethane	4.520	63	373	0.10	ug/L	#	49
18) Acrylonitrile	0.000		0	N.D.			
19) c-1,2-Dichloroethene	5.067	61	365	0.11	ug/L	#	56
20) 2,2-Dichloropropane	5.177	77	202	0.07	ug/L		71
21) Bromochloromethane	5.262	49	156	0.08	ug/L	#	15
22) Chloroform	5.347	83	862	0.20	ug/L		67
23) Carbon Tetrachloride	5.481	117	134	0.06	ug/L		76
24) Tetrahydrofuran	5.530	42	135	0.09	ug/L	#	45
25) 1,1,1-Trichloroethane	5.542	97	303	0.09	ug/L	#	65
27) 1,1-Dichloropropene	5.670	75	369	0.11	ug/L	#	41
28) 2-Butanone (MEK)	5.718	43	696	0.33	ug/L		54
29) Benzene	5.937	78	1225	0.11	ug/L		76
30) 1,2-Dichloroethane (EDC)	6.156	62	233	0.07	ug/L	#	50
31) iso-Butyl Alcohol	6.260	43	192	0.75	ug/L		96
33) Trichloroethene (TCE)	6.558	130	358	0.12	ug/L	#	57
34) Dibromomethane	0.000		0	N.D.			
35) 1,2-Dichloropropane	7.111	63	306	0.10	ug/L	#	37
36) Bromodichloromethane	7.184	83	158	0.06	ug/L	#	26
38) c-1,3-Dichloropropene	0.000		0	N.D.			
40) Toluene	8.152	91	2496	0.22	ug/L		77
41) Tetrachloroethene (PCE)	8.602	166	338	0.13	ug/L	#	56
42) 4-Methyl-2-Pentanone (...	8.620	43	867	0.25	ug/L	#	41
43) t-1,3-Dichloropropene	8.657	75	268	0.08	ug/L		47
44) 1,1,2-Trichloroethane	8.821	97	229	0.09	ug/L	#	13
45) Dibromochloromethane	0.000		0	N.D.			
46) 1,3-Dichloropropane	9.113	76	438	0.10	ug/L	#	40
47) 1,2-Dibromoethane (EDB)	9.253	107	186	0.07	ug/L		78
48) 2-Hexanone	9.508	43	443	0.18	ug/L		71

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052904.D
Acq On : 29 May 2019 3:40 pm
Operator : TB
Sample : 9E29058-CAL1
Misc : 1X 5mL 0.1ppb VOC DI+MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:44 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

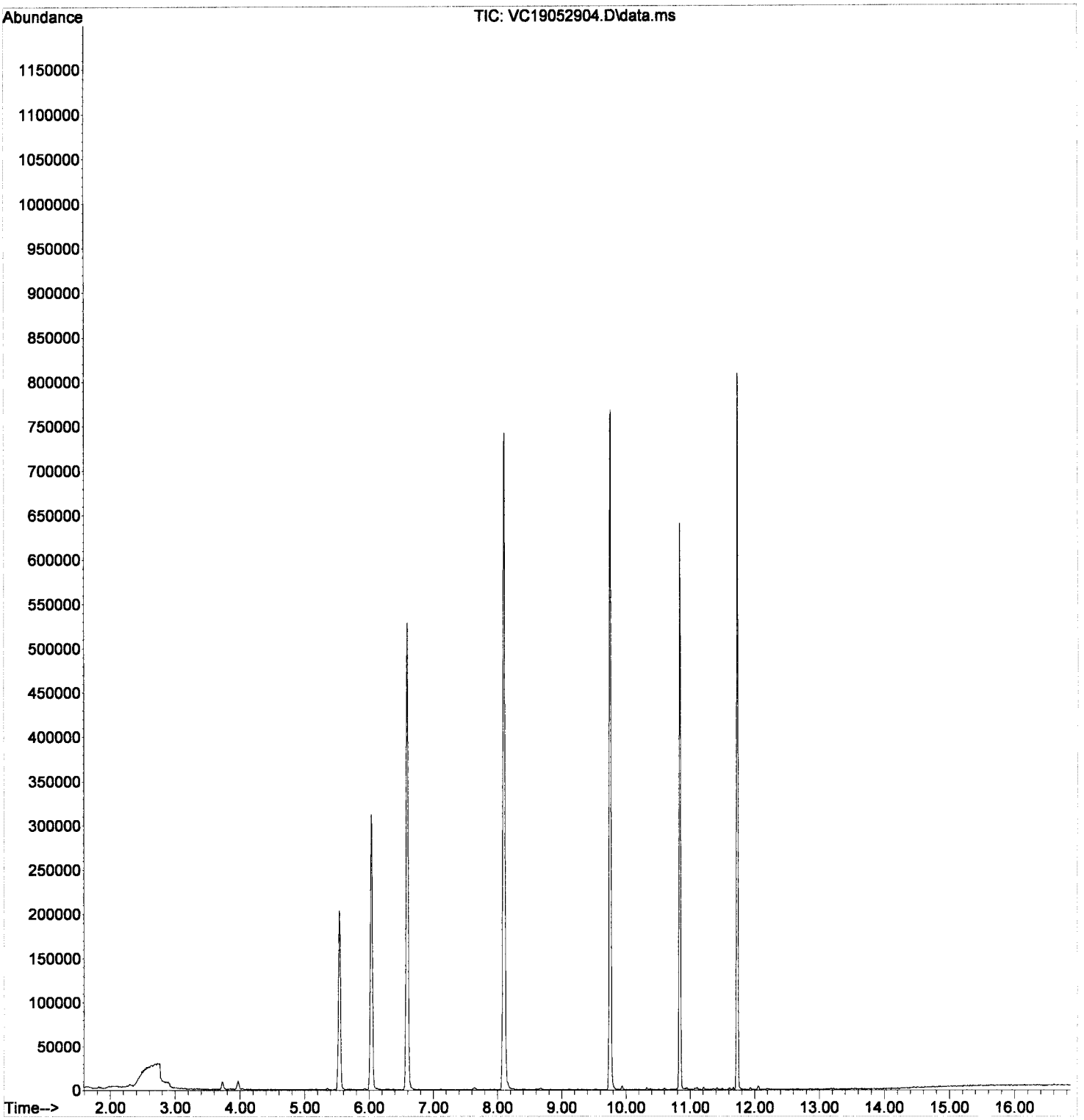
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
49) Chlorobenzene	9.764	112	1131	0.16	ug/L #	1
50) Ethylbenzene	9.800	91	1694	0.14	ug/L	86
51) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.		
52) m,p-Xylenes (2)	9.940	91	2487	0.28	ug/L	90
53) o-Xylene	10.324	91	1273	0.14	ug/L	92
54) Styrene	10.378	104	585	0.08	ug/L	78
55) Bromoform	0.000		0	N.D.		
56) Isopropylbenzene	10.597	105	1325	0.13	ug/L	83
59) Bromobenzene	10.926	156	177	0.07	ug/L	87
60) n-Propylbenzene	10.944	91	1564	0.14	ug/L	86
61) 1,1,2,2-Tetrachloroethane	11.005	83	266	0.10	ug/L #	25
62) 2-Chlorotoluene	11.072	126	260	0.11	ug/L #	75
63) 1,3,5-Trimethylbenzene	11.108	105	1305	0.16	ug/L	84
64) 1,2,3-Trichloropropane	0.000		0	N.D.		
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.		
66) 4-Chlorotoluene	11.206	91	1133	0.16	ug/L	76
67) tert-Butylbenzene	11.358	91	480	0.11	ug/L #	75
68) 1,2,4-Trimethylbenzene	11.412	105	965	0.12	ug/L	80
69) sec-Butylbenzene	11.504	105	1196	0.13	ug/L	89
70) 4-Isopropyltoluene	11.607	119	1072	0.14	ug/L	93
71) 1,3-Dichlorobenzene	11.674	146	610	0.14	ug/L	85
72) 1,4-Dichlorobenzene	11.741	146	690	0.16	ug/L #	25
73) n-Butylbenzene	11.930	91	1118	0.18	ug/L	93
74) 1,2-Dichlorobenzene	12.063	146	533	0.13	ug/L	93
75) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.		
76) Hexachlorobutadiene	13.183	223	235	0.38	ug/L #	72
77) 1,2,4-Trichlorobenzene	13.213	180	358	0.15	ug/L	72
78) Naphthalene	13.493	128	706	0.08	ug/L	78
79) 1,2,3-Trichlorobenzene	13.663	180	105	0.04	ug/L	66

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052904.D
Acq On : 29 May 2019 3:40 pm
Operator : TB
Sample : 9E29058-CAL1
Misc : 1X 5mL 0.1ppb VOC DI+MeOH
ALS Vial : 4 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:44 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052905.D
Acq On : 29 May 2019 4:07 pm
Operator : TB
Sample : 9E29058-CAL2
Misc : 1X 5mL 0.2ppb VOC DI+MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

5/30/19 post

Quant Time: May 30 12:04:06 2019
Quant Method : C:\msdchem\1\METHODS\~~VC190529S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.035	168	256759	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	446684	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.729	152	191276	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.536	111	136690	48.17	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.589	114	491851	49.59	ug/L		0.00
39) Toluene-d8 (S)	8.098	98	603494	49.82	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.835	174	165726	49.89	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.673	85	475	0.21	ug/L		62
3) Chloromethane	1.868	50	1572	0.43	ug/L		78
4) Vinyl Chloride	1.953	62	515	0.20	ug/L		92
5) Bromomethane	2.306	96	1803	1.27	ug/L		94
6) Chloroethane	0.000		0	N.D.	d		
7) Trichlorofluoromethane	0.000		0	N.D.	d		
8) 1,1-Dichloroethene	3.103	61	456	0.18	ug/L		93
9) Carbon Disulfide	3.115	76	835	0.21	ug/L		77
10) Freon 113	3.158	101	603	0.29	ug/L	#	9
11) Iodomethane	3.249	142	437	0.47	ug/L	#	21
12) Methylene Chloride	3.730	84	14589	5.00	ug/L		86
13) Acetone	0.000		0	N.D.	d		
14) t-1,2-Dichloroethene	3.894	61	734	0.24	ug/L		80
15) n-Hexane	3.973	86	874	1.73	ug/L	#	86
16) Methyl-tert-butyl-ether	4.034	73	1802	0.20	ug/L		86
17) 1,1-Dichloroethane	4.533	63	735	0.19	ug/L		68
18) Acrylonitrile	0.000		0	N.D.			
19) c-1,2-Dichloroethene	5.068	61	611	0.18	ug/L		78
20) 2,2-Dichloropropane	0.000		0	N.D.	d		
21) Bromochloromethane	5.269	49	453	0.22	ug/L		87
22) Chloroform	5.348	83	1314	0.30	ug/L		90
23) Carbon Tetrachloride	5.488	117	416	0.17	ug/L	#	52
24) Tetrahydrofuran	0.000		0	N.D.	d		
25) 1,1,1-Trichloroethane	5.536	97	657m	0.19	ug/L		
27) 1,1-Dichloropropene	5.688	75	822	0.24	ug/L	#	65
28) 2-Butanone (MEK)	0.000		0	N.D.	d		
29) Benzene	5.932	78	2321	0.21	ug/L		91
30) 1,2-Dichloroethane (EDC)	6.151	62	685	0.21	ug/L	#	50
31) iso-Butyl Alcohol	0.000		0	N.D.	d		
33) Trichloroethene (TCE)	6.552	130	778	0.26	ug/L	#	69
34) Dibromomethane	7.003	93	150	0.10	ug/L		83
35) 1,2-Dichloropropane	7.106	63	596	0.20	ug/L		91
36) Bromodichloromethane	7.185	83	431	0.16	ug/L	#	26
38) c-1,3-Dichloropropene	7.891	75	602	0.16	ug/L	#	74
40) Toluene	8.152	91	3425	0.30	ug/L		91
41) Tetrachloroethene (PCE)	8.602	166	698	0.27	ug/L		88
42) 4-Methyl-2-Pentanone (...	8.621	43	1694	0.49	ug/L		92
43) t-1,3-Dichloropropene	8.657	75	575	0.17	ug/L		47
44) 1,1,2-Trichloroethane	8.828	97	506	0.20	ug/L	#	46
45) Dibromochloromethane	9.028	129	172	0.10	ug/L	#	15
46) 1,3-Dichloropropane	9.120	76	988	0.22	ug/L		83
47) 1,2-Dibromoethane (EDB)	9.247	107	298	0.12	ug/L		82
48) 2-Hexanone	9.509	43	765	0.31	ug/L		89

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052905.D
Acq On : 29 May 2019 4:07 pm
Operator : TB
Sample : 9E29058-CAL2
Misc : 1X 5mL 0.2ppb VOC DI+MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 12:04:06 2019
Quant Method : C:\msdchem\1\METHODS\VC~~190529S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.770	112	1617	0.23	ug/L	#	58
50) Ethylbenzene	9.801	91	2895	0.25	ug/L		70
51) 1,1,1,2-Tetrachloroethane	9.837	131	318	0.15	ug/L	#	81
52) m,p-Xylenes (2)	9.941	91	4246	0.49	ug/L		88
53) o-Xylene	10.330	91	2232	0.25	ug/L		99
54) Styrene	10.373	104	1051	0.15	ug/L		100
55) Bromoform	0.000		0	N.D.	d		
56) Isopropylbenzene	10.592	105	2225	0.21	ug/L		92
59) Bromobenzene	10.920	156	513	0.20	ug/L	#	70
60) n-Propylbenzene	10.945	91	2483	0.22	ug/L		88
61) 1,1,2,2-Tetrachloroethane	11.012	83	439	0.17	ug/L		70
62) 2-Chlorotoluene	11.085	126	535	0.23	ug/L	#	51
63) 1,3,5-Trimethylbenzene	11.103	105	1776	0.22	ug/L		91
64) 1,2,3-Trichloropropane	11.121	110	144	0.14	ug/L	#	84
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.			
66) 4-Chlorotoluene	11.212	91	1680	0.25	ug/L		95
67) tert-Butylbenzene	11.358	91	1208	0.28	ug/L		82
68) 1,2,4-Trimethylbenzene	11.413	105	1610	0.20	ug/L		86
69) sec-Butylbenzene	11.498	105	2071	0.23	ug/L		92
70) 4-Isopropyltoluene	11.608	119	1749	0.23	ug/L		94
71) 1,3-Dichlorobenzene	11.675	146	927	0.22	ug/L		86
72) 1,4-Dichlorobenzene	11.735	146	1152	0.27	ug/L	#	32
73) n-Butylbenzene	11.936	91	1667	0.27	ug/L		98
74) 1,2-Dichlorobenzene	12.058	146	833	0.21	ug/L		80
75) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.			
76) Hexachlorobutadiene	13.177	223	296	0.48	ug/L	#	65
77) 1,2,4-Trichlorobenzene	13.220	180	579	0.25	ug/L		74
78) Naphthalene	13.500	128	1368	0.16	ug/L		76
79) 1,2,3-Trichlorobenzene	13.658	180	532	0.23	ug/L		86

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052905.D
Acq On : 29 May 2019 4:07 pm
Operator : TB
Sample : 9E29058-CAL2
Misc : 1X 5mL 0.2ppb VOC DI+MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:46 2019
Quant Method : C:\msdchem\1\METHODS\~~VC190529S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

5/30/19 pre

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.035	168	256759	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	446684	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.729	152	191276	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.536	111	136690	48.17	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.589	114	491851	49.59	ug/L		0.00
39) Toluene-d8 (S)	8.098	98	603494	49.82	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.835	174	165726	49.89	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.673	85	475	0.21	ug/L		62
3) Chloromethane	1.868	50	1572	0.43	ug/L		78
4) Vinyl Chloride	1.953	62	515	0.20	ug/L		92
5) Bromomethane	2.306	96	1803	1.27	ug/L		94
6) Chloroethane	2.501	64	307	0.32	ug/L	#	1
7) Trichlorofluoromethane	2.568	101	138	0.09	ug/L	#	1
8) 1,1-Dichloroethene	3.103	61	456	0.18	ug/L		93
9) Carbon Disulfide	3.115	76	835	0.21	ug/L		77
10) Freon 113	3.158	101	603	0.29	ug/L	#	9
11) Iodomethane	3.249	142	437	0.47	ug/L	#	21
12) Methylene Chloride	3.730	84	14589	5.00	ug/L		86
13) Acetone	3.845	43	1953	1.75	ug/L		90
14) t-1,2-Dichloroethene	3.894	61	734	0.24	ug/L		80
15) n-Hexane	3.973	86	874	1.73	ug/L	#	86
16) Methyl-tert-butyl-ether	4.034	73	1802	0.20	ug/L		86
17) 1,1-Dichloroethane	4.533	63	735	0.19	ug/L		68
18) Acrylonitrile	0.000		0	N.D.			
19) c-1,2-Dichloroethene	5.068	61	611	0.18	ug/L		78
20) 2,2-Dichloropropane	5.165	77	653	0.22	ug/L		83
21) Bromochloromethane	5.269	49	453	0.22	ug/L		87
22) Chloroform	5.348	83	1314	0.30	ug/L		90
23) Carbon Tetrachloride	5.488	117	416	0.17	ug/L	#	52
24) Tetrahydrofuran	5.542	42	330	0.21	ug/L	#	67
25) 1,1,1-Trichloroethane	~~5.549~~	~~97~~	~~430~~	~~0.13~~	~~ug/L~~		~~79~~ MI
27) 1,1-Dichloropropene	5.688	75	822	0.24	ug/L	#	65
28) 2-Butanone (MEK)	5.731	43	1214	0.59	ug/L		54
29) Benzene	5.932	78	2321	0.21	ug/L		91
30) 1,2-Dichloroethane (EDC)	6.151	62	685	0.21	ug/L	#	50
31) iso-Butyl Alcohol	6.285	43	738	2.90	ug/L		74
33) Trichloroethene (TCE)	6.552	130	778	0.26	ug/L	#	69
34) Dibromomethane	7.003	93	150	0.10	ug/L		83
35) 1,2-Dichloropropane	7.106	63	596	0.20	ug/L		91
36) Bromodichloromethane	7.185	83	431	0.16	ug/L	#	26
38) c-1,3-Dichloropropene	7.891	75	602	0.16	ug/L	#	74
40) Toluene	8.152	91	3425	0.30	ug/L		91
41) Tetrachloroethene (PCE)	8.602	166	698	0.27	ug/L		88
42) 4-Methyl-2-Pentanone (...	8.621	43	1694	0.49	ug/L		92
43) t-1,3-Dichloropropene	8.657	75	575	0.17	ug/L		47
44) 1,1,2-Trichloroethane	8.828	97	506	0.20	ug/L	#	46
45) Dibromochloromethane	9.028	129	172	0.10	ug/L	#	15
46) 1,3-Dichloropropane	9.120	76	988	0.22	ug/L		83
47) 1,2-Dibromoethane (EDB)	9.247	107	298	0.12	ug/L		82
48) 2-Hexanone	9.509	43	765	0.31	ug/L		89

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052905.D
Acq On : 29 May 2019 4:07 pm
Operator : TB
Sample : 9E29058-CAL2
Misc : 1X 5mL 0.2ppb VOC DI+MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:46 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

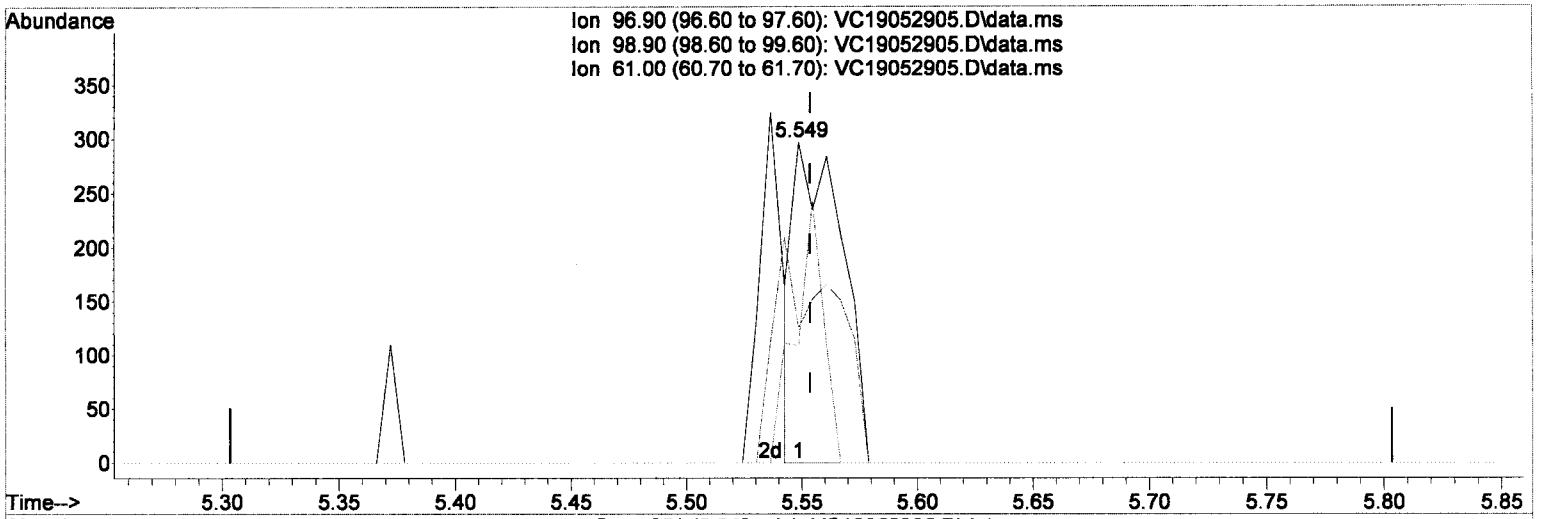
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.770	112	1617	0.23	ug/L	#	58
50) Ethylbenzene	9.801	91	2895	0.25	ug/L		70
51) 1,1,1,2-Tetrachloroethane	9.837	131	318	0.15	ug/L	#	81
52) m,p-Xylenes (2)	9.941	91	4246	0.49	ug/L		88
53) o-Xylene	10.330	91	2232	0.25	ug/L		99
54) Styrene	10.373	104	1051	0.15	ug/L		100
55) Bromoform	10.391	173	127	0.13	ug/L	#	36
56) Isopropylbenzene	10.592	105	2225	0.21	ug/L		92
59) Bromobenzene	10.920	156	513	0.20	ug/L	#	70
60) n-Propylbenzene	10.945	91	2483	0.22	ug/L		88
61) 1,1,2,2-Tetrachloroethane	11.012	83	439	0.17	ug/L		70
62) 2-Chlorotoluene	11.085	126	535	0.23	ug/L	#	51
63) 1,3,5-Trimethylbenzene	11.103	105	1776	0.22	ug/L		91
64) 1,2,3-Trichloropropane	11.121	110	144	0.14	ug/L	#	84
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.			
66) 4-Chlorotoluene	11.212	91	1680	0.25	ug/L		95
67) tert-Butylbenzene	11.358	91	1208	0.28	ug/L		82
68) 1,2,4-Trimethylbenzene	11.413	105	1610	0.20	ug/L		86
69) sec-Butylbenzene	11.498	105	2071	0.23	ug/L		92
70) 4-Isopropyltoluene	11.608	119	1749	0.23	ug/L		94
71) 1,3-Dichlorobenzene	11.675	146	927	0.22	ug/L		86
72) 1,4-Dichlorobenzene	11.735	146	1152	0.27	ug/L	#	32
73) n-Butylbenzene	11.936	91	1667	0.27	ug/L		98
74) 1,2-Dichlorobenzene	12.058	146	833	0.21	ug/L		80
75) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.			
76) Hexachlorobutadiene	13.177	223	296	0.48	ug/L	#	65
77) 1,2,4-Trichlorobenzene	13.220	180	579	0.25	ug/L		74
78) Naphthalene	13.500	128	1368	0.16	ug/L		76
79) 1,2,3-Trichlorobenzene	13.658	180	532	0.23	ug/L		86

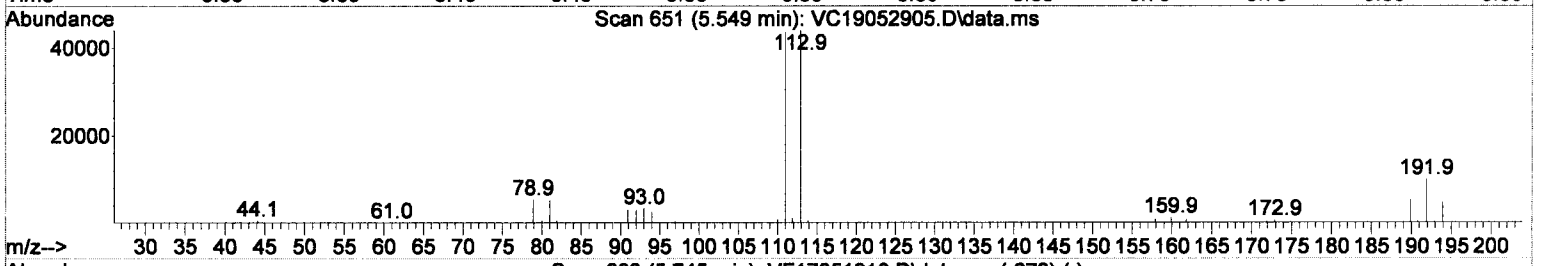
(#) = qualifier out of range (m) = manual integration (+) = signals summed

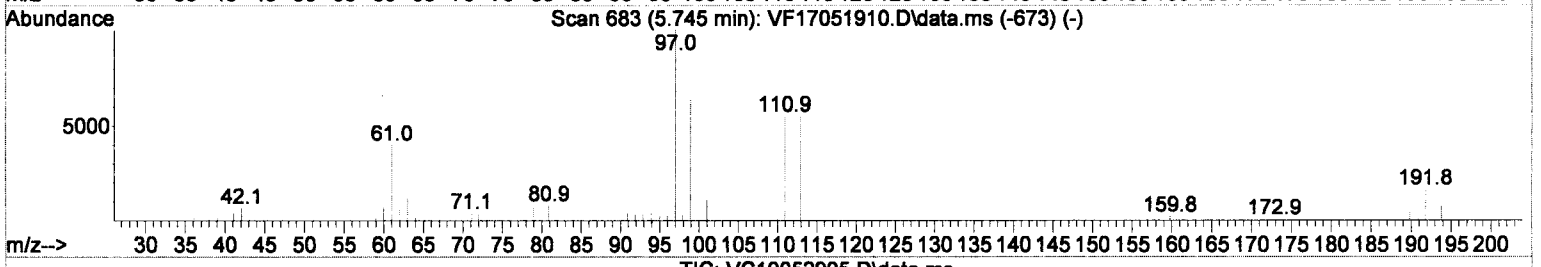
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052905.D
Acq On : 29 May 2019 4:07 pm
Operator : TB
Sample : 9E29058-CAL2
Misc : 1X 5mL 0.2ppb VOC DI+MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:46 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration







TIC: VC19052905.D\data.ms

(25) 1,1,1-Trichloroethane

5.549min (-0.005) 0.12 ug/L

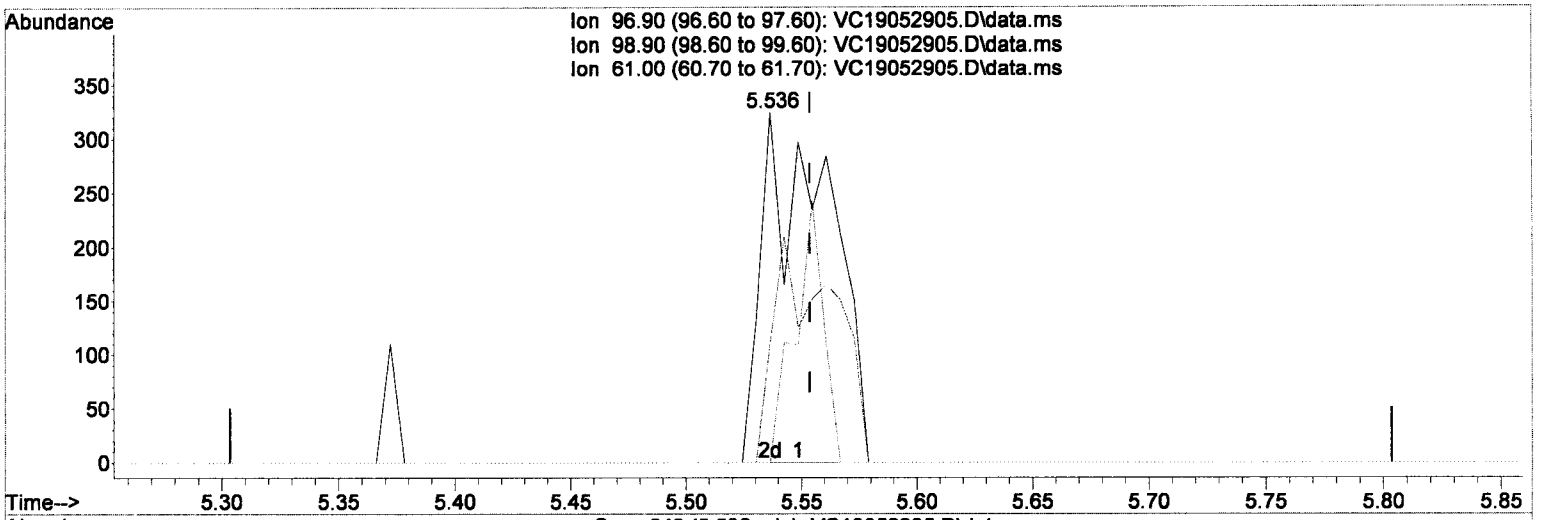
response 430

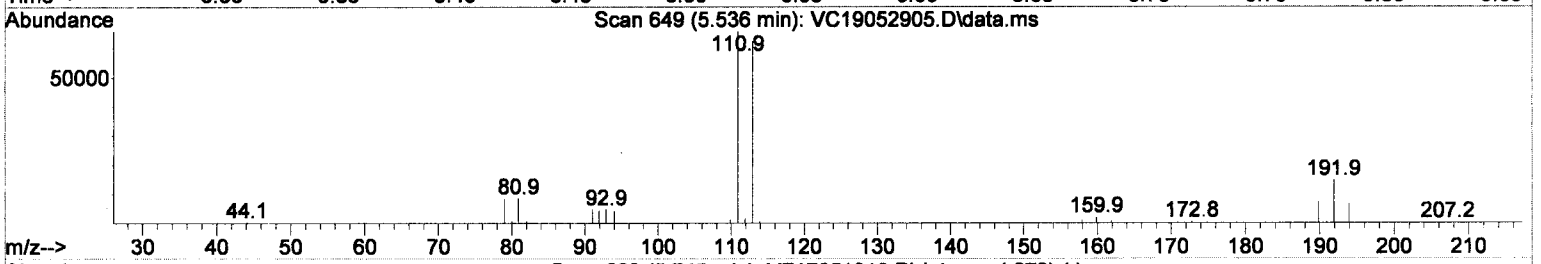
Ion	Exp%	Act%
96.90	100	100
98.90	65.60	42.09
61.00	42.20	36.70
0.00	0.00	0.00

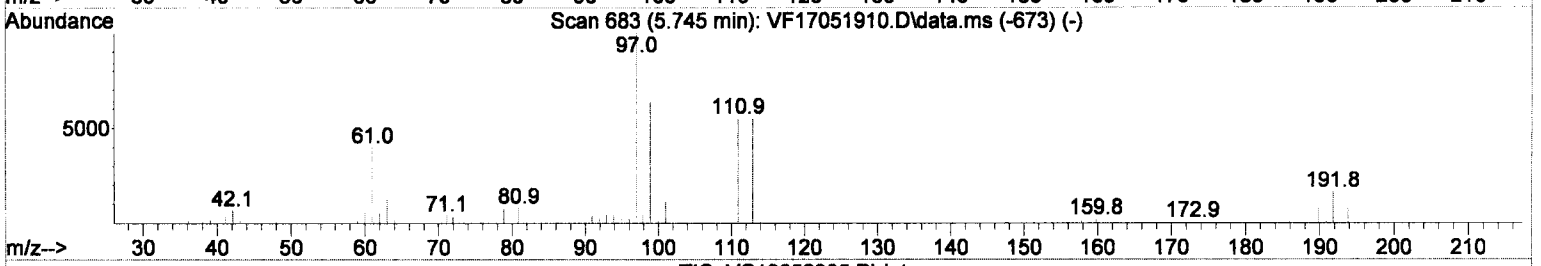
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052905.D
Acq On : 29 May 2019 4:07 pm
Operator : TB
Sample : 9E29058-CAL2
Misc : 1X 5mL 0.2ppb VOC DI+MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:46 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration







TIC: VC19052905.D\data.ms

(25) 1,1,1-Trichloroethane

5.536min (-0.017) 0.19 ug/L m

response 657

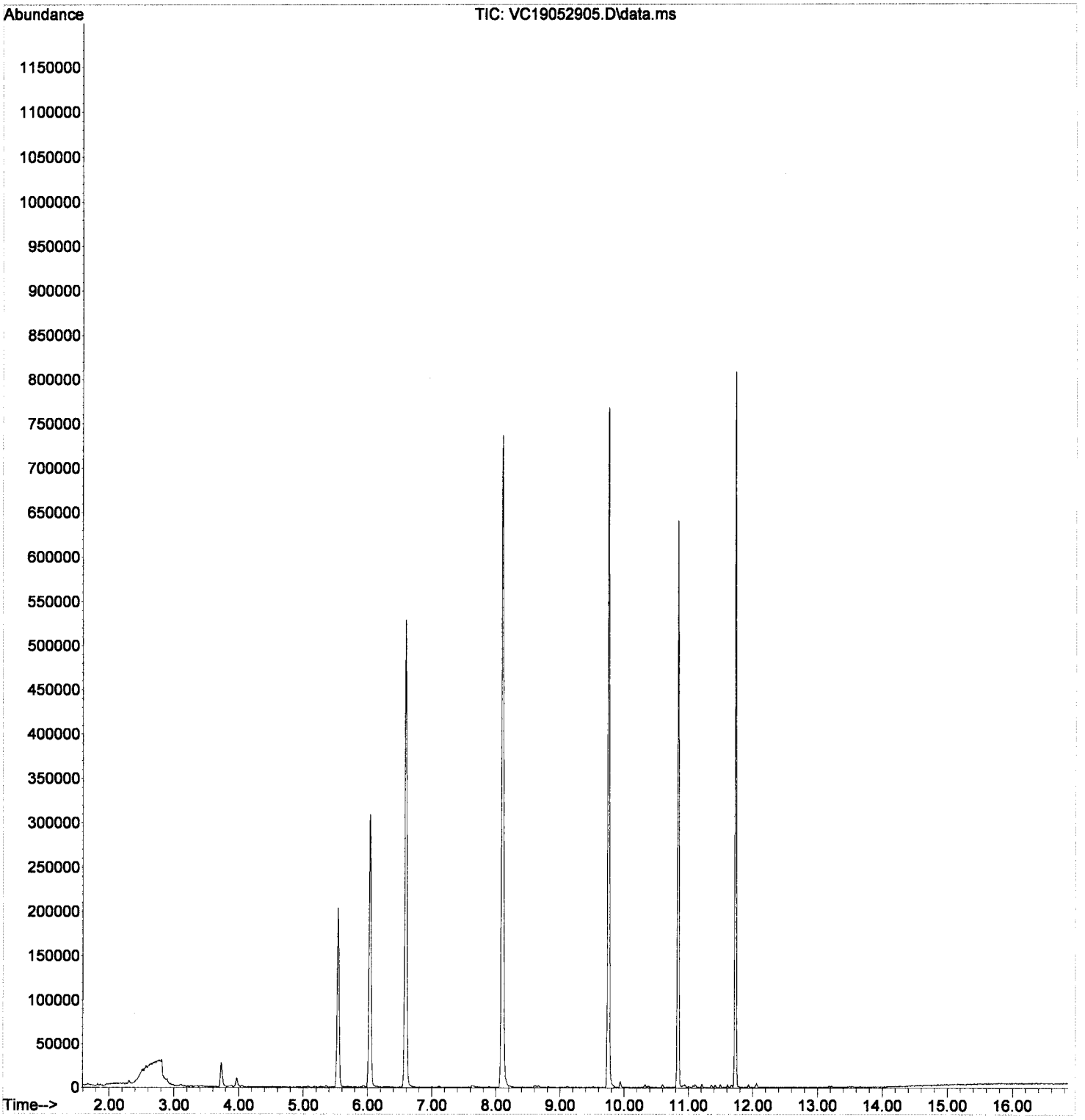
Ion	Exp%	Act%
96.90	100	100
98.90	65.60	64.37
61.00	42.20	0.00# - present
0.00	0.00	0.00

5/30/19

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052905.D
Acq On : 29 May 2019 4:07 pm
Operator : TB
Sample : 9E29058-CAL2
Misc : 1X 5mL 0.2ppb VOC DI+MeOH
ALS Vial : 5 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 12:04:06 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052906.D
Acq On : 29 May 2019 4:35 pm
Operator : TB
Sample : 9E29058-CAL3
Misc : 1X 5mL 0.4ppb VOC DI+MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

post
5/30/19

Quant Time: May 30 12:05:36 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.032	168	254275	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.749	117	441530	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.726	152	188614	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.539	111	132413	47.12	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.591	114	485518	49.43	ug/L		0.00
39) Toluene-d8 (S)	8.094	98	596173	49.79	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.837	174	163321	49.86	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.664	85	840	0.37	ug/L		88
3) Chloromethane	1.864	50	1870	0.52	ug/L		99
4) Vinyl Chloride	1.956	62	1058	0.41	ug/L		74
5) Bromomethane	2.308	96	2178	1.55	ug/L		97
6) Chloroethane	0.000		0	N.D.	d		
7) Trichlorofluoromethane	2.582	101	561	0.38	ug/L		76
8) 1,1-Dichloroethene	3.105	61	1130	0.44	ug/L		91
9) Carbon Disulfide	3.118	76	1568	0.39	ug/L		74
10) Freon 113	3.166	101	935	0.45	ug/L	#	48
11) Iodomethane	3.245	142	415	0.45	ug/L	#	76
12) Methylene Chloride	3.732	84	15095	5.22	ug/L		96
13) Acetone	0.000		0	N.D.	d		
14) t-1,2-Dichloroethene	3.902	61	1162	0.38	ug/L		85
15) n-Hexane	3.975	86	1123	2.25	ug/L	#	74
16) Methyl-tert-butyl-ether	4.042	73	3675	0.41	ug/L		88
17) 1,1-Dichloroethane	4.529	63	1418	0.38	ug/L		82
18) Acrylonitrile	4.620	53	342	0.23	ug/L		97
19) c-1,2-Dichloroethene	5.076	61	1412	0.42	ug/L		85
20) 2,2-Dichloropropane	5.180	77	1168	0.40	ug/L		77
21) Bromochloromethane	5.271	49	660	0.33	ug/L		82
22) Chloroform	5.356	83	2051	0.48	ug/L		94
23) Carbon Tetrachloride	5.472	117	700	0.30	ug/L		87
24) Tetrahydrofuran	5.539	42	841	0.55	ug/L	#	66
25) 1,1,1-Trichloroethane	5.545	97	1382	0.40	ug/L		83
27) 1,1-Dichloropropene	5.691	75	1310	0.39	ug/L		90
28) 2-Butanone (MEK)	0.000		0	N.D.	d		
29) Benzene	5.934	78	4546	0.41	ug/L		96
30) 1,2-Dichloroethane (EDC)	6.147	62	1395	0.42	ug/L		80
31) iso-Butyl Alcohol	0.000		0	N.D.	d		
33) Trichloroethene (TCE)	6.561	130	1054	0.35	ug/L	#	72
34) Dibromomethane	6.999	93	572	0.37	ug/L	#	68
35) 1,2-Dichloropropane	7.114	63	1068	0.37	ug/L		95
36) Bromodichloromethane	7.181	83	872	0.33	ug/L		86
38) c-1,3-Dichloropropene	7.899	75	1128	0.30	ug/L		93
40) Toluene	8.161	91	5721	0.50	ug/L		99
41) Tetrachloroethene (PCE)	8.605	166	1321	0.52	ug/L		77
42) 4-Methyl-2-Pentanone (...	8.623	43	3139	0.91	ug/L		80
43) t-1,3-Dichloropropene	8.654	75	908	0.27	ug/L		95
44) 1,1,2-Trichloroethane	8.818	97	911	0.37	ug/L		82
45) Dibromochloromethane	9.006	129	549	0.31	ug/L		81
46) 1,3-Dichloropropane	9.116	76	1866	0.42	ug/L		96
47) 1,2-Dibromoethane (EDB)	9.256	107	794	0.32	ug/L		70
48) 2-Hexanone	9.511	43	1839	0.74	ug/L		94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052906.D
Acq On : 29 May 2019 4:35 pm
Operator : TB
Sample : 9E29058-CAL3
Misc : 1X 5mL 0.4ppb VOC DI+MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 12:05:36 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

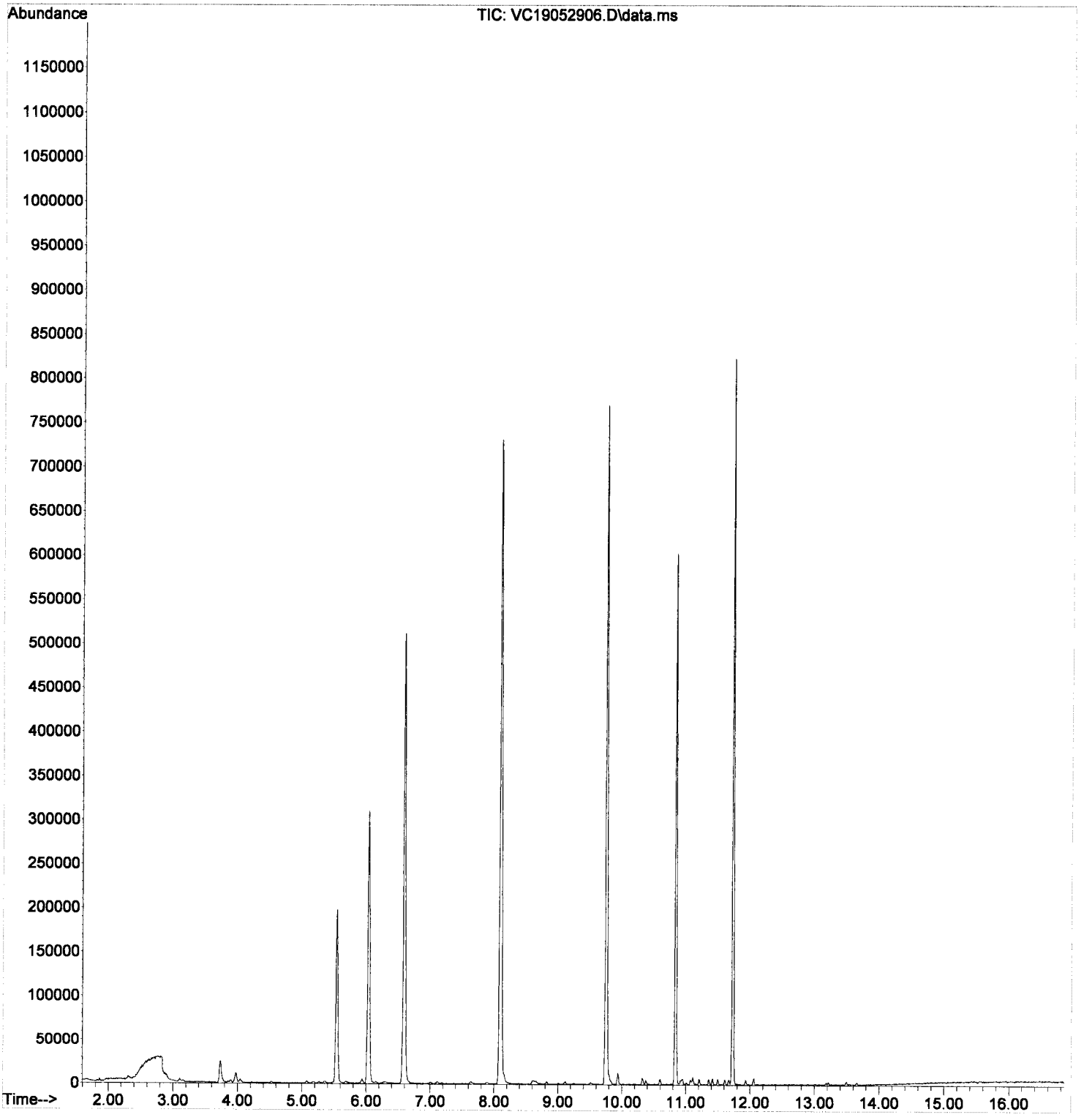
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.767	112	3136	0.46	ug/L	#	64
50) Ethylbenzene	9.797	91	5392	0.46	ug/L		98
51) 1,1,1,2-Tetrachloroethane	9.834	131	602	0.29	ug/L		90
52) m,p-Xylenes (2)	9.937	91	7624	0.88	ug/L		90
53) o-Xylene	10.326	91	3760	0.42	ug/L		92
54) Styrene	10.375	104	2262	0.33	ug/L		95
55) Bromoform	10.393	173	186	0.19	ug/L		93
56) Isopropylbenzene	10.594	105	4105	0.40	ug/L		94
59) Bromobenzene	10.917	156	1043	0.41	ug/L		83
60) n-Propylbenzene	10.947	91	4750	0.42	ug/L		99
61) 1,1,2,2-Tetrachloroethane	11.008	83	1001	0.39	ug/L		71
62) 2-Chlorotoluene	11.069	126	911	0.39	ug/L	#	77
63) 1,3,5-Trimethylbenzene	11.105	105	3139	0.40	ug/L		98
64) 1,2,3-Trichloropropane	11.117	110	500	0.48	ug/L		84
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.			
66) 4-Chlorotoluene	11.209	91	2912	0.43	ug/L		97
67) tert-Butylbenzene	11.361	91	1681	0.40	ug/L		93
68) 1,2,4-Trimethylbenzene	11.415	105	3385	0.43	ug/L		90
69) sec-Butylbenzene	11.501	105	3773	0.42	ug/L		92
70) 4-Isopropyltoluene	11.610	119	3163	0.42	ug/L		98
71) 1,3-Dichlorobenzene	11.677	146	1855	0.44	ug/L		90
72) 1,4-Dichlorobenzene	11.744	146	1914	0.46	ug/L		95
73) n-Butylbenzene	11.932	91	2690	0.44	ug/L		91
74) 1,2-Dichlorobenzene	12.060	146	1753	0.45	ug/L		93
75) 1,2-Dibromo-3-Chloropr...	0.000		0	N.D.	d		
76) Hexachlorobutadiene	13.192	223	375	0.62	ug/L	#	37
77) 1,2,4-Trichlorobenzene	13.216	180	812	0.35	ug/L		90
78) Naphthalene	13.496	128	2785	0.33	ug/L		94
79) 1,2,3-Trichlorobenzene	13.660	180	850	0.37	ug/L		92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052906.D
Acq On : 29 May 2019 4:35 pm
Operator : TB
Sample : 9E29058-CAL3
Misc : 1X 5mL 0.4ppb VOC DI+MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 12:05:36 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052906.D
Acq On : 29 May 2019 4:35 pm
Operator : TB
Sample : 9E29058-CAL3
Misc : 1X 5mL 0.4ppb VOC DI+MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:48 2019
Quant Method : C:\msdchem\1\METHODS\~~VC190529S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

5/30/19 pre

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.032	168	254275	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.749	117	441530	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.726	152	188614	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.539	111	132413	47.12	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.591	114	485518	49.43	ug/L		0.00
39) Toluene-d8 (S)	8.094	98	596173	49.79	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.837	174	163321	49.86	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.664	85	840	0.37	ug/L		88
3) Chloromethane	1.864	50	1870	0.52	ug/L		99
4) Vinyl Chloride	1.956	62	1058	0.41	ug/L		74
5) Bromomethane	2.308	96	2178	1.55	ug/L		97
6) Chloroethane	2.442	64	407	0.43	ug/L	#	1
7) Trichlorofluoromethane	2.582	101	561	0.38	ug/L		76
8) 1,1-Dichloroethene	3.105	61	1130	0.44	ug/L		91
9) Carbon Disulfide	3.118	76	1568	0.39	ug/L		74
10) Freon 113	3.166	101	935	0.45	ug/L	#	48
11) Iodomethane	3.245	142	415	0.45	ug/L	#	76
12) Methylene Chloride	3.732	84	15095	5.22	ug/L		96
13) Acetone	3.854	43	2175	1.97	ug/L		93
14) t-1,2-Dichloroethene	3.902	61	1162	0.38	ug/L		85
15) n-Hexane	3.975	86	1123	2.25	ug/L	#	74
16) Methyl-tert-butyl-ether	4.042	73	3675	0.41	ug/L		88
17) 1,1-Dichloroethane	4.529	63	1418	0.38	ug/L		82
18) Acrylonitrile	4.620	53	342	0.23	ug/L		97
19) c-1,2-Dichloroethene	5.076	61	1412	0.42	ug/L		85
20) 2,2-Dichloropropane	5.180	77	1168	0.40	ug/L		77
21) Bromochloromethane	5.271	49	660	0.33	ug/L		82
22) Chloroform	5.356	83	2051	0.48	ug/L		94
23) Carbon Tetrachloride	5.472	117	700	0.30	ug/L		87
24) Tetrahydrofuran	5.539	42	841	0.55	ug/L	#	66
25) 1,1,1-Trichloroethane	5.545	97	1382	0.40	ug/L		83
27) 1,1-Dichloropropene	5.691	75	1310	0.39	ug/L		90
28) 2-Butanone (MEK)	5.721	43	1770	0.86	ug/L		91
29) Benzene	5.934	78	4546	0.41	ug/L		96
30) 1,2-Dichloroethane (EDC)	6.147	62	1395	0.42	ug/L		80
31) iso-Butyl Alcohol	6.287	43	1484	5.89	ug/L		90
33) Trichloroethene (TCE)	6.561	130	1054	0.35	ug/L	#	72
34) Dibromomethane	6.999	93	572	0.37	ug/L	#	68
35) 1,2-Dichloropropane	7.114	63	1068	0.37	ug/L		95
36) Bromodichloromethane	7.181	83	872	0.33	ug/L		86
38) c-1,3-Dichloropropene	7.899	75	1128	0.30	ug/L		93
40) Toluene	8.161	91	5721	0.50	ug/L		99
41) Tetrachloroethene (PCE)	8.605	166	1321	0.52	ug/L		77
42) 4-Methyl-2-Pentanone (...	8.623	43	3139	0.91	ug/L		80
43) t-1,3-Dichloropropene	8.654	75	908	0.27	ug/L		95
44) 1,1,2-Trichloroethane	8.818	97	911	0.37	ug/L		82
45) Dibromochloromethane	9.006	129	549	0.31	ug/L		81
46) 1,3-Dichloropropane	9.116	76	1866	0.42	ug/L		96
47) 1,2-Dibromoethane (EDB)	9.256	107	794	0.32	ug/L		70
48) 2-Hexanone	9.511	43	1839	0.74	ug/L		94

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052906.D
Acq On : 29 May 2019 4:35 pm
Operator : TB
Sample : 9E29058-CAL3
Misc : 1X 5mL 0.4ppb VOC DI+MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:48 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

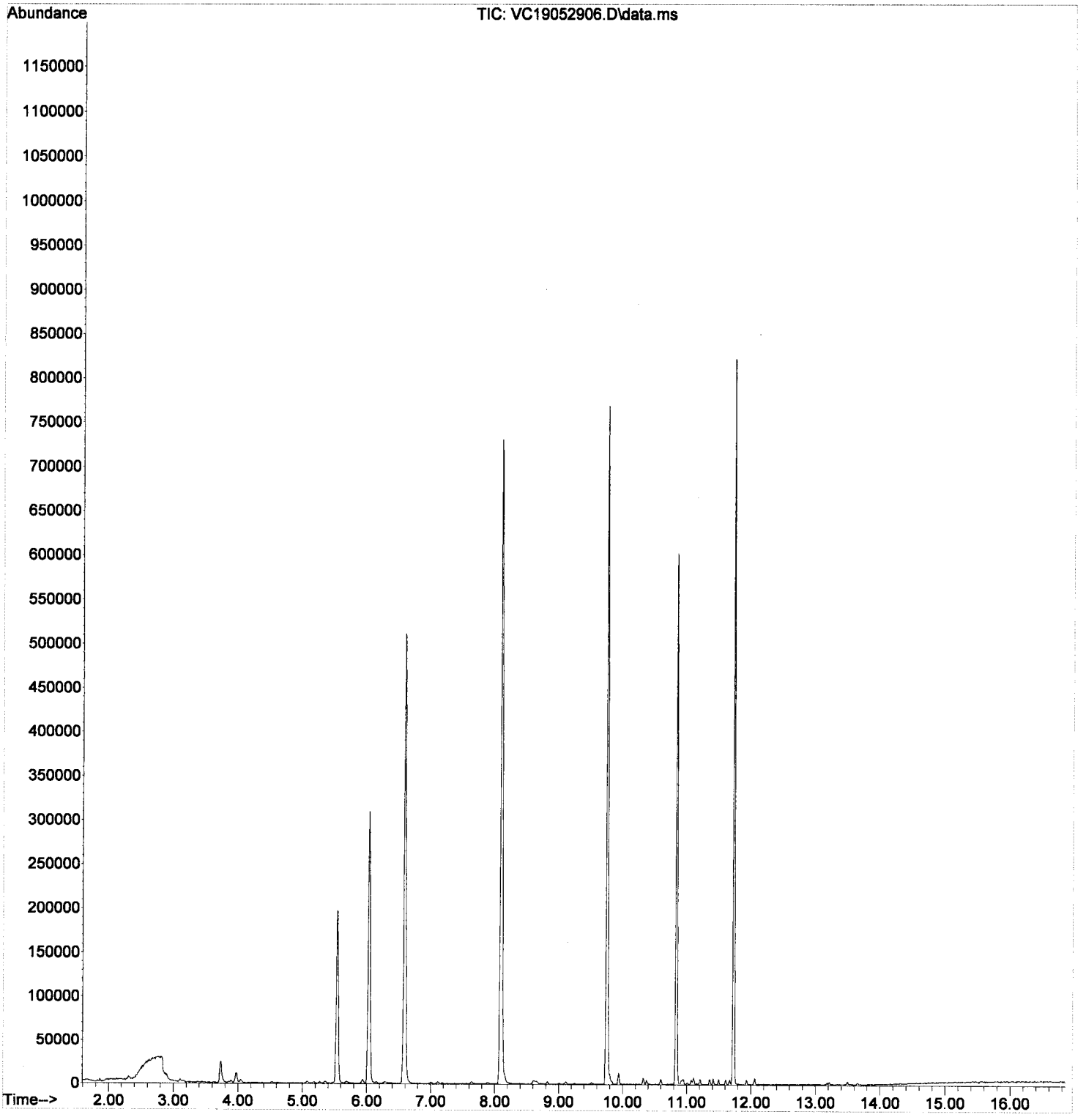
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.767	112	3136	0.46	ug/L	#	64
50) Ethylbenzene	9.797	91	5392	0.46	ug/L		98
51) 1,1,1,2-Tetrachloroethane	9.834	131	602	0.29	ug/L		90
52) m,p-Xylenes (2)	9.937	91	7624	0.88	ug/L		90
53) o-Xylene	10.326	91	3760	0.42	ug/L		92
54) Styrene	10.375	104	2262	0.33	ug/L		95
55) Bromoform	10.393	173	186	0.19	ug/L		93
56) Isopropylbenzene	10.594	105	4105	0.40	ug/L		94
59) Bromobenzene	10.917	156	1043	0.41	ug/L		83
60) n-Propylbenzene	10.947	91	4750	0.42	ug/L		99
61) 1,1,2,2-Tetrachloroethane	11.008	83	1001	0.39	ug/L		71
62) 2-Chlorotoluene	11.069	126	911	0.39	ug/L	#	77
63) 1,3,5-Trimethylbenzene	11.105	105	3139	0.40	ug/L		98
64) 1,2,3-Trichloropropane	11.117	110	500	0.48	ug/L		84
65) t-1,4-Dichloro-2-butene	0.000		0	N.D.			
66) 4-Chlorotoluene	11.209	91	2912	0.43	ug/L		97
67) tert-Butylbenzene	11.361	91	1681	0.40	ug/L		93
68) 1,2,4-Trimethylbenzene	11.415	105	3385	0.43	ug/L		90
69) sec-Butylbenzene	11.501	105	3773	0.42	ug/L		92
70) 4-Isopropyltoluene	11.610	119	3163	0.42	ug/L		98
71) 1,3-Dichlorobenzene	11.677	146	1855	0.44	ug/L		90
72) 1,4-Dichlorobenzene	11.744	146	1914	0.46	ug/L		95
73) n-Butylbenzene	11.932	91	2690	0.44	ug/L		91
74) 1,2-Dichlorobenzene	12.060	146	1753	0.45	ug/L		93
75) 1,2-Dibromo-3-Chloropr...	12.681	157	107	0.18	ug/L	#	30
76) Hexachlorobutadiene	13.192	223	375	0.62	ug/L	#	37
77) 1,2,4-Trichlorobenzene	13.216	180	812	0.35	ug/L		90
78) Naphthalene	13.496	128	2785	0.33	ug/L		94
79) 1,2,3-Trichlorobenzene	13.660	180	850	0.37	ug/L		92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052906.D
Acq On : 29 May 2019 4:35 pm
Operator : TB
Sample : 9E29058-CAL3
Misc : 1X 5mL 0.4ppb VOC DI+MeOH
ALS Vial : 6 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:48 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052907.D
Acq On : 29 May 2019 5:02 pm
Operator : TB
Sample : 9E29058-CAL4
Misc : 1X 5mL 1ppb VOC DI+MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 12:06:59 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

post
5/30/19
5/30/19

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.034	168	245560	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.751	117	430913	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.728	152	183911	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.535	111	127981	47.16	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.588	114	472967	49.86	ug/L		0.00
39) Toluene-d8 (S)	8.096	98	583864	49.96	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.834	174	158686	49.68	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.660	85	2045	0.94	ug/L		78
3) Chloromethane	1.861	50	3872	1.11	ug/L		98
4) Vinyl Chloride	1.952	62	2495	0.99	ug/L		83
5) Bromomethane	2.299	96	2456	1.81	ug/L		96
7) Trichlorofluoromethane	2.572	101	1421	0.99	ug/L		82
8) 1,1-Dichloroethene	3.102	61	2472	0.99	ug/L		91
9) Carbon Disulfide	3.108	76	3330	0.86	ug/L		96
10) Freon 113	3.144	101	2147	1.07	ug/L		80
11) Iodomethane	3.242	142	702	0.79	ug/L	#	79
12) Methylene Chloride	3.728	84	15763	5.65	ug/L		93
13) Acetone	3.856	43	3386m	3.17	ug/L		
14) t-1,2-Dichloroethene	3.886	61	2611	0.89	ug/L		93
15) n-Hexane	3.972	86	1382	2.86	ug/L	#	79
16) Methyl-tert-butyl-ether	4.032	73	8517	0.99	ug/L		93
17) 1,1-Dichloroethane	4.519	63	3481	0.96	ug/L		99
18) Acrylonitrile	4.610	53	1313	0.90	ug/L		73
19) c-1,2-Dichloroethene	5.067	61	3087	0.95	ug/L		97
20) 2,2-Dichloropropane	5.176	77	2678	0.95	ug/L		90
21) Bromochloromethane	5.267	49	1861	0.96	ug/L		85
22) Chloroform	5.353	83	4395	1.06	ug/L		96
23) Carbon Tetrachloride	5.474	117	1931	0.85	ug/L		90
24) Tetrahydrofuran	5.547	42	1903	1.28	ug/L		93
25) 1,1,1-Trichloroethane	5.547	97	2923	0.88	ug/L		88
27) 1,1-Dichloropropene	5.675	75	3655	1.13	ug/L		88
28) 2-Butanone (MEK)	5.705	43	4450	2.25	ug/L		97
29) Benzene	5.937	78	11217	1.06	ug/L		93
30) 1,2-Dichloroethane (EDC)	6.156	62	3138	0.99	ug/L		92
31) iso-Butyl Alcohol	6.296	43	6030m	24.77	ug/L		
33) Trichloroethene (TCE)	6.551	130	2995	1.03	ug/L		92
34) Dibromomethane	6.995	93	1272	0.86	ug/L		86
35) 1,2-Dichloropropane	7.111	63	2601	0.93	ug/L		79
36) Bromodichloromethane	7.178	83	2077	0.82	ug/L		94
38) c-1,3-Dichloropropene	7.889	75	3081	0.84	ug/L		77
40) Toluene	8.157	91	12756	1.15	ug/L		99
41) Tetrachloroethene (PCE)	8.595	166	2616	1.06	ug/L		96
42) 4-Methyl-2-Pentanone (...	8.626	43	7035	2.10	ug/L		93
43) t-1,3-Dichloropropene	8.644	75	2671	0.81	ug/L		78
44) 1,1,2-Trichloroethane	8.826	97	2251	0.94	ug/L		92
45) Dibromochloromethane	9.009	129	1390	0.80	ug/L		87
46) 1,3-Dichloropropane	9.106	76	4104	0.94	ug/L		88
47) 1,2-Dibromoethane (EDB)	9.240	107	2135	0.90	ug/L		79
48) 2-Hexanone	9.508	43	4936	2.04	ug/L		93
49) Chlorobenzene	9.769	112	7300	1.09	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052907.D
Acq On : 29 May 2019 5:02 pm
Operator : TB
Sample : 9E29058-CAL4
Misc : 1X 5mL 1ppb VOC DI+MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 12:06:59 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

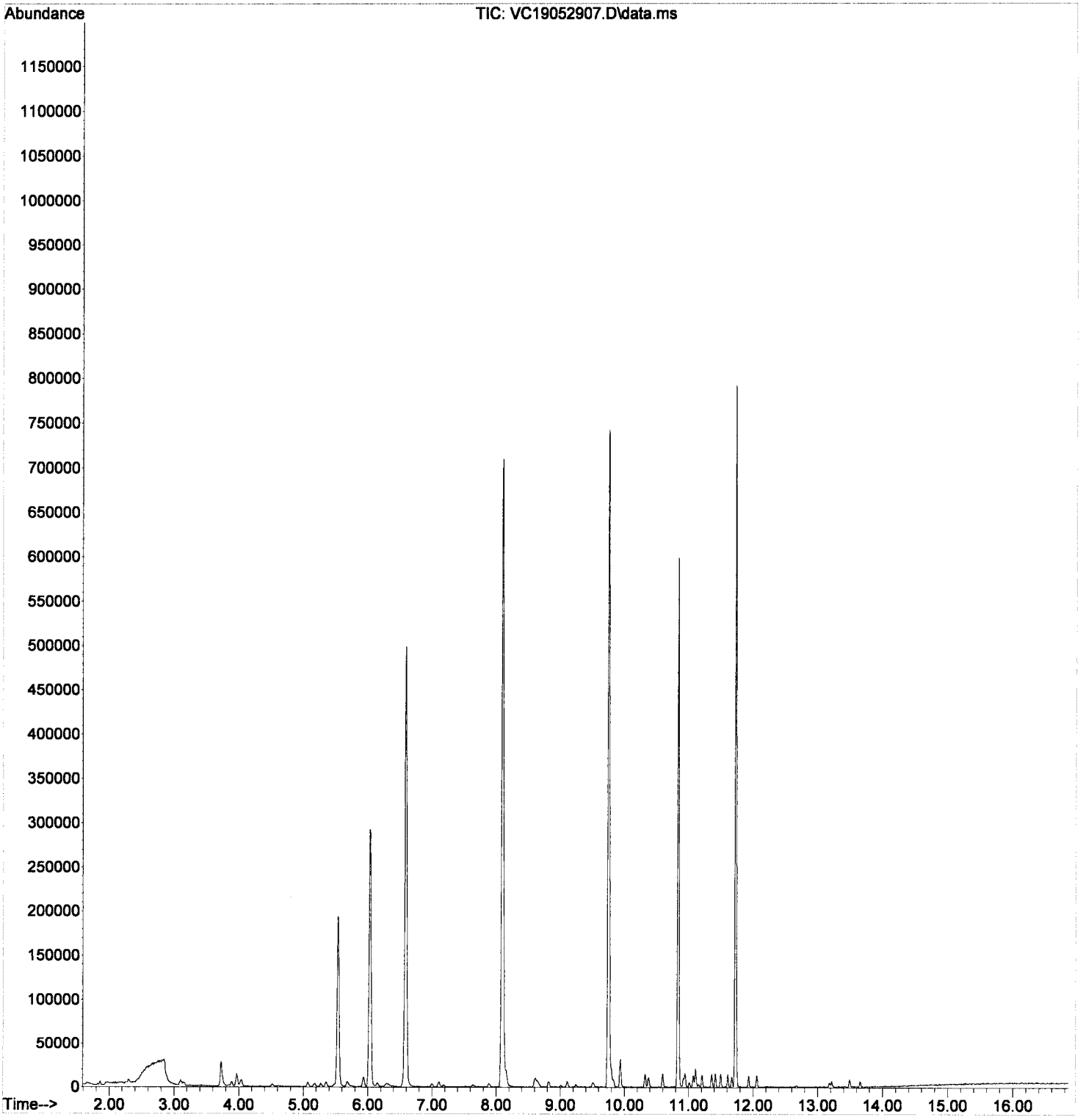
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
50) Ethylbenzene	9.800	91	12069	1.06	ug/L		95
51) 1,1,1,2-Tetrachloroethane	9.824	131	1810	0.88	ug/L	#	73
52) m,p-Xylenes (2)	9.933	91	17400	2.07	ug/L		97
53) o-Xylene	10.323	91	9051	1.04	ug/L		99
54) Styrene	10.378	104	5658	0.86	ug/L		93
55) Bromoform	10.384	173	619	0.65	ug/L		91
56) Isopropylbenzene	10.597	105	9890	0.98	ug/L		93
59) Bromobenzene	10.919	156	2592	1.05	ug/L	#	82
60) n-Propylbenzene	10.943	91	10579	0.97	ug/L		95
61) 1,1,2,2-Tetrachloroethane	11.010	83	2272	0.90	ug/L		86
62) 2-Chlorotoluene	11.071	126	2285	1.01	ug/L		86
63) 1,3,5-Trimethylbenzene	11.108	105	7772	1.02	ug/L		97
64) 1,2,3-Trichloropropane	11.114	110	983	0.97	ug/L		90
65) t-1,4-Dichloro-2-butene	11.150	88	180	0.57	ug/L	#	63
66) 4-Chlorotoluene	11.211	91	6874	1.05	ug/L		98
67) tert-Butylbenzene	11.357	91	4182	1.02	ug/L		88
68) 1,2,4-Trimethylbenzene	11.412	105	7847	1.01	ug/L		93
69) sec-Butylbenzene	11.497	105	8865	1.00	ug/L		96
70) 4-Isopropyltoluene	11.606	119	6901	0.95	ug/L		96
71) 1,3-Dichlorobenzene	11.667	146	4049	0.99	ug/L		96
72) 1,4-Dichlorobenzene	11.740	146	4368	1.08	ug/L		75
73) n-Butylbenzene	11.929	91	6459	1.07	ug/L		87
74) 1,2-Dichlorobenzene	12.063	146	3804	1.00	ug/L		86
75) 1,2-Dibromo-3-Chloropr...	12.671	157	368	0.64	ug/L	#	45
76) Hexachlorobutadiene	13.182	223	652	1.10	ug/L	#	70
77) 1,2,4-Trichlorobenzene	13.219	180	2286	1.02	ug/L		91
78) Naphthalene	13.492	128	6879	0.84	ug/L		97
79) 1,2,3-Trichlorobenzene	13.657	180	2090	0.93	ug/L		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052907.D
Acq On : 29 May 2019 5:02 pm
Operator : TB
Sample : 9E29058-CAL4
Misc : 1X 5mL 1ppb VOC DI+MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 12:06:59 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052907.D
Acq On : 29 May 2019 5:02 pm
Operator : TB
Sample : 9E29058-CAL4
Misc : 1X 5mL 1ppb VOC DI+MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:50 2019
Quant Method : C:\msdchem\1\METHODS\~~VC190529S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

5/30/19 pre

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.034	168	245560	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.751	117	430913	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.728	152	183911	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.535	111	127981	47.16	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.588	114	472967	49.86	ug/L		0.00
39) Toluene-d8 (S)	8.096	98	583864	49.96	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.834	174	158686	49.68	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.660	85	2045	0.94	ug/L		78
3) Chloromethane	1.861	50	3872	1.11	ug/L		98
4) Vinyl Chloride	1.952	62	2495	0.99	ug/L		83
5) Bromomethane	2.299	96	2456	1.81	ug/L		96
6) Chloroethane	2.445	64	782	0.85	ug/L	#	1
7) Trichlorofluoromethane	2.572	101	1421	0.99	ug/L		82
8) 1,1-Dichloroethene	3.102	61	2472	0.99	ug/L		91
9) Carbon Disulfide	3.108	76	3330	0.86	ug/L		96
10) Freon 113	3.144	101	2147	1.07	ug/L		80
11) Iodomethane	3.242	142	702	0.79	ug/L	#	79
12) Methylene Chloride	3.728	84	15763	5.65	ug/L		93
13) Acetone	~~3.838~~	~~43~~	~~1378~~	~~1.29~~	~~ug/L~~		~~82~~ MI
14) t-1,2-Dichloroethene	3.886	61	2611	0.89	ug/L		93
15) n-Hexane	3.972	86	1382	2.86	ug/L	#	79
16) Methyl-tert-butyl-ether	4.032	73	8517	0.99	ug/L		93
17) 1,1-Dichloroethane	4.519	63	3481	0.96	ug/L		99
18) Acrylonitrile	4.610	53	1313	0.90	ug/L		73
19) c-1,2-Dichloroethene	5.067	61	3087	0.95	ug/L		97
20) 2,2-Dichloropropane	5.176	77	2678	0.95	ug/L		90
21) Bromochloromethane	5.267	49	1861	0.96	ug/L		85
22) Chloroform	5.353	83	4395	1.06	ug/L		96
23) Carbon Tetrachloride	5.474	117	1931	0.85	ug/L		90
24) Tetrahydrofuran	5.547	42	1903	1.28	ug/L		93
25) 1,1,1-Trichloroethane	5.547	97	2923	0.88	ug/L		88
27) 1,1-Dichloropropene	5.675	75	3655	1.13	ug/L		88
28) 2-Butanone (MEK)	5.705	43	4450	2.25	ug/L		97
29) Benzene	5.937	78	11217	1.06	ug/L		93
30) 1,2-Dichloroethane (EDC)	6.156	62	3138	0.99	ug/L		92
31) iso-Butyl Alcohol	~~6.296~~	~~43~~	~~3491~~	~~14.34~~	~~ug/L~~		~~90~~ MI
33) Trichloroethene (TCE)	6.551	130	2995	1.03	ug/L		92
34) Dibromomethane	6.995	93	1272	0.86	ug/L		86
35) 1,2-Dichloropropane	7.111	63	2601	0.93	ug/L		79
36) Bromodichloromethane	7.178	83	2077	0.82	ug/L		94
38) c-1,3-Dichloropropene	7.889	75	3081	0.84	ug/L		77
40) Toluene	8.157	91	12756	1.15	ug/L		99
41) Tetrachloroethene (PCE)	8.595	166	2616	1.06	ug/L		96
42) 4-Methyl-2-Pentanone (...	8.626	43	7035	2.10	ug/L		93
43) t-1,3-Dichloropropene	8.644	75	2671	0.81	ug/L		78
44) 1,1,2-Trichloroethane	8.826	97	2251	0.94	ug/L		92
45) Dibromochloromethane	9.009	129	1390	0.80	ug/L		87
46) 1,3-Dichloropropane	9.106	76	4104	0.94	ug/L		88
47) 1,2-Dibromoethane (EDB)	9.240	107	2135	0.90	ug/L		79
48) 2-Hexanone	9.508	43	4936	2.04	ug/L		93

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052907.D
Acq On : 29 May 2019 5:02 pm
Operator : TB
Sample : 9E29058-CAL4
Misc : 1X 5mL 1ppb VOC DI+MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:50 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

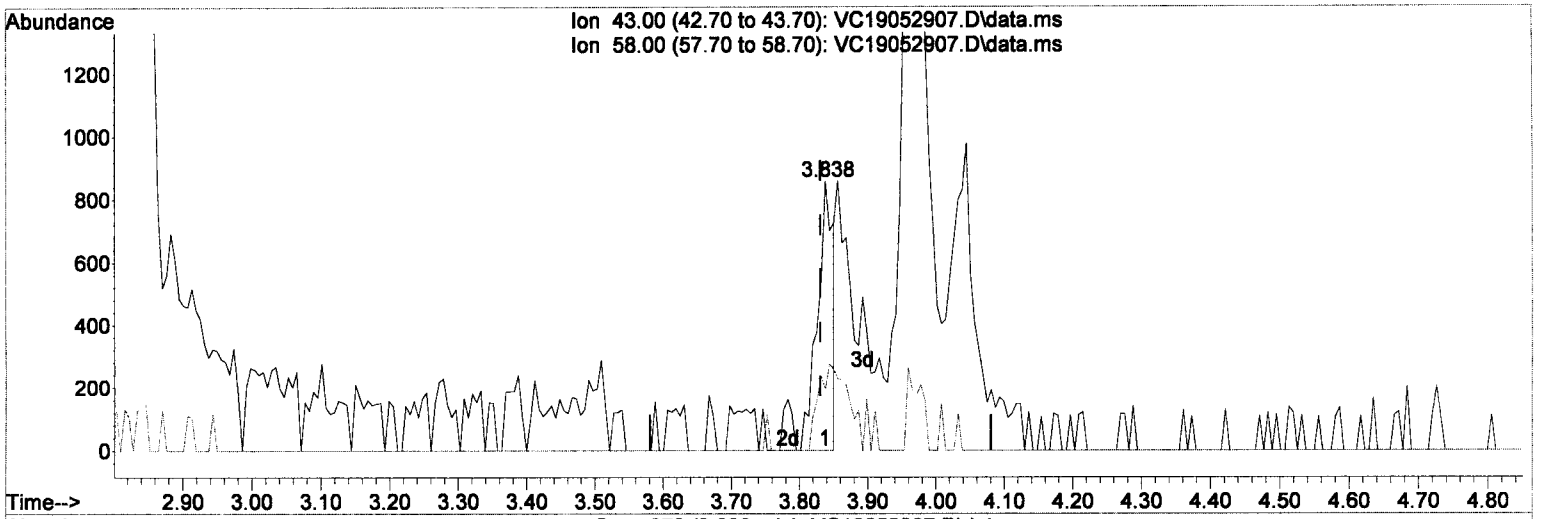
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.769	112	7300	1.09	ug/L		98
50) Ethylbenzene	9.800	91	12069	1.06	ug/L		95
51) 1,1,1,2-Tetrachloroethane	9.824	131	1810	0.88	ug/L	#	73
52) m,p-Xylenes (2)	9.933	91	17400	2.07	ug/L		97
53) o-Xylene	10.323	91	9051	1.04	ug/L		99
54) Styrene	10.378	104	5658	0.86	ug/L		93
55) Bromoform	10.384	173	619	0.65	ug/L		91
56) Isopropylbenzene	10.597	105	9890	0.98	ug/L		93
59) Bromobenzene	10.919	156	2592	1.05	ug/L	#	82
60) n-Propylbenzene	10.943	91	10579	0.97	ug/L		95
61) 1,1,2,2-Tetrachloroethane	11.010	83	2272	0.90	ug/L		86
62) 2-Chlorotoluene	11.071	126	2285	1.01	ug/L		86
63) 1,3,5-Trimethylbenzene	11.108	105	7772	1.02	ug/L		97
64) 1,2,3-Trichloropropane	11.114	110	983	0.97	ug/L		90
65) t-1,4-Dichloro-2-butene	11.150	88	180	0.57	ug/L	#	63
66) 4-Chlorotoluene	11.211	91	6874	1.05	ug/L		98
67) tert-Butylbenzene	11.357	91	4182	1.02	ug/L		88
68) 1,2,4-Trimethylbenzene	11.412	105	7847	1.01	ug/L		93
69) sec-Butylbenzene	11.497	105	8865	1.00	ug/L		96
70) 4-Isopropyltoluene	11.606	119	6901	0.95	ug/L		96
71) 1,3-Dichlorobenzene	11.667	146	4049	0.99	ug/L		96
72) 1,4-Dichlorobenzene	11.740	146	4368	1.08	ug/L		75
73) n-Butylbenzene	11.929	91	6459	1.07	ug/L		87
74) 1,2-Dichlorobenzene	12.063	146	3804	1.00	ug/L		86
75) 1,2-Dibromo-3-Chloropr...	12.671	157	368	0.64	ug/L	#	45
76) Hexachlorobutadiene	13.182	223	652	1.10	ug/L	#	70
77) 1,2,4-Trichlorobenzene	13.219	180	2286	1.02	ug/L		91
78) Naphthalene	13.492	128	6879	0.84	ug/L		97
79) 1,2,3-Trichlorobenzene	13.657	180	2090	0.93	ug/L		95

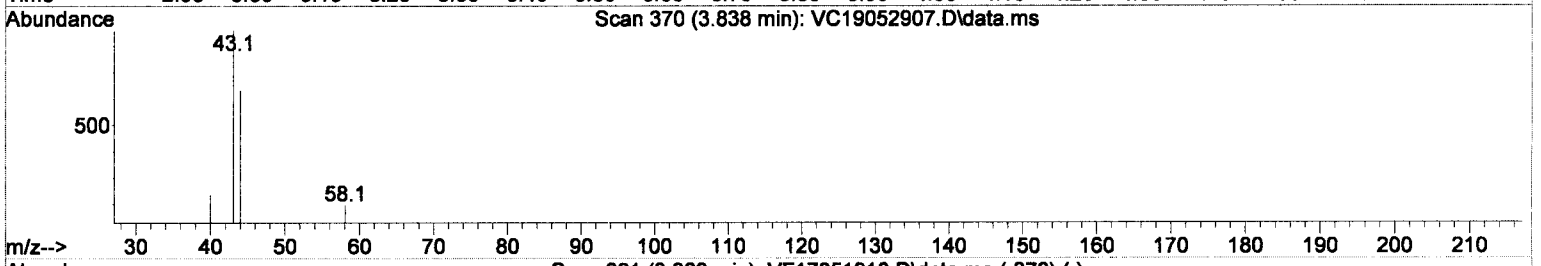
(#) = qualifier out of range (m) = manual integration (+) = signals summed

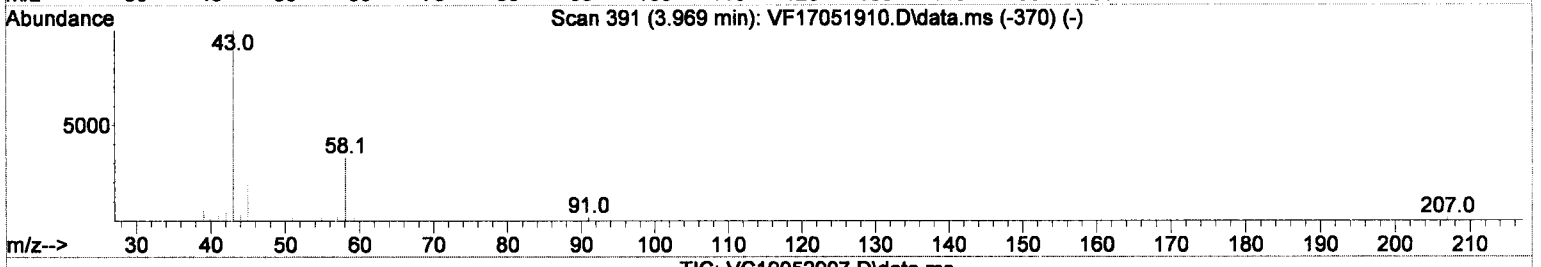
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052907.D
Acq On : 29 May 2019 5:02 pm
Operator : TB
Sample : 9E29058-CAL4
Misc : 1X 5mL 1ppb VOC DI+MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:50 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration







TIC: VC19052907.D\data.ms

(13) Acetone

3.838min (+0.007) 1.29 ug/L

response 1378

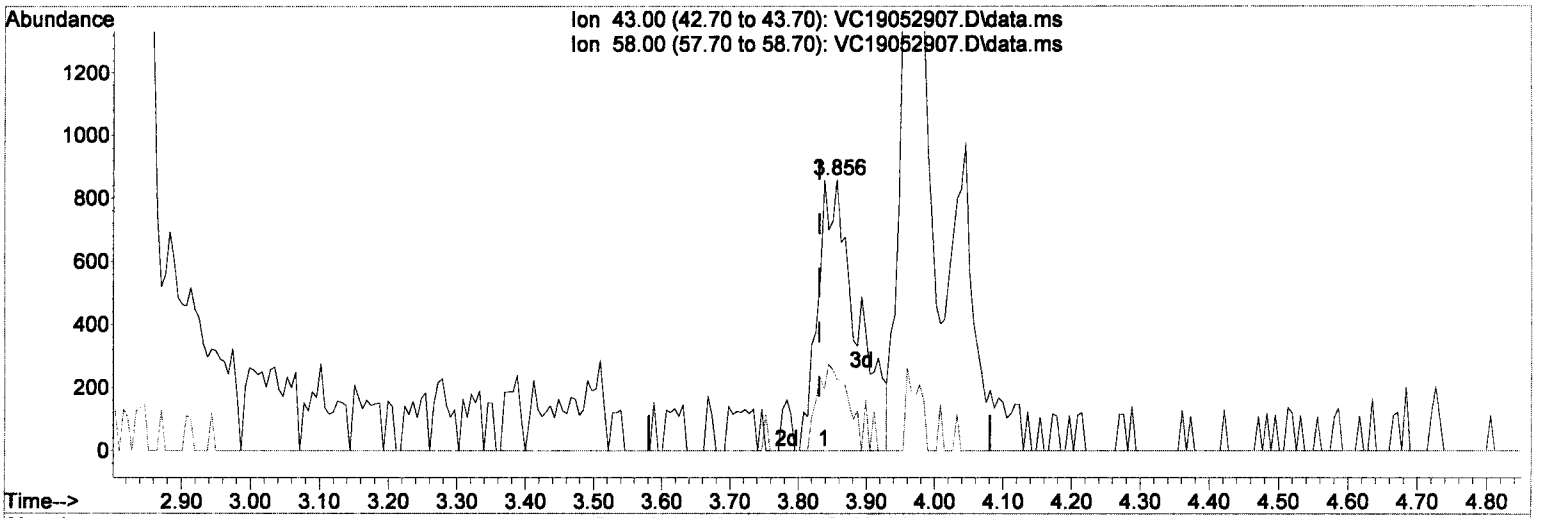
Ion	Exp%	Act%
43.00	100	100
58.00	33.10	22.75
0.00	0.00	0.00
0.00	0.00	0.00

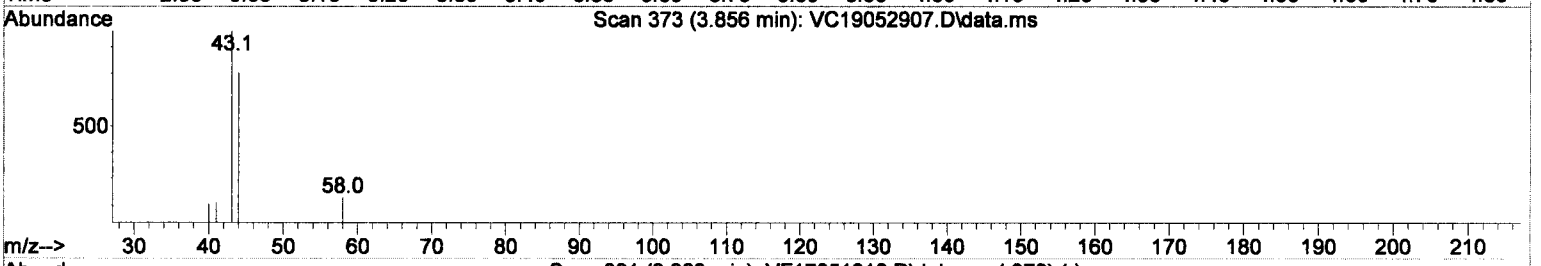
MF

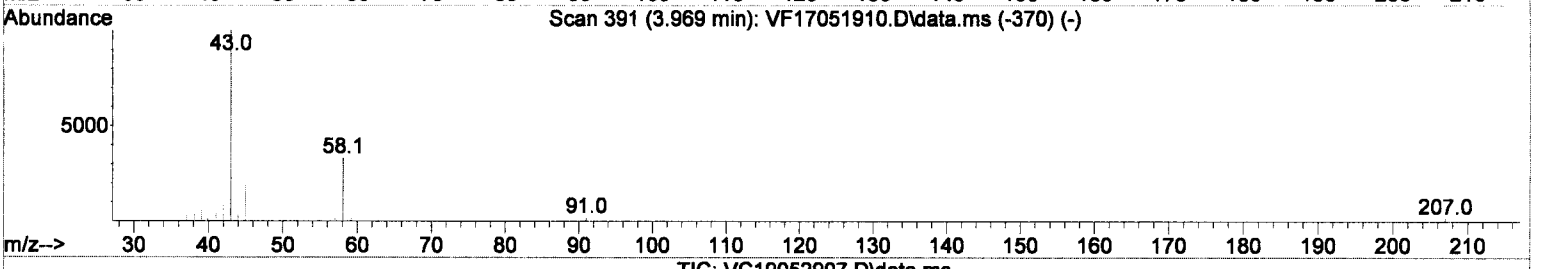
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052907.D
Acq On : 29 May 2019 5:02 pm
Operator : TB
Sample : 9E29058-CAL4
Misc : 1X 5mL 1ppb VOC DI+MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:50 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration







TIC: VC19052907.D\data.ms

(13) Acetone

3.856min (+0.025) 3.17 ug/L m

response 3386

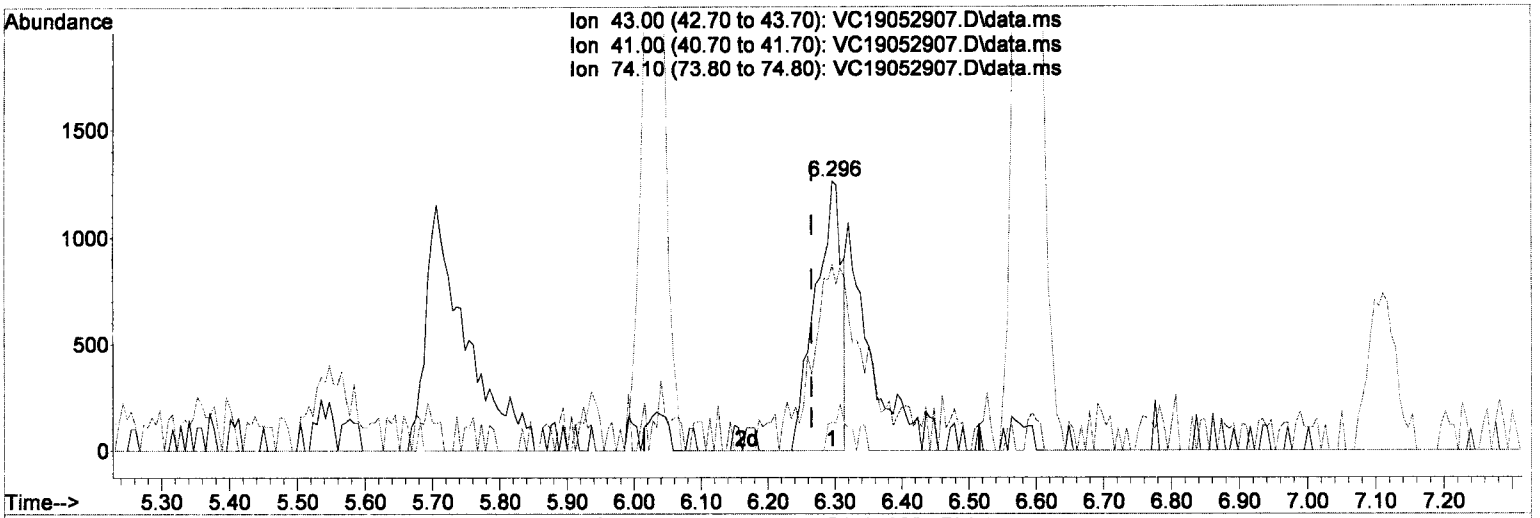
Ion	Exp%	Act%
43.00	100	100
58.00	33.10	26.51
0.00	0.00	0.00
0.00	0.00	0.00

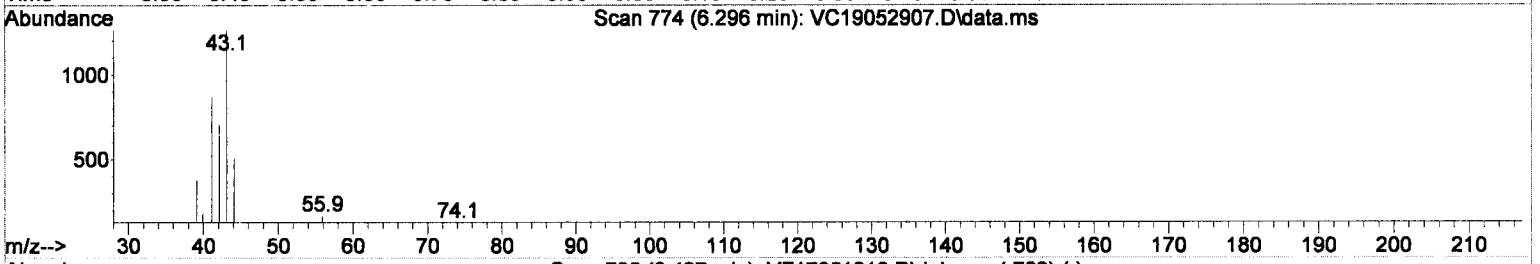
5/30/19

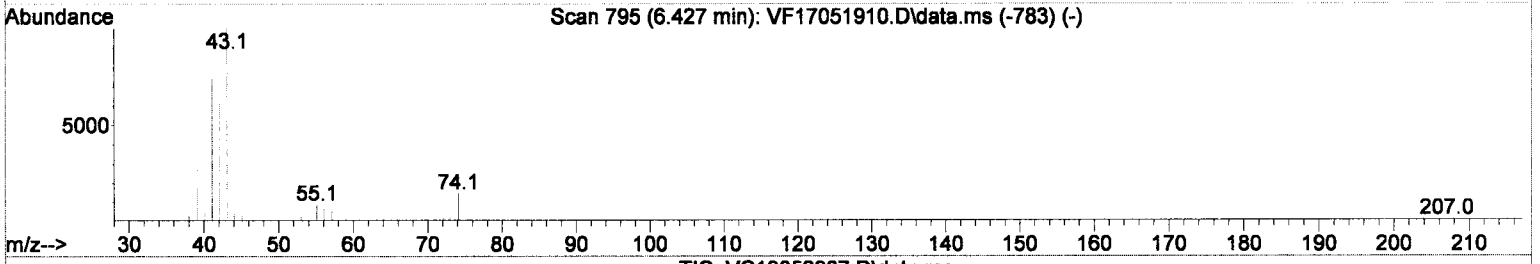
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052907.D
Acq On : 29 May 2019 5:02 pm
Operator : TB
Sample : 9E29058-CAL4
Misc : 1X 5mL 1ppb VOC DI+MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:50 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration







TIC: VC19052907.D\data.ms

(31) iso-Butyl Alcohol

6.296min (+0.030) 14.34 ug/L

response 3491

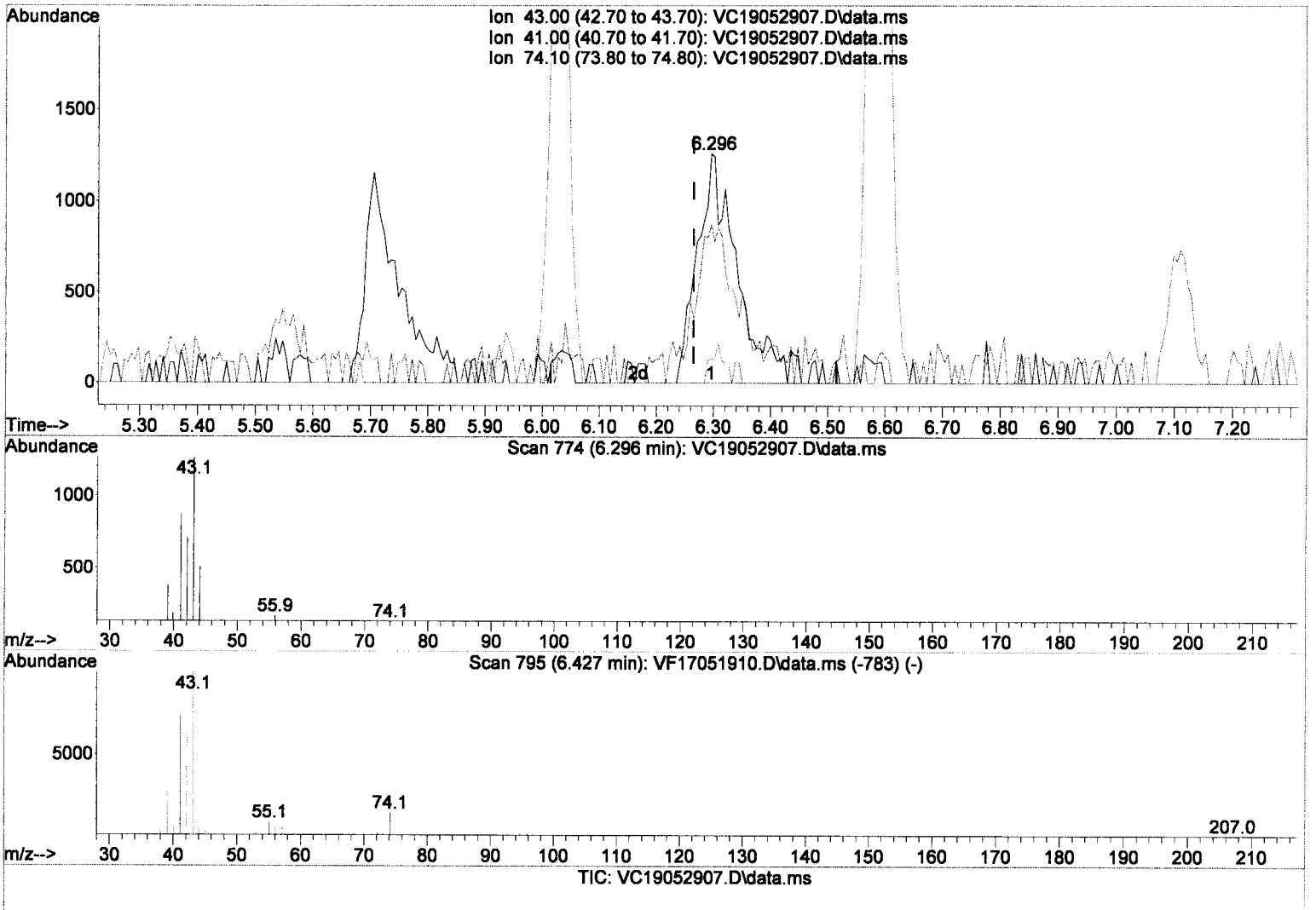
Ion	Exp%	Act%
43.00	100	100
41.00	78.40	68.99
74.10	9.40	10.55
0.00	0.00	0.00

MF

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052907.D
Acq On : 29 May 2019 5:02 pm
Operator : TB
Sample : 9E29058-CAL4
Misc : 1X 5mL 1ppb VOC DI+MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:50 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



TIC: VC19052907.D\data.ms

(31) iso-Butyl Alcohol

6.296min (+0.030) 24.77 ug/L m

response 6030

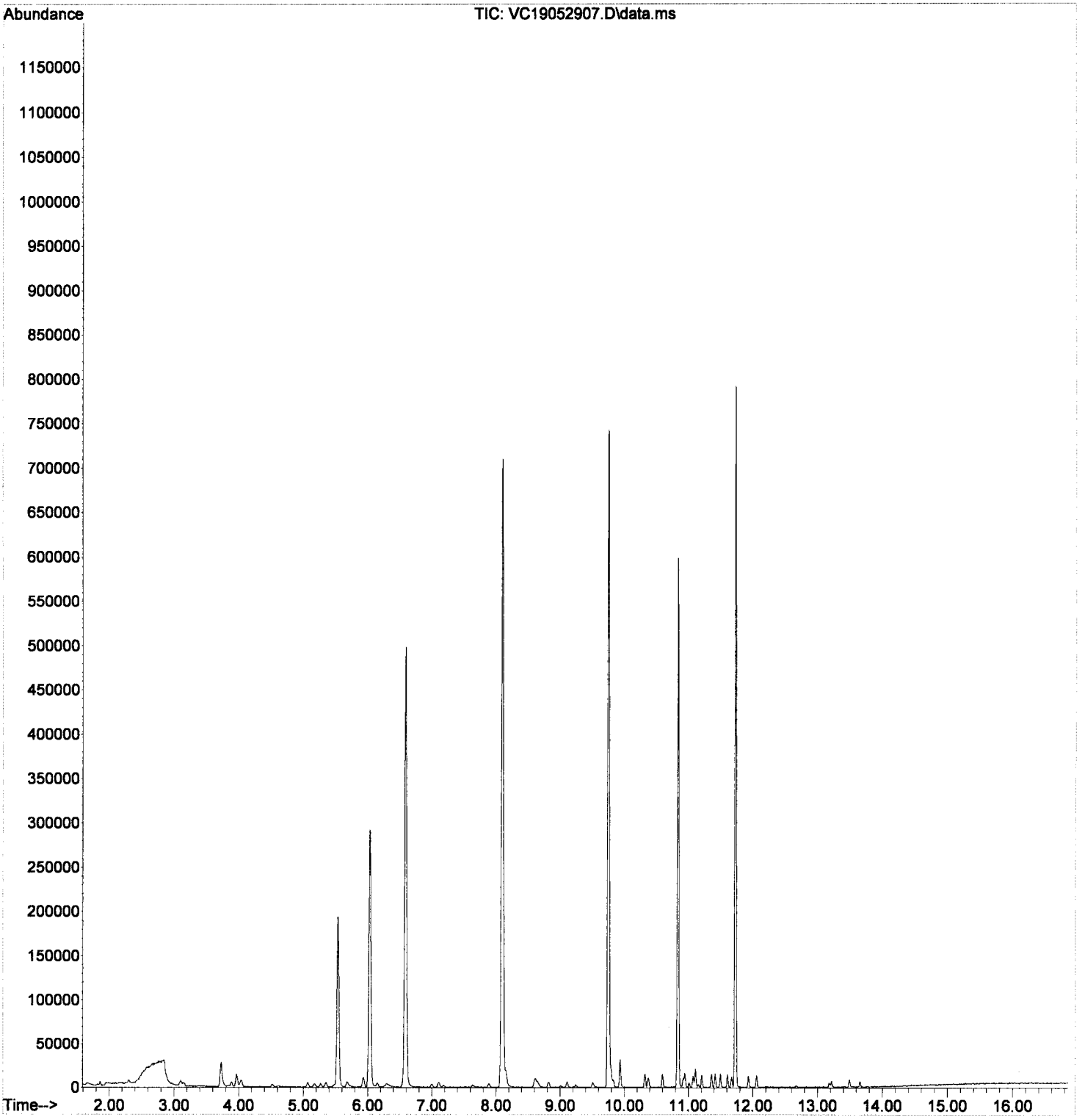
Ion	Exp%	Act%
43.00	100	100
41.00	78.40	68.99
74.10	9.40	10.55
0.00	0.00	0.00

5/30/19

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052907.D
Acq On : 29 May 2019 5:02 pm
Operator : TB
Sample : 9E29058-CAL4
Misc : 1X 5mL 1ppb VOC DI+MeOH
ALS Vial : 7 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:50 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

5/30/19 post

Quant Time: May 30 11:45:52 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.035	168	254825	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	451536	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.729	152	194740	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.536	111	140136	49.76	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.589	114	496387	50.43	ug/L		0.00
39) Toluene-d8 (S)	8.097	98	607810	49.63	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.835	174	166852	49.33	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.667	85	4563	2.03	ug/L		94
3) Chloromethane	1.862	50	7629	2.11	ug/L		94
4) Vinyl Chloride	1.953	62	5260	2.01	ug/L		91
5) Bromomethane	2.306	96	4475	3.17	ug/L		92
6) Chloroethane	2.440	64	2003	2.10	ug/L	#	1
7) Trichlorofluoromethane	2.580	101	2958	1.99	ug/L		94
8) 1,1-Dichloroethene	3.103	61	4891	1.89	ug/L		88
9) Carbon Disulfide	3.115	76	6854	1.70	ug/L		98
10) Freon 113	3.152	101	3908	1.88	ug/L		85
11) Iodomethane	3.249	142	1507	1.64	ug/L	#	75
12) Methylene Chloride	3.729	84	18469	6.37	ug/L		98
13) Acetone	3.845	43	5795	5.23	ug/L		94
14) t-1,2-Dichloroethene	3.894	61	5764	1.90	ug/L		99
15) n-Hexane	3.973	86	1767	3.53	ug/L	#	87
16) Methyl-tert-butyl-ether	4.034	73	17541	1.96	ug/L		91
17) 1,1-Dichloroethane	4.520	63	7479	1.99	ug/L		93
18) Acrylonitrile	4.606	53	2550	1.68	ug/L		86
19) c-1,2-Dichloroethene	5.068	61	6425	1.91	ug/L		99
20) 2,2-Dichloropropane	5.177	77	5498	1.88	ug/L		96
21) Bromochloromethane	5.269	49	3833	1.91	ug/L		98
22) Chloroform	5.354	83	8763	2.03	ug/L		98
23) Carbon Tetrachloride	5.475	117	3774	1.59	ug/L		92
24) Tetrahydrofuran	5.542	42	3294	2.13	ug/L		88
25) 1,1,1-Trichloroethane	5.548	97	6438	1.88	ug/L		98
27) 1,1-Dichloropropene	5.682	75	6475	1.93	ug/L		95
28) 2-Butanone (MEK)	5.701	43	7369	3.59	ug/L		94
29) Benzene	5.938	78	21880	1.99	ug/L		96
30) 1,2-Dichloroethane (EDC)	6.151	62	6601	2.00	ug/L		99
31) iso-Butyl Alcohol	6.291	43	11367	45.00	ug/L		84
33) Trichloroethene (TCE)	6.546	130	6232	2.07	ug/L		87
34) Dibromomethane	6.996	93	2771	1.81	ug/L		87
35) 1,2-Dichloropropane	7.112	63	5608	1.93	ug/L		92
36) Bromodichloromethane	7.179	83	4030	1.53	ug/L		90
38) c-1,3-Dichloropropene	7.891	75	6187	1.61	ug/L		95
40) Toluene	8.152	91	23832	2.05	ug/L		88
41) Tetrachloroethene (PCE)	8.602	166	4849	1.88	ug/L		96
42) 4-Methyl-2-Pentanone (...	8.615	43	13222	3.76	ug/L		91
43) t-1,3-Dichloropropene	8.645	75	5147	1.49	ug/L		98
44) 1,1,2-Trichloroethane	8.821	97	4541	1.81	ug/L		88
45) Dibromochloromethane	9.004	129	2873	1.57	ug/L		88
46) 1,3-Dichloropropane	9.107	76	8546	1.86	ug/L		93
47) 1,2-Dibromoethane (EDB)	9.241	107	4166	1.67	ug/L		100
48) 2-Hexanone	9.509	43	8511	3.36	ug/L		93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:52 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

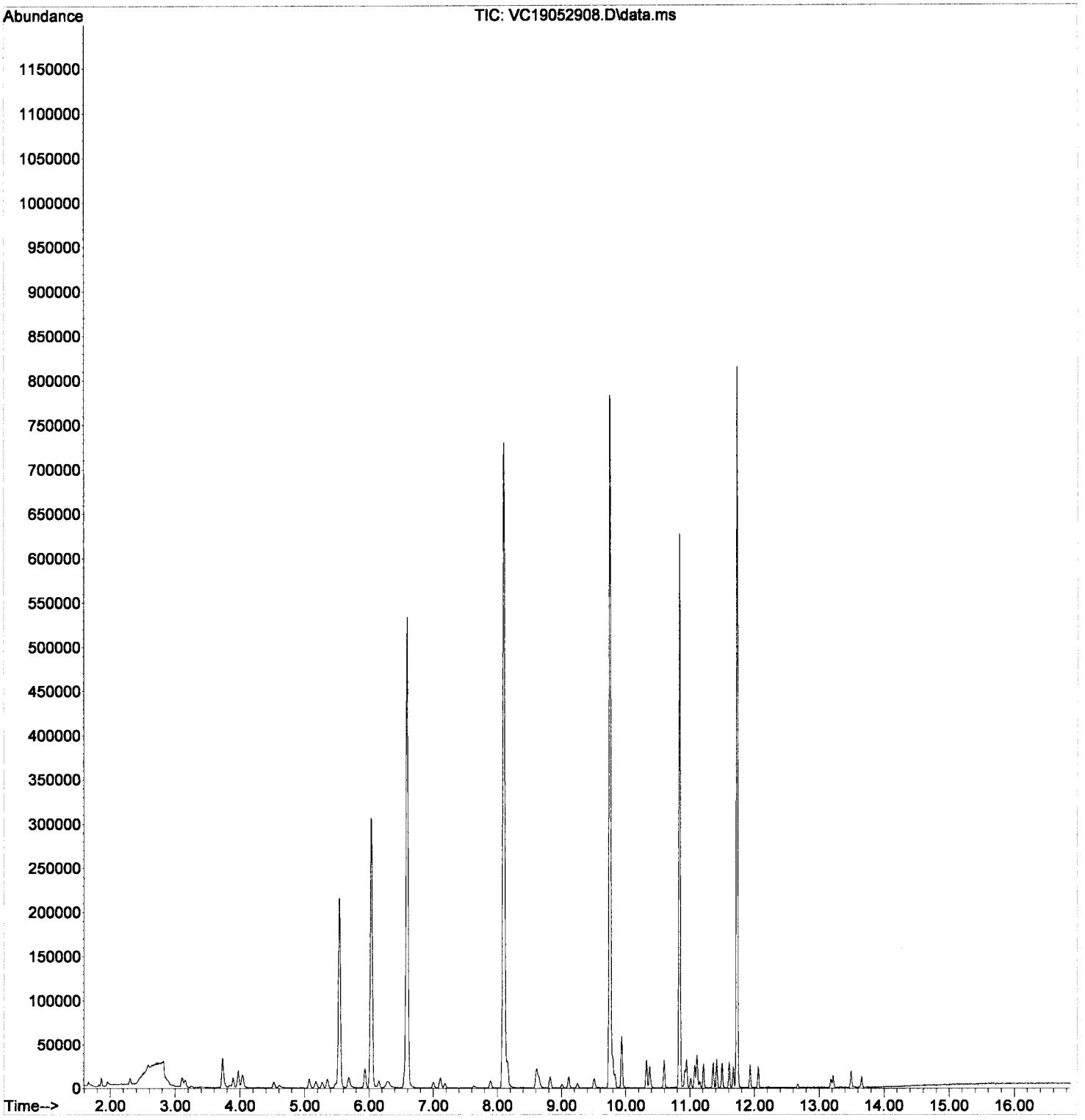
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.764	112	14584	2.08	ug/L		98
50) Ethylbenzene	9.795	91	23660	1.98	ug/L		99
51) 1,1,1,2-Tetrachloroethane	9.831	131	3542	1.64	ug/L		95
52) m,p-Xylenes (2)	9.935	91	34407	3.91	ug/L		98
53) o-Xylene	10.324	91	17445	1.91	ug/L		99
54) Styrene	10.373	104	11631	1.68	ug/L		95
55) Bromoform	10.391	173	1354	1.36	ug/L		82
56) Isopropylbenzene	10.598	105	20325	1.92	ug/L		96
59) Bromobenzene	10.920	156	5277	2.01	ug/L		89
60) n-Propylbenzene	10.945	91	22107	1.91	ug/L		92
61) 1,1,2,2-Tetrachloroethane	11.011	83	4646	1.75	ug/L		96
62) 2-Chlorotoluene	11.066	126	4419	1.84	ug/L		97
63) 1,3,5-Trimethylbenzene	11.103	105	14521	1.80	ug/L		94
64) 1,2,3-Trichloropropane	11.115	110	2200	2.06	ug/L		91
65) t-1,4-Dichloro-2-butene	11.151	88	320	0.95	ug/L	#	52
66) 4-Chlorotoluene	11.206	91	13410	1.93	ug/L		98
67) tert-Butylbenzene	11.358	91	8037	1.86	ug/L		97
68) 1,2,4-Trimethylbenzene	11.413	105	15360	1.87	ug/L		99
69) sec-Butylbenzene	11.498	105	16671	1.78	ug/L		99
70) 4-Isopropyltoluene	11.608	119	14651	1.91	ug/L		99
71) 1,3-Dichlorobenzene	11.675	146	8756	2.03	ug/L		92
72) 1,4-Dichlorobenzene	11.741	146	8705	2.03	ug/L		92
73) n-Butylbenzene	11.930	91	12230	1.92	ug/L		98
74) 1,2-Dichlorobenzene	12.058	146	7643	1.90	ug/L		89
75) 1,2-Dibromo-3-Chloropr...	12.672	157	826	1.35	ug/L		83
76) Hexachlorobutadiene	13.183	223	1244	1.99	ug/L	#	83
77) 1,2,4-Trichlorobenzene	13.214	180	4471	1.88	ug/L		92
78) Naphthalene	13.493	128	14001	1.61	ug/L		96
79) 1,2,3-Trichlorobenzene	13.652	180	4310	1.82	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:52 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:52 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

5/30/19 pre

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.035	168	254825	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	451536	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.729	152	194740	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.536	111	140136	49.76	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.589	114	496387	50.43	ug/L		0.00
39) Toluene-d8 (S)	8.097	98	607810	49.63	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.835	174	166852	49.33	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.667	85	4563	2.03	ug/L		94
3) Chloromethane	1.862	50	7629	2.11	ug/L		94
4) Vinyl Chloride	1.953	62	5260	2.01	ug/L		91
5) Bromomethane	2.306	96	4475	3.17	ug/L		92
6) Chloroethane	2.440	64	2003	2.10	ug/L	#	1
7) Trichlorofluoromethane	2.580	101	2958	1.99	ug/L		94
8) 1,1-Dichloroethene	3.103	61	4891	1.89	ug/L		88
9) Carbon Disulfide	3.115	76	6854	1.70	ug/L		98
10) Freon 113	3.152	101	3908	1.88	ug/L		85
11) Iodomethane	3.249	142	1507	1.64	ug/L	#	75
12) Methylene Chloride	3.729	84	18469	6.37	ug/L		98
13) Acetone	3.845	43	5795	5.23	ug/L		94
14) t-1,2-Dichloroethene	3.894	61	5764	1.90	ug/L		99
15) n-Hexane	3.973	86	1767	3.53	ug/L	#	87
16) Methyl-tert-butyl-ether	4.034	73	17541	1.96	ug/L		91
17) 1,1-Dichloroethane	4.520	63	7479	1.99	ug/L		93
18) Acrylonitrile	4.606	53	2550	1.68	ug/L		86
19) c-1,2-Dichloroethene	5.068	61	6425	1.91	ug/L		99
20) 2,2-Dichloropropane	5.177	77	5498	1.88	ug/L		96
21) Bromochloromethane	5.269	49	3833	1.91	ug/L		98
22) Chloroform	5.354	83	8763	2.03	ug/L		98
23) Carbon Tetrachloride	5.475	117	3774	1.59	ug/L		92
24) Tetrahydrofuran	5.542	42	3294	2.13	ug/L		88
25) 1,1,1-Trichloroethane	5.548	97	6438	1.88	ug/L		98
27) 1,1-Dichloropropene	5.682	75	6475	1.93	ug/L		95
28) 2-Butanone (MEK)	5.701	43	7369	3.59	ug/L		94
29) Benzene	5.938	78	21880	1.99	ug/L		96
30) 1,2-Dichloroethane (EDC)	6.151	62	6601	2.00	ug/L		99
31) iso-Butyl Alcohol	6.291	43	11367	45.00	ug/L		84
33) Trichloroethene (TCE)	6.546	130	6232	2.07	ug/L		87
34) Dibromomethane	6.996	93	2771	1.81	ug/L		87
35) 1,2-Dichloropropane	7.112	63	5608	1.93	ug/L		92
36) Bromodichloromethane	7.179	83	4030	1.53	ug/L		90
38) c-1,3-Dichloropropene	7.891	75	6187	1.61	ug/L		95
40) Toluene	8.152	91	23832	2.05	ug/L		88
41) Tetrachloroethene (PCE)	8.602	166	4849	1.88	ug/L		96
42) 4-Methyl-2-Pentanone (...	8.615	43	13222	3.76	ug/L		91
43) t-1,3-Dichloropropene	8.645	75	5147	1.49	ug/L		98
44) 1,1,2-Trichloroethane	8.821	97	4541	1.81	ug/L		88
45) Dibromochloromethane	9.004	129	2873	1.57	ug/L		88
46) 1,3-Dichloropropane	9.107	76	8546	1.86	ug/L		93
47) 1,2-Dibromoethane (EDB)	9.241	107	4166	1.67	ug/L		100
48) 2-Hexanone	9.509	43	8511	3.36	ug/L		93

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:52 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

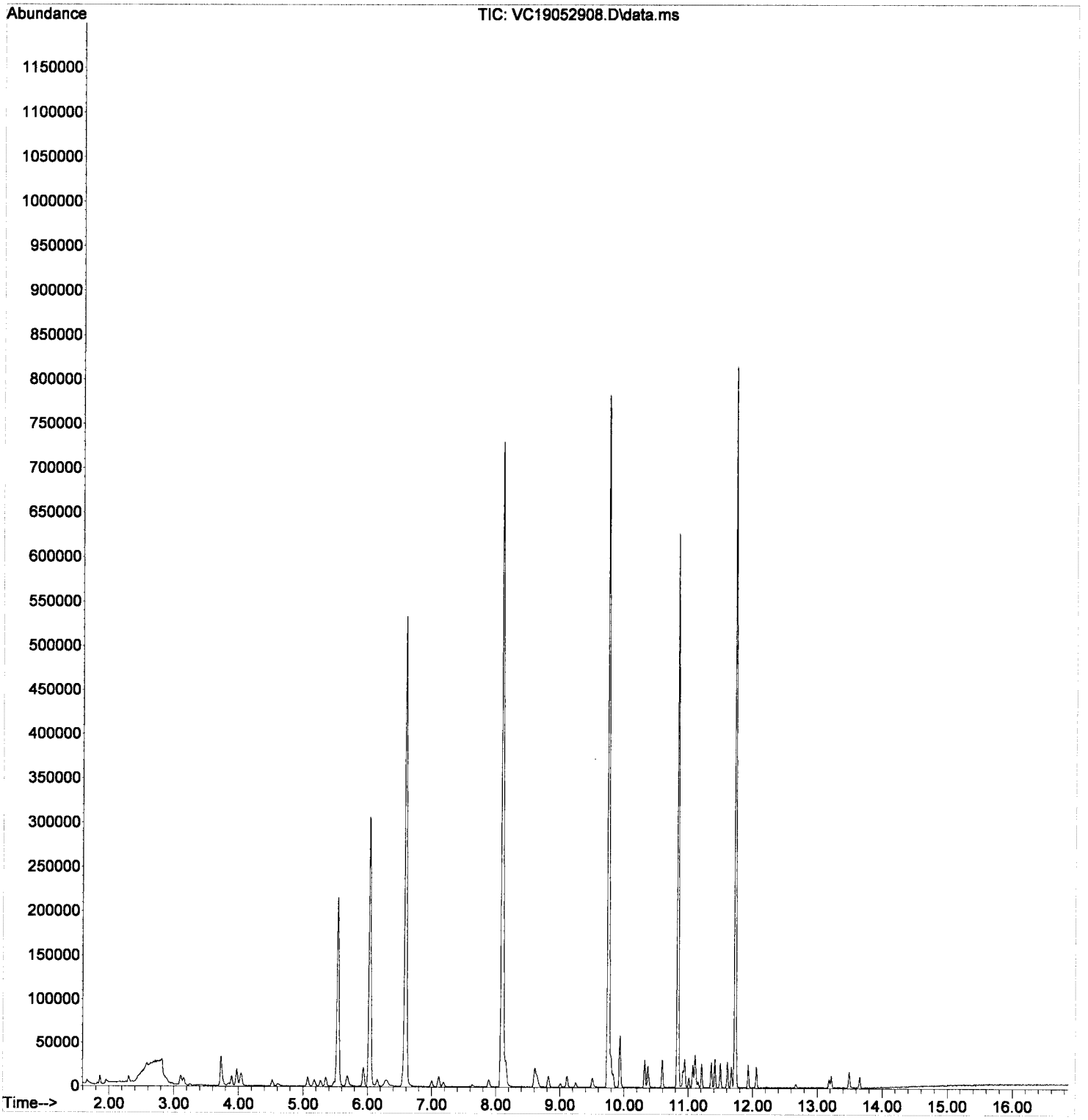
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.764	112	14584	2.08	ug/L		98
50) Ethylbenzene	9.795	91	23660	1.98	ug/L		99
51) 1,1,1,2-Tetrachloroethane	9.831	131	3542	1.64	ug/L		95
52) m,p-Xylenes (2)	9.935	91	34407	3.91	ug/L		98
53) o-Xylene	10.324	91	17445	1.91	ug/L		99
54) Styrene	10.373	104	11631	1.68	ug/L		95
55) Bromoform	10.391	173	1354	1.36	ug/L		82
56) Isopropylbenzene	10.598	105	20325	1.92	ug/L		96
59) Bromobenzene	10.920	156	5277	2.01	ug/L		89
60) n-Propylbenzene	10.945	91	22107	1.91	ug/L		92
61) 1,1,2,2-Tetrachloroethane	11.011	83	4646	1.75	ug/L		96
62) 2-Chlorotoluene	11.066	126	4419	1.84	ug/L		97
63) 1,3,5-Trimethylbenzene	11.103	105	14521	1.80	ug/L		94
64) 1,2,3-Trichloropropane	11.115	110	2200	2.06	ug/L		91
65) t-1,4-Dichloro-2-butene	11.151	88	320	0.95	ug/L	#	52
66) 4-Chlorotoluene	11.206	91	13410	1.93	ug/L		98
67) tert-Butylbenzene	11.358	91	8037	1.86	ug/L		97
68) 1,2,4-Trimethylbenzene	11.413	105	15360	1.87	ug/L		99
69) sec-Butylbenzene	11.498	105	16671	1.78	ug/L		99
70) 4-Isopropyltoluene	11.608	119	14651	1.91	ug/L		99
71) 1,3-Dichlorobenzene	11.675	146	8756	2.03	ug/L		92
72) 1,4-Dichlorobenzene	11.741	146	8705	2.03	ug/L		92
73) n-Butylbenzene	11.930	91	12230	1.92	ug/L		98
74) 1,2-Dichlorobenzene	12.058	146	7643	1.90	ug/L		89
75) 1,2-Dibromo-3-Chloropr...	12.672	157	826	1.35	ug/L		83
76) Hexachlorobutadiene	13.183	223	1244	1.99	ug/L	#	83
77) 1,2,4-Trichlorobenzene	13.214	180	4471	1.88	ug/L		92
78) Naphthalene	13.493	128	14001	1.61	ug/L		96
79) 1,2,3-Trichlorobenzene	13.652	180	4310	1.82	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052908.D
Acq On : 29 May 2019 5:30 pm
Operator : TB
Sample : 9E29058-CAL5
Misc : 1X 5mL 2ppb VOC DI+MeOH
ALS Vial : 8 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:52 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052909.D
Acq On : 29 May 2019 5:57 pm
Operator : TB
Sample : 9E29058-CAL6
Misc : 1X 5mL 5ppb VOC DI+MeOH
ALS Vial : 9 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:54 2019
Quant Method : C:\msdchem\1\METHODS\~~VC190529S.M~~
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

5/30/19
no change

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.036	168	254773	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.753	117	445170	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.730	152	188506	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.537	111	136458	48.46	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.589	114	492217	50.01	ug/L		0.00
39) Toluene-d8 (S)	8.098	98	604964	50.11	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.835	174	163573	49.96	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.668	85	12196	5.43	ug/L		96
3) Chloromethane	1.862	50	19122	5.29	ug/L		98
4) Vinyl Chloride	1.954	62	13474	5.16	ug/L		99
5) Bromomethane	2.306	96	9080	6.44	ug/L		91
6) Chloroethane	2.452	64	5245	5.50	ug/L	#	43
7) Trichlorofluoromethane	2.580	101	7697	5.18	ug/L		99
8) 1,1-Dichloroethene	3.097	61	13008	5.04	ug/L		85
9) Carbon Disulfide	3.109	76	17910	4.45	ug/L		99
10) Freon 113	3.152	101	10435	5.03	ug/L		94
11) Iodomethane	3.249	142	3398	3.70	ug/L		98
12) Methylene Chloride	3.736	84	25250	8.72	ug/L		97
13) Acetone	3.846	43	11897	10.74	ug/L		94
14) t-1,2-Dichloroethene	3.894	61	15650	5.15	ug/L		94
15) n-Hexane	3.973	86	3499	6.99	ug/L	#	90
16) Methyl-tert-butyl-ether	4.040	73	44834	5.02	ug/L		98
17) 1,1-Dichloroethane	4.527	63	18960	5.04	ug/L		98
18) Acrylonitrile	4.606	53	7679	5.05	ug/L		94
19) c-1,2-Dichloroethene	5.068	61	17123	5.09	ug/L		95
20) 2,2-Dichloropropane	5.178	77	14424	4.94	ug/L		93
21) Bromochloromethane	5.269	49	10200	5.08	ug/L		90
22) Chloroform	5.354	83	21196	4.92	ug/L		97
23) Carbon Tetrachloride	5.482	117	10919	4.61	ug/L		95
24) Tetrahydrofuran	5.537	42	7878	5.10	ug/L		94
25) 1,1,1-Trichloroethane	5.555	97	16696	4.87	ug/L		96
27) 1,1-Dichloropropene	5.677	75	16613	4.95	ug/L		98
28) 2-Butanone (MEK)	5.701	43	21043	10.25	ug/L		96
29) Benzene	5.932	78	56100	5.10	ug/L		96
30) 1,2-Dichloroethane (EDC)	6.151	62	16641	5.05	ug/L		97
31) iso-Butyl Alcohol	6.297	43	31527	124.84	ug/L		83
33) Trichloroethene (TCE)	6.547	130	15220	5.06	ug/L		92
34) Dibromomethane	7.003	93	7159	4.67	ug/L		99
35) 1,2-Dichloropropane	7.112	63	14430	4.97	ug/L		91
36) Bromodichloromethane	7.185	83	11827	4.50	ug/L		99
38) c-1,3-Dichloropropene	7.885	75	17156	4.52	ug/L		98
40) Toluene	8.153	91	59374	5.19	ug/L		98
41) Tetrachloroethene (PCE)	8.603	166	13201	5.20	ug/L		97
42) 4-Methyl-2-Pentanone (...	8.615	43	34042	9.82	ug/L		97
43) t-1,3-Dichloropropene	8.645	75	14478	4.26	ug/L		94
44) 1,1,2-Trichloroethane	8.816	97	12374	5.00	ug/L		96
45) Dibromochloromethane	9.004	129	7443	4.14	ug/L		86
46) 1,3-Dichloropropane	9.108	76	22298	4.93	ug/L		97
47) 1,2-Dibromoethane (EDB)	9.248	107	11552	4.69	ug/L		95
48) 2-Hexanone	9.503	43	24821	9.93	ug/L		95

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052909.D
Acq On : 29 May 2019 5:57 pm
Operator : TB
Sample : 9E29058-CAL6
Misc : 1X 5mL 5ppb VOC DI+MeOH
ALS Vial : 9 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:54 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

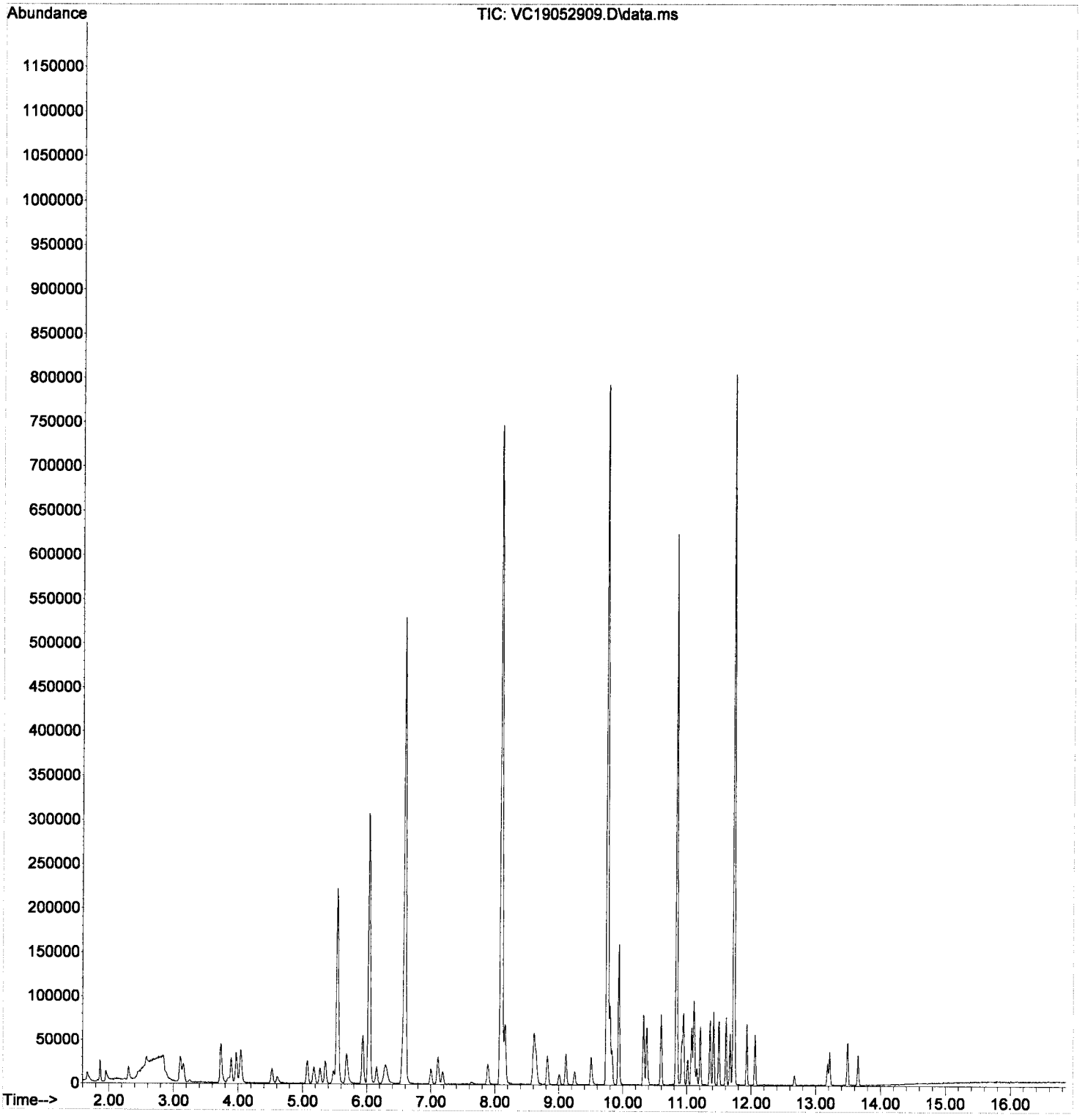
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.765	112	35456	5.12	ug/L		94
50) Ethylbenzene	9.795	91	60912	5.17	ug/L		99
51) 1,1,1,2-Tetrachloroethane	9.832	131	9596	4.51	ug/L		94
52) m,p-Xylenes (2)	9.935	91	87900	10.12	ug/L		97
53) o-Xylene	10.324	91	45708	5.06	ug/L		98
54) Styrene	10.373	104	31844	4.66	ug/L		97
55) Bromoform	10.385	173	4070	4.14	ug/L		92
56) Isopropylbenzene	10.598	105	53051	5.09	ug/L		94
59) Bromobenzene	10.921	156	13190	5.20	ug/L		96
60) n-Propylbenzene	10.945	91	57721	5.15	ug/L		98
61) 1,1,2,2-Tetrachloroethane	11.006	83	12322	4.79	ug/L		96
62) 2-Chlorotoluene	11.073	126	12024	5.17	ug/L	#	84
63) 1,3,5-Trimethylbenzene	11.103	105	39774	5.09	ug/L		98
64) 1,2,3-Trichloropropane	11.115	110	5164	4.99	ug/L		86
65) t-1,4-Dichloro-2-butene	11.152	88	1285	3.96	ug/L	#	83
66) 4-Chlorotoluene	11.207	91	33806	5.03	ug/L		94
67) tert-Butylbenzene	11.359	91	20763	4.96	ug/L		95
68) 1,2,4-Trimethylbenzene	11.413	105	39159	4.93	ug/L		99
69) sec-Butylbenzene	11.499	105	45399	5.01	ug/L		97
70) 4-Isopropyltoluene	11.608	119	37395	5.03	ug/L		97
71) 1,3-Dichlorobenzene	11.669	146	21090	5.04	ug/L		96
72) 1,4-Dichlorobenzene	11.736	146	21623	5.22	ug/L		95
73) n-Butylbenzene	11.930	91	31024	5.03	ug/L		96
74) 1,2-Dichlorobenzene	12.058	146	19883	5.09	ug/L		93
75) 1,2-Dibromo-3-Chloropr...	12.673	157	2389	4.05	ug/L		96
76) Hexachlorobutadiene	13.184	223	2782	4.59	ug/L	#	75
77) 1,2,4-Trichlorobenzene	13.214	180	11381	4.93	ug/L		97
78) Naphthalene	13.494	128	38161	4.53	ug/L		98
79) 1,2,3-Trichlorobenzene	13.652	180	10740	4.67	ug/L		90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052909.D
Acq On : 29 May 2019 5:57 pm
Operator : TB
Sample : 9E29058-CAL6
Misc : 1X 5mL 5ppb VOC DI+MeOH
ALS Vial : 9 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:54 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052910.D
Acq On : 29 May 2019 6:25 pm
Operator : TB
Sample : 9E29058-CAL7
Misc : 1X 5mL 10ppb VOC DI+MeOH
ALS Vial : 10 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:56 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

5/30/19
no change

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.031	168	250992	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.748	117	436340	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.725	152	186773	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.532	111	135028	48.67	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.584	114	477661	49.27	ug/L		0.00
39) Toluene-d8 (S)	8.093	98	590419	49.89	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.837	174	161677	49.84	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.657	85	22760	10.28	ug/L		97
3) Chloromethane	1.857	50	35625	10.00	ug/L		98
4) Vinyl Chloride	1.943	62	25219	9.80	ug/L		95
5) Bromomethane	2.296	96	16179	11.65	ug/L		94
6) Chloroethane	2.435	64	9117	9.71	ug/L	#	67
7) Trichlorofluoromethane	2.569	101	13672	9.35	ug/L		94
8) 1,1-Dichloroethene	3.092	61	25751	10.13	ug/L		85
9) Carbon Disulfide	3.105	76	36451	9.20	ug/L		97
10) Freon 113	3.147	101	20551	10.06	ug/L		84
11) Iodomethane	3.238	142	7794	8.61	ug/L		93
12) Methylene Chloride	3.719	84	35620	12.48	ug/L		97
13) Acetone	3.835	43	20645	18.91	ug/L		96
14) t-1,2-Dichloroethene	3.883	61	30362	10.15	ug/L		98
15) n-Hexane	3.962	86	5559	11.27	ug/L	#	92
16) Methyl-tert-butyl-ether	4.035	73	87421	9.94	ug/L		98
17) 1,1-Dichloroethane	4.516	63	36342	9.81	ug/L		95
18) Acrylonitrile	4.595	53	15131	10.10	ug/L		98
19) c-1,2-Dichloroethene	5.070	61	33881	10.23	ug/L		96
20) 2,2-Dichloropropane	5.173	77	29348	10.20	ug/L		85
21) Bromochloromethane	5.264	49	20180	10.21	ug/L		92
22) Chloroform	5.343	83	42125	9.93	ug/L		98
23) Carbon Tetrachloride	5.477	117	22616	9.69	ug/L		95
24) Tetrahydrofuran	5.538	42	15478	10.18	ug/L		96
25) 1,1,1-Trichloroethane	5.544	97	32805	9.71	ug/L		98
27) 1,1-Dichloropropene	5.672	75	32947	9.97	ug/L		97
28) 2-Butanone (MEK)	5.690	43	40332	19.95	ug/L		95
29) Benzene	5.927	78	109245	10.08	ug/L		98
30) 1,2-Dichloroethane (EDC)	6.146	62	32514	10.01	ug/L		95
31) iso-Butyl Alcohol	6.286	43	61468	247.07	ug/L		89
33) Trichloroethene (TCE)	6.548	130	29345	9.90	ug/L		95
34) Dibromomethane	6.998	93	14902	9.86	ug/L		94
35) 1,2-Dichloropropane	7.108	63	27791	9.71	ug/L		93
36) Bromodichloromethane	7.174	83	23755	9.17	ug/L		94
38) c-1,3-Dichloropropene	7.886	75	35060	9.42	ug/L		97
40) Toluene	8.154	91	113987	10.16	ug/L		99
41) Tetrachloroethene (PCE)	8.598	166	25684	10.31	ug/L		98
42) 4-Methyl-2-Pentanone (...	8.616	43	69619	20.50	ug/L		98
43) t-1,3-Dichloropropene	8.647	75	31437	9.43	ug/L		99
44) 1,1,2-Trichloroethane	8.817	97	24039	9.90	ug/L		88
45) Dibromochloromethane	9.006	129	16078	9.12	ug/L		92
46) 1,3-Dichloropropane	9.103	76	43756	9.86	ug/L		98
47) 1,2-Dibromoethane (EDB)	9.243	107	23883	9.89	ug/L		91
48) 2-Hexanone	9.498	43	49008	20.01	ug/L		97

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052910.D
Acq On : 29 May 2019 6:25 pm
Operator : TB
Sample : 9E29058-CAL7
Misc : 1X 5mL 10ppb VOC DI+MeOH
ALS Vial : 10 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:56 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

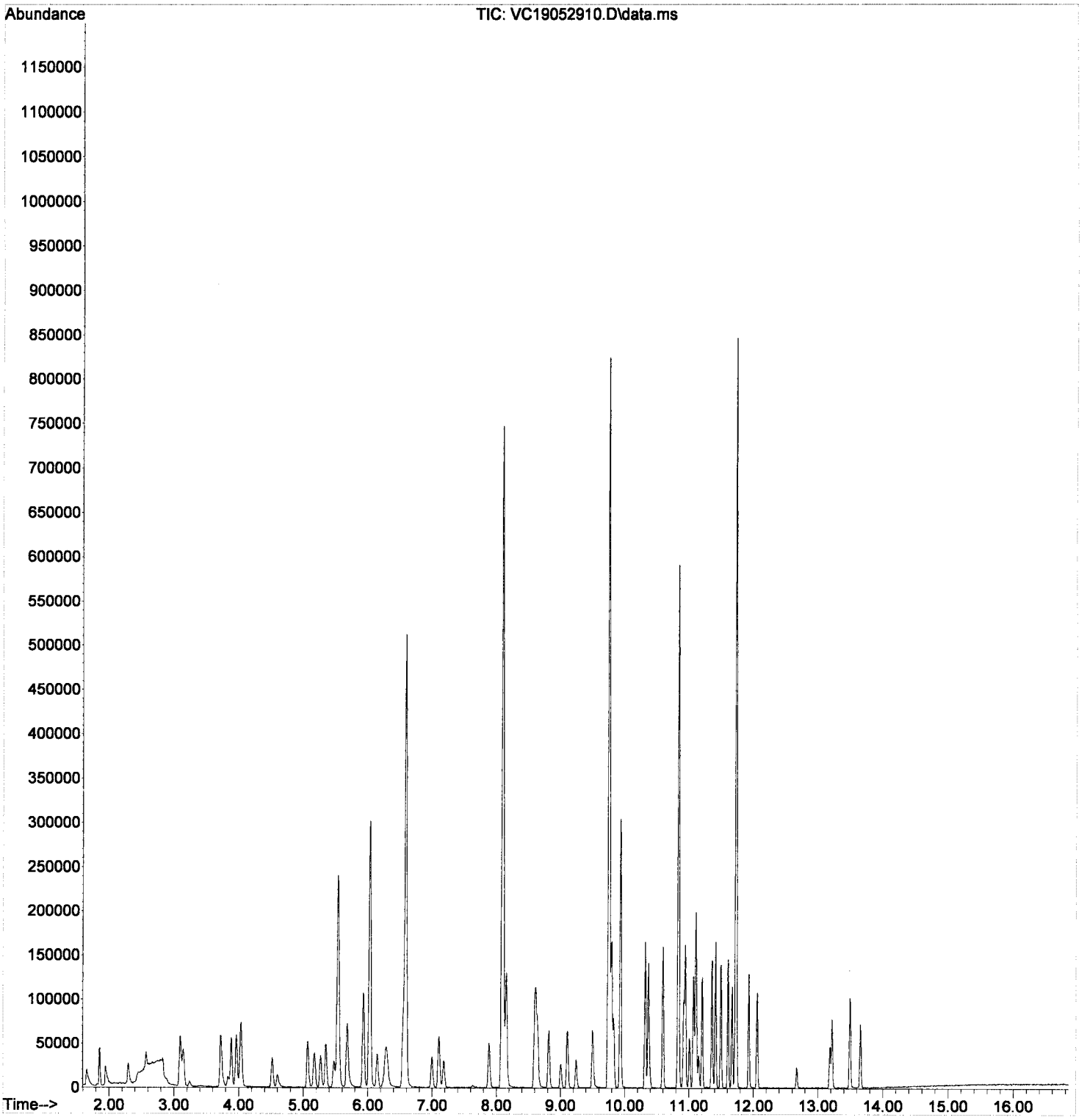
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.766	112	68508	10.10	ug/L		96
50) Ethylbenzene	9.796	91	115497	10.01	ug/L		98
51) 1,1,1,2-Tetrachloroethane	9.827	131	19728	9.47	ug/L		96
52) m,p-Xylenes (2)	9.930	91	170308	20.00	ug/L		99
53) o-Xylene	10.320	91	87450	9.88	ug/L		99
54) Styrene	10.368	104	64308	9.61	ug/L		99
55) Bromoform	10.387	173	8679	9.00	ug/L		95
56) Isopropylbenzene	10.593	105	101485	9.94	ug/L		97
59) Bromobenzene	10.916	156	25871	10.29	ug/L		87
60) n-Propylbenzene	10.940	91	110989	10.00	ug/L		98
61) 1,1,2,2-Tetrachloroethane	11.007	83	25383	9.95	ug/L		99
62) 2-Chlorotoluene	11.068	126	23789	10.32	ug/L	#	79
63) 1,3,5-Trimethylbenzene	11.104	105	77961	10.07	ug/L		98
64) 1,2,3-Trichloropropane	11.117	110	10336	10.07	ug/L	#	81
65) t-1,4-Dichloro-2-butene	11.153	88	2829	8.80	ug/L		94
66) 4-Chlorotoluene	11.208	91	65138	9.79	ug/L		98
67) tert-Butylbenzene	11.354	91	41310	9.96	ug/L		96
68) 1,2,4-Trimethylbenzene	11.415	105	78362	9.96	ug/L		99
69) sec-Butylbenzene	11.500	105	88679	9.88	ug/L		98
70) 4-Isopropyltoluene	11.609	119	74162	10.06	ug/L		96
71) 1,3-Dichlorobenzene	11.670	146	41681	10.05	ug/L		97
72) 1,4-Dichlorobenzene	11.737	146	41926	10.22	ug/L		96
73) n-Butylbenzene	11.932	91	61550	10.07	ug/L		98
74) 1,2-Dichlorobenzene	12.059	146	38321	9.91	ug/L		98
75) 1,2-Dibromo-3-Chloropr...	12.674	157	5509	9.42	ug/L		96
76) Hexachlorobutadiene	13.179	223	5351	8.91	ug/L		94
77) 1,2,4-Trichlorobenzene	13.215	180	23206	10.15	ug/L		93
78) Naphthalene	13.495	128	79664	9.54	ug/L		98
79) 1,2,3-Trichlorobenzene	13.653	180	22472	9.87	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052910.D
Acq On : 29 May 2019 6:25 pm
Operator : TB
Sample : 9E29058-CAL7
Misc : 1X 5mL 10ppb VOC DI+MeOH
ALS Vial : 10 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:56 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052911.D
Acq On : 29 May 2019 6:52 pm
Operator : TB
Sample : 9E29058-CAL8
Misc : 1X 5mL 20ppb VOC DI+MeOH
ALS Vial : 11 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:58 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

5/30/19
no change

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.031	168	256524	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.748	117	450201	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.725	152	190782	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.532	111	141761	50.00	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.584	114	495460	50.00	ug/L		0.00
39) Toluene-d8 (S)	8.093	98	610484	50.00	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.837	174	165674	50.00	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.657	85	45253	20.00	ug/L		97
3) Chloromethane	1.858	50	72826	20.00	ug/L		100
4) Vinyl Chloride	1.949	62	52612	20.00	ug/L		95
5) Bromomethane	2.296	96	28393	20.00	ug/L		98
6) Chloroethane	2.448	64	19192	20.00	ug/L		88
7) Trichlorofluoromethane	2.575	101	29898	20.00	ug/L		99
8) 1,1-Dichloroethene	3.093	61	51985	20.00	ug/L		90
9) Carbon Disulfide	3.105	76	80999	20.00	ug/L		99
10) Freon 113	3.147	101	41761	20.00	ug/L		87
11) Iodomethane	3.245	142	18507	20.00	ug/L		97
12) Methylene Chloride	3.725	84	58329	20.00	ug/L		96
13) Acetone	3.835	43	44627	40.00	ug/L		100
14) t-1,2-Dichloroethene	3.883	61	61167	20.00	ug/L		98
15) n-Hexane	3.962	86	10080	20.00	ug/L	#	90
16) Methyl-tert-butyl-ether	4.035	73	179725	20.00	ug/L		99
17) 1,1-Dichloroethane	4.516	63	75709	20.00	ug/L		95
18) Acrylonitrile	4.595	53	30627	20.00	ug/L		96
19) c-1,2-Dichloroethene	5.070	61	67717	20.00	ug/L		96
20) 2,2-Dichloropropane	5.173	77	58827	20.00	ug/L		89
21) Bromochloromethane	5.264	49	40396	20.00	ug/L		94
22) Chloroform	5.349	83	86712	20.00	ug/L		98
23) Carbon Tetrachloride	5.477	117	47689	20.00	ug/L		93
24) Tetrahydrofuran	5.532	42	31084	20.00	ug/L		92
25) 1,1,1-Trichloroethane	5.550	97	69031	20.00	ug/L		99
27) 1,1-Dichloropropene	5.678	75	67566	20.00	ug/L		98
28) 2-Butanone (MEK)	5.690	43	82660	40.00	ug/L		99
29) Benzene	5.934	78	221601	20.00	ug/L		98
30) 1,2-Dichloroethane (EDC)	6.146	62	66416	20.00	ug/L		99
31) iso-Butyl Alcohol	6.286	43	127134	500.00	ug/L		91
33) Trichloroethene (TCE)	6.548	130	60590	20.00	ug/L		97
34) Dibromomethane	6.998	93	30886	20.00	ug/L		91
35) 1,2-Dichloropropane	7.108	63	58485	20.00	ug/L		89
36) Bromodichloromethane	7.181	83	52937	20.00	ug/L		97
38) c-1,3-Dichloropropene	7.886	75	76771	20.00	ug/L		99
40) Toluene	8.154	91	231426	20.00	ug/L		97
41) Tetrachloroethene (PCE)	8.598	166	51386	20.00	ug/L		97
42) 4-Methyl-2-Pentanone (...	8.616	43	140164	40.00	ug/L		99
43) t-1,3-Dichloropropene	8.641	75	68797	20.00	ug/L		97
44) 1,1,2-Trichloroethane	8.817	97	50104	20.00	ug/L		96
45) Dibromochloromethane	9.006	129	36395	20.00	ug/L		97
46) 1,3-Dichloropropane	9.109	76	91532	20.00	ug/L		99
47) 1,2-Dibromoethane (EDB)	9.243	107	49836	20.00	ug/L		94
48) 2-Hexanone	9.498	43	101065	40.00	ug/L		97

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052911.D
Acq On : 29 May 2019 6:52 pm
Operator : TB
Sample : 9E29058-CAL8
Misc : 1X 5mL 20ppb VOC DI+MeOH
ALS Vial : 11 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:58 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

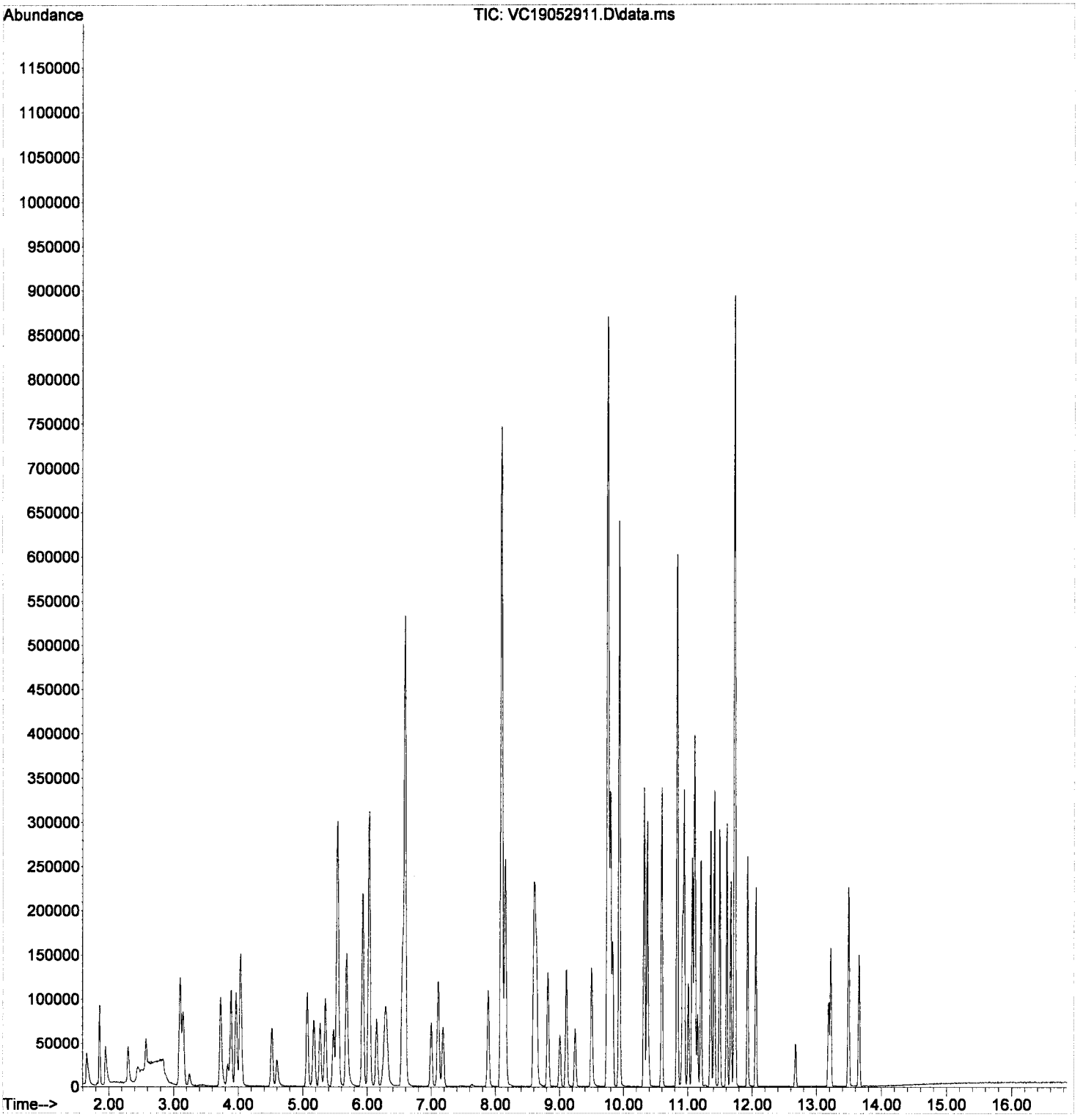
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.766	112	139988	20.00	ug/L		95
50) Ethylbenzene	9.797	91	238085	20.00	ug/L		100
51) 1,1,1,2-Tetrachloroethane	9.827	131	42996	20.00	ug/L		99
52) m,p-Xylenes (2)	9.930	91	351394	40.00	ug/L		100
53) o-Xylene	10.320	91	182582	20.00	ug/L		98
54) Styrene	10.368	104	138152	20.00	ug/L		99
55) Bromoform	10.387	173	19903	20.00	ug/L		100
56) Isopropylbenzene	10.593	105	210609	20.00	ug/L		98
59) Bromobenzene	10.916	156	51348	20.00	ug/L		91
60) n-Propylbenzene	10.940	91	226710	20.00	ug/L		98
61) 1,1,2,2-Tetrachloroethane	11.007	83	52097	20.00	ug/L		99
62) 2-Chlorotoluene	11.068	126	47080	20.00	ug/L	#	83
63) 1,3,5-Trimethylbenzene	11.104	105	158194	20.00	ug/L		98
64) 1,2,3-Trichloropropane	11.117	110	20960	20.00	ug/L		88
65) t-1,4-Dichloro-2-butene	11.153	88	6571	20.00	ug/L	#	78
66) 4-Chlorotoluene	11.202	91	135968	20.00	ug/L		98
67) tert-Butylbenzene	11.354	91	84715	20.00	ug/L		95
68) 1,2,4-Trimethylbenzene	11.415	105	160708	20.00	ug/L		98
69) sec-Butylbenzene	11.494	105	183450	20.00	ug/L		97
70) 4-Isopropyltoluene	11.609	119	150593	20.00	ug/L		99
71) 1,3-Dichlorobenzene	11.670	146	84703	20.00	ug/L		97
72) 1,4-Dichlorobenzene	11.737	146	83842	20.00	ug/L		98
73) n-Butylbenzene	11.932	91	124826	20.00	ug/L		99
74) 1,2-Dichlorobenzene	12.060	146	79024	20.00	ug/L		97
75) 1,2-Dibromo-3-Chloropr...	12.674	157	11948	20.00	ug/L		92
76) Hexachlorobutadiene	13.185	223	12267	20.00	ug/L		97
77) 1,2,4-Trichlorobenzene	13.215	180	46713	20.00	ug/L		98
78) Naphthalene	13.489	128	170582	20.00	ug/L		98
79) 1,2,3-Trichlorobenzene	13.653	180	46516	20.00	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052911.D
Acq On : 29 May 2019 6:52 pm
Operator : TB
Sample : 9E29058-CAL8
Misc : 1X 5mL 20ppb VOC DI+MeOH
ALS Vial : 11 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:45:58 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052912.D
Acq On : 29 May 2019 7:20 pm
Operator : TB
Sample : 9E29058-CAL9
Misc : 1X 5mL 50ppb VOC DI+MeOH
ALS Vial : 12 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:46:00 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

5/30/19

no change

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.031	168	250786	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.748	117	449432	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.725	152	195329	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.532	111	143870	51.90	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.591	114	489311	50.51	ug/L		0.00
39) Toluene-d8 (S)	8.094	98	601358	49.34	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.837	174	167723	49.44	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.663	85	122313	55.29	ug/L		99
3) Chloromethane	1.864	50	179217	50.34	ug/L		99
4) Vinyl Chloride	1.949	62	132089	51.36	ug/L		97
5) Bromomethane	2.302	96	66982	48.26	ug/L		99
6) Chloroethane	2.448	64	47938	51.10	ug/L		86
7) Trichlorofluoromethane	2.576	101	73023	49.97	ug/L		98
8) 1,1-Dichloroethene	3.099	61	135031	53.14	ug/L		87
9) Carbon Disulfide	3.111	76	237187	59.91	ug/L		99
10) Freon 113	3.148	101	104970	51.42	ug/L		89
11) Iodomethane	3.245	142	58902	65.11	ug/L		98
12) Methylene Chloride	3.726	84	122804	43.07	ug/L		98
13) Acetone	3.835	43	111792	102.49	ug/L		94
14) t-1,2-Dichloroethene	3.890	61	157053	52.53	ug/L		99
15) n-Hexane	3.969	86	25466	51.68	ug/L	#	84
16) Methyl-tert-butyl-ether	4.036	73	446710	50.85	ug/L		97
17) 1,1-Dichloroethane	4.523	63	187888	50.77	ug/L		99
18) Acrylonitrile	4.596	53	79642	53.20	ug/L		96
19) c-1,2-Dichloroethene	5.070	61	170168	51.41	ug/L		99
20) 2,2-Dichloropropane	5.173	77	148829	51.76	ug/L		88
21) Bromochloromethane	5.265	49	100930	51.11	ug/L		97
22) Chloroform	5.350	83	217722	51.37	ug/L		98
23) Carbon Tetrachloride	5.478	117	132426	56.81	ug/L		93
24) Tetrahydrofuran	5.532	42	78409	51.60	ug/L		93
25) 1,1,1-Trichloroethane	5.551	97	175402	51.98	ug/L		98
27) 1,1-Dichloropropene	5.678	75	172418	52.20	ug/L		98
28) 2-Butanone (MEK)	5.684	43	208404	103.16	ug/L		95
29) Benzene	5.934	78	547822	50.57	ug/L		98
30) 1,2-Dichloroethane (EDC)	6.147	62	166385	51.25	ug/L		97
31) iso-Butyl Alcohol	6.281	43	325134	1307.96	ug/L		87
33) Trichloroethene (TCE)	6.548	130	153840	51.94	ug/L		99
34) Dibromomethane	6.998	93	80383	53.24	ug/L		93
35) 1,2-Dichloropropane	7.108	63	145741	50.98	ug/L		92
36) Bromodichloromethane	7.181	83	148293	57.31	ug/L		99
38) c-1,3-Dichloropropene	7.887	75	206054	53.77	ug/L		97
40) Toluene	8.154	91	567186	49.10	ug/L		100
41) Tetrachloroethene (PCE)	8.598	166	131806	51.39	ug/L		98
42) 4-Methyl-2-Pentanone (...	8.617	43	362001	103.48	ug/L		99
43) t-1,3-Dichloropropene	8.641	75	188244	54.82	ug/L		96
44) 1,1,2-Trichloroethane	8.817	97	128045	51.20	ug/L		96
45) Dibromochloromethane	9.006	129	110966	61.08	ug/L		98
46) 1,3-Dichloropropane	9.109	76	228171	49.94	ug/L		100
47) 1,2-Dibromoethane (EDB)	9.243	107	132585	53.30	ug/L		98
48) 2-Hexanone	9.499	43	264271	104.77	ug/L		97

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052912.D
Acq On : 29 May 2019 7:20 pm
Operator : TB
Sample : 9E29058-CAL9
Misc : 1X 5mL 50ppb VOC DI+MeOH
ALS Vial : 12 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:46:00 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

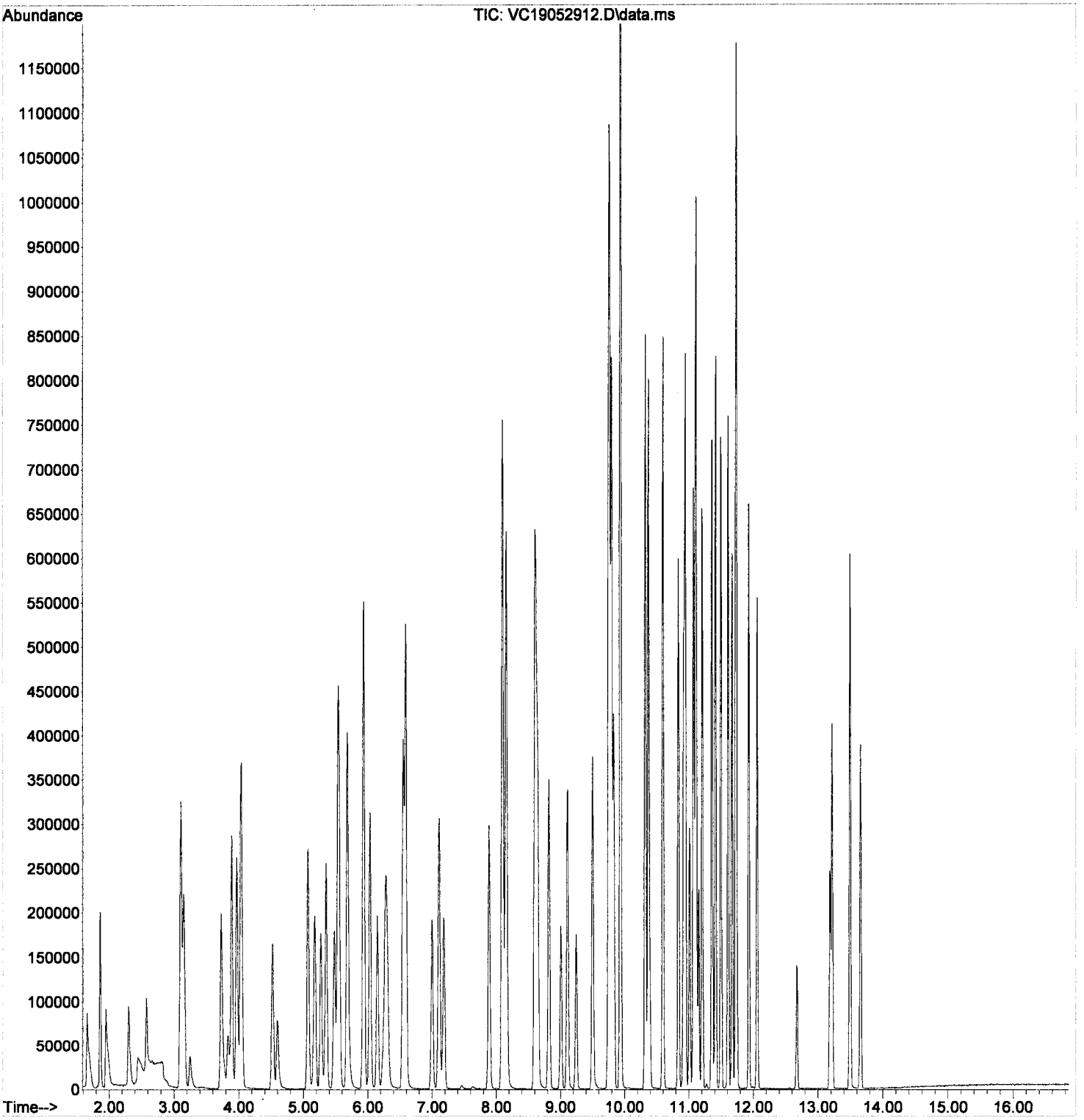
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.766	112	351235	50.27	ug/L		97
50) Ethylbenzene	9.797	91	580649	48.86	ug/L		99
51) 1,1,1,2-Tetrachloroethane	9.827	131	116780	54.41	ug/L		96
52) m,p-Xylenes (2)	9.931	91	846663	96.54	ug/L		98
53) o-Xylene	10.320	91	457250	50.17	ug/L		99
54) Styrene	10.369	104	353430	51.25	ug/L		98
55) Bromoform	10.387	173	64724	65.15	ug/L		97
56) Isopropylbenzene	10.594	105	514735	48.96	ug/L		100
59) Bromobenzene	10.916	156	134239	51.07	ug/L		92
60) n-Propylbenzene	10.941	91	564190	48.61	ug/L		100
61) 1,1,2,2-Tetrachloroethane	11.008	83	135917	50.96	ug/L		98
62) 2-Chlorotoluene	11.068	126	120765	50.11	ug/L		86
63) 1,3,5-Trimethylbenzene	11.105	105	396913	49.01	ug/L		97
64) 1,2,3-Trichloropropane	11.117	110	54793	51.07	ug/L		92
65) t-1,4-Dichloro-2-butene	11.154	88	19084	56.73	ug/L	#	77
66) 4-Chlorotoluene	11.202	91	345630	49.66	ug/L		98
67) tert-Butylbenzene	11.360	91	215868	49.78	ug/L		96
68) 1,2,4-Trimethylbenzene	11.415	105	400305	48.66	ug/L		98
69) sec-Butylbenzene	11.494	105	461029	49.09	ug/L		97
70) 4-Isopropyltoluene	11.610	119	386921	50.19	ug/L		97
71) 1,3-Dichlorobenzene	11.671	146	218010	50.28	ug/L		98
72) 1,4-Dichlorobenzene	11.738	146	214078	49.88	ug/L		100
73) n-Butylbenzene	11.926	91	313322	49.03	ug/L		98
74) 1,2-Dichlorobenzene	12.060	146	201831	49.89	ug/L		99
75) 1,2-Dibromo-3-Chloropr...	12.674	157	36171	59.14	ug/L		93
76) Hexachlorobutadiene	13.179	223	30150	48.01	ug/L		97
77) 1,2,4-Trichlorobenzene	13.216	180	126759	53.01	ug/L		97
78) Naphthalene	13.490	128	451629	51.72	ug/L		99
79) 1,2,3-Trichlorobenzene	13.654	180	120109	50.44	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052912.D
Acq On : 29 May 2019 7:20 pm
Operator : TB
Sample : 9E29058-CAL9
Misc : 1X 5mL 50ppb VOC DI+MeOH
ALS Vial : 12 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:46:00 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052913.D
Acq On : 29 May 2019 7:47 pm
Operator : TB
Sample : 9E29058-IBL2
Misc : 1X 5mL DI+MeOH
ALS Vial : 13 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:37 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

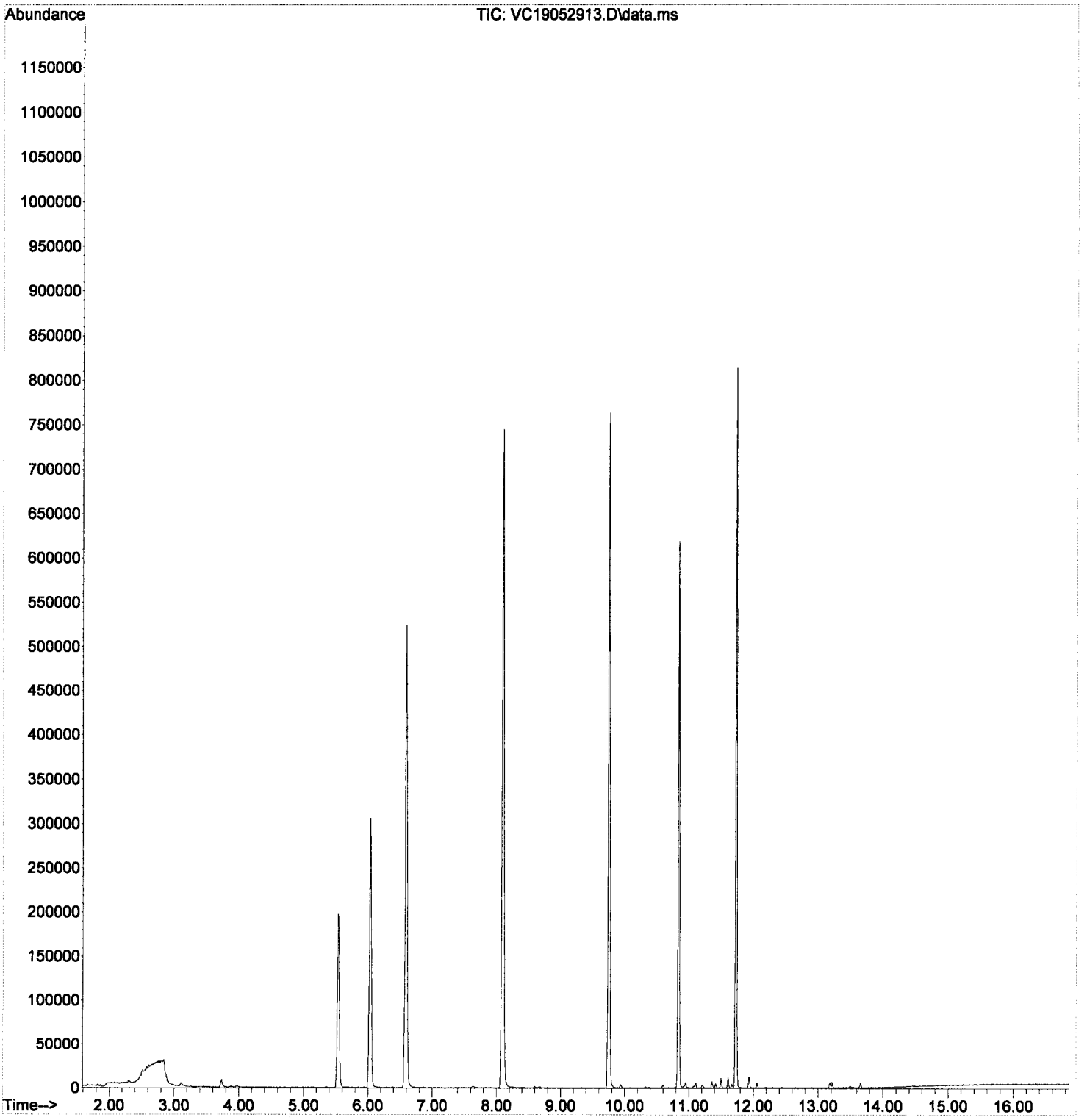
Compound	R.T.	QIon	Response	Conc Units		Dev(Min)
Internal Standards						
1) Pentafluorobenzene (I)	6.034	168	251569	50.00 ug/L		0.00
37) Chlorobenzene-d5 (I)	9.751	117	444742	50.00 ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.728	152	190416	50.00 ug/L		0.00
System Monitoring Compounds						
26) Dibromofluoromethane (S)	5.535	111	134463	49.36 ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.588	114	487332	50.36 ug/L		0.00
39) Toluene-d8 (S)	8.096	98	596282	49.56 ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.834	174	163307	49.67 ug/L		0.00
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.666	85	357	0.16 ug/L	#	50
3) Chloromethane	1.867	50	976	0.26 ug/L		84
5) Bromomethane	2.311	96	1740	1.20 ug/L		77
6) Chloroethane	2.524	64	106	0.11 ug/L	#	1
9) Carbon Disulfide	3.114	76	5278	1.31 ug/L		93
10) Freon 113	3.144	101	240	0.11 ug/L	#	73
11) Iodomethane	3.260	142	820	1.51 ug/L	#	78
12) Methylene Chloride	3.734	84	4772	Below Cal		93
13) Acetone	3.807	43	145	0.13 ug/L	#	42
14) t-1,2-Dichloroethene	3.886	61	405	0.14 ug/L	#	69
27) 1,1-Dichloropropene	5.681	75	506	0.15 ug/L		65
33) Trichloroethene (TCE)	6.551	130	349	0.11 ug/L	#	74
40) Toluene	8.157	91	1535	0.13 ug/L		81
41) Tetrachloroethene (PCE)	8.595	166	515	0.19 ug/L	#	55
49) Chlorobenzene	9.763	112	913	0.13 ug/L	#	1
50) Ethylbenzene	9.794	91	1643	0.14 ug/L		90
52) m,p-Xylenes (2)	9.940	91	2720	0.31 ug/L		91
53) o-Xylene	10.323	91	959	0.11 ug/L		80
54) Styrene	10.378	104	575	0.09 ug/L		80
56) Isopropylbenzene	10.597	105	2561	0.25 ug/L		82
59) Bromobenzene	10.919	156	356	0.14 ug/L		91
60) n-Propylbenzene	10.949	91	4592	0.40 ug/L		96
62) 2-Chlorotoluene	11.077	126	404	0.17 ug/L	#	82
63) 1,3,5-Trimethylbenzene	11.108	105	2985	0.39 ug/L		86
66) 4-Chlorotoluene	11.205	91	1724	0.25 ug/L		92
67) tert-Butylbenzene	11.357	91	2078	0.48 ug/L	#	78
68) 1,2,4-Trimethylbenzene	11.418	105	2595	0.33 ug/L		98
69) sec-Butylbenzene	11.497	105	7228	0.79 ug/L		94
70) 4-Isopropyltoluene	11.606	119	6170	0.83 ug/L		92
71) 1,3-Dichlorobenzene	11.673	146	1236	0.28 ug/L		91
72) 1,4-Dichlorobenzene	11.740	146	1354	0.31 ug/L	#	35
73) n-Butylbenzene	11.929	91	6549	1.03 ug/L		96
74) 1,2-Dichlorobenzene	12.063	146	829	0.20 ug/L		92
76) Hexachlorobutadiene	13.176	223	818	1.39 ug/L	#	74
77) 1,2,4-Trichlorobenzene	13.219	180	2228	0.94 ug/L		77
78) Naphthalene	13.492	128	2214	0.28 ug/L		84
79) 1,2,3-Trichlorobenzene	13.657	180	1953	0.87 ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052913.D
Acq On : 29 May 2019 7:47 pm
Operator : TB
Sample : 9E29058-IBL2
Misc : 1X 5mL DI+MeOH
ALS Vial : 13 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:37 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052914.D
Acq On : 29 May 2019 8:15 pm
Operator : TB
Sample : 9E29058-CALA
Misc : 1X 5mL 100ppb VOC DI+MeOH
ALS Vial : 14 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:46:02 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

5/30/19

no change

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (I)	6.031	168	260650	50.00	ug/L	0.00
37) Chlorobenzene-d5 (I)	9.748	117	459775	50.00	ug/L	0.00
57) 1,4-Dichlorobenzene-d4...	11.725	152	197554	50.00	ug/L	0.00
System Monitoring Compounds						
26) Dibromofluoromethane (S)	5.532	111	144066	50.01	ug/L	0.00
32) 1,4-Difluorobenzene (S)	6.584	114	496661	49.33	ug/L	0.00
39) Toluene-d8 (S)	8.093	98	619571	49.69	ug/L	0.00
58) 4-Bromofluorobenzene (S)	10.836	174	172526	50.28	ug/L	0.00
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.650	85	241195	104.91	ug/L	98
3) Chloromethane	1.851	50	355923	96.20	ug/L	99
4) Vinyl Chloride	1.942	62	265790	99.44	ug/L	98
5) Bromomethane	2.295	96	130087	90.18	ug/L	93
6) Chloroethane	2.441	64	105670	108.38	ug/L	98
7) Trichlorofluoromethane	2.569	101	152590	100.46	ug/L	99
8) 1,1-Dichloroethene	3.086	61	268375	101.62	ug/L	88
9) Carbon Disulfide	3.098	76	506056	122.98	ug/L	99
10) Freon 113	3.141	101	207803	97.94	ug/L	88
11) Iodomethane	3.238	142	139044	147.88	ug/L	99
12) Methylene Chloride	3.719	84	236890	79.94	ug/L	94
13) Acetone	3.828	43	225817	199.20	ug/L	94
14) t-1,2-Dichloroethene	3.883	61	311743	100.32	ug/L	96
15) n-Hexane	3.962	86	48610	94.92	ug/L	97
16) Methyl-tert-butyl-ether	4.029	73	885758	97.01	ug/L	97
17) 1,1-Dichloroethane	4.516	63	388015	100.88	ug/L	99
18) Acrylonitrile	4.589	53	160664	103.26	ug/L	100
19) c-1,2-Dichloroethene	5.063	61	343281	99.78	ug/L	99
20) 2,2-Dichloropropane	5.167	77	299040	100.06	ug/L	88
21) Bromochloromethane	5.264	49	202481	98.66	ug/L	99
22) Chloroform	5.343	83	433579	98.42	ug/L	98
23) Carbon Tetrachloride	5.471	117	278862	115.10	ug/L	98
24) Tetrahydrofuran	5.526	42	156885	99.34	ug/L	93
25) 1,1,1-Trichloroethane	5.544	97	353917	100.92	ug/L	97
27) 1,1-Dichloropropene	5.672	75	339212	98.82	ug/L	99
28) 2-Butanone (MEK)	5.684	43	408448	194.52	ug/L	95
29) Benzene	5.927	78	1066556	94.74	ug/L	96
30) 1,2-Dichloroethane (EDC)	6.146	62	327724	97.13	ug/L	98
31) iso-Butyl Alcohol	6.280	43	664229	2570.97	ug/L	88
33) Trichloroethene (TCE)	6.548	130	306069	99.43	ug/L	98
34) Dibromomethane	6.992	93	161634	103.01	ug/L	92
35) 1,2-Dichloropropane	7.101	63	294477	99.11	ug/L	92
36) Bromodichloromethane	7.180	83	315200	117.20	ug/L	97
38) c-1,3-Dichloropropene	7.886	75	423217	107.96	ug/L	99
40) Toluene	8.154	91	1105825	93.58	ug/L	97
41) Tetrachloroethene (PCE)	8.598	166	260817	99.40	ug/L	98
42) 4-Methyl-2-Pentanone (...	8.616	43	707759	197.77	ug/L	98
43) t-1,3-Dichloropropene	8.640	75	389918	110.99	ug/L	97
44) 1,1,2-Trichloroethane	8.817	97	255240	99.76	ug/L	95
45) Dibromochloromethane	9.005	129	241274	129.83	ug/L	94
46) 1,3-Dichloropropane	9.103	76	456442	97.66	ug/L	99
47) 1,2-Dibromoethane (EDB)	9.243	107	266180	104.60	ug/L	100
48) 2-Hexanone	9.498	43	528430	204.79	ug/L	99

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052914.D
Acq On : 29 May 2019 8:15 pm
Operator : TB
Sample : 9E29058-CALA
Misc : 1X 5mL 100ppb VOC DI+MeOH
ALS Vial : 14 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:46:02 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

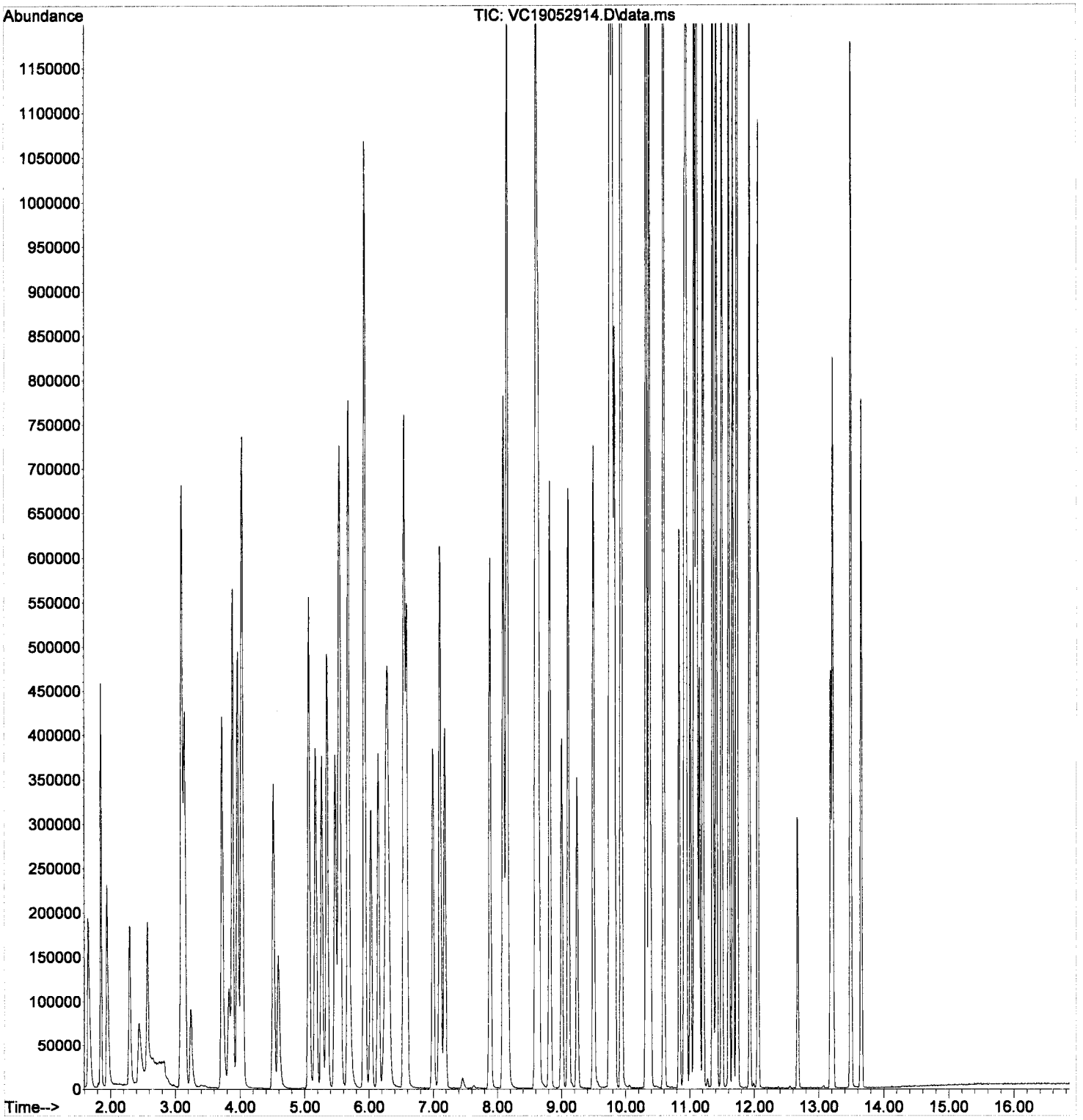
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.766	112	689400	96.44	ug/L		97
50) Ethylbenzene	9.790	91	1114972	91.71	ug/L		96
51) 1,1,1,2-Tetrachloroethane	9.827	131	242014	110.23	ug/L		98
52) m,p-Xylenes (2)	9.930	91	1592559	177.51	ug/L		95
53) o-Xylene	10.319	91	885817	95.01	ug/L		96
54) Styrene	10.368	104	713586	101.15	ug/L		97
55) Bromoform	10.386	173	146040	143.70	ug/L		99
56) Isopropylbenzene	10.593	105	1002570	93.22	ug/L		97
59) Bromobenzene	10.916	156	271067	101.96	ug/L		93
60) n-Propylbenzene	10.940	91	1090767	92.93	ug/L		98
61) 1,1,2,2-Tetrachloroethane	11.007	83	271157	100.53	ug/L		99
62) 2-Chlorotoluene	11.068	126	246373	101.07	ug/L		93
63) 1,3,5-Trimethylbenzene	11.104	105	773425	94.43	ug/L		95
64) 1,2,3-Trichloropropane	11.116	110	105916	97.60	ug/L		87
65) t-1,4-Dichloro-2-butene	11.153	88	40488	119.01	ug/L	#	74
66) 4-Chlorotoluene	11.208	91	677786	96.28	ug/L		97
67) tert-Butylbenzene	11.354	91	425964	97.12	ug/L		92
68) 1,2,4-Trimethylbenzene	11.414	105	777007	93.38	ug/L		97
69) sec-Butylbenzene	11.500	105	882609	92.92	ug/L		99
70) 4-Isopropyltoluene	11.609	119	751233	96.35	ug/L		98
71) 1,3-Dichlorobenzene	11.670	146	425300	96.98	ug/L		99
72) 1,4-Dichlorobenzene	11.737	146	418076	96.31	ug/L		97
73) n-Butylbenzene	11.932	91	597386	92.43	ug/L		99
74) 1,2-Dichlorobenzene	12.059	146	392931	96.04	ug/L		97
75) 1,2-Dibromo-3-Chloropr...	12.674	157	80792	130.60	ug/L		93
76) Hexachlorobutadiene	13.185	223	57553	90.62	ug/L		99
77) 1,2,4-Trichlorobenzene	13.215	180	244685	101.17	ug/L		99
78) Naphthalene	13.489	128	891724	100.97	ug/L		98
79) 1,2,3-Trichlorobenzene	13.653	180	241375	100.22	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052914.D
Acq On : 29 May 2019 8:15 pm
Operator : TB
Sample : 9E29058-CALA
Misc : 1X 5mL 100ppb VOC DI+MeOH
ALS Vial : 14 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:46:02 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052915.D
Acq On : 29 May 2019 8:42 pm
Operator : TB
Sample : 9E29058-IBL3
Misc : 1X 5mL DI+MeOH
ALS Vial : 15 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:39 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units		Dev(Min)
Internal Standards						
1) Pentafluorobenzene (I)	6.034	168	256547	50.00 ug/L		0.00
37) Chlorobenzene-d5 (I)	9.751	117	452677	50.00 ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.728	152	192224	50.00 ug/L		0.00
System Monitoring Compounds						
26) Dibromofluoromethane (S)	5.535	111	140388	50.53 ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.587	114	494571	50.12 ug/L		0.00
39) Toluene-d8 (S)	8.096	98	609458	49.77 ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.834	174	168721	50.83 ug/L		0.00
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.654	85	676	0.29 ug/L	#	50
3) Chloromethane	1.861	50	943	0.25 ug/L		88
4) Vinyl Chloride	1.946	62	275	0.11 ug/L		68
5) Bromomethane	2.305	96	1722	1.17 ug/L		89
6) Chloroethane	2.445	64	129	0.13 ug/L	#	1
7) Trichlorofluoromethane	2.572	101	180	0.12 ug/L	#	65
8) 1,1-Dichloroethene	3.089	61	380	0.15 ug/L		79
9) Carbon Disulfide	3.108	76	2586	0.63 ug/L		89
10) Freon 113	3.156	101	673	0.31 ug/L	#	65
11) Iodomethane	3.254	142	849	1.52 ug/L	#	75
12) Methylene Chloride	3.728	84	3426	Below Cal		88
13) Acetone	3.850	43	871	0.75 ug/L		95
14) t-1,2-Dichloroethene	3.892	61	750	0.25 ug/L		84
15) n-Hexane	3.971	86	246	Below Cal	#	4
19) c-1,2-Dichloroethene	5.054	61	315	0.09 ug/L	#	17
24) Tetrahydrofuran	5.535	42	155	0.09 ug/L	#	46
27) 1,1-Dichloropropene	5.687	75	990	0.29 ug/L		91
28) 2-Butanone (MEK)	5.724	43	638	0.31 ug/L		54
33) Trichloroethene (TCE)	6.551	130	647	0.21 ug/L		84
40) Toluene	8.157	91	1952	0.16 ug/L		87
41) Tetrachloroethene (PCE)	8.601	166	1080	0.39 ug/L		85
49) Chlorobenzene	9.769	112	1460	0.20 ug/L		76
50) Ethylbenzene	9.793	91	2680	0.22 ug/L		78
52) m,p-Xylenes (2)	9.933	91	4420	0.50 ug/L		88
53) o-Xylene	10.323	91	1924	0.21 ug/L		92
54) Styrene	10.377	104	1021	0.16 ug/L		88
56) Isopropylbenzene	10.596	105	4775	0.45 ug/L		92
59) Bromobenzene	10.919	156	566	0.22 ug/L	#	66
60) n-Propylbenzene	10.943	91	8814	0.76 ug/L		95
62) 2-Chlorotoluene	11.071	126	976	0.41 ug/L		99
63) 1,3,5-Trimethylbenzene	11.107	105	5812	0.74 ug/L		87
66) 4-Chlorotoluene	11.211	91	2829	0.41 ug/L		94
67) tert-Butylbenzene	11.357	91	4500	1.03 ug/L		94
68) 1,2,4-Trimethylbenzene	11.412	105	5321	0.66 ug/L		98
69) sec-Butylbenzene	11.497	105	13359	1.44 ug/L		93
70) 4-Isopropyltoluene	11.606	119	11787	1.56 ug/L		92
71) 1,3-Dichlorobenzene	11.673	146	2471	0.55 ug/L		97
72) 1,4-Dichlorobenzene	11.740	146	2868	0.64 ug/L		80
73) n-Butylbenzene	11.929	91	12734	1.99 ug/L		98
74) 1,2-Dichlorobenzene	12.063	146	1697	0.41 ug/L		91
76) Hexachlorobutadiene	13.182	223	1410	2.38 ug/L		84
77) 1,2,4-Trichlorobenzene	13.212	180	3876	1.63 ug/L		98
78) Naphthalene	13.492	128	4286	0.53 ug/L		94

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052915.D
Acq On : 29 May 2019 8:42 pm
Operator : TB
Sample : 9E29058-IBL3
Misc : 1X 5mL DI+MeOH
ALS Vial : 15 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:39 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

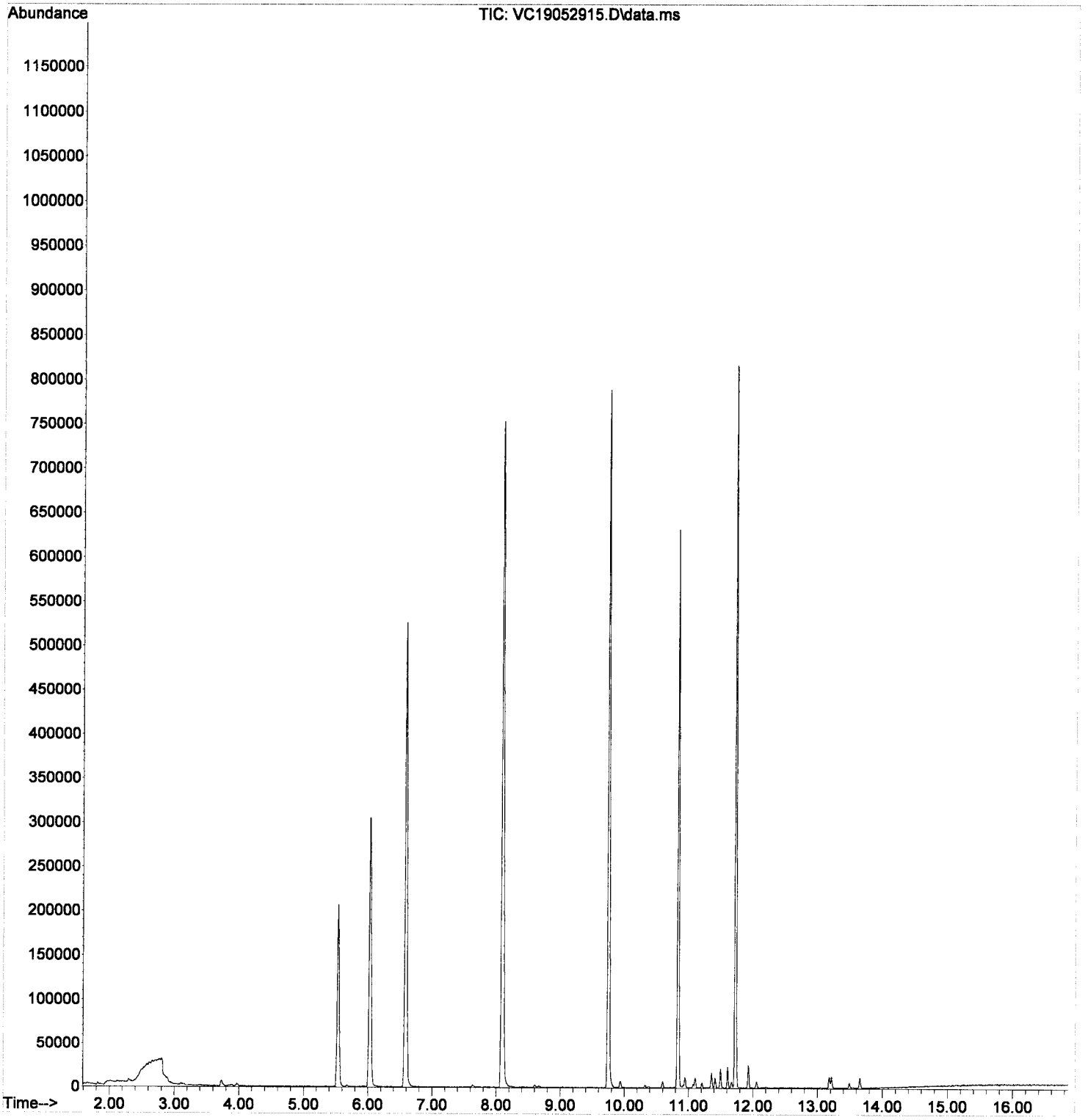
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
79) 1,2,3-Trichlorobenzene	13.656	180	3676	1.63	ug/L	89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052915.D
Acq On : 29 May 2019 8:42 pm
Operator : TB
Sample : 9E29058-IBL3
Misc : 1X 5mL DI+MeOH
ALS Vial : 15 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:39 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052916.D
Acq On : 29 May 2019 9:10 pm
Operator : TB
Sample : 9E29058-CALB
Misc : 1X 5mL 200ppb VOC DI+MeOH
ALS Vial : 16 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:46:04 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

5/30/19 no change

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (I)	6.029	168	266542	50.00	ug/L	0.00
37) Chlorobenzene-d5 (I)	9.752	117	464260	50.00	ug/L	0.00
57) 1,4-Dichlorobenzene-d4...	11.729	152	201371	50.00	ug/L	0.00
System Monitoring Compounds						
26) Dibromofluoromethane (S)	5.530	111	144453	49.03	ug/L	0.00
32) 1,4-Difluorobenzene (S)	6.582	114	515449	50.06	ug/L	0.00
39) Toluene-d8 (S)	8.091	98	635623	50.48	ug/L	0.00
58) 4-Bromofluorobenzene (S)	10.834	174	170853	48.85	ug/L	0.00
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.655	85	453681	192.97	ug/L	98
3) Chloromethane	1.855	50	652609	172.49	ug/L	99
4) Vinyl Chloride	1.940	62	501566	183.50	ug/L	98
5) Bromomethane	2.293	96	269576	182.75	ug/L	96
6) Chloroethane	2.433	64	187116	187.66	ug/L	95
7) Trichlorofluoromethane	2.567	101	268497	172.86	ug/L	99
8) 1,1-Dichloroethene	3.090	61	525278	194.49	ug/L	90
9) Carbon Disulfide	3.102	76	1024014	243.34	ug/L	98
10) Freon 113	3.139	101	409831	188.90	ug/L	88
11) Iodomethane	3.236	142	307158	319.46	ug/L	98
12) Methylene Chloride	3.723	84	435629	143.76	ug/L	96
13) Acetone	3.826	43	420741	362.94	ug/L	93
14) t-1,2-Dichloroethene	3.881	61	595457	187.38	ug/L	94
15) n-Hexane	3.960	86	98461	188.02	ug/L	97
16) Methyl-tert-butyl-ether	4.027	73	1674237	179.31	ug/L	94
17) 1,1-Dichloroethane	4.514	63	718862	182.76	ug/L	99
18) Acrylonitrile	4.587	53	314097	197.40	ug/L	100
19) c-1,2-Dichloroethene	5.061	61	647004	183.91	ug/L	99
20) 2,2-Dichloropropane	5.165	77	584639	191.29	ug/L	88
21) Bromochloromethane	5.262	49	383923	182.94	ug/L	99
22) Chloroform	5.347	83	802076	178.04	ug/L	97
23) Carbon Tetrachloride	5.475	117	577566	233.12	ug/L	98
24) Tetrahydrofuran	5.524	42	306415	189.74	ug/L	94
25) 1,1,1-Trichloroethane	5.542	97	697341	194.44	ug/L	99
27) 1,1-Dichloropropene	5.670	75	664805	189.39	ug/L	97
28) 2-Butanone (MEK)	5.682	43	802082	373.55	ug/L	95
29) Benzene	5.925	78	1978560	171.86	ug/L	93
30) 1,2-Dichloroethane (EDC)	6.144	62	639082	185.22	ug/L	97
31) iso-Butyl Alcohol	6.278	43	1273429	4819.98	ug/L	89
33) Trichloroethene (TCE)	6.546	130	582863	185.16	ug/L	98
34) Dibromomethane	6.996	93	312313	194.63	ug/L	96
35) 1,2-Dichloropropane	7.105	63	569634	187.48	ug/L	94
36) Bromodichloromethane	7.178	83	637695	231.87	ug/L	96
38) c-1,3-Dichloropropene	7.884	75	831235	209.99	ug/L	98
40) Toluene	8.152	91	2033618	170.42	ug/L	94
41) Tetrachloroethene (PCE)	8.596	166	514549	194.20	ug/L	98
42) 4-Methyl-2-Pentanone (...	8.614	43	1330786	368.28	ug/L	97
43) t-1,3-Dichloropropene	8.644	75	772812	217.86	ug/L	95
44) 1,1,2-Trichloroethane	8.815	97	500164	193.60	ug/L	97
45) Dibromochloromethane	9.003	129	499033	265.93	ug/L	97
46) 1,3-Dichloropropane	9.107	76	863655	183.00	ug/L	99
47) 1,2-Dibromoethane (EDB)	9.241	107	519720	202.26	ug/L	100
48) 2-Hexanone	9.496	43	1007307	386.60	ug/L	95

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052916.D
Acq On : 29 May 2019 9:10 pm
Operator : TB
Sample : 9E29058-CALB
Misc : 1X 5mL 200ppb VOC DI+MeOH
ALS Vial : 16 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:46:04 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration

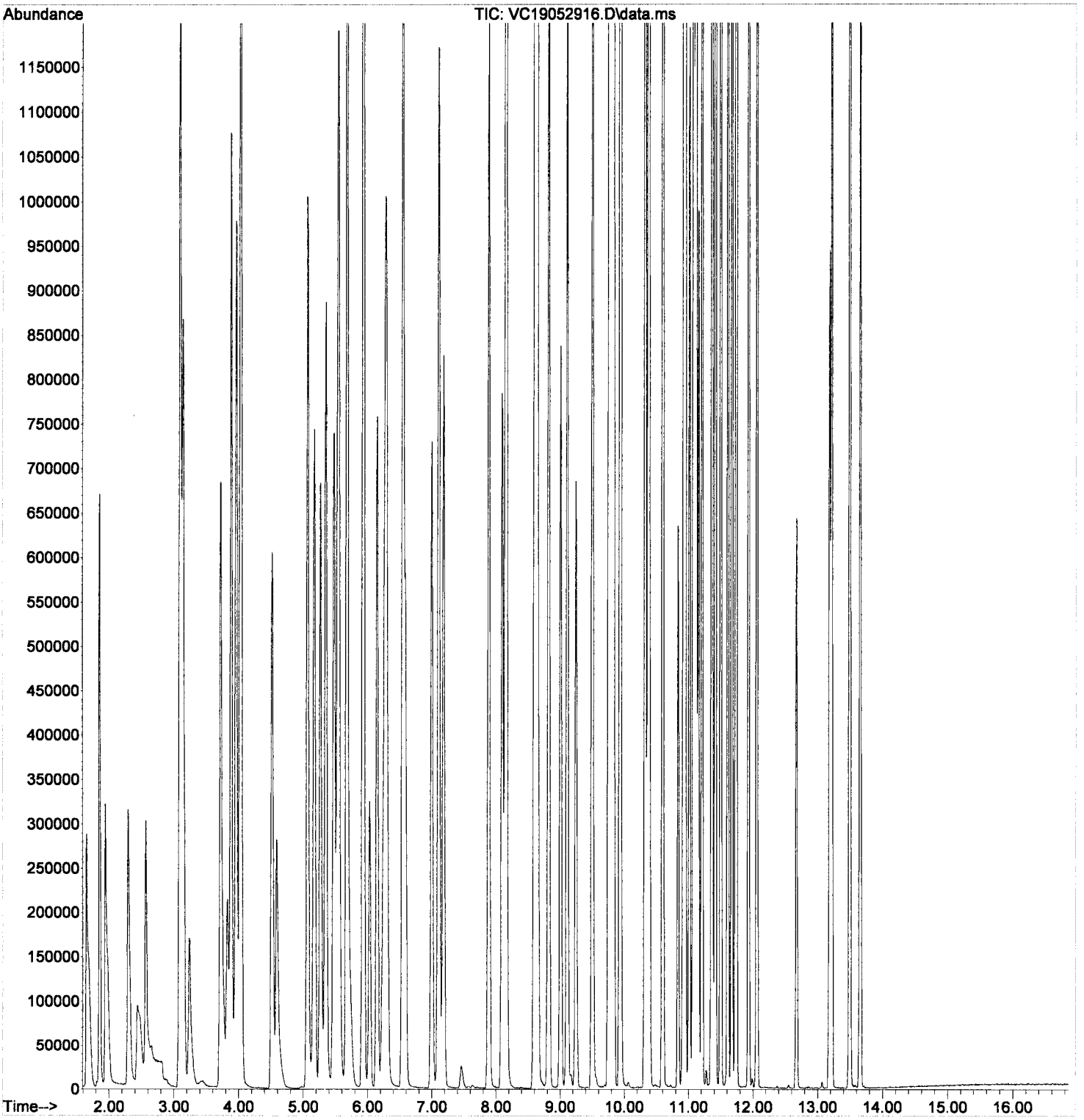
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.764	112	1272416	176.28	ug/L		94
50) Ethylbenzene	9.794	91	1992124	162.28	ug/L		91
51) 1,1,1,2-Tetrachloroethane	9.831	131	477013	215.17	ug/L		97
52) m,p-Xylenes (2)	9.934	91	2720941	300.35	ug/L		86
53) o-Xylene	10.317	91	1581408	167.98	ug/L		93
54) Styrene	10.366	104	1293977	181.65	ug/L		92
55) Bromoform	10.390	173	312567	304.58	ug/L		99
56) Isopropylbenzene	10.597	105	1774164	163.38	ug/L		93
59) Bromobenzene	10.920	156	503576	185.83	ug/L		98
60) n-Propylbenzene	10.944	91	1879841	157.12	ug/L		91
61) 1,1,2,2-Tetrachloroethane	11.011	83	542178	197.20	ug/L		99
62) 2-Chlorotoluene	11.072	126	452526	182.13	ug/L		97
63) 1,3,5-Trimethylbenzene	11.102	105	1378879	165.16	ug/L		94
64) 1,2,3-Trichloropropane	11.114	110	207925	187.97	ug/L		90
65) t-1,4-Dichloro-2-butene	11.151	88	84511	243.70	ug/L	#	74
66) 4-Chlorotoluene	11.206	91	1200687	167.33	ug/L		94
67) tert-Butylbenzene	11.358	91	765557	171.23	ug/L		94
68) 1,2,4-Trimethylbenzene	11.412	105	1351532	159.35	ug/L		92
69) sec-Butylbenzene	11.498	105	1543796	159.46	ug/L		95
70) 4-Isopropyltoluene	11.607	119	1333607	167.80	ug/L		95
71) 1,3-Dichlorobenzene	11.668	146	784949	175.60	ug/L		97
72) 1,4-Dichlorobenzene	11.741	146	784148	177.22	ug/L		97
73) n-Butylbenzene	11.929	91	1090372	165.52	ug/L		95
74) 1,2-Dichlorobenzene	12.057	146	746324	178.95	ug/L		95
75) 1,2-Dibromo-3-Chloropr...	12.672	157	172847	274.12	ug/L		92
76) Hexachlorobutadiene	13.183	223	115944	179.09	ug/L		98
77) 1,2,4-Trichlorobenzene	13.213	180	483143	195.98	ug/L		97
78) Naphthalene	13.493	128	1658112	184.18	ug/L		97
79) 1,2,3-Trichlorobenzene	13.651	180	476195	193.98	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052916.D
Acq On : 29 May 2019 9:10 pm
Operator : TB
Sample : 9E29058-CALB
Misc : 1X 5mL 200ppb VOC DI+MeOH
ALS Vial : 16 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 11:46:04 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 11:44:49 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052917.D
Acq On : 29 May 2019 9:37 pm
Operator : TB
Sample : 9E29058-IBL4
Misc : 1X 5mL DI+MeOH
ALS Vial : 17 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:41 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units		Dev(Min)
Internal Standards						
1) Pentafluorobenzene (I)	6.035	168	266471	50.00 ug/L		0.00
37) Chlorobenzene-d5 (I)	9.752	117	468131	50.00 ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.729	152	198041	50.00 ug/L		0.00
System Monitoring Compounds						
26) Dibromofluoromethane (S)	5.536	111	145533	50.44 ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.588	114	513391	50.09 ug/L		0.00
39) Toluene-d8 (S)	8.097	98	627007	49.51 ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.834	174	174112	50.92 ug/L		0.00
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.661	85	1425	0.60 ug/L		87
3) Chloromethane	1.861	50	1797	0.46 ug/L		93
4) Vinyl Chloride	1.946	62	700	0.26 ug/L		91
5) Bromomethane	2.311	96	2516	1.64 ug/L	#	68
6) Chloroethane	2.433	64	128	0.13 ug/L	#	1
7) Trichlorofluoromethane	2.585	101	522	0.34 ug/L	#	16
8) 1,1-Dichloroethene	3.096	61	781	0.29 ug/L		96
9) Carbon Disulfide	3.114	76	5429	1.27 ug/L		94
10) Freon 113	3.139	101	1424	0.62 ug/L	#	64
11) Iodomethane	3.254	142	1500	2.07 ug/L	#	89
12) Methylene Chloride	3.729	84	5380	Below Cal		98
13) Acetone	3.838	43	1747	1.45 ug/L		95
14) t-1,2-Dichloroethene	3.893	61	1472	0.47 ug/L		93
15) n-Hexane	3.972	86	243	Below Cal	#	83
19) c-1,2-Dichloroethene	5.085	61	580	0.17 ug/L		83
22) Chloroform	5.359	83	846	0.18 ug/L		85
23) Carbon Tetrachloride	5.487	117	459	0.19 ug/L		82
25) 1,1,1-Trichloroethane	5.542	97	318	0.09 ug/L	#	45
27) 1,1-Dichloropropene	5.682	75	1691	0.47 ug/L		90
28) 2-Butanone (MEK)	5.712	43	436	0.20 ug/L		54
29) Benzene	5.931	78	1907	0.16 ug/L		95
30) 1,2-Dichloroethane (EDC)	6.156	62	420	0.12 ug/L		71
31) iso-Butyl Alcohol	6.308	43	105	0.40 ug/L		92
33) Trichloroethene (TCE)	6.558	130	1357	0.42 ug/L		82
34) Dibromomethane	7.002	93	215	0.14 ug/L	#	25
38) c-1,3-Dichloropropene	7.896	75	390	0.11 ug/L		65
40) Toluene	8.158	91	3533	0.29 ug/L		98
41) Tetrachloroethene (PCE)	8.596	166	2047	0.71 ug/L		97
43) t-1,3-Dichloropropene	8.656	75	377	0.11 ug/L		57
46) 1,3-Dichloropropane	9.113	76	475	0.10 ug/L	#	73
47) 1,2-Dibromoethane (EDB)	9.247	107	201	0.08 ug/L		72
48) 2-Hexanone	9.520	43	358	0.14 ug/L	#	31
49) Chlorobenzene	9.764	112	2333	0.31 ug/L	#	58
50) Ethylbenzene	9.800	91	4828	0.38 ug/L		94
52) m,p-Xylenes (2)	9.940	91	8543	0.94 ug/L		95
53) o-Xylene	10.323	91	2908	0.30 ug/L		88
54) Styrene	10.378	104	1910	0.29 ug/L		88
56) Isopropylbenzene	10.597	105	9551	0.87 ug/L		98
59) Bromobenzene	10.920	156	911	0.35 ug/L		87
60) n-Propylbenzene	10.944	91	17507	1.47 ug/L		99
61) 1,1,2,2-Tetrachloroethane	11.023	83	278	0.11 ug/L	#	25
62) 2-Chlorotoluene	11.072	126	1493	0.60 ug/L		93
63) 1,3,5-Trimethylbenzene	11.102	105	11474	1.42 ug/L		91

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052917.D
Acq On : 29 May 2019 9:37 pm
Operator : TB
Sample : 9E29058-IBL4
Misc : 1X 5mL DI+MeOH
ALS Vial : 17 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:41 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

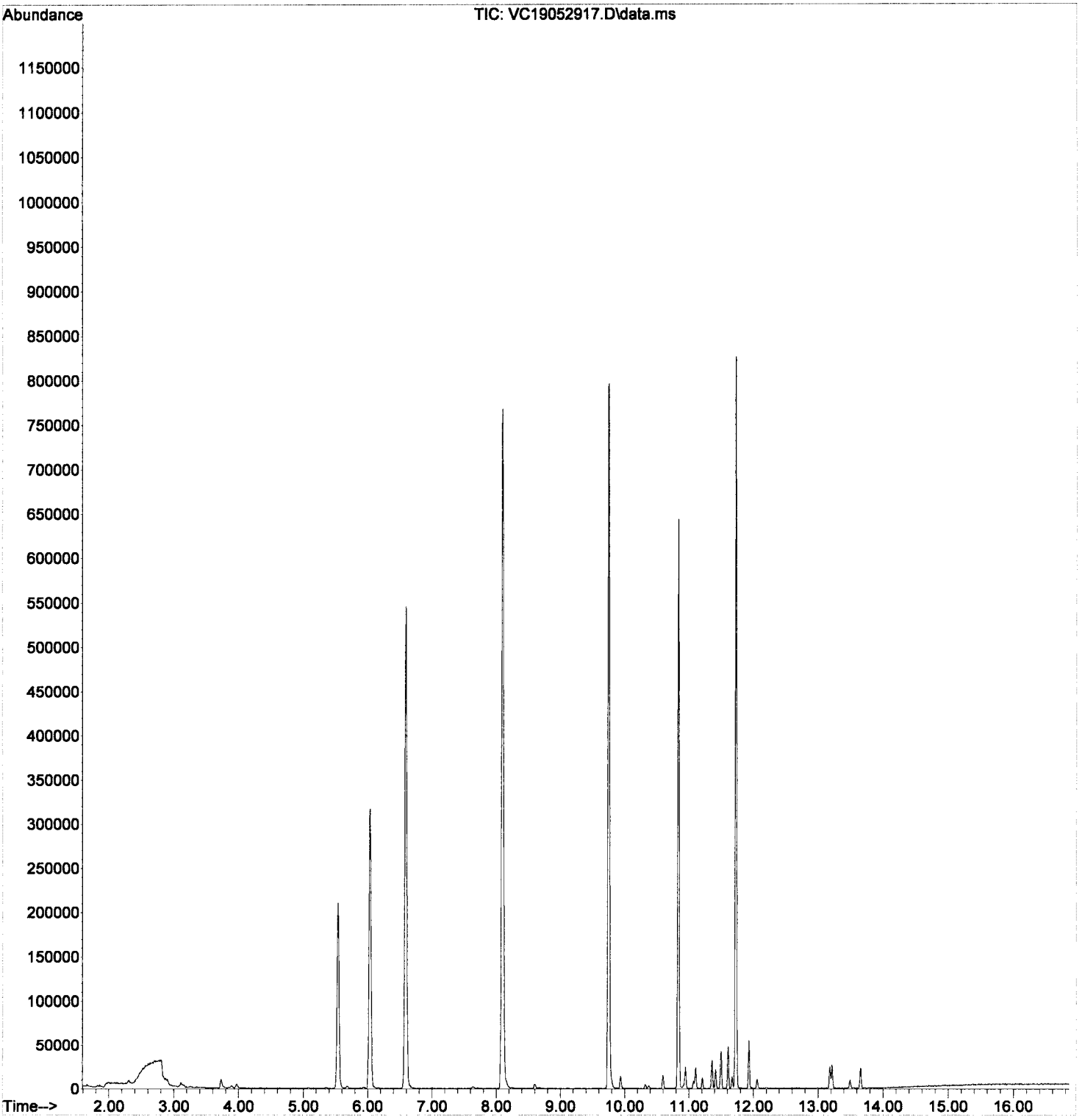
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
66) 4-Chlorotoluene	11.205	91	5419	0.76	ug/L	99
67) tert-Butylbenzene	11.358	91	8902	1.97	ug/L	98
68) 1,2,4-Trimethylbenzene	11.412	105	10380	1.26	ug/L	98
69) sec-Butylbenzene	11.497	105	27464	2.88	ug/L	98
70) 4-Isopropyltoluene	11.607	119	23355	3.01	ug/L	98
71) 1,3-Dichlorobenzene	11.674	146	4941	1.08	ug/L	94
72) 1,4-Dichlorobenzene	11.741	146	4659	1.02	ug/L	91
73) n-Butylbenzene	11.929	91	25413	3.85	ug/L	97
74) 1,2-Dichlorobenzene	12.057	146	3084	0.73	ug/L	97
76) Hexachlorobutadiene	13.183	223	2835	4.65	ug/L	96
77) 1,2,4-Trichlorobenzene	13.213	180	8316	3.39	ug/L	94
78) Naphthalene	13.493	128	8127	0.98	ug/L	100
79) 1,2,3-Trichlorobenzene	13.657	180	7607	3.27	ug/L	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052917.D
Acq On : 29 May 2019 9:37 pm
Operator : TB
Sample : 9E29058-IBL4
Misc : 1X 5mL DI+MeOH
ALS Vial : 17 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:41 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052918.D
Acq On : 29 May 2019 10:05 pm
Operator : TB
Sample : 9E29058-IBL5
Misc : 1X 5mL DI+MeOH
ALS Vial : 18 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:43 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

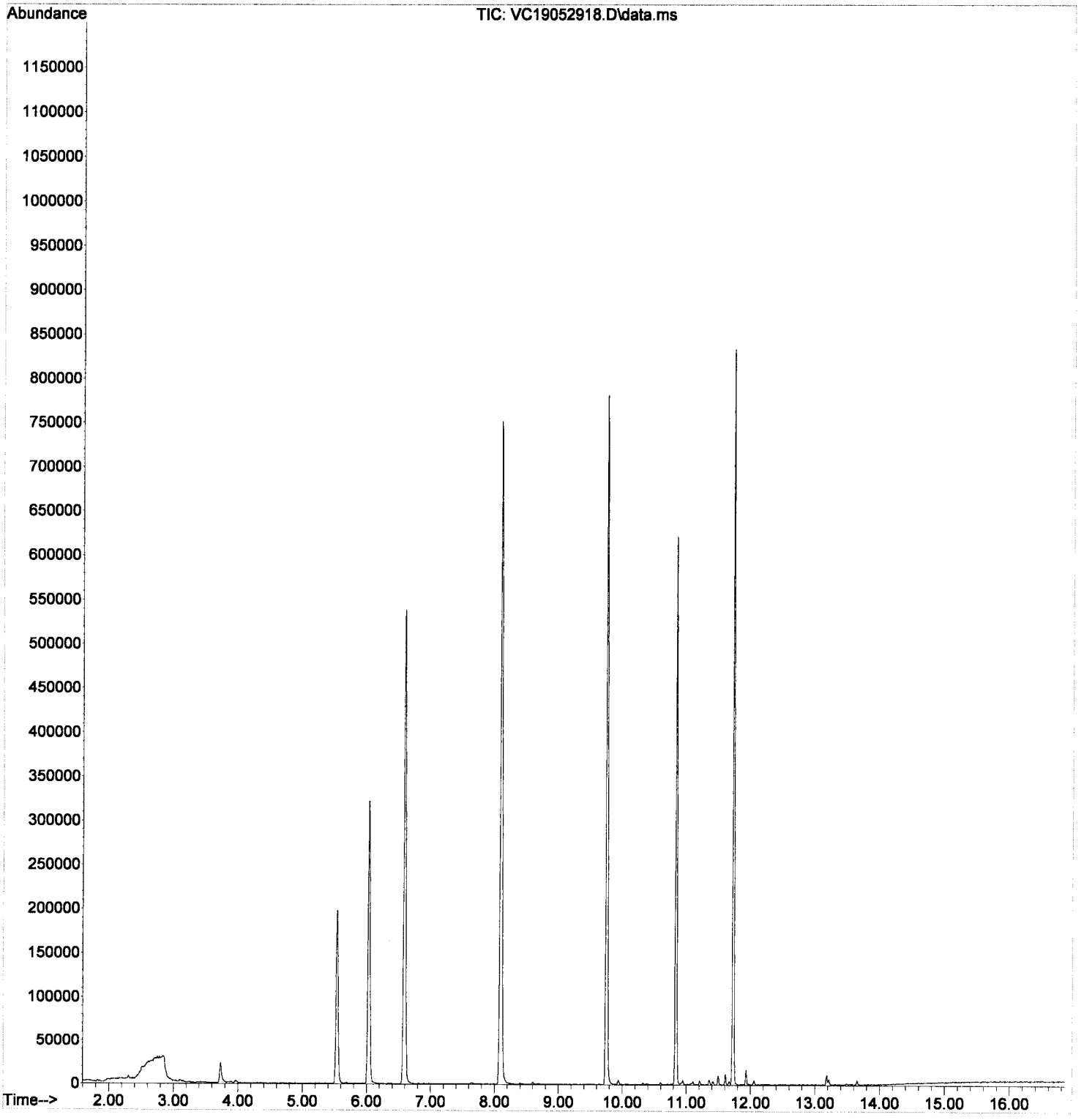
Compound	R.T.	QIon	Response	Conc Units		Dev(Min)
Internal Standards						
1) Pentafluorobenzene (I)	6.030	168	262431	50.00 ug/L		0.00
37) Chlorobenzene-d5 (I)	9.747	117	460245	50.00 ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.724	152	197727	50.00 ug/L		0.00
System Monitoring Compounds						
26) Dibromofluoromethane (S)	5.538	111	139115	48.95 ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.590	114	508408	50.37 ug/L		0.00
39) Toluene-d8 (S)	8.093	98	623082	50.04 ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.836	174	168233	49.27 ug/L		0.00
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.668	85	297	0.13 ug/L	#	50
3) Chloromethane	1.863	50	964	0.25 ug/L		84
5) Bromomethane	2.301	96	1935	1.28 ug/L		71
6) Chloroethane	2.526	64	129	0.13 ug/L	#	1
8) 1,1-Dichloroethene	3.098	61	246	0.09 ug/L	#	72
9) Carbon Disulfide	3.104	76	1990	0.47 ug/L		88
10) Freon 113	3.153	101	635	0.28 ug/L		77
11) Iodomethane	3.262	142	695	1.37 ug/L	#	47
12) Methylene Chloride	3.731	84	13098	Below Cal		94
13) Acetone	3.859	43	2652	2.24 ug/L		78
14) t-1,2-Dichloroethene	3.889	61	496	0.16 ug/L	#	74
27) 1,1-Dichloropropene	5.690	75	683	0.19 ug/L		84
28) 2-Butanone (MEK)	5.732	43	375	0.18 ug/L		54
33) Trichloroethene (TCE)	6.553	130	416	0.13 ug/L		83
40) Toluene	8.166	91	1276	0.10 ug/L		90
41) Tetrachloroethene (PCE)	8.610	166	725	0.26 ug/L	#	60
49) Chlorobenzene	9.766	112	925	0.13 ug/L	#	1
50) Ethylbenzene	9.802	91	1878	0.15 ug/L		82
52) m,p-Xylenes (2)	9.936	91	2865	0.32 ug/L		95
53) o-Xylene	10.325	91	936	0.10 ug/L		75
54) Styrene	10.374	104	646	0.10 ug/L		93
56) Isopropylbenzene	10.599	105	1528	0.14 ug/L		89
59) Bromobenzene	10.915	156	389	0.15 ug/L		74
60) n-Propylbenzene	10.946	91	3694	0.31 ug/L		96
62) 2-Chlorotoluene	11.067	126	433	0.18 ug/L	#	58
63) 1,3,5-Trimethylbenzene	11.104	105	2122	0.26 ug/L		88
66) 4-Chlorotoluene	11.207	91	1647	0.23 ug/L		97
67) tert-Butylbenzene	11.359	91	1693	0.38 ug/L		92
68) 1,2,4-Trimethylbenzene	11.420	105	2188	0.27 ug/L		98
69) sec-Butylbenzene	11.499	105	6614	0.69 ug/L		95
70) 4-Isopropyltoluene	11.609	119	5729	0.74 ug/L		91
71) 1,3-Dichlorobenzene	11.670	146	1299	0.28 ug/L		92
72) 1,4-Dichlorobenzene	11.743	146	1341	0.29 ug/L		78
73) n-Butylbenzene	11.931	91	7709	1.17 ug/L		99
74) 1,2-Dichlorobenzene	12.053	146	631	0.15 ug/L		97
76) Hexachlorobutadiene	13.184	223	1476	2.42 ug/L		90
77) 1,2,4-Trichlorobenzene	13.215	180	2198	0.90 ug/L		98
78) Naphthalene	13.495	128	1302	0.16 ug/L		78
79) 1,2,3-Trichlorobenzene	13.659	180	1736	0.75 ug/L		78

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052918.D
Acq On : 29 May 2019 10:05 pm
Operator : TB
Sample : 9E29058-IBL5
Misc : 1X 5mL DI+MeOH
ALS Vial : 18 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:43 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052919.D
Acq On : 29 May 2019 10:32 pm
Operator : TB
Sample : 9E29058-ICV1
Misc : 1X 5mL 20ppb VOC DI+MeOH
ALS Vial : 19 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

5/30/19

Quant Time: May 30 15:28:45 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.037	168	267090	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.747	117	469227	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.725	152	199143	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.538	111	150987	52.20	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.590	114	516911	50.32	ug/L		0.00
39) Toluene-d8 (S)	8.093	98	628263	49.49	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.836	174	172175	50.07	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.663	85	39805	16.60	ug/L		99
3) Chloromethane	1.863	50	73919	18.77	ug/L		100
4) Vinyl Chloride	1.955	62	52823	19.40	ug/L		93
5) Bromomethane	2.301	96	32111	20.91	ug/L		97
6) Chloroethane	2.447	64	21900	21.41	ug/L		83
7) Trichlorofluoromethane	2.575	101	27335	18.01	ug/L		97
8) 1,1-Dichloroethene	3.098	61	68501	25.35	ug/L		87
9) Carbon Disulfide	3.110	76	83938	19.57	ug/L		99
10) Freon 113	3.147	101	44798	19.53	ug/L		90
11) Iodomethane	3.250	142	17633	15.93	ug/L		97
12) Methylene Chloride	3.731	84	57801	18.27	ug/L		97
13) Acetone	3.834	43	48607	40.37	ug/L		94
14) t-1,2-Dichloroethene	3.889	61	76230	24.33	ug/L		94
15) n-Hexane	3.968	86	11789	21.52	ug/L	#	86
16) Methyl-tert-butyl-ether	4.035	73	188517	20.31	ug/L		98
17) 1,1-Dichloroethane	4.522	63	93082	24.10	ug/L		98
18) Acrylonitrile	4.595	53	32674	20.92	ug/L		98
19) c-1,2-Dichloroethene	5.069	61	75358	21.55	ug/L		96
20) 2,2-Dichloropropane	5.173	77	59131	19.54	ug/L		89
21) Bromochloromethane	5.270	49	44777	21.67	ug/L		97
22) Chloroform	5.349	83	94903	20.68	ug/L		99
23) Carbon Tetrachloride	5.477	117	53890	21.74	ug/L		98
24) Tetrahydrofuran	5.532	42	32013	18.31	ug/L		92
25) 1,1,1-Trichloroethane	5.550	97	78867	22.51	ug/L		99
27) 1,1-Dichloropropene	5.678	75	74489	20.65	ug/L		97
28) 2-Butanone (MEK)	5.690	43	86952	40.50	ug/L		96
29) Benzene	5.933	78	246265	21.21	ug/L		99
30) 1,2-Dichloroethane (EDC)	6.146	62	74000	21.38	ug/L		99
31) iso-Butyl Alcohol	6.274	43	134411	505.53	ug/L		93
33) Trichloroethene (TCE)	6.548	130	66523	20.43	ug/L		98
34) Dibromomethane	6.998	93	33103	21.33	ug/L		91
35) 1,2-Dichloropropane	7.107	63	62437	21.04	ug/L		93
36) Bromodichloromethane	7.180	83	57376	21.95	ug/L		96
38) c-1,3-Dichloropropene	7.886	75	81256	22.00	ug/L		99
40) Toluene	8.154	91	246595	19.87	ug/L		98
41) Tetrachloroethene (PCE)	8.604	166	55691	19.35	ug/L		100
42) 4-Methyl-2-Pentanone (...	8.616	43	148633	38.79	ug/L		100
43) t-1,3-Dichloropropene	8.646	75	74591	21.77	ug/L		98
44) 1,1,2-Trichloroethane	8.817	97	54388	21.45	ug/L		96
45) Dibromochloromethane	9.005	129	40277	18.92	ug/L		94
46) 1,3-Dichloropropane	9.109	76	97055	20.69	ug/L		99
47) 1,2-Dibromoethane (EDB)	9.243	107	54165	21.85	ug/L		100
48) 2-Hexanone	9.498	43	105747	40.70	ug/L		98

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052919.D
Acq On : 29 May 2019 10:32 pm
Operator : TB
Sample : 9E29058-ICV1
Misc : 1X 5mL 20ppb VOC DI+MeOH
ALS Vial : 19 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:45 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

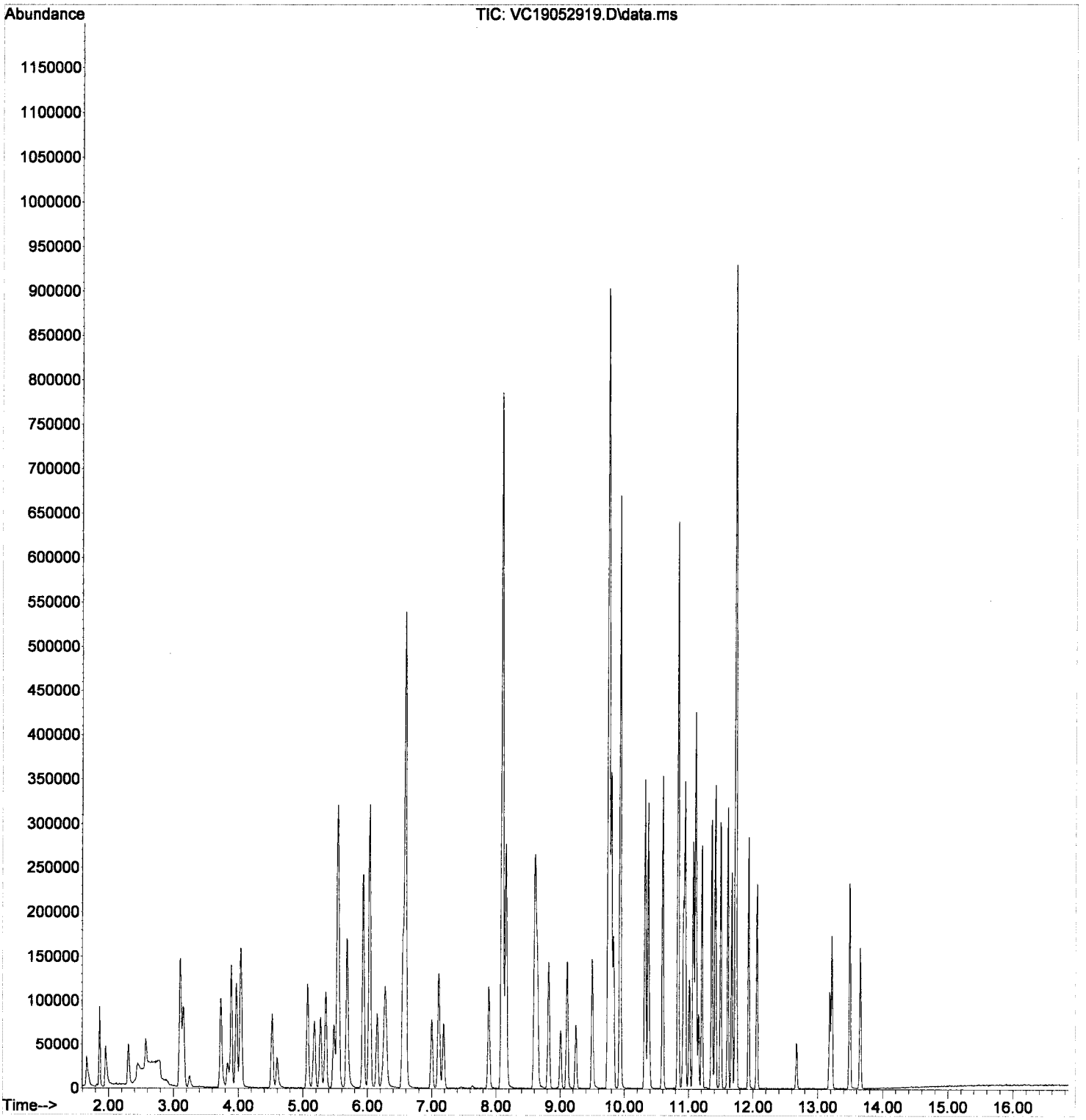
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
49) Chlorobenzene	9.766	112	151633	20.14	ug/L		99
50) Ethylbenzene	9.796	91	250184	19.82	ug/L		99
51) 1,1,1,2-Tetrachloroethane	9.827	131	46738	22.01	ug/L		99
52) m,p-Xylenes (2)	9.930	91	369390	40.54	ug/L		100
53) o-Xylene	10.319	91	192124	20.06	ug/L		99
54) Styrene	10.368	104	143713	21.47	ug/L		98
55) Bromoform	10.386	173	22610	18.67	ug/L		95
56) Isopropylbenzene	10.593	105	216506	19.72	ug/L		99
59) Bromobenzene	10.922	156	56374	21.44	ug/L		99
60) n-Propylbenzene	10.940	91	236282	19.71	ug/L		98
61) 1,1,2,2-Tetrachloroethane	11.007	83	56206	21.54	ug/L		94
62) 2-Chlorotoluene	11.068	126	49936	20.12	ug/L	#	82
63) 1,3,5-Trimethylbenzene	11.104	105	168273	20.76	ug/L		98
64) 1,2,3-Trichloropropane	11.116	110	21880	20.34	ug/L	#	83
65) t-1,4-Dichloro-2-butene	11.153	88	6955	19.17	ug/L	#	86
66) 4-Chlorotoluene	11.208	91	145649	20.30	ug/L		98
67) tert-Butylbenzene	11.354	91	88273	19.43	ug/L		96
68) 1,2,4-Trimethylbenzene	11.414	105	167703	20.22	ug/L		97
69) sec-Butylbenzene	11.500	105	193906	20.19	ug/L		98
70) 4-Isopropyltoluene	11.609	119	164288	21.02	ug/L		97
71) 1,3-Dichlorobenzene	11.670	146	90545	19.62	ug/L		99
72) 1,4-Dichlorobenzene	11.737	146	90005	19.52	ug/L		96
73) n-Butylbenzene	11.931	91	134289	20.21	ug/L		99
74) 1,2-Dichlorobenzene	12.059	146	83574	19.72	ug/L		99
75) 1,2-Dibromo-3-Chloropr...	12.674	157	12442	20.02	ug/L		98
76) Hexachlorobutadiene	13.179	223	13236	21.57	ug/L		98
77) 1,2,4-Trichlorobenzene	13.215	180	51658	20.93	ug/L		97
78) Naphthalene	13.489	128	180001	21.67	ug/L		99
79) 1,2,3-Trichlorobenzene	13.653	180	48911	20.92	ug/L		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052919.D
Acq On : 29 May 2019 10:32 pm
Operator : TB
Sample : 9E29058-ICV1
Misc : 1X 5mL 20ppb VOC DI+MeOH
ALS Vial : 19 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:45 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052920.D
Acq On : 29 May 2019 10:59 pm
Operator : TB
Sample : 9E29058-IBL6
Misc : 1X 5mL DI+MeOH
ALS Vial : 20 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:47 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration

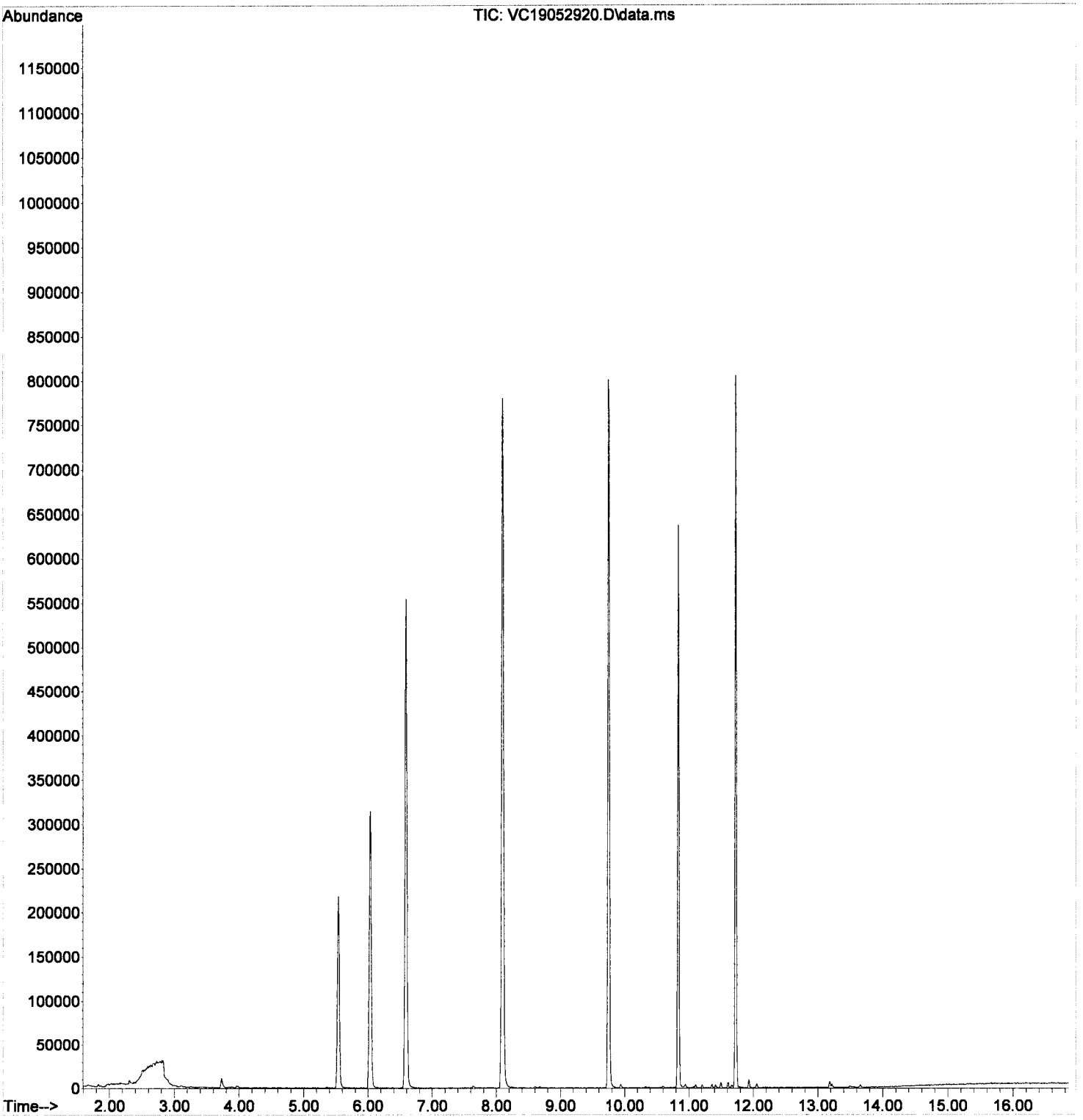
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene (I)	6.035	168	263418	50.00	ug/L		0.00
37) Chlorobenzene-d5 (I)	9.746	117	469419	50.00	ug/L		0.00
57) 1,4-Dichlorobenzene-d4...	11.729	152	193137	50.00	ug/L		0.00
System Monitoring Compounds							
26) Dibromofluoromethane (S)	5.536	111	149058	52.26	ug/L		0.00
32) 1,4-Difluorobenzene (S)	6.588	114	517972	51.12	ug/L		0.00
39) Toluene-d8 (S)	8.097	98	636573	50.13	ug/L		0.00
58) 4-Bromofluorobenzene (S)	10.834	174	170886	51.24	ug/L		0.00
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.667	85	391	0.17	ug/L	#	50
3) Chloromethane	1.861	50	1206	0.31	ug/L		94
5) Bromomethane	2.305	96	2643	1.75	ug/L		81
6) Chloroethane	2.531	64	502	0.50	ug/L	#	1
9) Carbon Disulfide	3.121	76	1128	0.27	ug/L		51
10) Freon 113	3.157	101	259	0.11	ug/L	#	79
11) Iodomethane	3.254	142	1123	1.75	ug/L	#	89
12) Methylene Chloride	3.735	84	5229	Below Cal			93
13) Acetone	3.851	43	2026	1.71	ug/L		85
14) t-1,2-Dichloroethene	3.893	61	342	0.11	ug/L		88
15) n-Hexane	3.960	86	175	Below Cal		#	1
22) Chloroform	5.353	83	416	0.09	ug/L		79
27) 1,1-Dichloropropene	5.688	75	499	0.14	ug/L	#	68
28) 2-Butanone (MEK)	5.737	43	239	0.11	ug/L		54
40) Toluene	8.158	91	1337	0.11	ug/L		72
41) Tetrachloroethene (PCE)	8.590	166	614	0.21	ug/L	#	67
49) Chlorobenzene	9.770	112	761	0.10	ug/L	#	41
50) Ethylbenzene	9.794	91	1537	0.12	ug/L		91
52) m,p-Xylenes (2)	9.934	91	2237	0.25	ug/L		92
53) o-Xylene	10.323	91	1026	0.11	ug/L		60
56) Isopropylbenzene	10.597	105	1697	0.15	ug/L		86
60) n-Propylbenzene	10.944	91	2962	0.25	ug/L		89
62) 2-Chlorotoluene	11.072	126	260	0.11	ug/L	#	86
63) 1,3,5-Trimethylbenzene	11.108	105	1782	0.23	ug/L		85
66) 4-Chlorotoluene	11.212	91	1495	0.21	ug/L		80
67) tert-Butylbenzene	11.358	91	1160	0.26	ug/L		82
68) 1,2,4-Trimethylbenzene	11.412	105	1662	0.21	ug/L		95
69) sec-Butylbenzene	11.498	105	3585	0.38	ug/L		96
70) 4-Isopropyltoluene	11.607	119	3334	0.44	ug/L		92
71) 1,3-Dichlorobenzene	11.674	146	1044	0.23	ug/L		87
72) 1,4-Dichlorobenzene	11.735	146	1219	0.27	ug/L	#	40
73) n-Butylbenzene	11.930	91	4399	0.68	ug/L		95
74) 1,2-Dichlorobenzene	12.063	146	605	0.15	ug/L		72
76) Hexachlorobutadiene	13.177	223	834	1.40	ug/L		89
77) 1,2,4-Trichlorobenzene	13.213	180	1499	0.63	ug/L		82
78) Naphthalene	13.499	128	1487	0.18	ug/L		89
79) 1,2,3-Trichlorobenzene	13.651	180	1110	0.49	ug/L	#	66

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052920.D
Acq On : 29 May 2019 10:59 pm
Operator : TB
Sample : 9E29058-IBL6
Misc : 1X 5mL DI+MeOH
ALS Vial : 20 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:28:47 2019
Quant Method : C:\msdchem\1\METHODS\VC190529S.M
Quant Title : EPA 8260: Volatile Organic Compounds
QLast Update : Thu May 30 14:50:00 2019
Response via : Initial Calibration



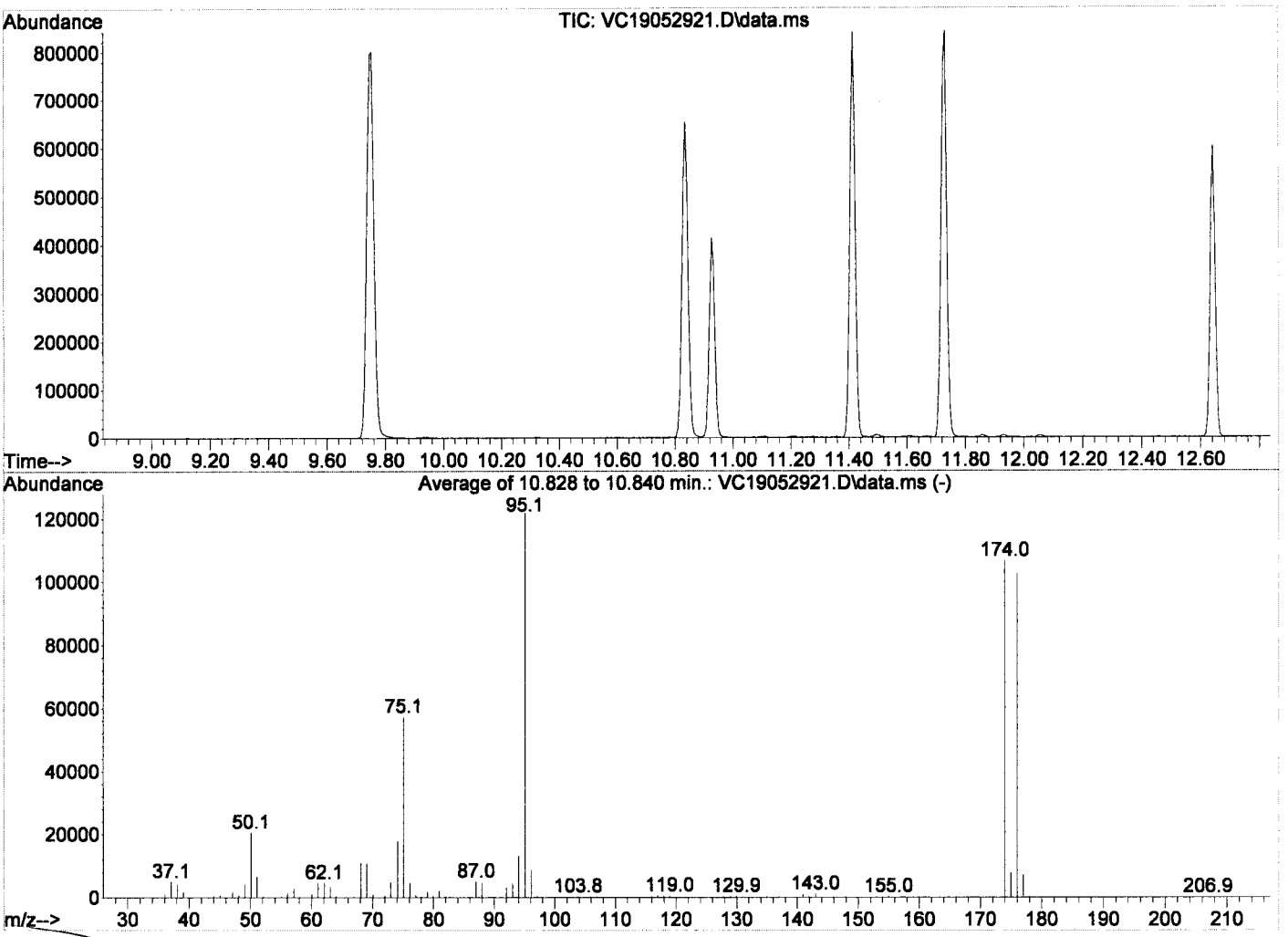
BFB

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052921.D
Acq On : 29 May 2019 11:27 pm
Operator : TB
Sample : 9E29058-TUN2 RT
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\VC190529G.M
Title : NWTPH-Gx by GC/MS
Last Update : Thu May 30 15:52:54 2019

5/30/19



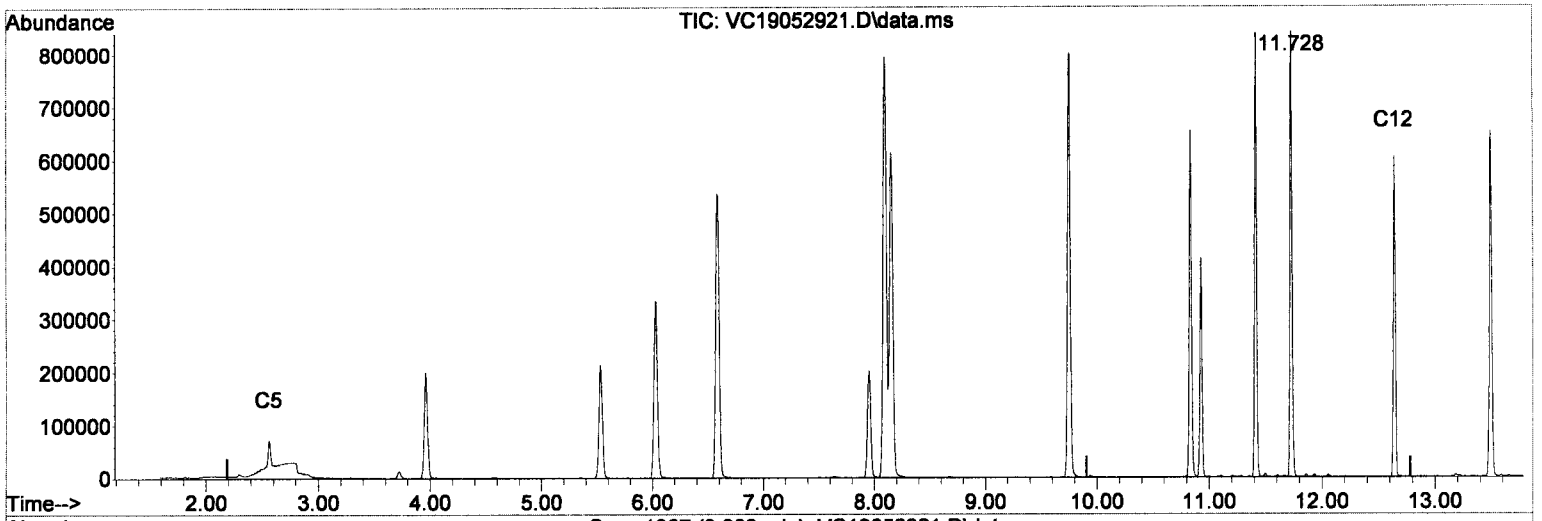
AutoFind: Scans 1519, 1520, 1521; Background Corrected with Scan 1512

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	12	40	16.8	20485	PASS
75	95	30	60	47.0	57338	PASS
95	95	100	100	100.0	121885	PASS
96	95	5	9	7.2	8794	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	200	87.5	106672	PASS
175	174	5	9	7.2	7710	PASS
176	174	95	101	96.1	102493	PASS
177	176	5	9	7.0	7180	PASS

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052921.D
Acq On : 29 May 2019 11:27 pm
Operator : TB
Sample : 9E29058-TUN2 RT
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:53 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration



TIC: VC19052921.D\data.ms

(5) CA-LUFT (C5-C12) (H)

9.906min (0.000) 392.07 ug/L m

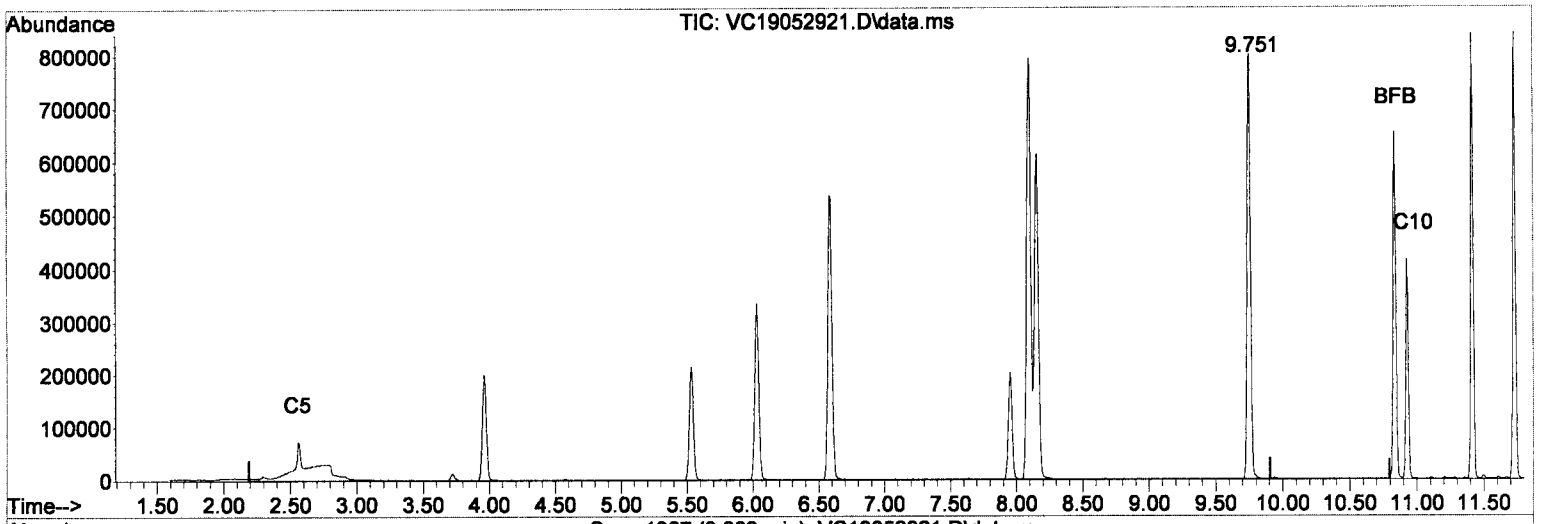
response 5195528

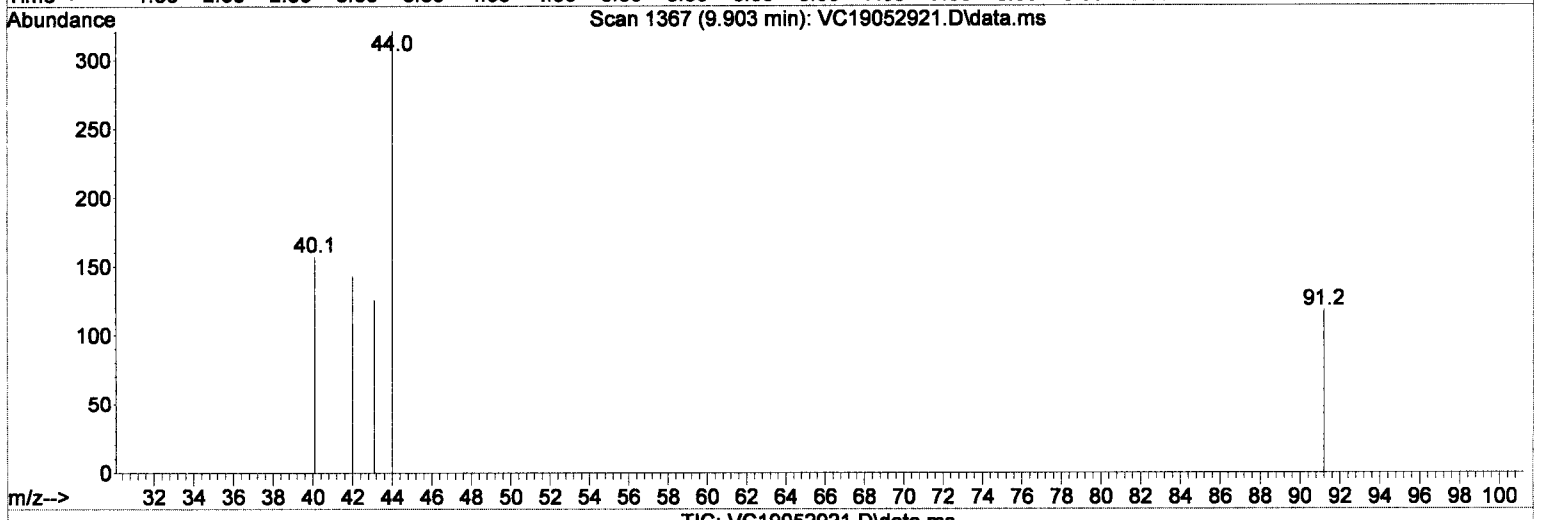
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.79#
0.00	0.00	0.62#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052921.D
Acq On : 29 May 2019 11:27 pm
Operator : TB
Sample : 9E29058-TUN2 RT
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:53 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration





TIC: VC19052921.D\data.ms

(6) TPHg (C5-C9) (H)

9.906min (0.000) 229.20 ug/L m

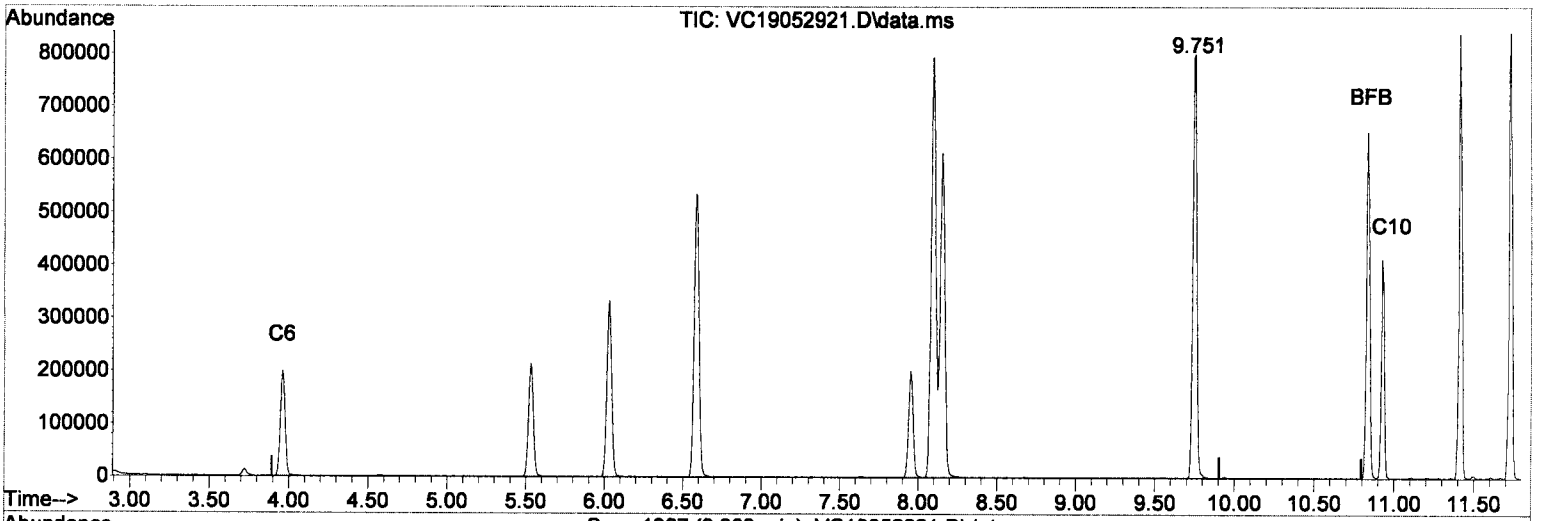
response 2819041

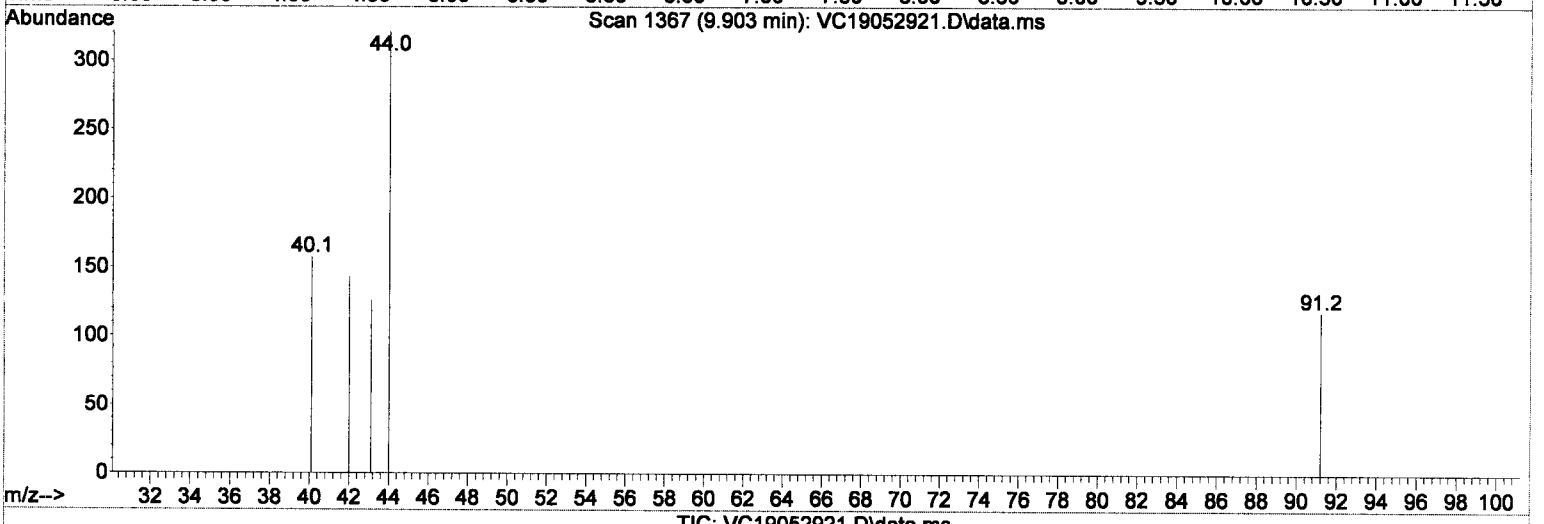
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	1.45#
0.00	0.00	1.14#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052921.D
Acq On : 29 May 2019 11:27 pm
Operator : TB
Sample : 9E29058-TUN2 RT
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:53 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration





TIC: VC19052921.D\data.ms

(7) TPHg (C6-C10) (H)

9.906min (0.000) 281.64 ug/L m

response 2593656

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	1.58#
0.00	0.00	1.24#
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052921.D
Acq On : 29 May 2019 11:27 pm
Operator : TB
Sample : 9E29058-TUN2 RT
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:53 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

5/30/19

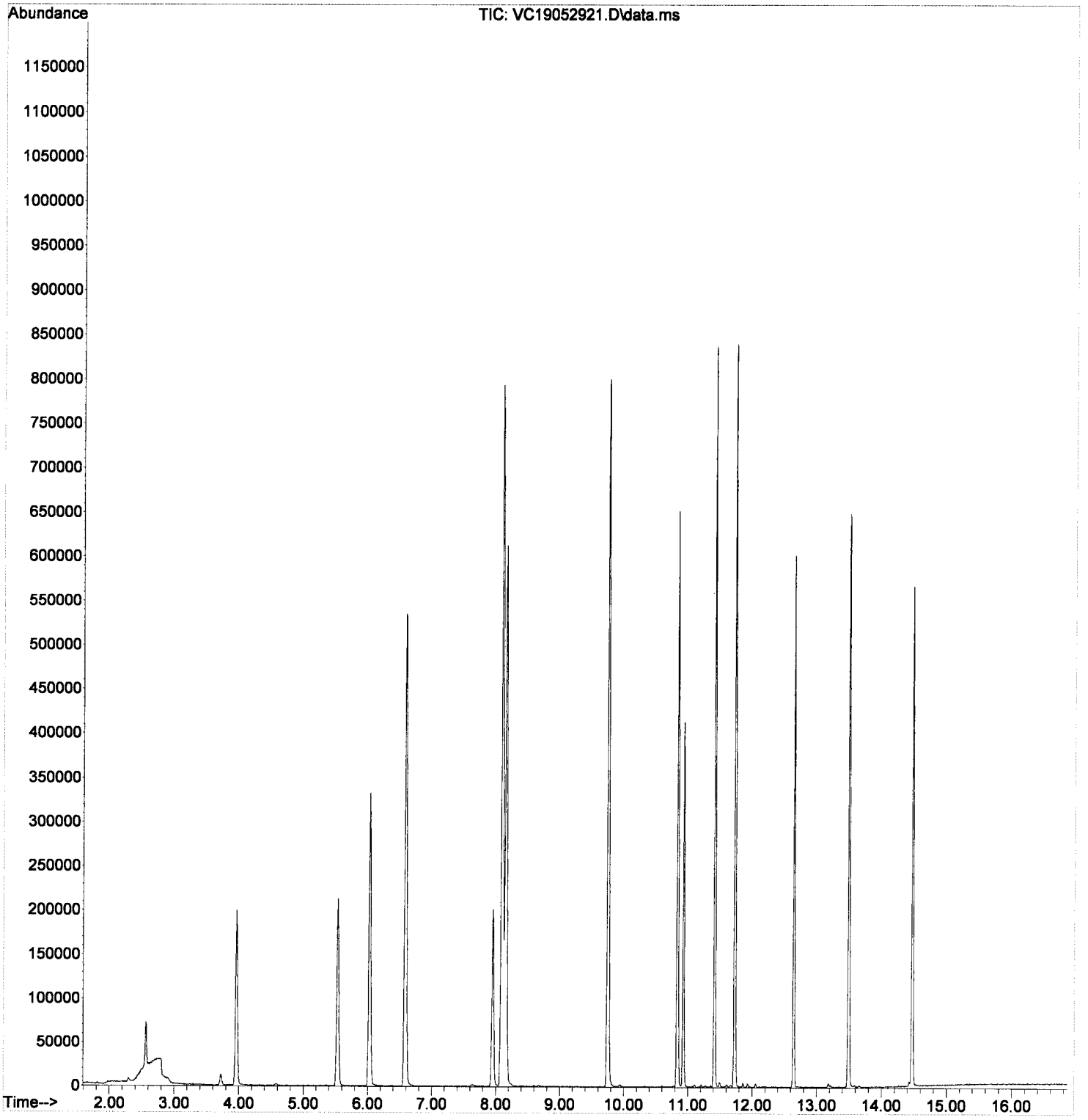
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.028	168	265731	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.582	TIC	1164135	47.01	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.834	TIC	943243	50.99	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.751	TIC	1393197	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.091	TIC	1667197	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.728	TIC	1147078	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	5195528m	392.07	ug/L	
6) TPHg (C5-C9)	9.906	TIC	2819041m	229.20	ug/L	
7) TPHg (C6-C10)	9.906	TIC	2593656m	281.64	ug/L	
8) NWTPH-Gx	9.906	TIC	5082946m	669.68	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052921.D
Acq On : 29 May 2019 11:27 pm
Operator : TB
Sample : 9E29058-TUN2 RT
Misc : A19C135 BFB (IS/SURR)
ALS Vial : 21 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:53 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052923.D
Acq On : 30 May 2019 12:22 am
Operator : TB
Sample : 9E29058-ICB2
Misc : 1X 5mL DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:56 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

5/30/19

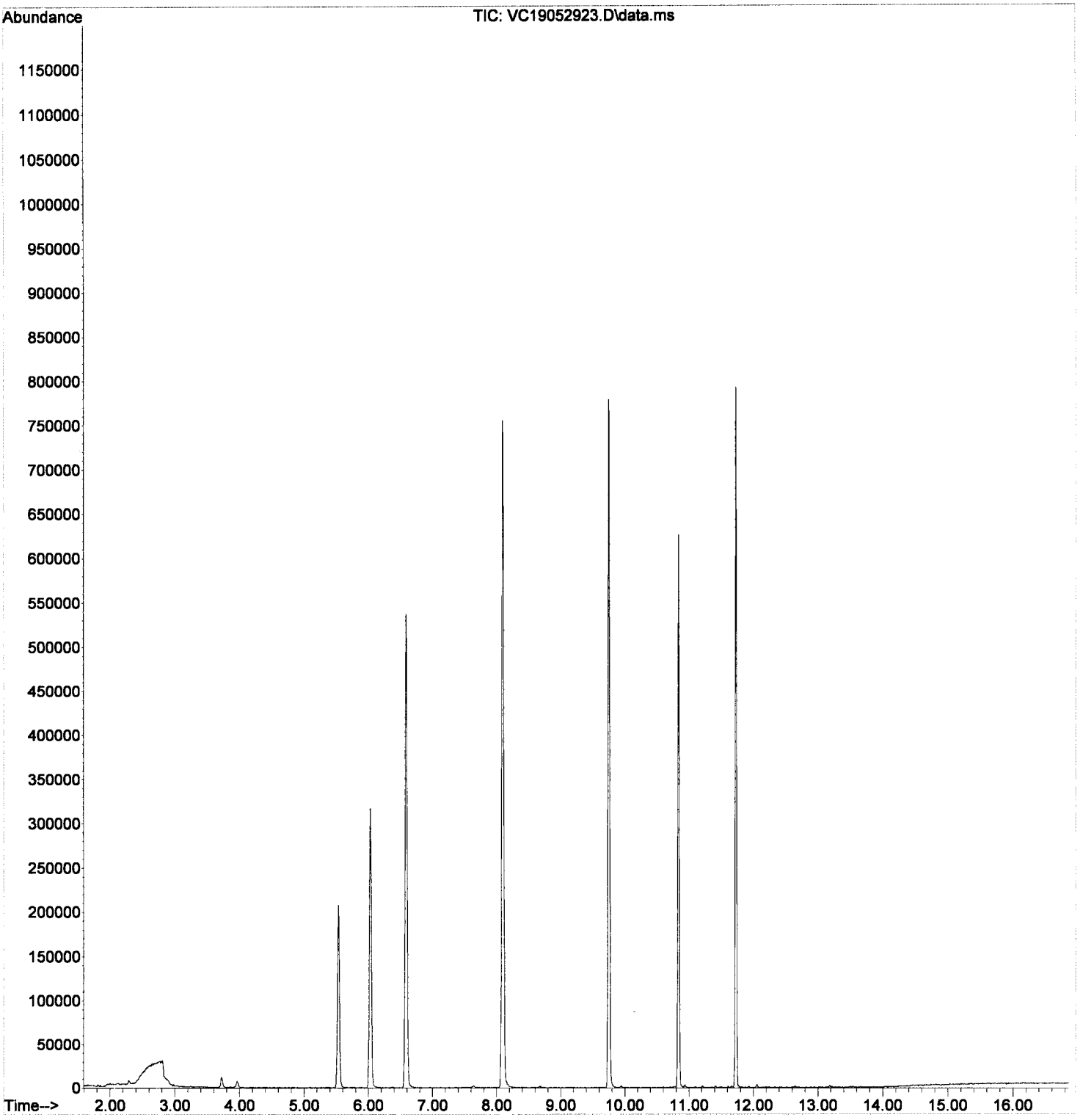
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.029	168	261900	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.582	TIC	1130594	46.32	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.835	TIC	894652	49.07	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.746	TIC	1326473	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.091	TIC	1614341	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.729	TIC	1093552	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	651712m	9.28	ug/L	LMQC
6) TPHg (C5-C9)	9.906	TIC	651712m	14.63	ug/L	
7) TPHg (C6-C10)	9.906	TIC	464649m	14.02	ug/L	
8) NWTPH-Gx	9.906	TIC	8855m	13.72	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052923.D
Acq On : 30 May 2019 12:22 am
Operator : TB
Sample : 9E29058-ICB2
Misc : 1X 5mL DI+MeOH
ALS Vial : 23 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:56 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052924.D
Acq On : 30 May 2019 12:49 am
Operator : TB
Sample : 9E29058-CALC
Misc : 1X 5mL 50ppb GX DI+MeOH
ALS Vial : 24 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

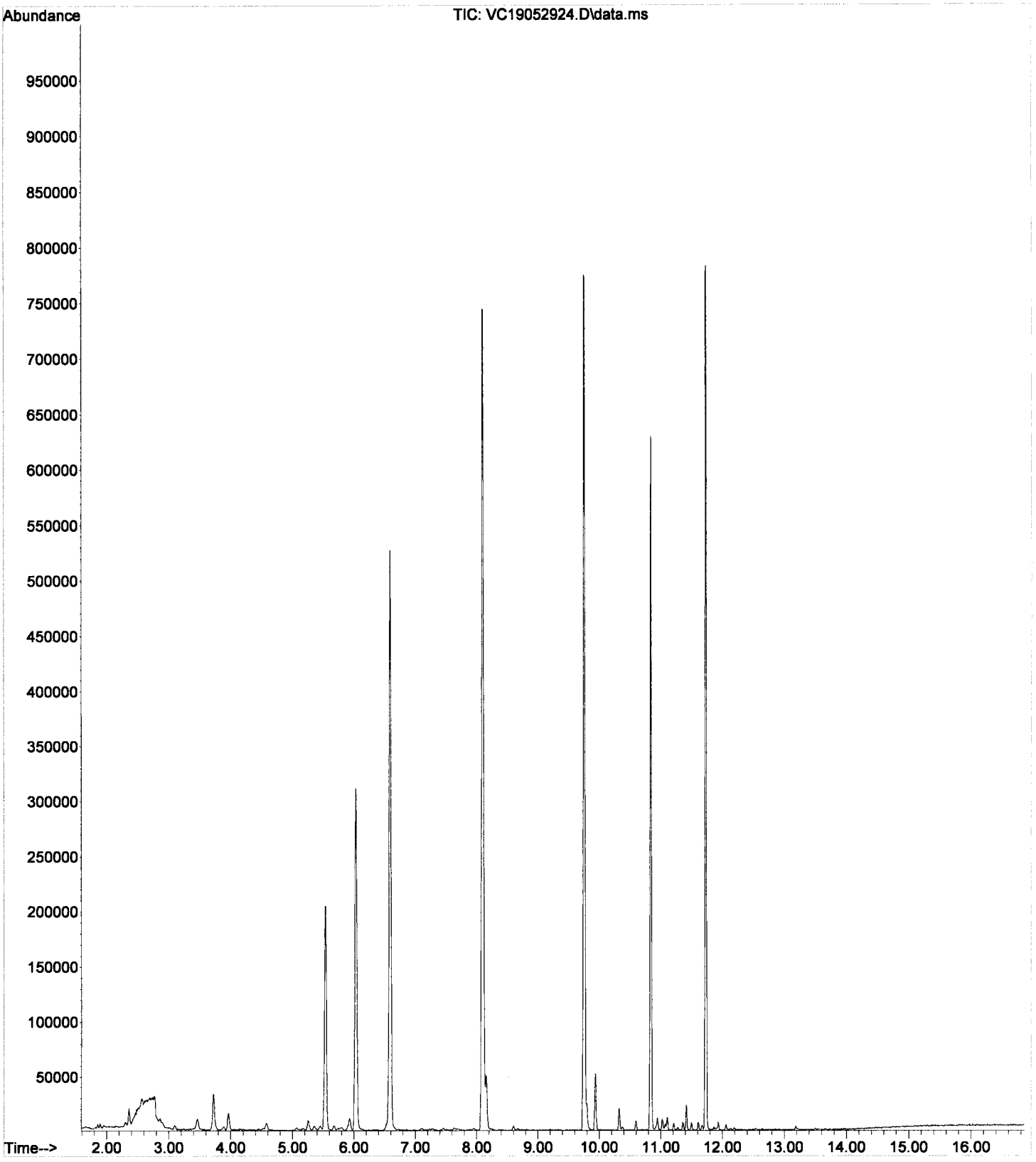
Quant Time: May 30 15:47:24 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration

5/30/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.029	168	257140	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.588	TIC	1139443	49.09	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.835	TIC	893711	50.46	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.746	TIC	1364832	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.091	TIC	1608804	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.729	TIC	1090524	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	1126234m	86.93	ug/L	
6) TPHg (C5-C9)	9.906	TIC	959474m	85.93	ug/L	
7) TPHg (C6-C10)	9.906	TIC	733539m	85.30	ug/L	
8) NWTPH-Gx	9.906	TIC	337341m	46.30	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

File :C:\msdchem\1\DATA\2019-05\9E29058\VC19052924.D
Operator : TB
Acquired : 30 May 2019 12:49 am using AcqMethod VC1612RUN.M
Instrument : VOA-GCMS3
Sample Name: 9E29058-CALC
Misc Info : 1X 5mL 50ppb GX DI+MeOH
Vial Number: 24



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052925.D
Acq On : 30 May 2019 1:17 am
Operator : TB
Sample : 9E29058-CALD
Misc : 1X 5mL 100ppb GX DI+MeOH
ALS Vial : 25 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

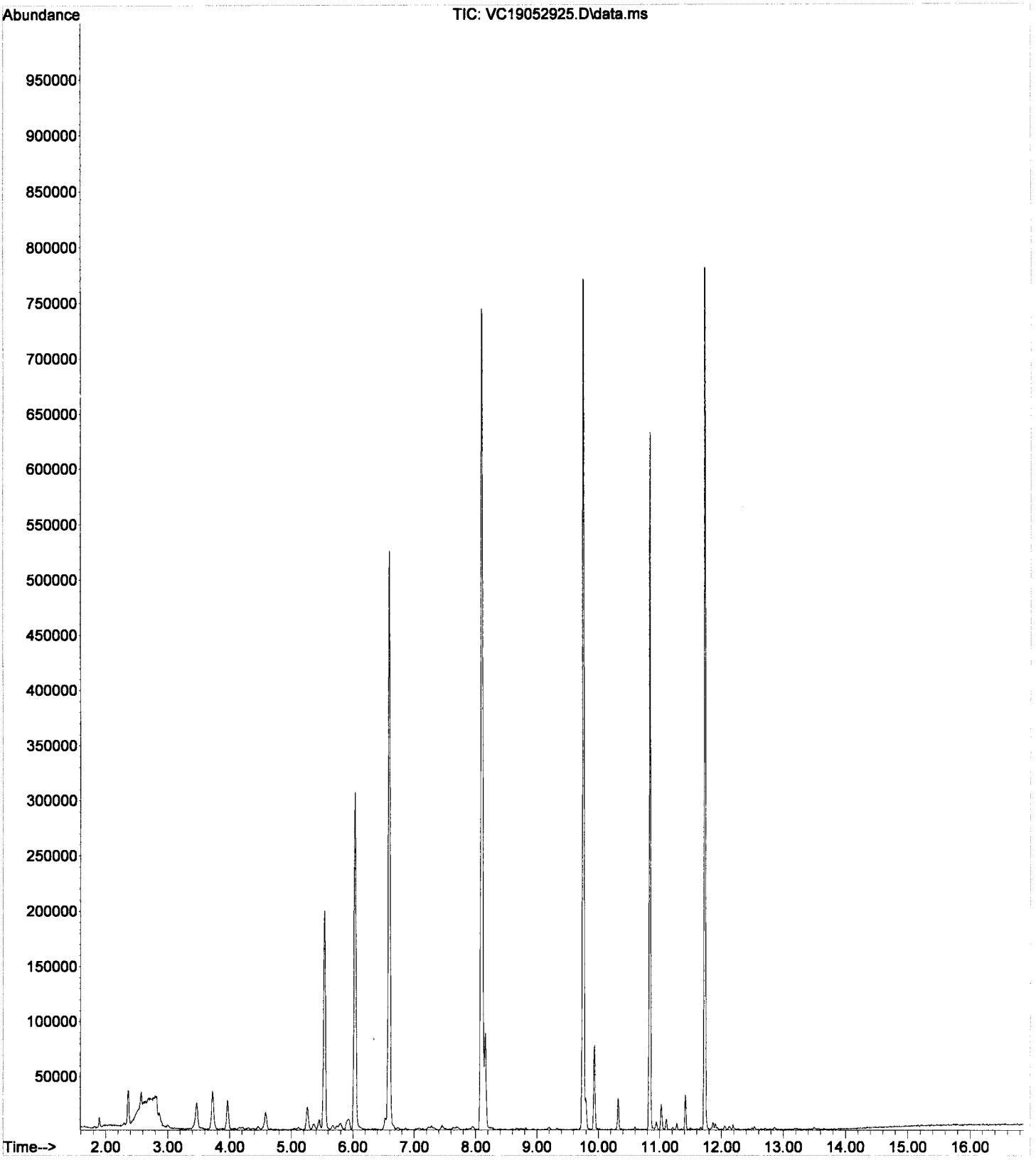
Quant Time: May 30 15:47:26 2019
Quant Method : C:\msdchem\1\METHODS\~~VC190529G.M~~
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration

5/30/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.029	168	254092	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.589	TIC	1130909	49.31	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.835	TIC	893010	51.02	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.746	TIC	1356890	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.092	TIC	1598426	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.724	TIC	1104507	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	1624353m	126.88	ug/L	
6) TPHg (C5-C9)	9.906	TIC	1478586m	134.01	ug/L	
7) TPHg (C6-C10)	9.906	TIC	1118241m	131.60	ug/L	
8) NWTPH-Gx	9.906	TIC	594153m	82.53	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

File :C:\msdchem\1\DATA\2019-05\9E29058\VC19052925.D
Operator : TB
Acquired : 30 May 2019 1:17 am using AcqMethod VC1612RUN.M
Instrument : VOA-GCMS3
Sample Name: 9E29058-CALD
Misc Info : 1X 5mL 100ppb GX DI+MeOH
Vial Number: 25



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052926.D
Acq On : 30 May 2019 1:44 am
Operator : TB
Sample : 9E29058-CALE
Misc : 1X 5mL 250ppb GX DI+MeOH
ALS Vial : 26 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

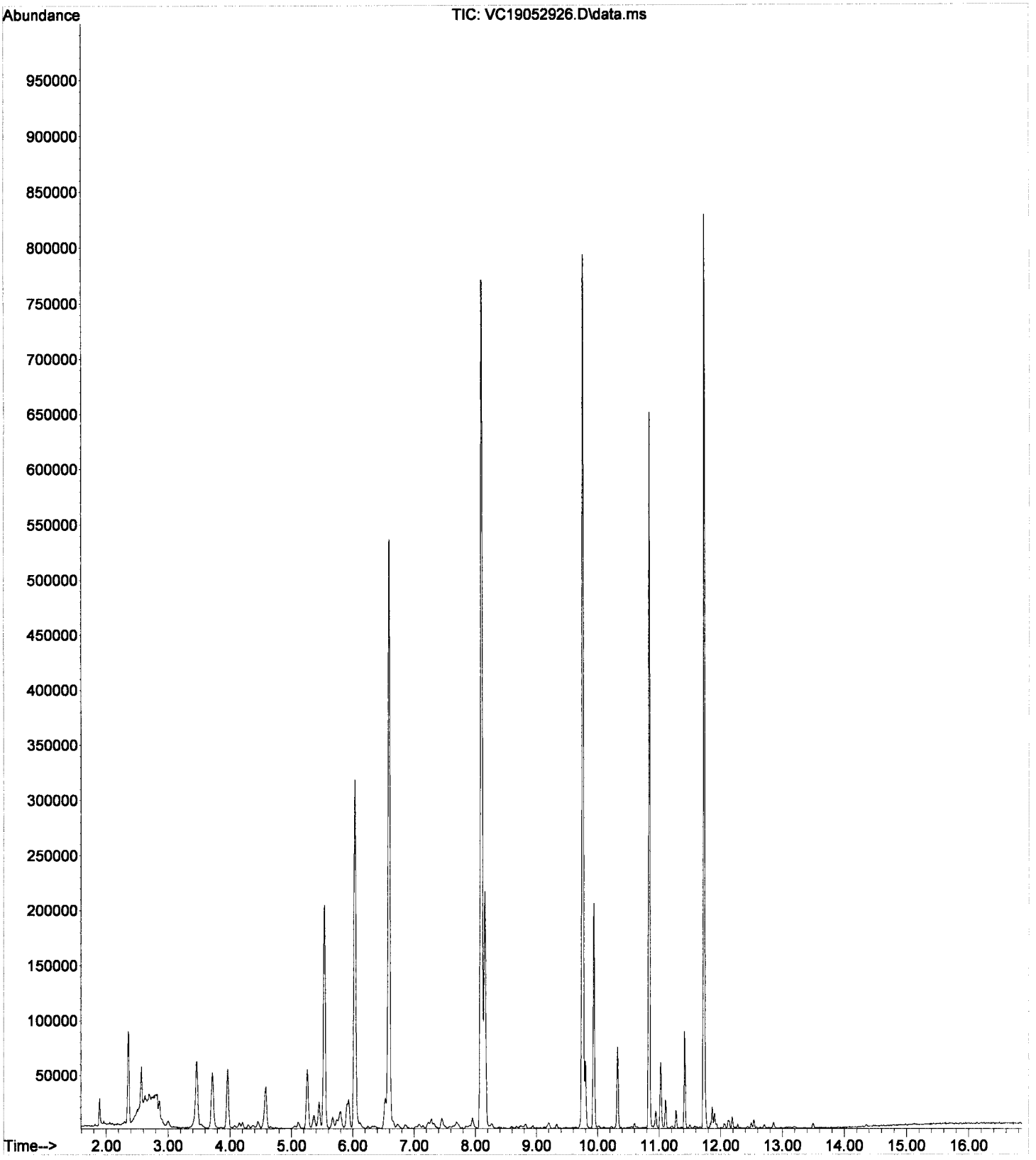
Quant Time: May 30 15:47:28 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration

5/30/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.028	168	264662	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.588	TIC	1181697	49.47	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.834	TIC	923159	50.64	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.751	TIC	1373720	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.090	TIC	1645193	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.728	TIC	1147251	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	3450881m	258.79	ug/L	
6) TPHg (C5-C9)	9.906	TIC	3008909m	261.82	ug/L	
7) TPHg (C6-C10)	9.906	TIC	2261282m	255.49	ug/L	
8) NWTPH-Gx	9.906	TIC	1724074m	229.91	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

File :C:\msdchem\1\DATA\2019-05\9E29058\VC19052926.D
Operator : TB
Acquired : 30 May 2019 1:44 am using AcqMethod VC1612RUN.M
Instrument : VOA-GCMS3
Sample Name: 9E29058-CALE
Misc Info : 1X 5mL 250ppb GX DI+MeOH
Vial Number: 26



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052927.D
Acq On : 30 May 2019 2:12 am
Operator : TB
Sample : 9E29058-CALF
Misc : 1X 5mL 500ppb GX DI+MeOH
ALS Vial : 27 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

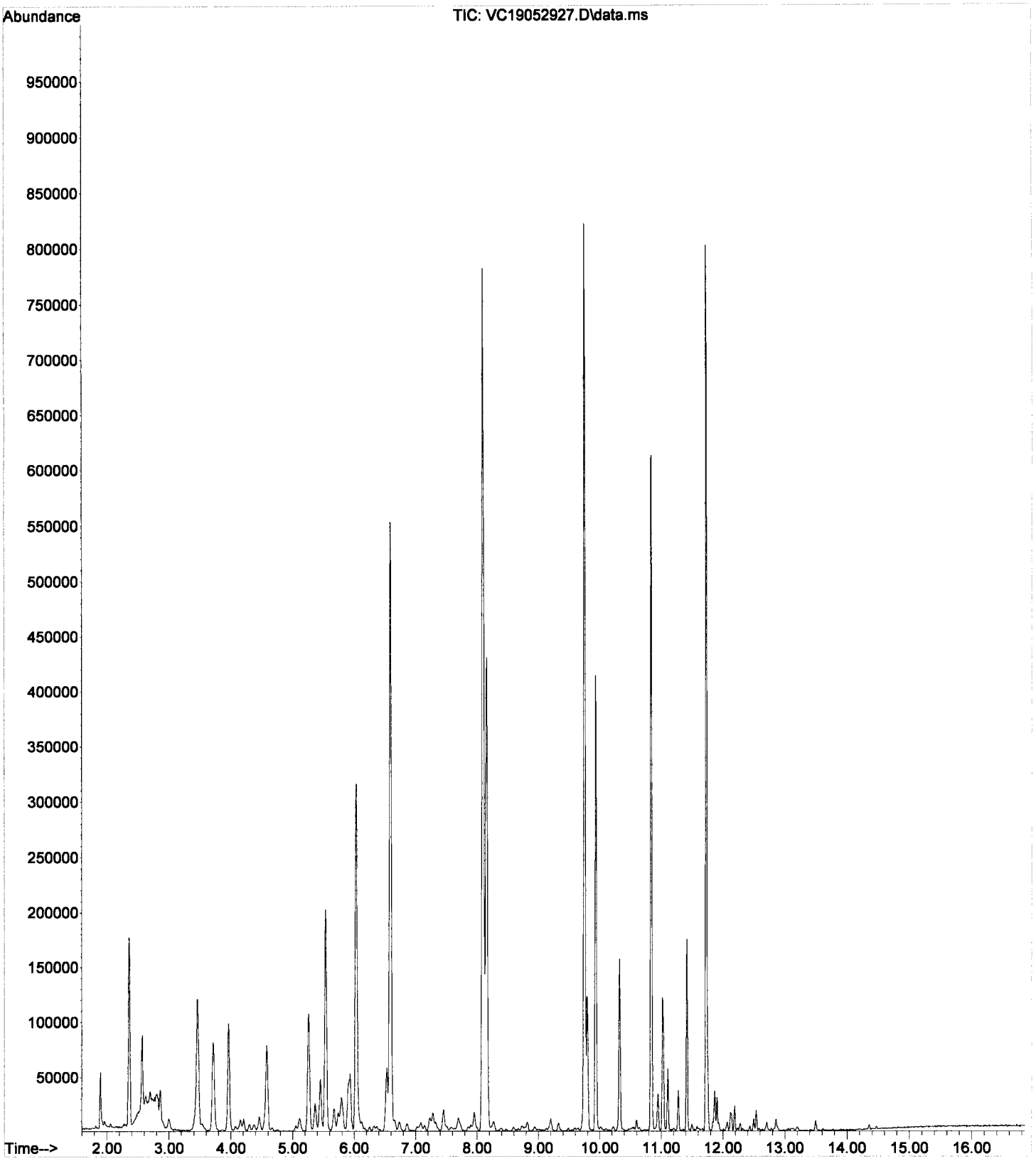
Quant Time: May 30 15:47:30 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration

5/30/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.031	168	261529	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.585	TIC	1178596	49.93	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.837	TIC	900724	50.00	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.748	TIC	1373218	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.093	TIC	1631979	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.725	TIC	1139134	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	6589983m	500.13	ug/L	
6) TPHg (C5-C9)	9.906	TIC	5679706m	500.15	ug/L	
7) TPHg (C6-C10)	9.906	TIC	4374724m	500.19	ug/L	
8) NWTPH-Gx	9.906	TIC	3706703m	500.22	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

File :C:\msdchem\1\DATA\2019-05\9E29058\VC19052927.D
Operator : TB
Acquired : 30 May 2019 2:12 am using AcqMethod VC1612RUN.M
Instrument : VOA-GCMS3
Sample Name: 9E29058-CALF
Misc Info : 1X 5mL 500ppb GX DI+MeOH
Vial Number: 27



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052928.D
Acq On : 30 May 2019 2:39 am
Operator : TB
Sample : 9E29058-CALG
Misc : 1X 5mL 1000ppb GX DI+MeOH
ALS Vial : 28 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

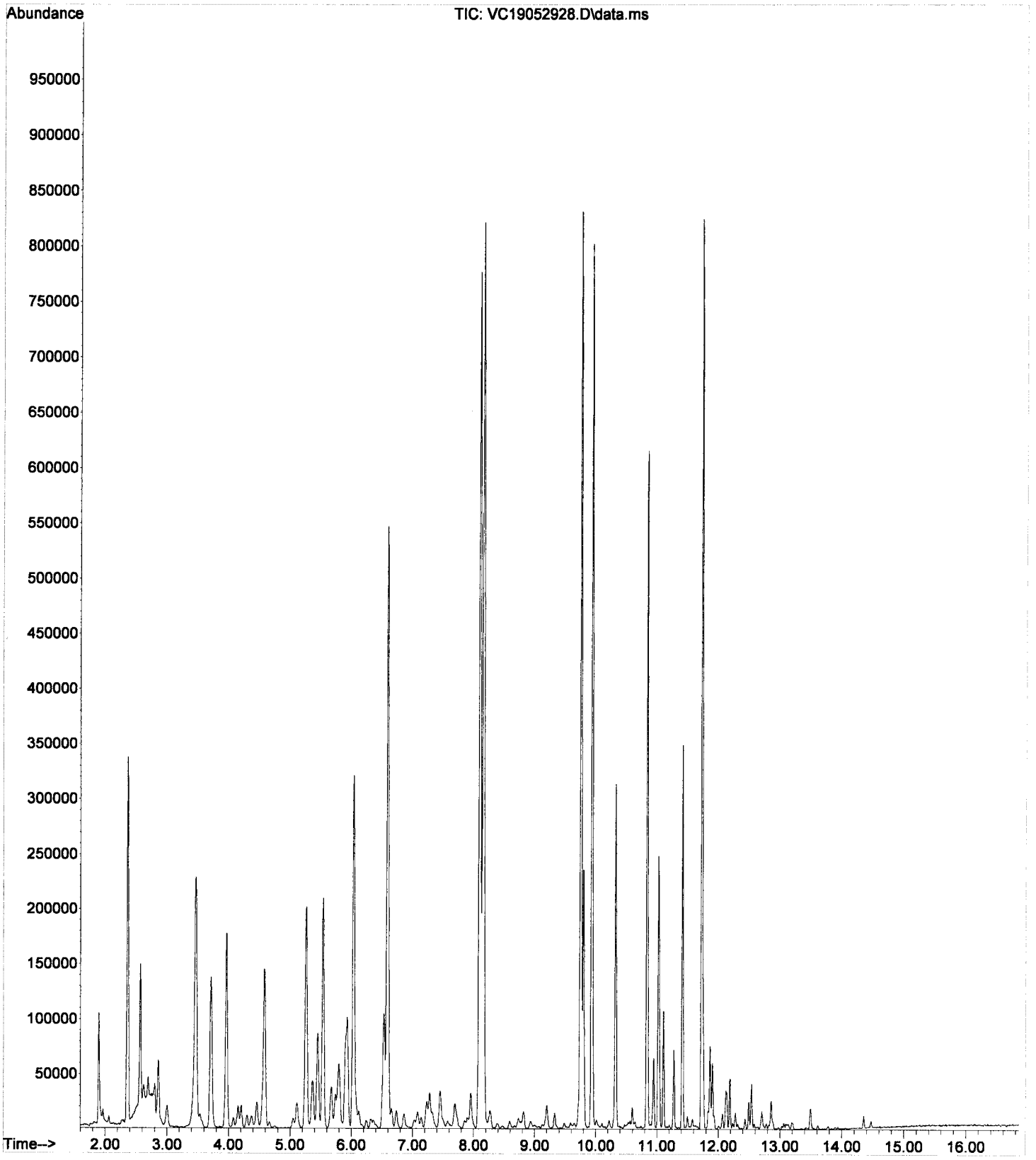
Quant Time: May 30 15:47:32 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration

5/30/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.031	168	261111	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.585	TIC	1170992	49.69	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.837	TIC	915240	50.89	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.748	TIC	1421490	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.094	TIC	1681294	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.725	TIC	1206900	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	12264001m	932.23	ug/L	
6) TPHg (C5-C9)	9.906	TIC	10516295m	927.53	ug/L	
7) TPHg (C6-C10)	9.906	TIC	8234768m	943.04	ug/L	
8) NWTPH-Gx	9.906	TIC	7396048m	999.71	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

File :C:\msdchem\1\DATA\2019-05\9E29058\VC19052928.D
Operator : TB
Acquired : 30 May 2019 2:39 am using AcqMethod VC1612RUN.M
Instrument : VOA-GCMS3
Sample Name: 9E29058-CALG
Misc Info : 1X 5mL 1000ppb GX DI+MeOH
Vial Number: 28



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052929.D
Acq On : 30 May 2019 3:07 am
Operator : TB
Sample : 9E29058-CALH
Misc : 1X 5mL 2500ppb GX DI+MeOH
ALS Vial : 29 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

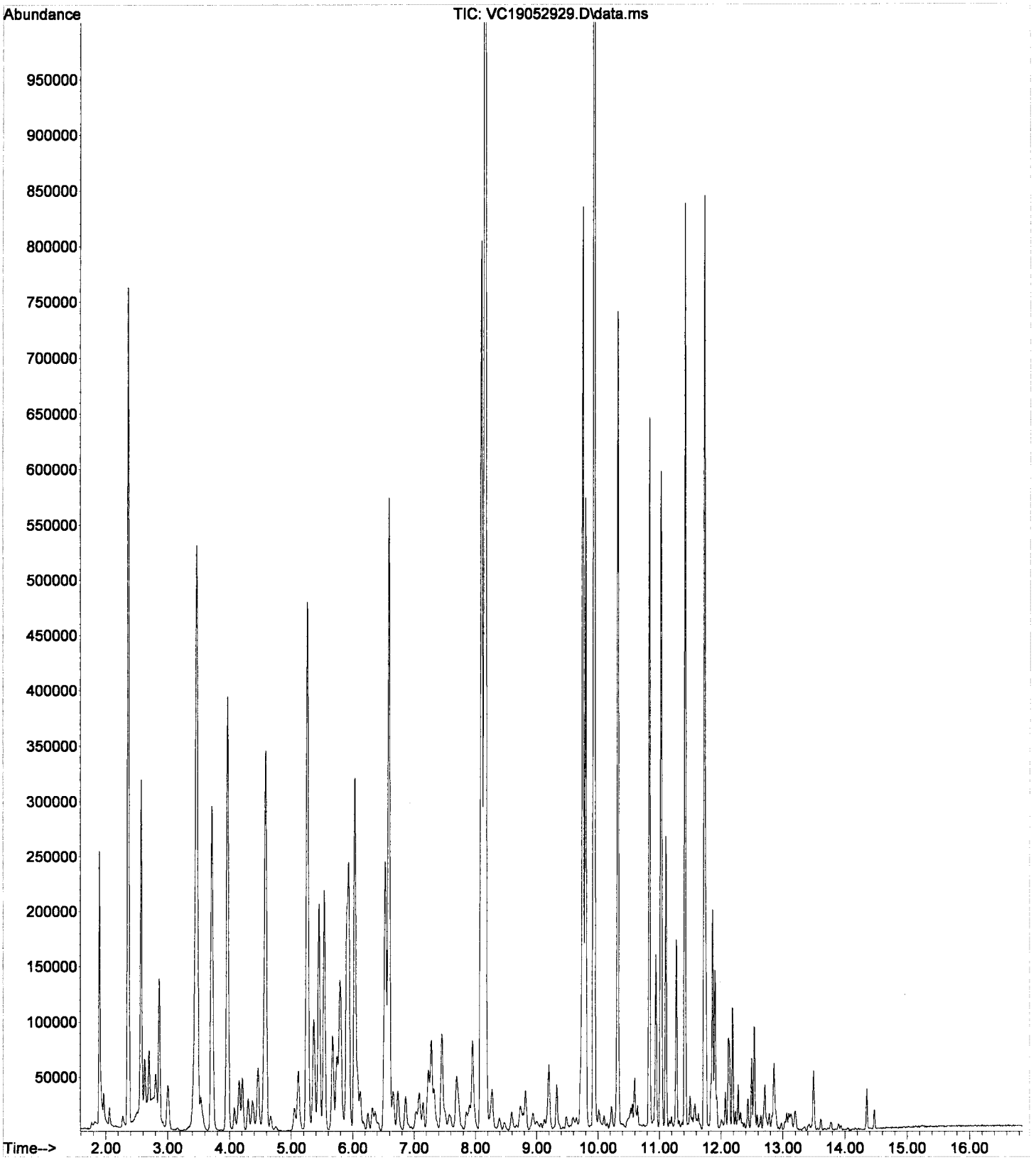
Quant Time: May 30 15:47:34 2019
Quant Method : C:\msdchem\1\METHODS\~~VC190529G~~.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration

5/30/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.034	168	268653	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.588	TIC	1212113	49.99	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.834	TIC	936867	50.63	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.751	TIC	1507141	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.096	TIC	1729205	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.728	TIC	1379986	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	28320107m	2092.27	ug/L	
6) TPHg (C5-C9)	9.906	TIC	23917340m	2050.28	ug/L	
7) TPHg (C6-C10)	9.906	TIC	18963080m	2110.68	ug/L	
8) NWTPH-Gx	9.906	TIC	18385276m	2415.33	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

File :C:\msdchem\1\DATA\2019-05\9E29058\VC19052929.D
Operator : TB
Acquired : 30 May 2019 3:07 am using AcqMethod VC1612RUN.M
Instrument : VOA-GCMS3
Sample Name: 9E29058-CALH
Misc Info : 1X 5mL 2500ppb GX DI+MeOH
Vial Number: 29



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052930.D
Acq On : 30 May 2019 3:34 am
Operator : TB
Sample : 9E29058-CALI
Misc : 1X 5mL 5000ppb GX DI+MeOH
ALS Vial : 30 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:50:56 2019
Quant Method : C:\msdchem\1\METHODS\~~VC190529G.M~~
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration

5/30/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.035	168	266073	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.588	TIC	1320230	54.97	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.835	TIC	922982	50.36	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.752	TIC	1171661m	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.097	TIC	1683833	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.729	TIC	1344258m	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	61543670m	4590.90	ug/L	
6) TPHg (C5-C9)	9.906	TIC	51205660m	4432.09	ug/L	
7) TPHg (C6-C10)	9.906	TIC	41070880m	4615.70	ug/L	
8) NWTPH-Gx	9.906	TIC	41069114m	5447.68	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052930.D
Acq On : 30 May 2019 3:34 am
Operator : TB
Sample : 9E29058-CALI
Misc : 1X 5mL 5000ppb GX DI+MeOH
ALS Vial : 30 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:47:36 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration

5/30/19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.035	168	266073	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.588	TIC	1320230	54.97	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.835	TIC	922982	50.36	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.752	TIC	1634465	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.097	TIC	1683833	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.729	TIC	1634619	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	60790505m	4534.72	ug/L	
6) TPHg (C5-C9)	9.906	TIC	50742856m	4392.03	ug/L	
7) TPHg (C6-C10)	9.906	TIC	40608076m	4563.69	ug/L	
8) NWTPH-Gx	9.906	TIC	40315949m	5347.78	ug/L	

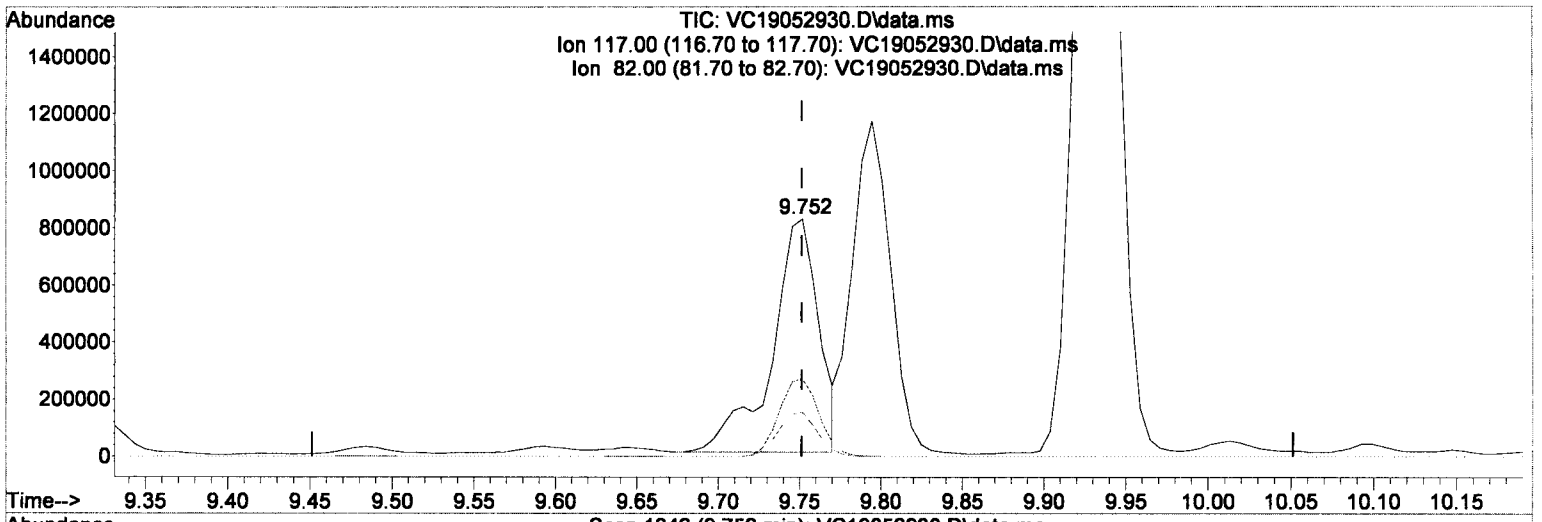
MT

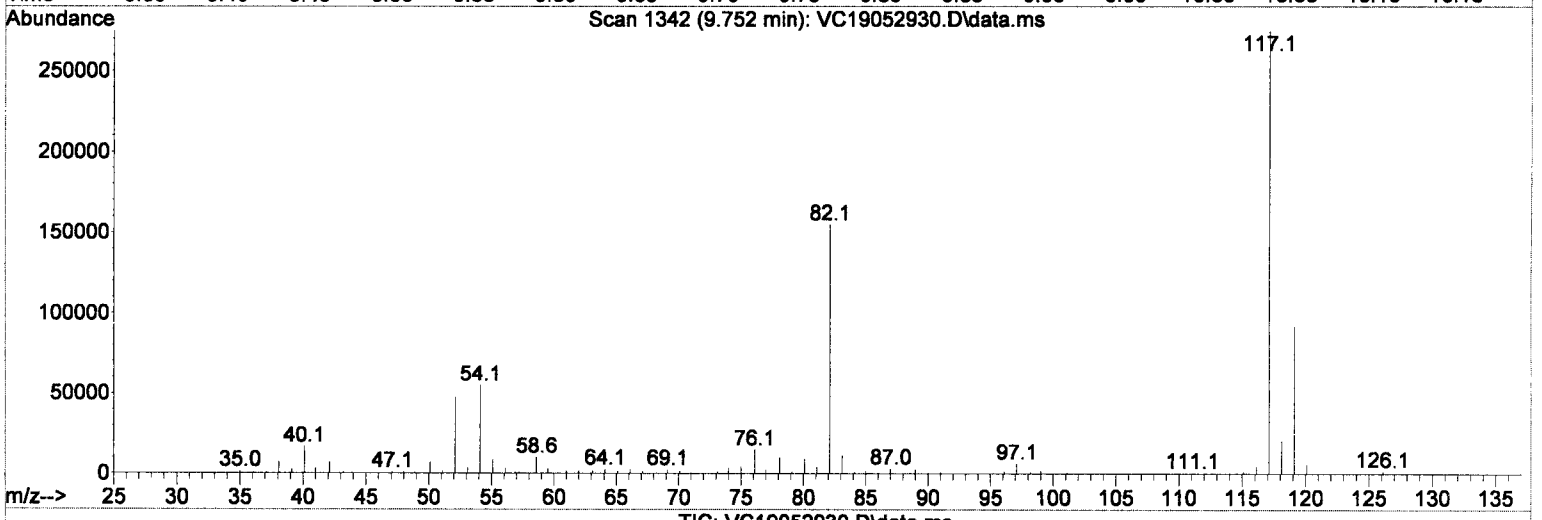
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052930.D
Acq On : 30 May 2019 3:34 am
Operator : TB
Sample : 9E29058-CALI
Misc : 1X 5mL 5000ppb GX DI+MeOH
ALS Vial : 30 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:47:36 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration





TIC: VC19052930.D\data.ms

(4) Chlorobenzene-d5 (NR) (S)

9.752min (+0.000) 0.00 ug/L

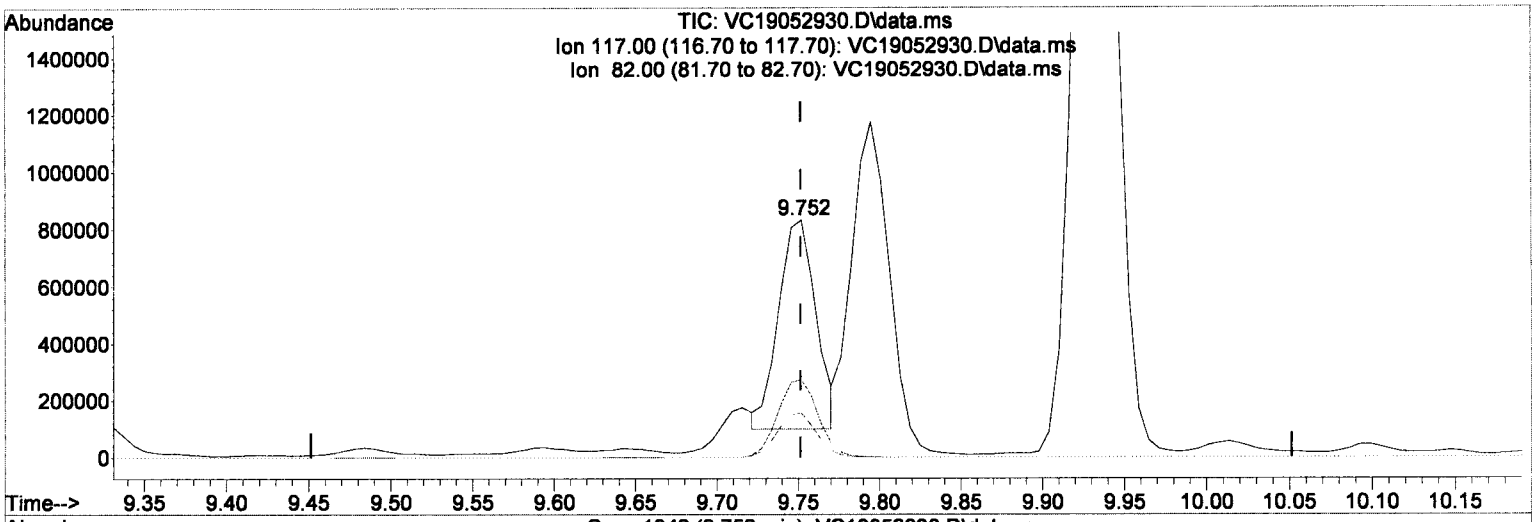
response 1634465

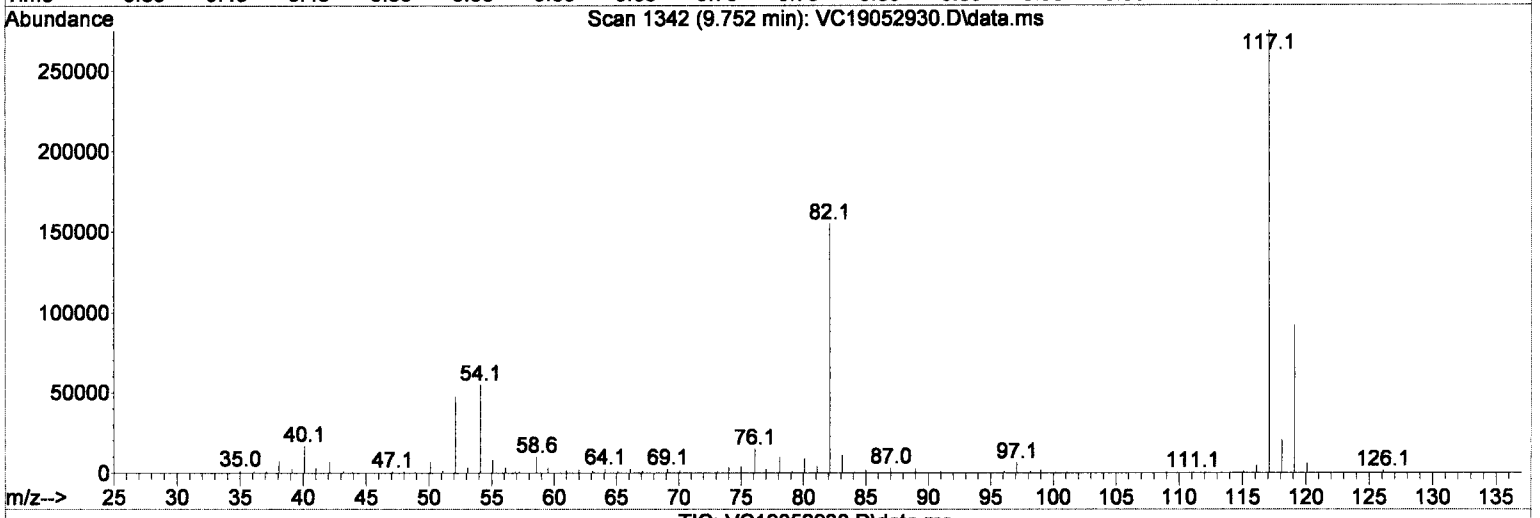
Signal	Exp%	Act%
TIC	100	100
117.00	32.40	28.75
82.00	18.10	16.01
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052930.D
Acq On : 30 May 2019 3:34 am
Operator : TB
Sample : 9E29058-CALI
Misc : 1X 5mL 5000ppb GX DI+MeOH
ALS Vial : 30 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:47:36 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration





TIC: VC19052930.D\data.ms

(4) Chlorobenzene-d5 (NR) (S)

9.752min (+0.000) 0.00 ug/L (m)

5/30/19

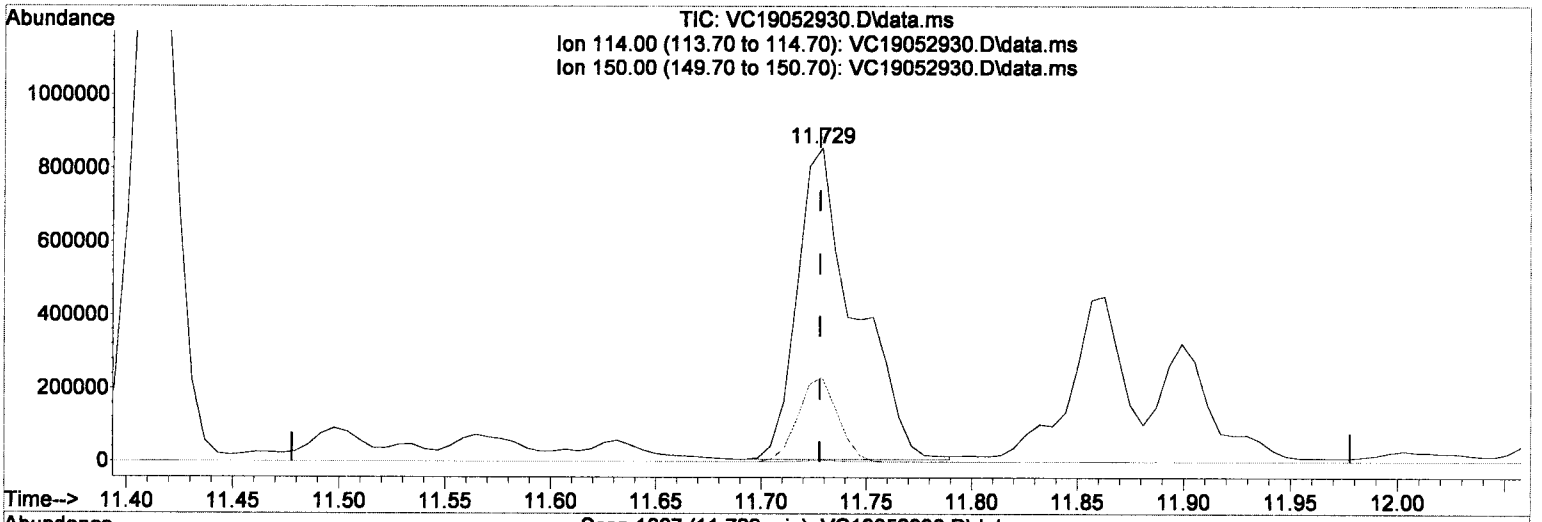
response 1171661

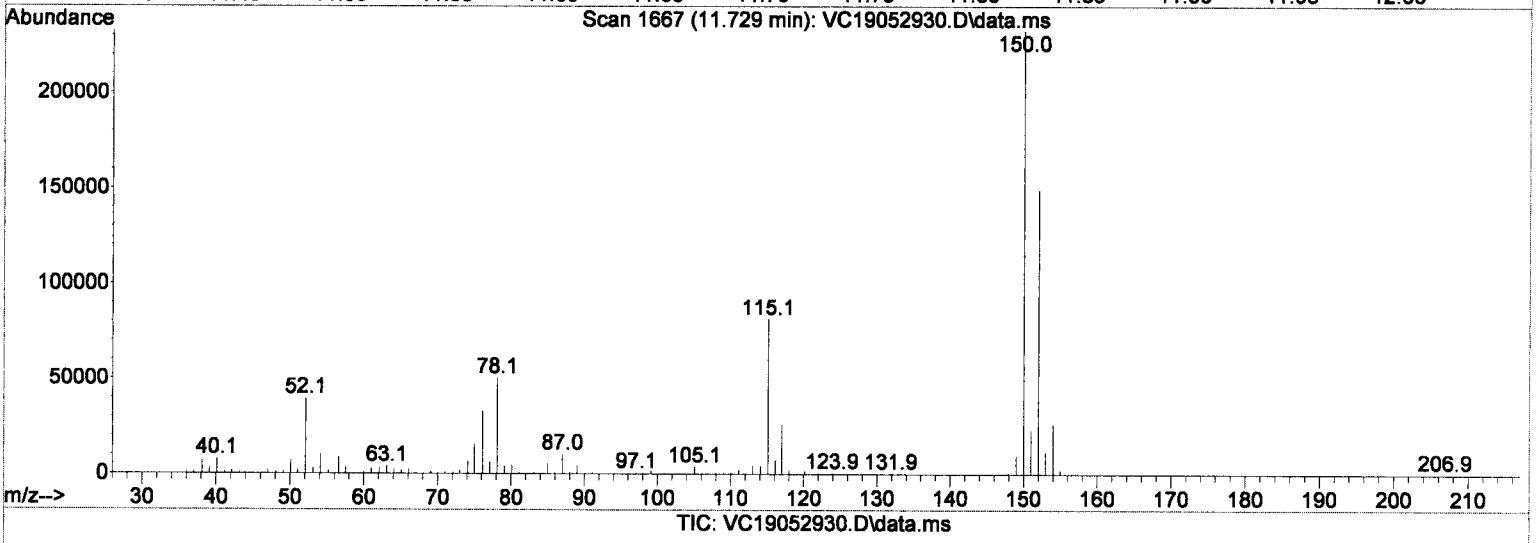
Signal	Exp%	Act%
TIC	100	100
117.00	32.40	40.11
82.00	18.10	22.34
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052930.D
Acq On : 30 May 2019 3:34 am
Operator : TB
Sample : 9E29058-CALI
Misc : 1X 5mL 5000ppb GX DI+MeOH
ALS Vial : 30 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:47:36 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration





TIC: VC19052930.D\data.ms

(12) 1,4-Dichlorobenzene-d4 (NR) (S)

11.729min (+0.001) 0.00 ug/L

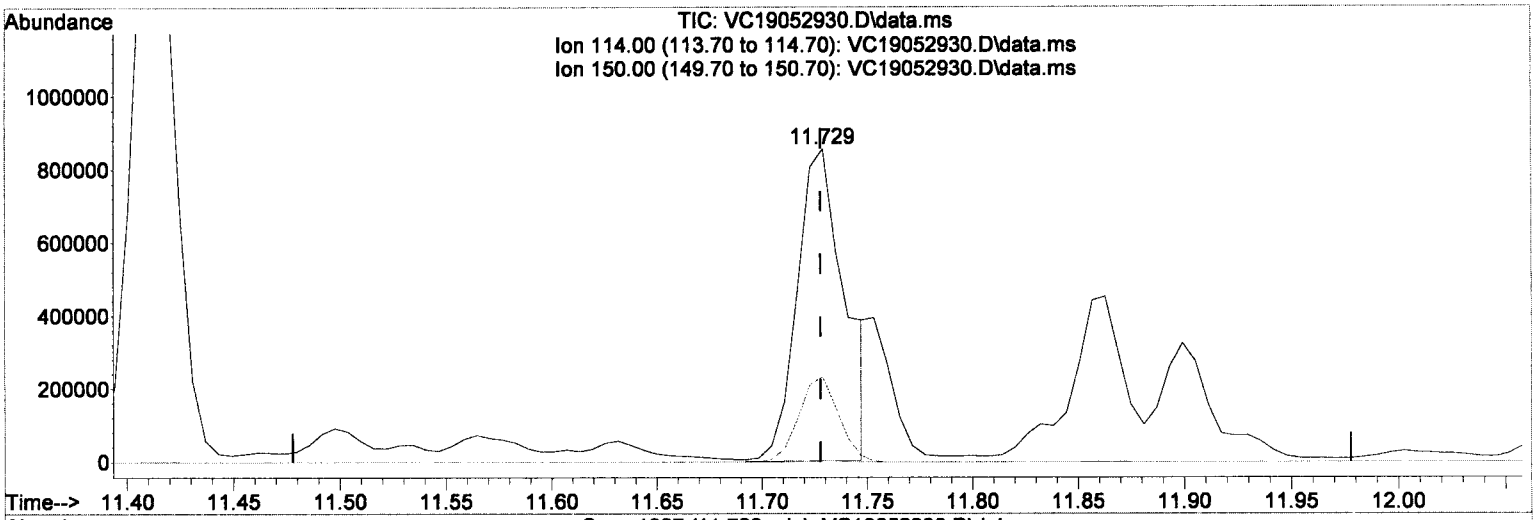
response 1634619

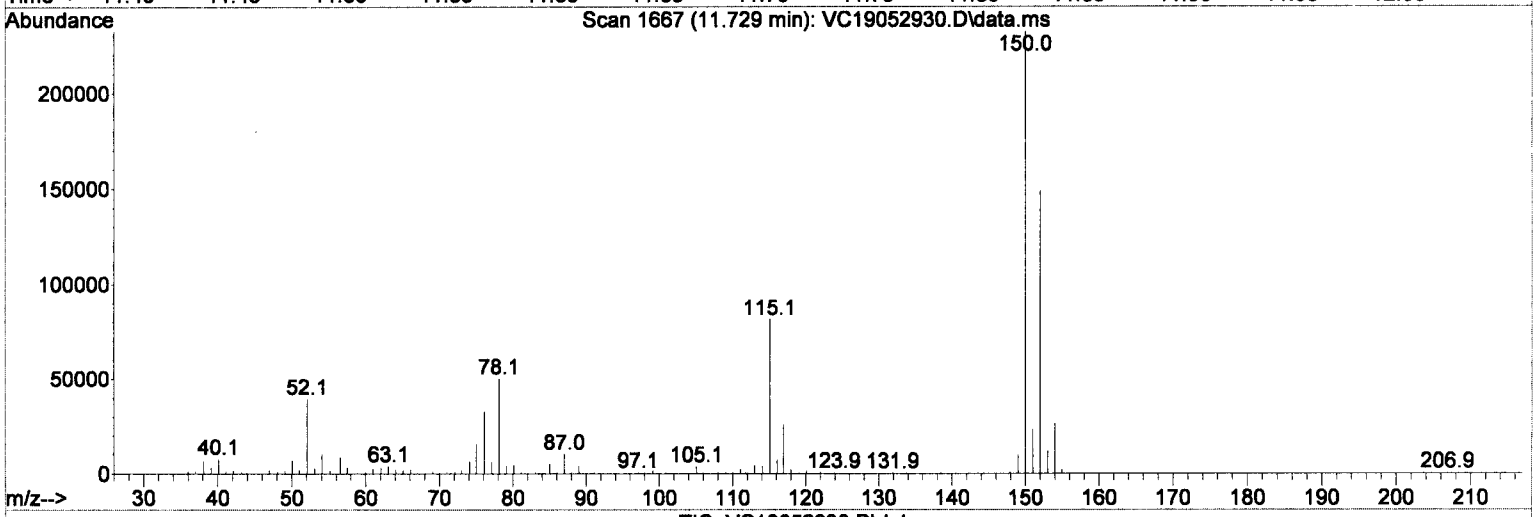
Signal	Exp%	Act%
TIC	100	100
114.00	0.20	0.00
150.00	24.00	18.78
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052930.D
Acq On : 30 May 2019 3:34 am
Operator : TB
Sample : 9E29058-CALI
Misc : 1X 5mL 5000ppb GX DI+MeOH
ALS Vial : 30 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:47:36 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration





TIC: VC19052930.D\data.ms

(12) 1,4-Dichlorobenzene-d4 (NR) (S)

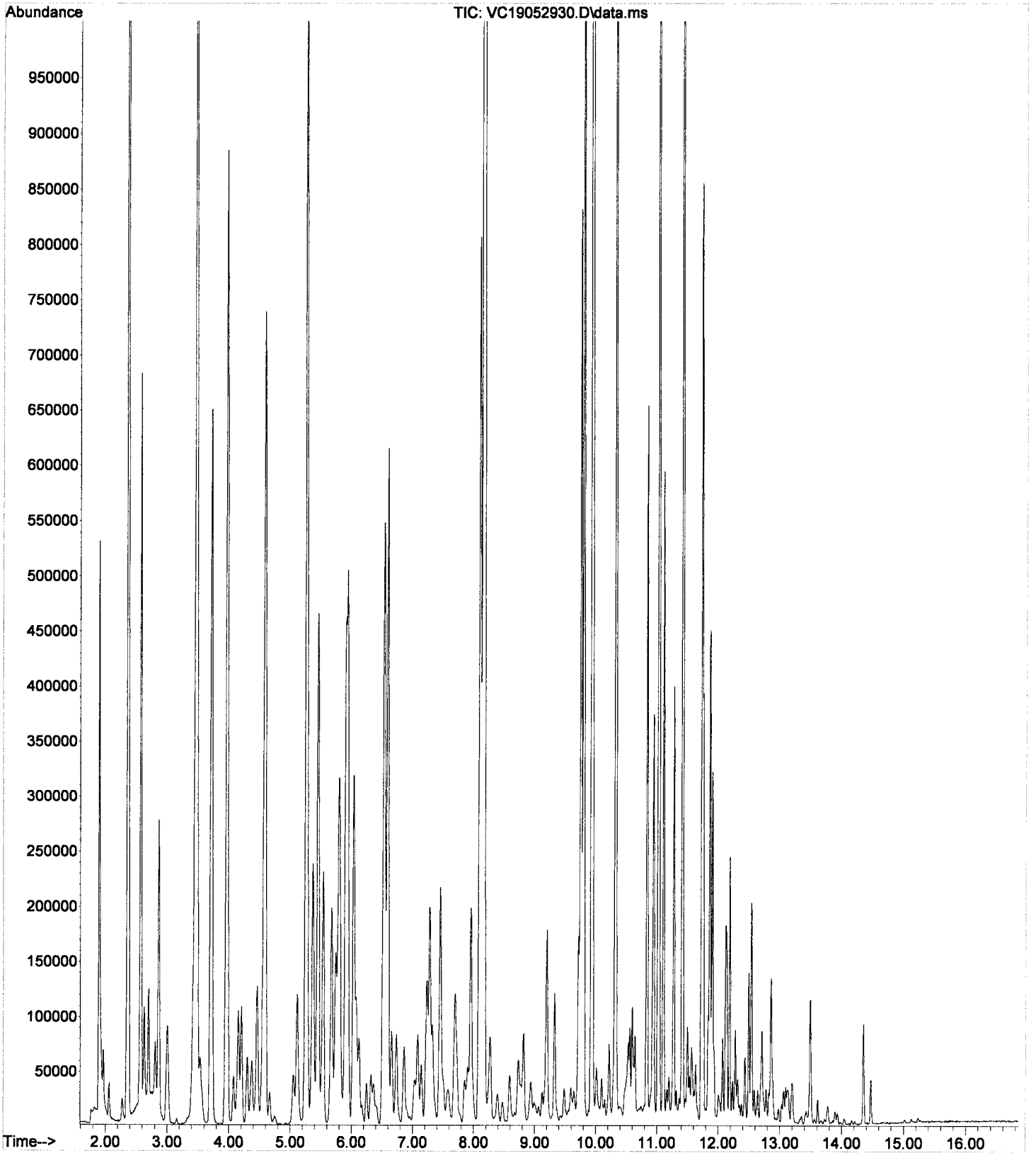
11.729min (+0.001) 0.00 ug/L m

response 1344258

Signal	Exp%	Act%
TIC	100	100
114.00	0.20	0.00
150.00	24.00	22.84
0.00	0.00	0.00

5/30/19

File :C:\msdchem\1\DATA\2019-05\9E29058\VC19052930.D
Operator : TB
Acquired : 30 May 2019 3:34 am using AcqMethod VC1612RUN.M
Instrument : VOA-GCMS3
Sample Name: 9E29058-CALI
Misc Info : 1X 5mL 5000ppb GX DI+MeOH
Vial Number: 30



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052931.D
Acq On : 30 May 2019 4:02 am
Operator : TB
Sample : 9E29058-CALJ
Misc : 1X 5mL 10000ppb GX DI+MeOH
ALS Vial : 31 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

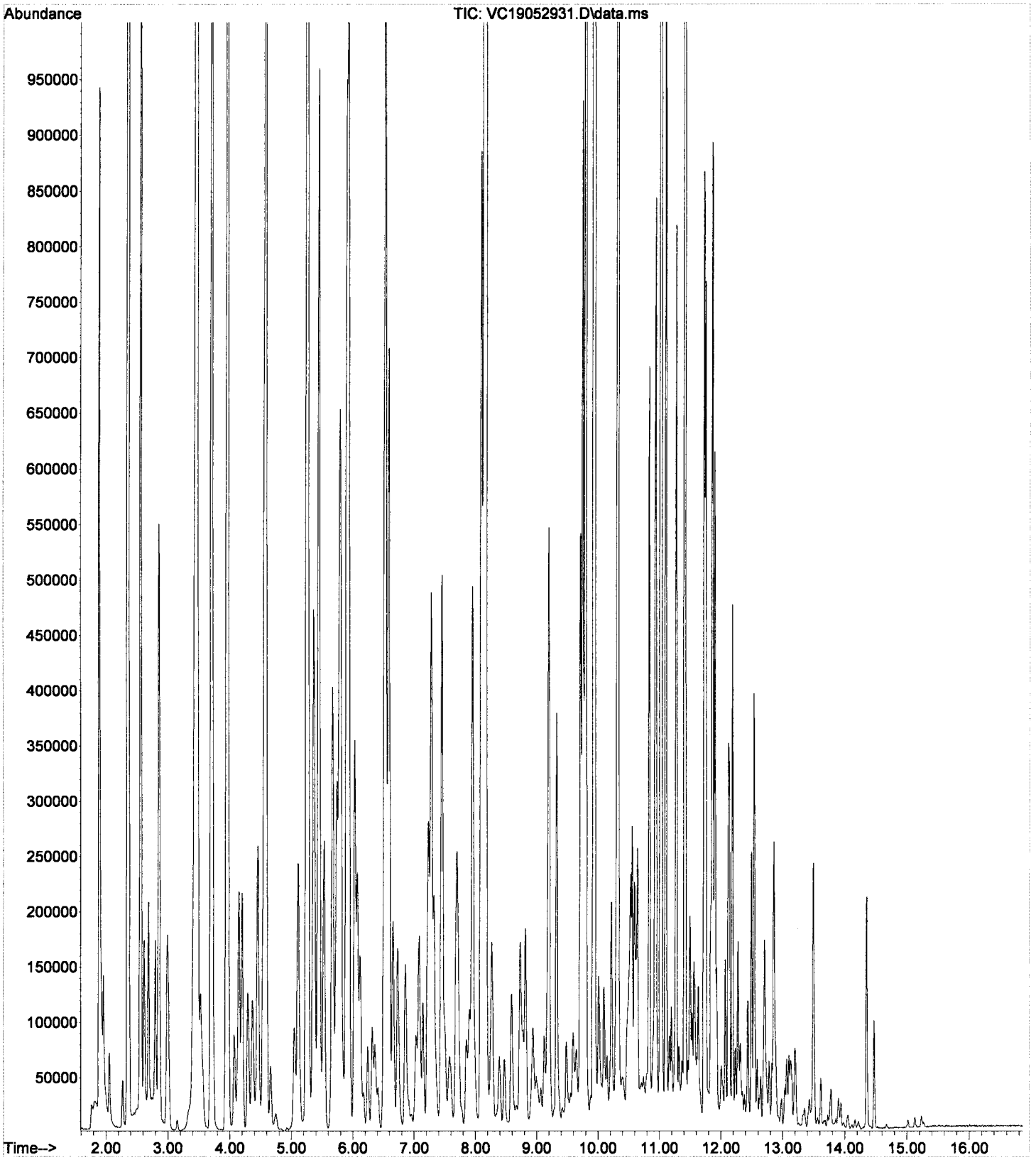
5/30/19

Quant Time: May 30 15:47:38 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:46:48 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.029	168	280943	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.583	TIC	1535644	60.56	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.835	TIC	973205	50.29	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.746	TIC	1469336	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.091	TIC	1948912	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.723	TIC	1323065	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	121522195m	8585.25	ug/L	
6) TPHg (C5-C9)	9.906	TIC	100273382m	8219.75	ug/L	
7) TPHg (C6-C10)	9.906	TIC	81063895m	8628.07	ug/L	
8) NWTPH-Gx	9.906	TIC	82431215m	10355.49	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

File :C:\msdchem\1\DATA\2019-05\9E29058\VC19052931.D
Operator : TB
Acquired : 30 May 2019 4:02 am using AcqMethod VC1612RUN.M
Instrument : VOA-GCMS3
Sample Name: 9E29058-CALJ
Misc Info : 1X 5mL 10000ppb GX DI+MeOH
Vial Number: 31



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052932.D
Acq On : 30 May 2019 4:29 am
Operator : TB
Sample : 9E29058-IBL8
Misc : 1X 5mL DI+MeOH
ALS Vial : 32 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:58 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

NR

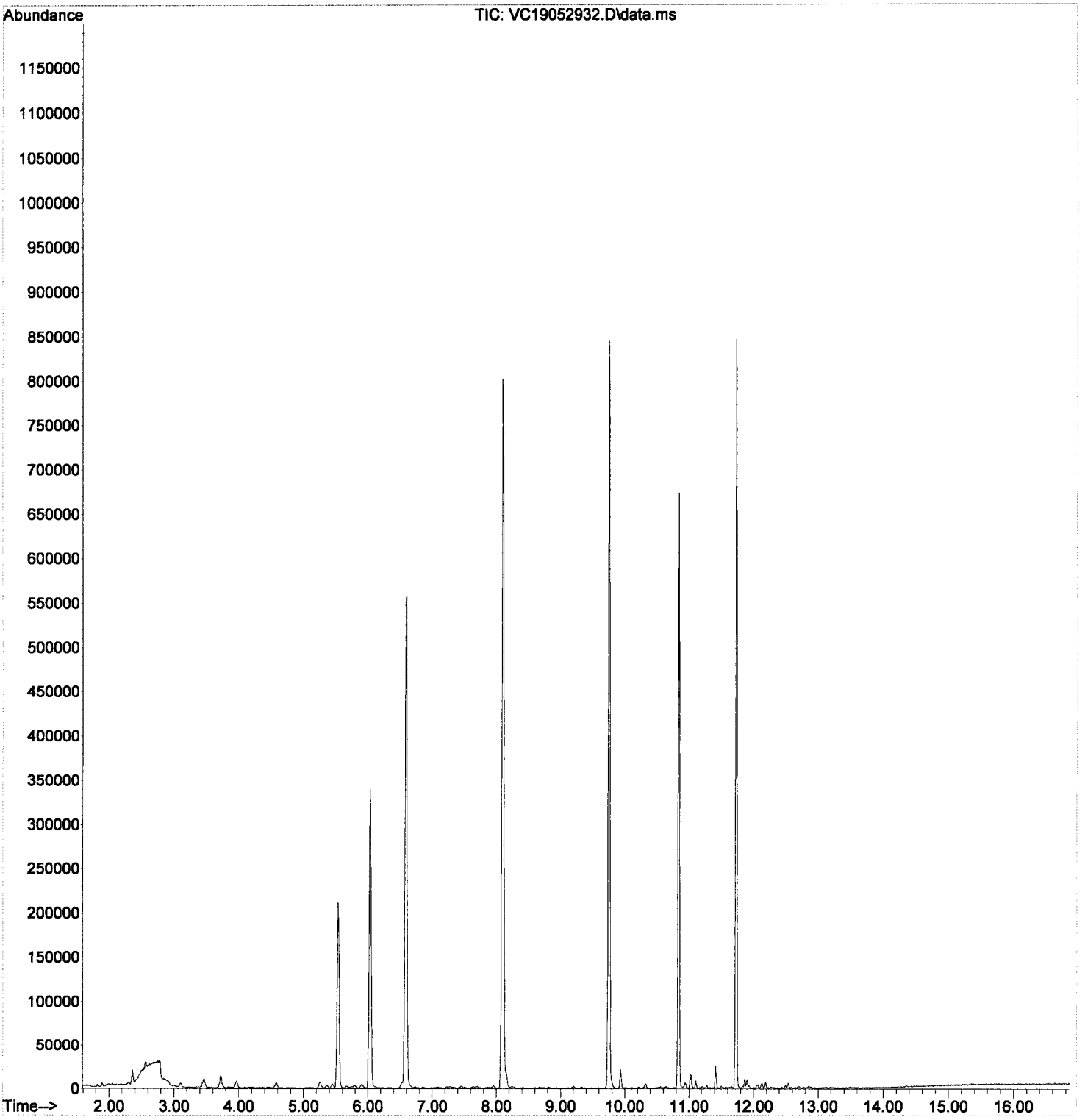
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.029	168	279728	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.589	TIC	1222030	46.88	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.835	TIC	961897	49.39	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.746	TIC	1419826	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.091	TIC	1738033	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.723	TIC	1151134	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	1068894m	39.14	ug/L	
6) TPHg (C5-C9)	9.906	TIC	896529m	33.55	ug/L	
7) TPHg (C6-C10)	9.906	TIC	652995m	32.78	ug/L	
8) NWTPH-Gx	9.906	TIC	279571m	46.94	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052932.D
Acq On : 30 May 2019 4:29 am
Operator : TB
Sample : 9E29058-IBL8
Misc : 1X 5mL DI+MeOH
ALS Vial : 32 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 15:59:58 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052933.D
Acq On : 30 May 2019 4:57 am
Operator : TB
Sample : 9E29058-IBL9
Misc : 1X 5mL DI+MeOH
ALS Vial : 33 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 16:00:00 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

NR

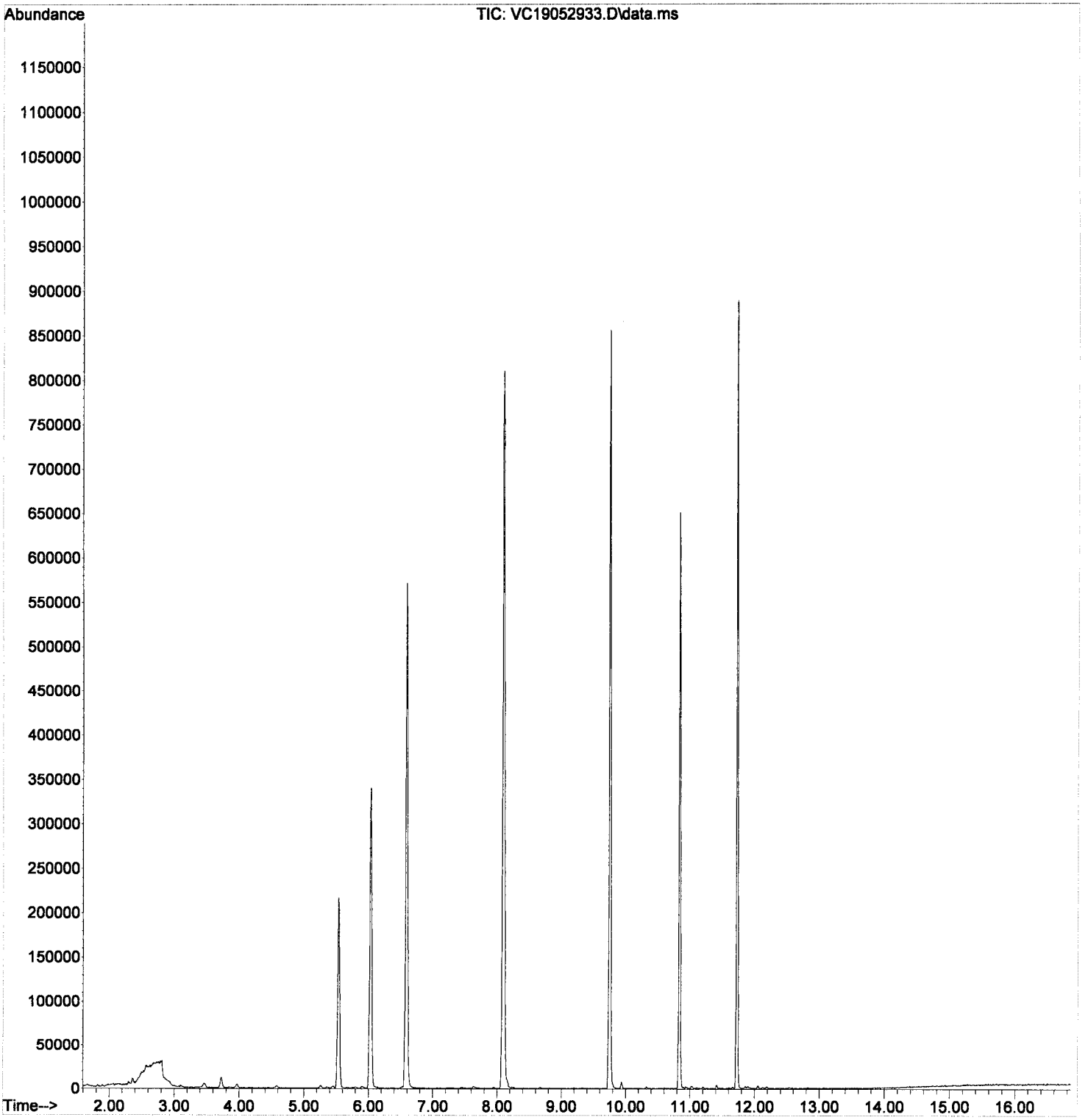
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.031	168	283591	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.585	TIC	1202716	45.51	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.831	TIC	964432	48.85	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.748	TIC	1423294	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.094	TIC	1741215	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.725	TIC	1168289	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	663119m	5.91	ug/L	
6) TPHg (C5-C9)	9.906	TIC	644102m	8.90	ug/L	
7) TPHg (C6-C10)	9.906	TIC	521725m	16.22	ug/L	
8) NWTPH-Gx	9.906	TIC	43772m	17.87	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052933.D
Acq On : 30 May 2019 4:57 am
Operator : TB
Sample : 9E29058-IBL9
Misc : 1X 5mL DI+MeOH
ALS Vial : 33 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 16:00:00 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052934.D
Acq On : 30 May 2019 5:25 am
Operator : TB
Sample : 9E29058-ICV2
Misc : 1X 5mL 500ppb GX DI+MeOH
ALS Vial : 34 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 16:00:02 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

5/30/19

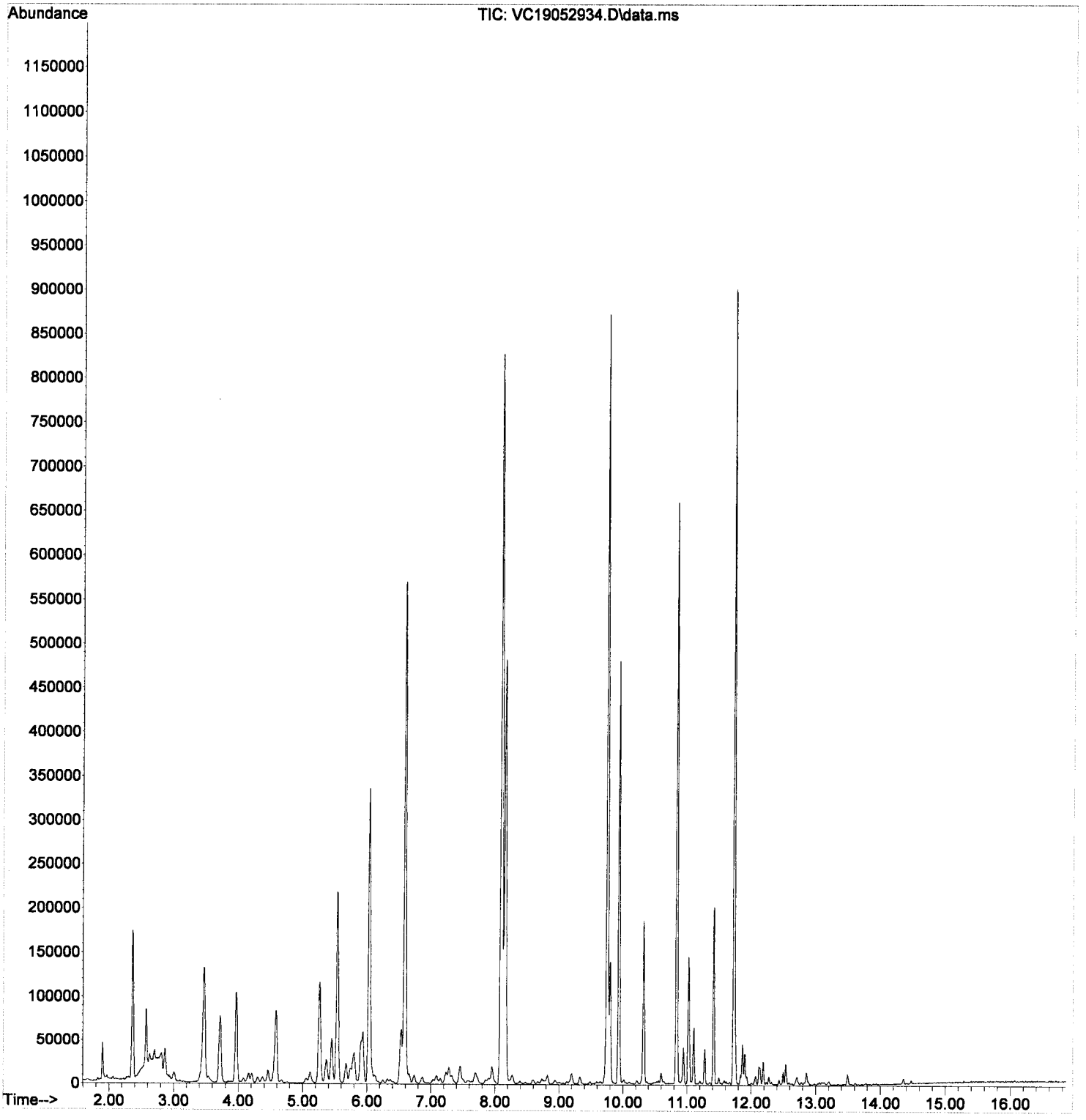
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.032	168	282127	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.585	TIC	1225298	46.60	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.831	TIC	969339	49.35	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.749	TIC	1455006	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.094	TIC	1726664	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.726	TIC	1226030	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	7243471m	529.63	ug/L	
6) TPHg (C5-C9)	9.906	TIC	6152737m	526.03	ug/L	
7) TPHg (C6-C10)	9.906	TIC	4887342m	535.49	ug/L	
8) NWTPH-Gx	9.906	TIC	4278524m	533.68	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052934.D
Acq On : 30 May 2019 5:25 am
Operator : TB
Sample : 9E29058-ICV2
Misc : 1X 5mL 500ppb GX DI+MeOH
ALS Vial : 34 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 16:00:02 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052935.D
Acq On : 30 May 2019 5:52 am
Operator : TB
Sample : 9E29058-IBLA
Misc : 1X 5mL DI+MeOH
ALS Vial : 35 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 16:00:04 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration

NR

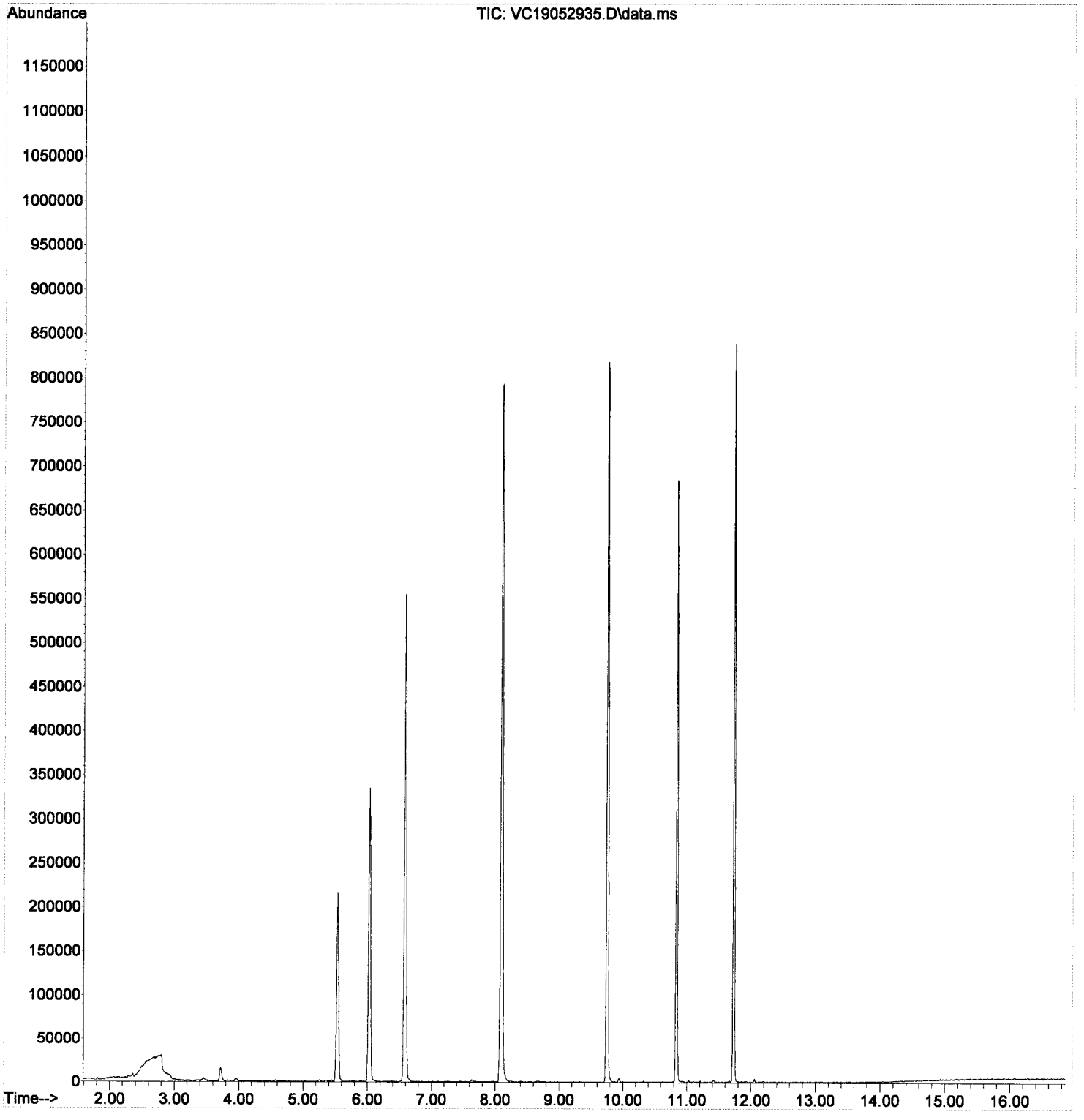
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene (IS)	6.028	168	276844	50.00	ug/L	0.00
System Monitoring Compounds						
2) 1,4-Difluorobenzene (Sur)	6.582	TIC	1199322	46.48	ug/L	0.00
3) 4-Bromofluorobenzene (...	10.834	TIC	959696	49.79	ug/L	0.00
4) Chlorobenzene-d5 (NR)	9.745	TIC	1402860	0.00	ug/L	0.00
10) Toluene-d8 (NR)	8.096	TIC	1704421	0.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4...	11.728	TIC	1157049	0.00	ug/L	0.00
Target Compounds						Qvalue
5) CA-LUFT (C5-C12)	9.906	TIC	652148m	6.30	ug/L	
6) TPHg (C5-C9)	9.906	TIC	651994m	11.11	ug/L	
7) TPHg (C6-C10)	9.906	TIC	497146m	14.74	ug/L	
8) NWTPH-Gx	9.906	TIC	16386m	14.59	ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2019-05\9E29058\
Data File : VC19052935.D
Acq On : 30 May 2019 5:52 am
Operator : TB
Sample : 9E29058-IBLA
Misc : 1X 5mL DI+MeOH
ALS Vial : 35 Sample Multiplier: 1
DataAcq Meth:VC1612RUN.M

Quant Time: May 30 16:00:04 2019
Quant Method : C:\msdchem\1\METHODS\VC190529G.M
Quant Title : NWTPH-Gx by GC/MS
QLast Update : Thu May 30 15:52:54 2019
Response via : Initial Calibration



APEX LABORATORIES, LLC
6700 SW Sandburg St. Tigard OR 97223 phone 503-718-2323

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Benchsheet & Analysis Sequence Data

Batch 9051465

Sequence 9E31014 (A9E0902-01)

Apex Laboratories

PREPARATION BENCH SHEET

BATCH #: 9051465 (Solid)

Prep Method: EPA 3546

#	Lab Number		Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surr.	Sample ID	Extraction Comments	pH <2	pH Other	pH >11
	9051465-BLK1		QC	05/31/19 13:13	11	5				100					
	9051465-BS1		QC	05/31/19 13:13	10	5	A19D326		100	100					
	A9E0902-01	A	8270 SIM PAH	05/31/19 13:13	10.06	5				100	2708-190524-014				
	9051465-DUP1		QC	05/31/19 13:13	10.13	5		A9E0902-01		100					
	9051465-MS1		QC	05/31/19 13:13	10.13	5	A19D326	A9E0902-01	100	100					
	A9E0902-01RE1	A	8270 SIM PAH	05/31/19 13:13	10.06	5				100	2708-190524-014	Added 6/3/2019 By bsj			
	9051465-DUP2		QC	05/31/19 13:13	10.13	5		A9E0902-01RE1		100					

Standards/Reagents

Reagent(s)

Std ID	Exp. Date	Description
A13L219	11/30/23	Extractions Balance
A18K311	12/31/20	Glass Wool
A19D007	09/30/20	DCM CHEM PROD. 186806
A19D260	10/15/19	Sodium Sulfate Lot # Q098001

Analyte Spike(s)

Std ID	Exp. Date	Description
A19D326	10/21/19	8270D PAH+/Phenols (JSCS) Spike @ 80 PPM

Surrogate(s)

Std ID	Exp. Date	Description
A19E036	10/30/19	PAH Soil and Water Surr. (50ppm)

Method 3546 digestion time and temperture achieved.
Initial:

Witness:_____

Prepared By: Date

Reviewed By: 6-03-19 Date

Apex Laboratories

PREPARATION BENCH SHEET

BATCH #: 9051465 (Solid)

Prep Method: EPA 3546

#	Lab Number		Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surr.	Sample ID	Extraction Comments	pH <2	pH Other	pH >11
1	9051465-BLK1		QC	05/31/19 13:13	~~10~~ 11	5 ✓				100					
2	9051465-BS1		QC	05/31/19 13:13	10	5 ✓	A19D326		100	100					
3	A9E0902-01	A	8270 SIM PAH 100X	05/31/19 13:13	~~10~~ 10.06	5 ✓				100	2708-190524-014	mud, rocks, odor #			
4	9051465-DUP1		QC	05/31/19 13:13	~~10~~ 10.13	5 ✓		A9E0902-01		100		#			
5	9051465-MS1		QC	05/31/19 13:13	~~10~~ 10.13	5 ✓	A19D326	A9E0902-01	100	100		#			

Standards/Reagents

Reagent(s)

Std ID	Exp. Date	Description
A13L219	11/30/23	Extractions Balance
A18K311	12/31/20	Glass Wool
A19D007	09/30/20	DCM CHEM PROD. 186806
A19D260	10/15/19	Sodium Sulfate Lot # Q098001

Analyte Spike(s) JRA

Std ID	Exp. Date	Description
A19D326	10/21/19	8270D PAH+/Phenols (JSCS) Spike @ 80 PPM

Surrogate(s) JRA

Std ID	Exp. Date	Description
~~A19E036~~	~~10/30/19~~	PAH Soil and Water Surr. (50ppm)
A19E304	11/24/19	JRA 05/31/19

- heavy turnevap staining

Method 3546 digestion time and temperture achieved.
Initial: JRA

Witness: CAH 5.31.19

JRA — Prepared By: — 05/31/19 — Date

CAH — Reviewed By: — 05.31.19 — Date

CAH 05.31.19

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence:	9E31014	Instrument:	SV-GCMS4
Date:	05/31/19 09:01	Calibration:	A9E0902

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9E31014-TUN1	Water	QC	QC			A19D031	A19E333
2	9E31014-CCV1	Water	QC	QC			A19B027	A19C237
3	9E31014-TUN2	Water	QC	QC			A19D031	A19E333
4	9E31014-CCV2	Water	QC	QC			A19B027	A19C237
5	9E31014-TUN3	Water	QC	QC			A19D031	A19E333
6	9E31014-CCV3	Water	QC	QC			A19B027	A19C237
7	9E31014-CCB1	Water	QC	QC			A19B027	
8	9051460-BLK1	Water	QC	QC		9051460	A19B027	
9	9051460-BS1	Water	QC	QC		9051460	A19B027	
10	9051460-BSD1	Water	QC	QC		9051460	A19B027	
11	A9E0963-01	Water	8270 SIM PAH (1-2mL FV)		06/03/19	9051460	A19B027	
12	9051465-BLK1	Solid	QC	QC		9051465	A19B027	
13	9051465-BS1	Solid	QC	QC		9051465	A19B027	
14	A9E0902-01	Solid	8270 SIM PAH	Hahn and Associates	06/03/19	9051465	A19B027	
15	9051465-DUP1	Solid	QC	QC		9051465	A19B027	
16	9E31014-IBL1	Water	QC	QC			A19B027	

Data Entered By: BSJ 6-03-19

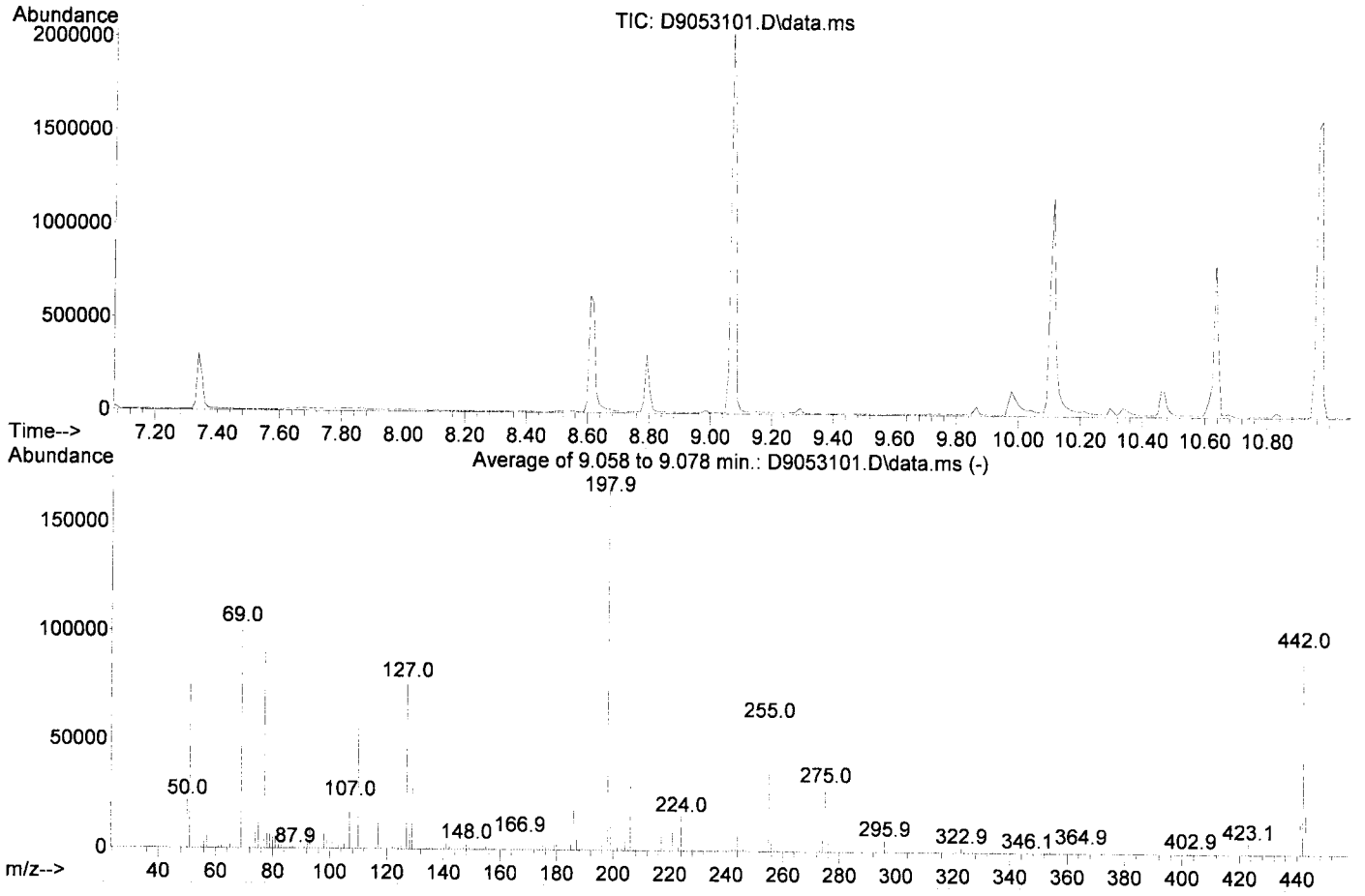
Data Reviewed By: [illegible] 6/3/19

Comments:

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053101.D
Acq On : 31 May 2019 10:57 am
Operator : bsj
Sample : 9E31014-TUN1
Misc : 1x A19E333 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\methods\DFTPP-8270.M
Title : EPA 8270 SIM PAH
Last Update : Wed Dec 05 14:43:36 2018



AutoFind: Scans 544, 545, 546; Background Corrected with Scan 542

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	45.6	75485	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	61.5	101779	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	46.5	76925	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	165453	PASS
199	198	5	9	6.5	10805	PASS
275	198	10	60	18.0	29763	PASS
365	198	1	100	1.5	2444	PASS
441	442	0.01	24	14.6	13719	PASS
442	198	50	200	56.7	93771	PASS
443	442	15	24	19.4	18195	PASS

Q-14 ✓

5-31-19

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053101.D
Acq On : 31 May 2019 10:57 am
Operator : bsj
Sample : 9E31014-TUN1
Misc : 1x A19E333 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 31 11:23:12 2019
Quant Method : C:\msdchem\1\methods\DFTPP-8270.M
Quant Title : EPA 8270 SIM PAH
QLast Update : Wed Dec 05 14:43:36 2018
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	5.651	136	150616	2000.00	ng/ml	0.00
2) Acenaphthene-d10	7.339	162	71593	2000.00	ng/ml	-0.01
3) Phenanthrene-d10	8.792	188	111894	2000.00	ng/ml	0.00
7) Chrysene-d12	11.554	240	69795	2000.00	ng/ml	0.00
8) Perylene-d12	14.071	264	46813	2000.00	ng/ml	0.00
9) Dibenz(ah)anthracene-d14	16.424	292	36840	2000.00	ng/mL	-0.02
Target Compounds						Qvalue
4) Pentachlorophenol (PCP)	8.618	266	101862	31.20	ng/mL	97
5) DFTPP	9.068	198	308330	38.50	ng/mL	79
6) DDT	10.971	TIC	2159757	21340.91	ng/mL#	1

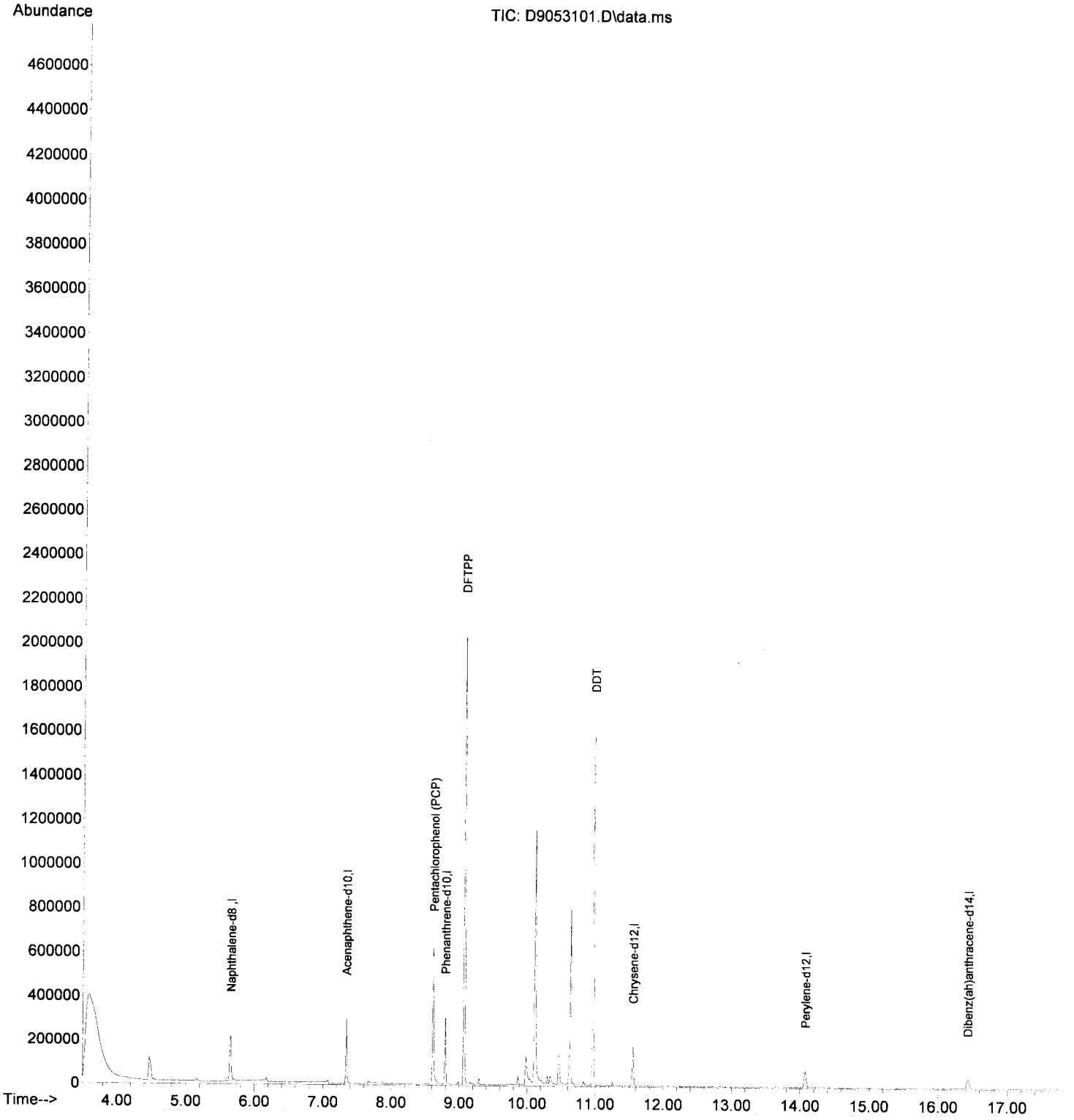
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Q-1d
5-31-19
BS

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053101.D
Acq On : 31 May 2019 10:57 am
Operator : bsj
Sample : 9E31014-TUN1
Misc : 1x A19E333 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 31 11:23:12 2019
Quant Method : C:\msdchem\1\methods\DFTPP-8270.M
Quant Title : EPA 8270 SIM PAH
QLast Update : Wed Dec 05 14:43:36 2018
Response via : Initial Calibration
InstName : SV-GCMS4



Evaluate Continuing Calibration Report

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053102.D
Acq On : 31 May 2019 11:21 am
Operator : bsj
Sample : 9E31014-CCV1
Misc : 1x A19C237@1000
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 31 13:21:51 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R3.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu May 09 08:52:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Replaced liner and clipped column after this run

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Naphthalene-d8 (ISTD)	2000.000	2000.000	0.0	76	0.00
2	T	Naphthlene	1000.000	1017.926	-1.8	78	0.00
3	T	2-Methylnaphthalene	1000.000	1005.694	-0.6	76	0.00
4	T	1-Methylnaphthalene	1000.000	1027.455	-2.7	78	0.00
5	I	Acenaphthene-d10 (ISTD)	2000.000	2000.000	0.0	73	0.00
6	S	2-Fluorobiphenyl(Surr)	1000.000	1068.214	-6.8	78	0.00
7	T	Acenaphthylene	1000.000	1079.080	-7.9	79	0.00
8	T	Acenaphthene	1000.000	1048.936	-4.9	76	0.00
9		Dibenzofuran	1000.000	1078.204	-7.8	79	0.00
10	T	Fluorene	1000.000	1063.296	-6.3	78	0.00
11	I	Phenanthrene-d10 (ISTD)	2000.000	2000.000	0.0	80	0.00
12	T	Phenanthrene	1000.000	981.010	1.9	80	0.00
13	T	Anthracene	1000.000	1029.204	-2.9	84	0.00
14		Carbazole	1000.000	1091.907	-9.2	86	0.00
15	T	Fluoranthene	1000.000	1020.203	-2.0	84	0.00
16	T	Pyrene	1000.000	1030.952	-3.1	86	0.00
17	I	Chrysene-d12 (ISTD)	2000.000	2000.000	0.0	86	0.00
18	S	Terphenyl-d14(Surr)	1000.000	998.497	0.2	86	0.00
19	T	Benz(a)Anthracene	1000.000	994.362	0.6	89	0.00
20	T	Chrysene	1000.000	1060.701	-6.1	92	0.00
21	I	Perylene-d12 (ISTD)	2000.000	2000.000	0.0	86	-0.01
22	T	Benzo(b)Fluoranthene	1000.000	1055.376	-5.5	90	-0.01
23	T	Benzo(k)Fluoranthene	1000.000	1049.621	-5.0	89	0.00
24	T	Benzo(b+k)Fluoranthene	2000.000	2104.407	-5.2	90	-0.06
25		Benzo(e) Pyrene	1000.000	1012.075	-1.2	86	-0.01
26	T	Benzo(a)Pyrene	1000.000	1045.098	-4.5	88	-0.01
27		Perylene	1000.000	1168.014	-16.8	99	-0.01
28		Dibenz(a,h)anthracene-d14 (	2000.000	2000.000	0.0	83	-0.02
29	T	Indeno(1,2,3-cd)Pyrene	1000.000	1252.760	-25.3#	104	-0.02
30	T	Dibenz(a,h)Anthracene	1000.000	1103.481	-10.3	92	-0.02
31	T	Benzo (g,h,i) Perylene	1000.000	970.437	3.0	80	0.00

D-14 ✓

(#) = Out of Range SPCC's out = 0 CCC's out = 0

5.31-19
BSJ

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053102.D
Acq On : 31 May 2019 11:21 am
Operator : bsj
Sample : 9E31014-CCV1
Misc : 1x A19C237@1000
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 31 13:21:51 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R3.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu May 09 08:52:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Naphthalene-d8 (ISTD)	5.651	136	386958	2000.00 ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.349	164	182924	2000.00 ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.797	188	280628	2000.00 ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.553	240	144624	2000.00 ng/ml	0.00
21) Perylene-d12 (ISTD)	14.068	264	99812	2000.00 ng/ml	-0.01
28) Dibenz(a,h)anthracene-...	16.416	292	65100	2000.00 ng/mL	-0.02
System Monitoring Compounds					
6) 2-Fluorobiphenyl(Surr)	6.686	172	144825	1068.21 ng/ml	0.00
18) Terphenyl-d14(Surr)	10.354	244	76415	998.50 ng/ml	0.00
Target Compounds					Qvalue
2) Naphthlene	5.671	128	204167	1017.93 ng/ml	99
3) 2-Methylnaphthalene	6.334	142	130416	1005.69 ng/ml	99
4) 1-Methylnaphthalene	6.427	142	129210	1027.46 ng/ml	98
7) Acenaphthylene	7.201	152	178262	1079.08 ng/ml	98
8) Acenaphthene	7.373	153	116031	1048.94 ng/ml	95
9) Dibenzofuran	7.545	168	159037	1078.20 ng/mL	88
10) Fluorene	7.878	166	122049	1063.30 ng/ml	98
12) Phenanthrene	8.819	178	158511	981.01 ng/ml	98
13) Anthracene	8.866	178	167932	1029.20 ng/ml	98
14) Carbazole	9.020	167	137769	1091.91 ng/mL	99
15) Fluoranthene	9.987	202	140471	1020.20 ng/ml	99
16) Pyrene	10.210	202	141259	1030.95 ng/ml	99
19) Benz(a)Anthracene	11.539	228	86771	994.36 ng/ml	96
20) Chrysene	11.588	228	90267	1060.70 ng/ml	95
22) Benzo(b)Fluoranthene	13.310	252	68010	1055.38 ng/ml	63
23) Benzo(k)Fluoranthene	13.361	252	67031	1049.62 ng/ml	58
24) Benzo(b+k)Fluoranthene	13.310	252	135553	2104.41 ng/ml#	58
25) Benzo(e) Pyrene	13.850	252	64903	1012.08 ng/mL	89
26) Benzo(a)Pyrene	13.947	252	57883	1045.10 ng/ml	62
27) Perylene	14.120	252	62564	1168.01 ng/mL	87
29) Indeno(1,2,3-cd)Pyrene	16.433	276	51272	1252.76 ng/ml	80
30) Dibenz(a,h)Anthracene	16.500	278	41235	1103.48 ng/ml	61
31) Benzo (g,h,i) Perylene	17.023	276	42716	970.44 ng/ml	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Q-14

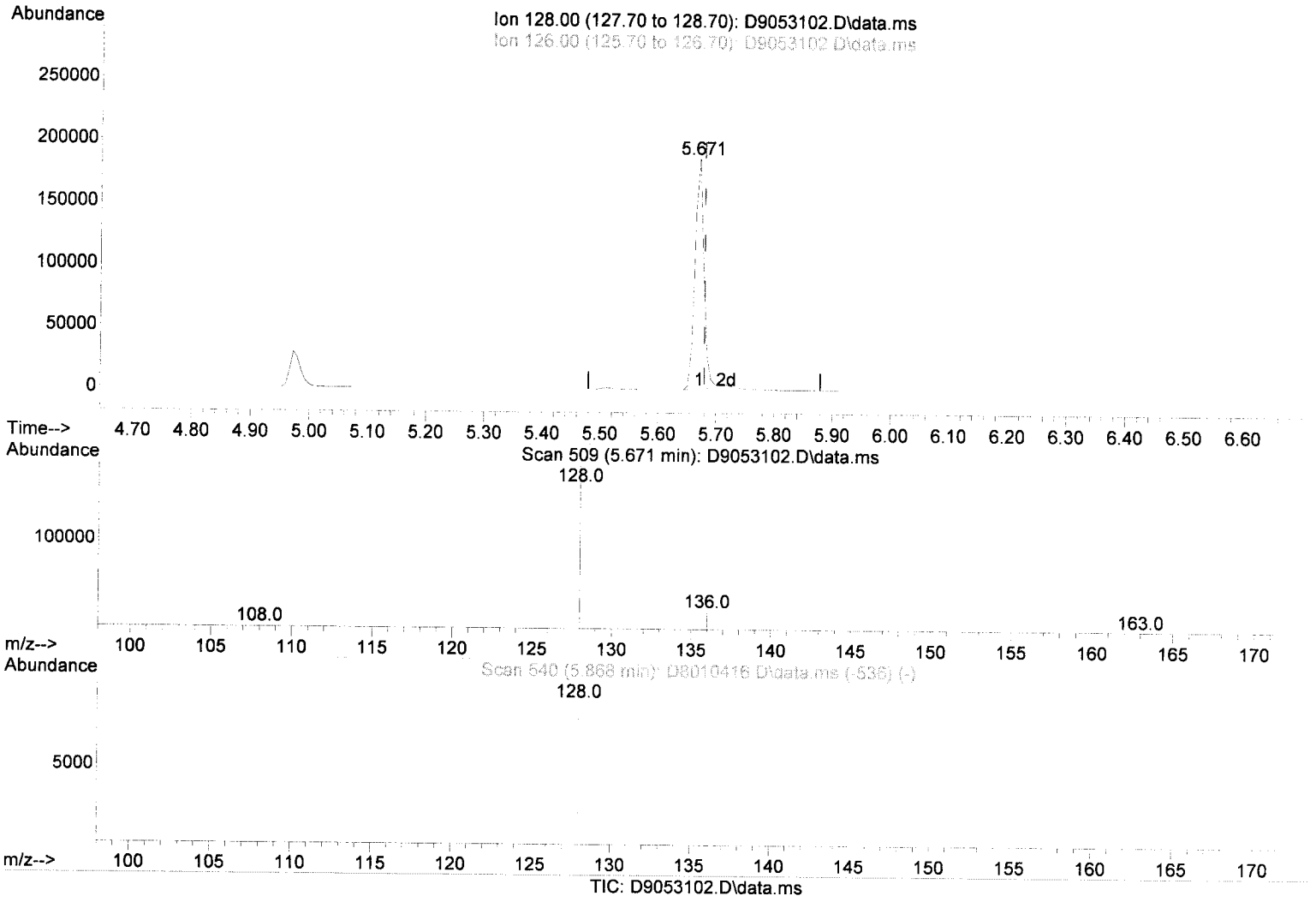
5-31-19

B

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053102.D
Acq On : 31 May 2019 11:21 am
Operator : bsj
Sample : 9E31014-CCV1
Misc : 1x A19C237@1000
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 31 13:21:51 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R3.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu May 09 08:52:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(2) Naphthlene (T)

5.671min (-0.009) 1017.93 ng/ml

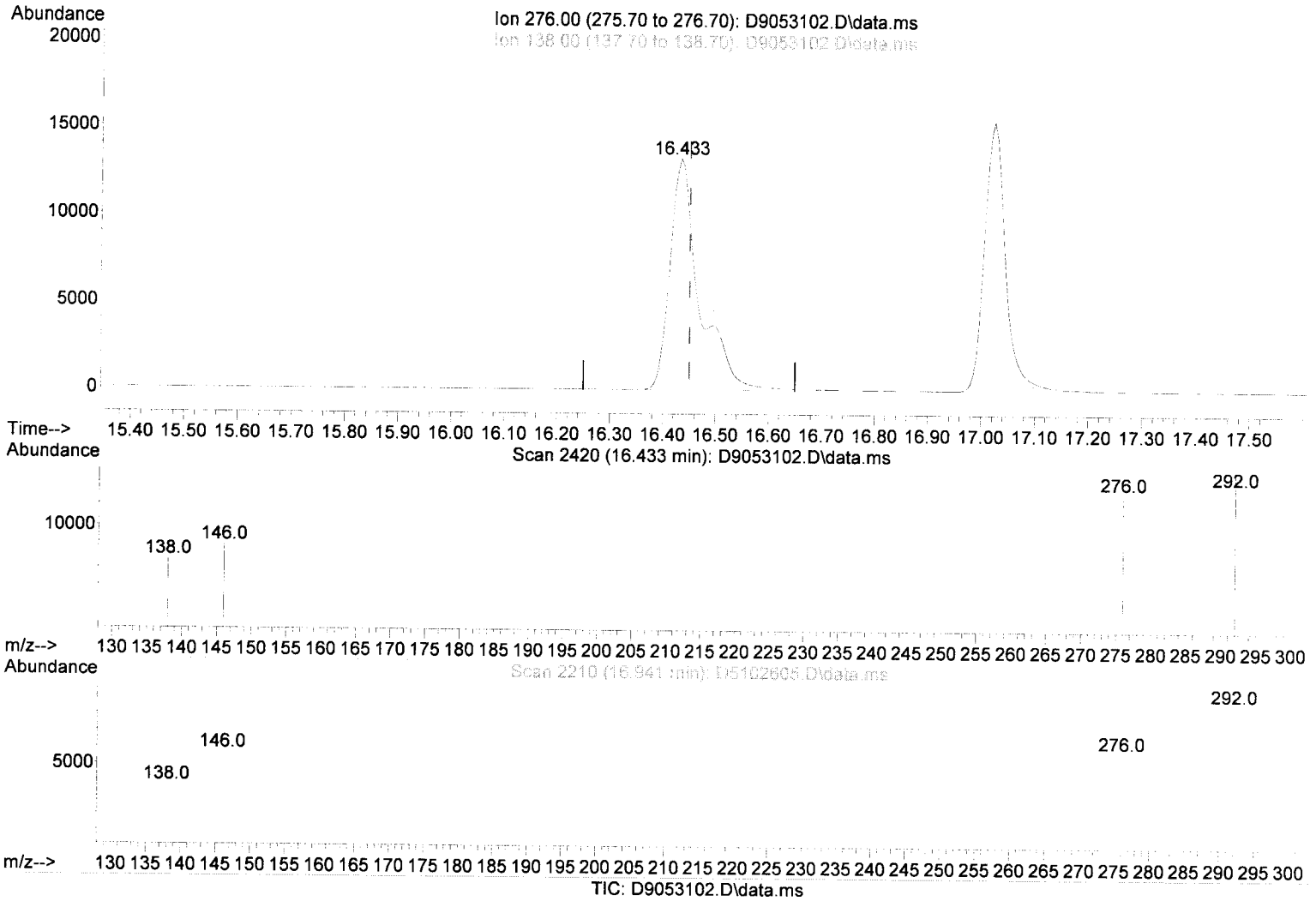
response 204167

Ion	Exp%	Act%
128.00	100.00	100.00
126.00	7.50	7.14
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053102.D
Acq On : 31 May 2019 11:21 am
Operator : bsj
Sample : 9E31014-CCV1
Misc : 1x A19C237@1000
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 31 13:21:51 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R3.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu May 09 08:52:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(29) Indeno(1,2,3-cd)Pyrene (T)

16.433min (-0.017) 1252.76 ng/ml

response 51272

Ion	Exp%	Act%
276.00	100.00	100.00
138.00	29.30	40.16
0.00	0.00	0.00
0.00	0.00	0.00

Q-4

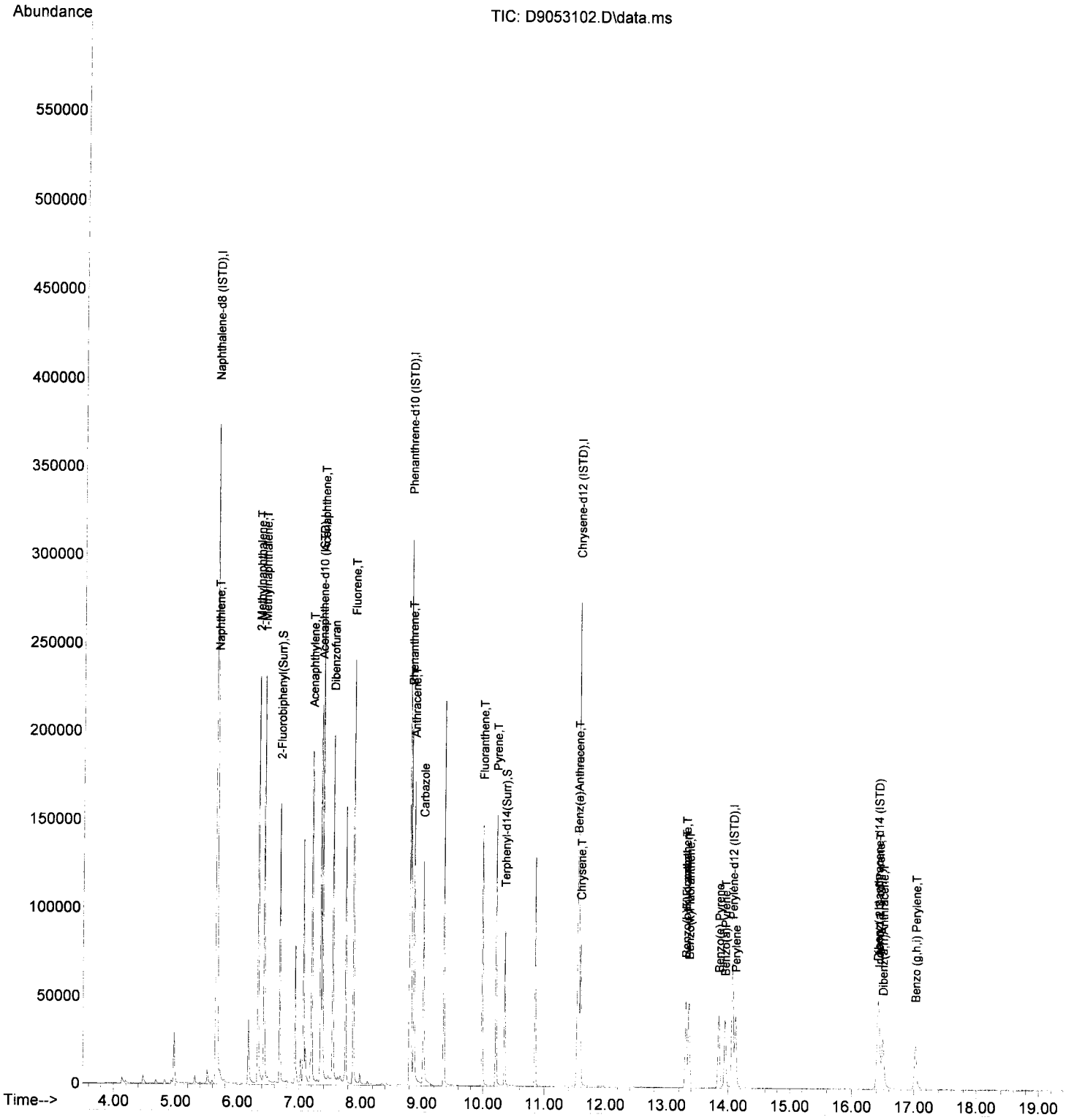
5-31-19 BSJ

✓

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053102.D
Acq On : 31 May 2019 11:21 am
Operator : bsj
Sample : 9E31014-CCV1
Misc : 1x A19C237@1000
ALS Vial : 2 Sample Multiplier: 1

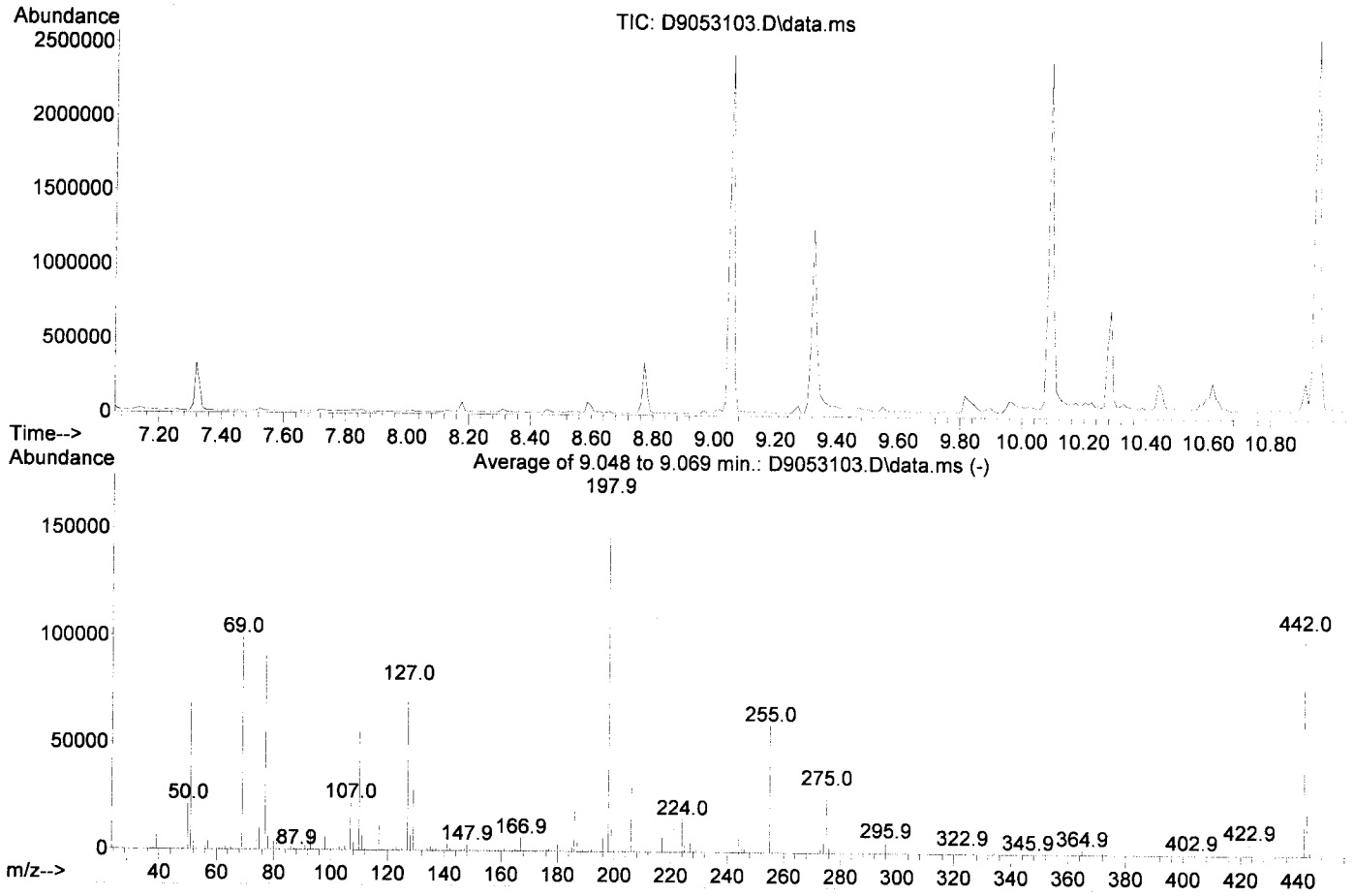
Quant Time: May 31 13:21:51 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R3.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu May 09 08:52:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053103.D
Acq On : 31 May 2019 4:46 pm
Operator : bsj
Sample : 9E31014-TUN2
Misc : 1x A19E333 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\methods\DFTPP-8270.M
Title : EPA 8270 SIM PAH
Last Update : Wed Dec 05 14:43:36 2018



AutoFind: Scans 543, 544, 545; Background Corrected with Scan 540

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	43.7	73240	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	59.1	99181	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	46.3	77578	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	167726	PASS
199	198	5	9	6.6	11110	PASS
275	198	10	60	17.9	30051	PASS
365	198	1	100	1.4	2284	PASS
441	442	0.01	24	14.4	14958	PASS
442	198	50	200	61.9	103816	PASS
443	442	15	24	19.1	19860	PASS

Q-14 ~~Pass~~ Q-06
TTH 5/31/19

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053103.D
Acq On : 31 May 2019 4:46 pm
Operator : bsj
Sample : 9E31014-TUN2
Misc : 1x A19E333 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 31 17:04:43 2019
Quant Method : C:\msdchem\1\methods\DFTPP-8270.M
Quant Title : EPA 8270 SIM PAH
QLast Update : Wed Dec 05 14:43:36 2018
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	5.631	136	146954	2000.00	ng/ml	-0.02
2) Acenaphthene-d10	7.319	162	67902	2000.00	ng/ml	-0.03
3) Phenanthrene-d10	8.772	188	122792	2000.00	ng/ml	-0.03
7) Chrysene-d12	11.534	240	94718	2000.00	ng/ml	-0.03
8) Perylene-d12	14.030	264	77825	2000.00	ng/ml	-0.05
9) Dibenz(ah)anthracene-d14	16.373	292	71562	2000.00	ng/mL	-0.07
Target Compounds						Qvalue
4) Pentachlorophenol (PCP)	8.598	266	9334	2.61	ng/mL	97
5) DFTPP	9.058	198	312998	35.62	ng/mL	80
6) DDT	10.951	TIC	2984924	26876.83	ng/mL#	1

(#) = qualifier out of range (m) = manual integration (+) = signals summed

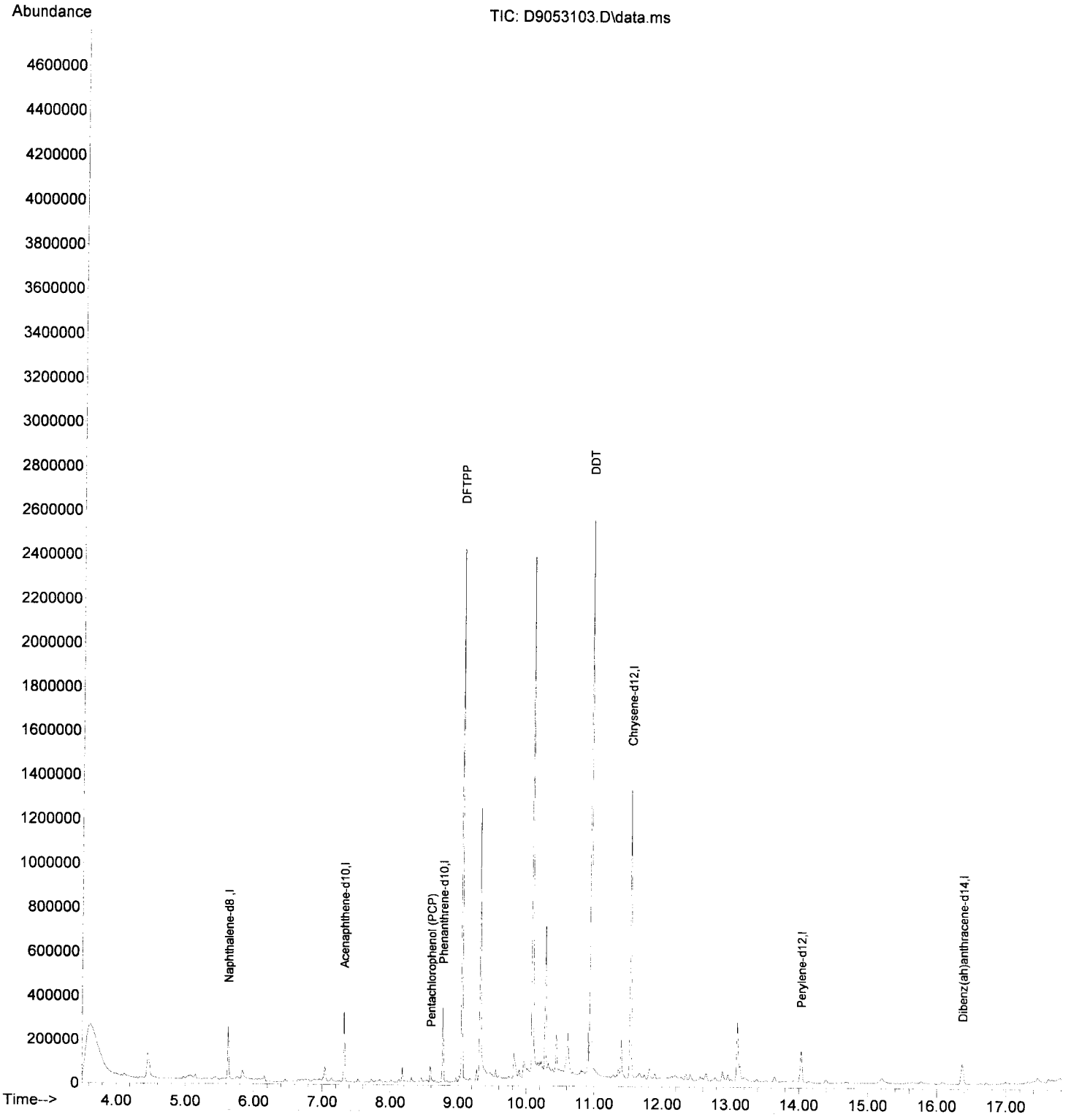
~~Q 14~~ Q-06 BDS

DTH 5/31/19

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053103.D
Acq On : 31 May 2019 4:46 pm
Operator : bsj
Sample : 9E31014-TUN2
Misc : 1x A19E333 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 31 17:04:43 2019
Quant Method : C:\msdchem\1\methods\DFTPP-8270.M
Quant Title : EPA 8270 SIM PAH
QLast Update : Wed Dec 05 14:43:36 2018
Response via : Initial Calibration
InstName : SV-GCMS4



Evaluate Continuing Calibration Report

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053104.D
Acq On : 31 May 2019 5:11 pm
Operator : bsj
Sample : 9E31014-CCV2
Misc : 1x A19C237@1000
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 31 18:10:06 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Naphthalene-d8 (ISTD)	2000.000	2000.000	0.0	75	0.00
2	T	Naphthlene	1000.000	1026.761	-2.7	79	0.00
3	T	2-Methylnaphthalene	1000.000	1030.350	-3.0	78	0.00
4	T	1-Methylnaphthalene	1000.000	1024.281	-2.4	77	0.00
5	I	Acenaphthene-d10 (ISTD)	2000.000	2000.000	0.0	76	0.00
6	S	2-Fluorobiphenyl(Surr)	1000.000	1054.207	-5.4	81	0.00
7	T	Acenaphthylene	1000.000	1049.219	-4.9	80	0.00
8	T	Acenaphthene	1000.000	1038.679	-3.9	79	0.00
9		Dibenzofuran	1000.000	1094.003	-9.4	83	0.00
10	T	Fluorene	1000.000	1093.313	-9.3	84	0.00
11	I	Phenanthrene-d10 (ISTD)	2000.000	2000.000	0.0	88	0.00
12	T	Phenanthrene	1000.000	1010.924	-1.1	90	0.00
13	T	Anthracene	1000.000	1040.325	-4.0	93	0.00
14		Carbazole	1000.000	1218.894	-21.9#	105	0.00
15	T	Fluoranthene	1000.000	1125.264	-12.5	101	0.00
16	T	Pyrene	1000.000	1144.470	-14.4	104	0.00
17	I	Chrysene-d12 (ISTD)	2000.000	2000.000	0.0	128	0.00
18	S	Terphenyl-d14(Surr)	1000.000	863.032	13.7	110	0.00
19	T	Benz(a)Anthracene	1000.000	1001.496	-0.1	133	0.00
20	T	Chrysene	1000.000	1047.267	-4.7	135	0.00
21	I	Perylene-d12 (ISTD)	2000.000	2000.000	0.0	161	0.00
22	T	Benzo(b)Fluoranthene	1000.000	987.202	1.3	159	0.00
23	T	Benzo(k)Fluoranthene	1000.000	1000.333	-0.0	160	0.00
24	T	Benzo(b+k)Fluoranthene	2000.000	1986.980	0.7	160	0.00
25		Benzo(e) Pyrene	1000.000	965.107	3.5	154	0.00
26	T	Benzo(a)Pyrene	1000.000	1076.420	-7.6	170	0.00
27		Perylene	1000.000	1166.185	-16.6	186	0.00
28		Dibenz(a,h)anthracene-d14 (	2000.000	2000.000	0.0	205	0.00
29	T	Indeno(1,2,3-cd)Pyrene	1000.000	976.903	2.3	199	0.00
30	T	Dibenz(a,h)Anthracene	1000.000	1046.876	-4.7	213	0.00
31	T	Benzo (g,h,i) Perylene	1000.000	928.020	7.2	187	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Q-06
Q-14
DTH 5/31/19

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053104.D
Acq On : 31 May 2019 5:11 pm
Operator : bsj
Sample : 9E31014-CCV2
Misc : 1x A19C237@1000
ALS Vial : 2 Sample Multiplier: 1

Returned after 7th run

Quant Time: May 31 18:10:06 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Naphthalene-d8 (ISTD)	5.632	136	385066	2000.00 ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.324	164	191293	2000.00 ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.771	188	307502	2000.00 ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.525	240	214392	2000.00 ng/ml	0.00
21) Perylene-d12 (ISTD)	14.021	264	187969	2000.00 ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.359	292	159857	2000.00 ng/mL	0.00
System Monitoring Compounds					
6) 2-Fluorobiphenyl(Surr)	6.661	172	149465	1054.21 ng/ml	0.00
18) Terphenyl-d14(Surr)	10.325	244	97910	863.03 ng/ml	0.00
Target Compounds					Qvalue
2) Naphthlene	5.645	128	204932	1026.76 ng/ml	99
3) 2-Methylnaphthalene	6.309	142	132960	1030.35 ng/ml	99
4) 1-Methylnaphthalene	6.406	142	128181	1024.28 ng/ml	98
7) Acenaphthylene	7.183	152	181259	1049.22 ng/ml	98
8) Acenaphthene	7.349	153	120153	1038.68 ng/ml	96
9) Dibenzofuran	7.521	168	168750	1094.00 ng/mL	87
10) Fluorene	7.855	166	131236	1093.31 ng/ml	99
12) Phenanthrene	8.797	178	178987	1010.92 ng/ml	98
13) Anthracene	8.845	178	186002	1040.32 ng/ml	98
14) Carbazole	8.994	167	168519	1218.89 ng/mL	98
15) Fluoranthene	9.958	202	169774	1125.26 ng/ml	99
16) Pyrene	10.180	202	171830	1144.47 ng/ml	99
19) Benz(a)Anthracene	11.504	228	129553	1001.50 ng/ml	96
20) Chrysene	11.553	228	132118	1047.27 ng/ml	96
22) Benzo(b)Fluoranthene	13.268	252	119805	987.20 ng/ml	66
23) Benzo(k)Fluoranthene	13.314	252	120307	1000.33 ng/ml	62
24) Benzo(b+k)Fluoranthene	13.314	252	241033	1986.98 ng/ml	64
25) Benzo(e) Pyrene	13.797	252	116555	965.11 ng/mL	92
26) Benzo(a)Pyrene	13.900	252	112274	1076.42 ng/ml	65
27) Perylene	14.073	252	117638	1166.19 ng/mL	90
29) Indeno(1,2,3-cd)Pyrene	16.370	276	98178	976.90 ng/ml	63
30) Dibenz(a,h)Anthracene	16.437	278	96061	1046.88 ng/ml	63
31) Benzo (g,h,i) Perylene	16.966	276	100307	928.02 ng/ml	83

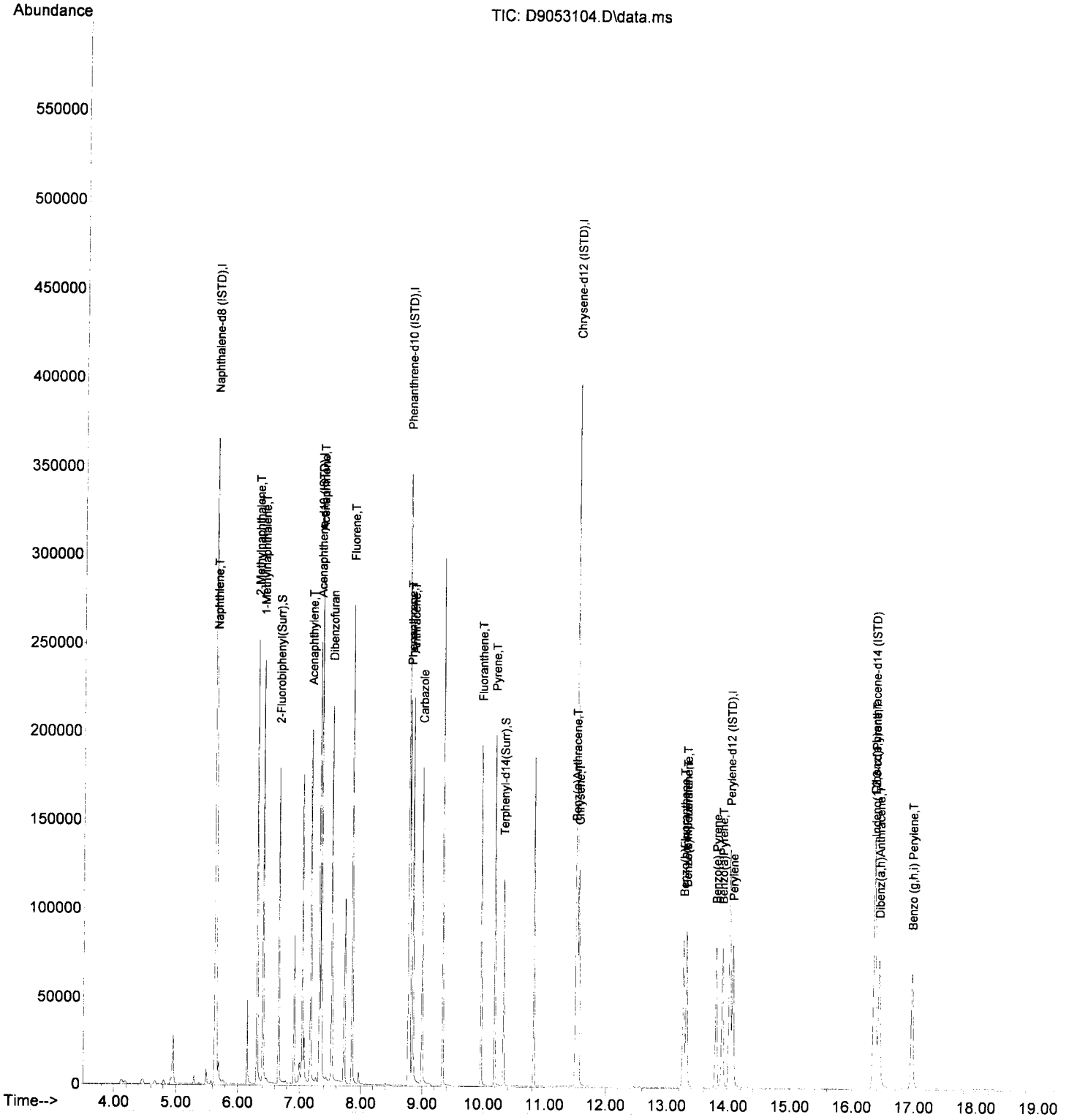
Q-04 ~~Q-05~~ DMF 5/31/19

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053104.D
Acq On : 31 May 2019 5:11 pm
Operator : bsj
Sample : 9E31014-CCV2
Misc : 1x A19C237@1000
ALS Vial : 2 Sample Multiplier: 1

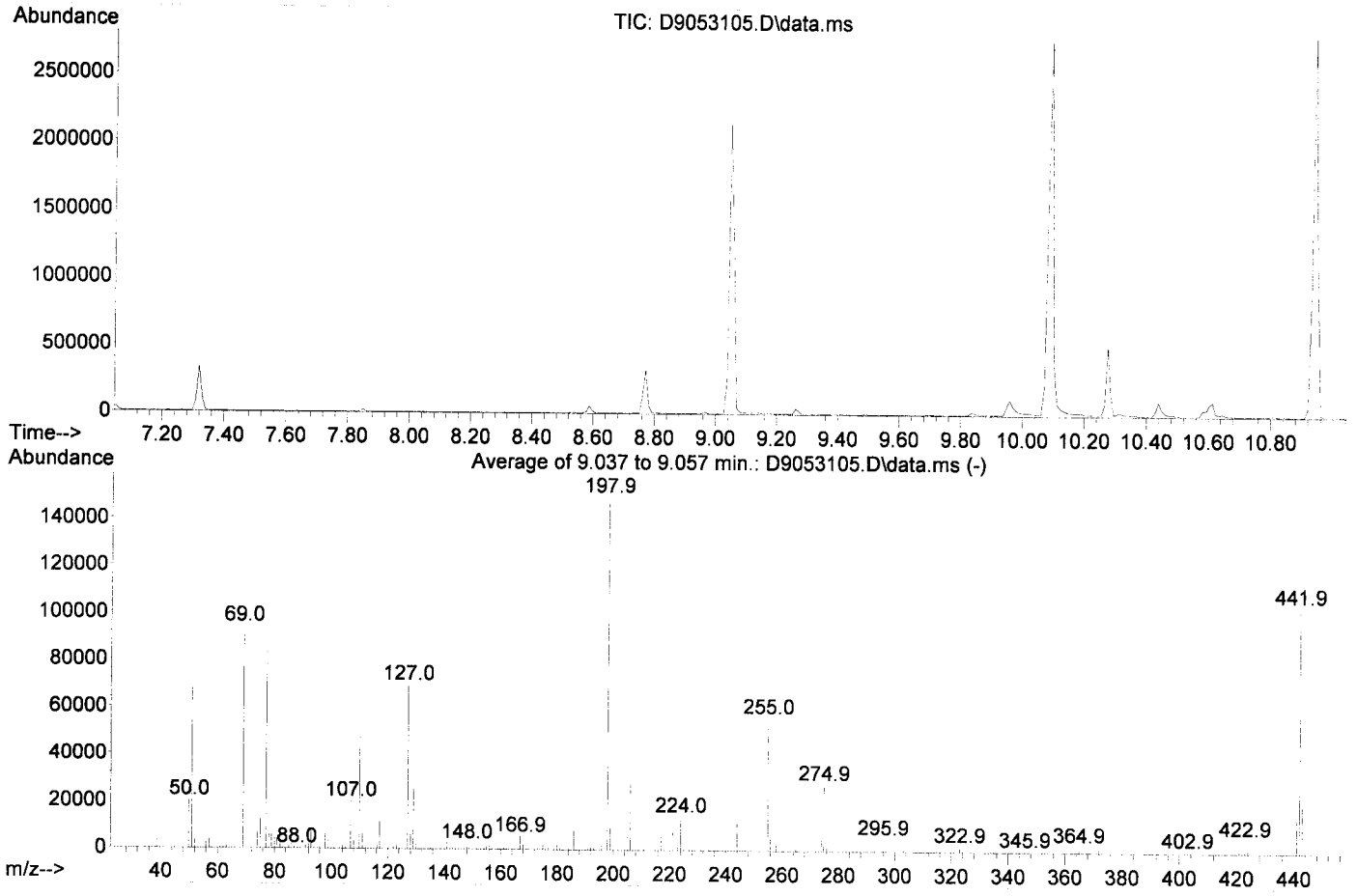
Quant Time: May 31 18:10:06 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053105.D
Acq On : 31 May 2019 5:44 pm
Operator : bsj
Sample : 9E31014-TUN3
Misc : 1x A19E333 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\methods\DFTPP-8270.M
Title : EPA 8270 SIM PAH
Last Update : Wed Dec 05 14:43:36 2018



AutoFind: Scans 542, 543, 544; Background Corrected with Scan 540

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	44.5	67671	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	62.0	94211	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	45.8	69563	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	151957	PASS
199	198	5	9	6.7	10149	PASS
275	198	10	60	18.6	28258	PASS
365	198	1	100	1.7	2630	PASS
441	442	0.01	24	14.4	15038	PASS
442	198	50	200	68.6	104183	PASS
443	442	15	24	19.4	20168	PASS

DMF 5/31/19

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053105.D
Acq On : 31 May 2019 5:44 pm
Operator : bsj
Sample : 9E31014-TUN3
Misc : 1x A19E333 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 31 18:10:48 2019
Quant Method : C:\msdchem\1\methods\DFTPP-8270.M
Quant Title : EPA 8270 SIM PAH
QLast Update : Wed Dec 05 14:43:36 2018
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	5.630	136	137576	2000.00	ng/ml	-0.02
2) Acenaphthene-d10	7.318	162	66756	2000.00	ng/ml	-0.03
3) Phenanthrene-d10	8.771	188	115952	2000.00	ng/ml	-0.03
7) Chrysene-d12	11.523	240	84313	2000.00	ng/ml	-0.04
8) Perylene-d12	14.019	264	67586	2000.00	ng/ml	-0.06
9) Dibenz(ah)anthracene-d14	16.362	292	60715	2000.00	ng/mL	-0.08
Target Compounds						Qvalue
4) Pentachlorophenol (PCP)	8.587	266	6029	1.78	ng/mL	93
5) DFTPP	9.047	198	283178	34.13	ng/mL	75
6) DDT	10.940	TIC	2891410	27570.60	ng/mL#	1

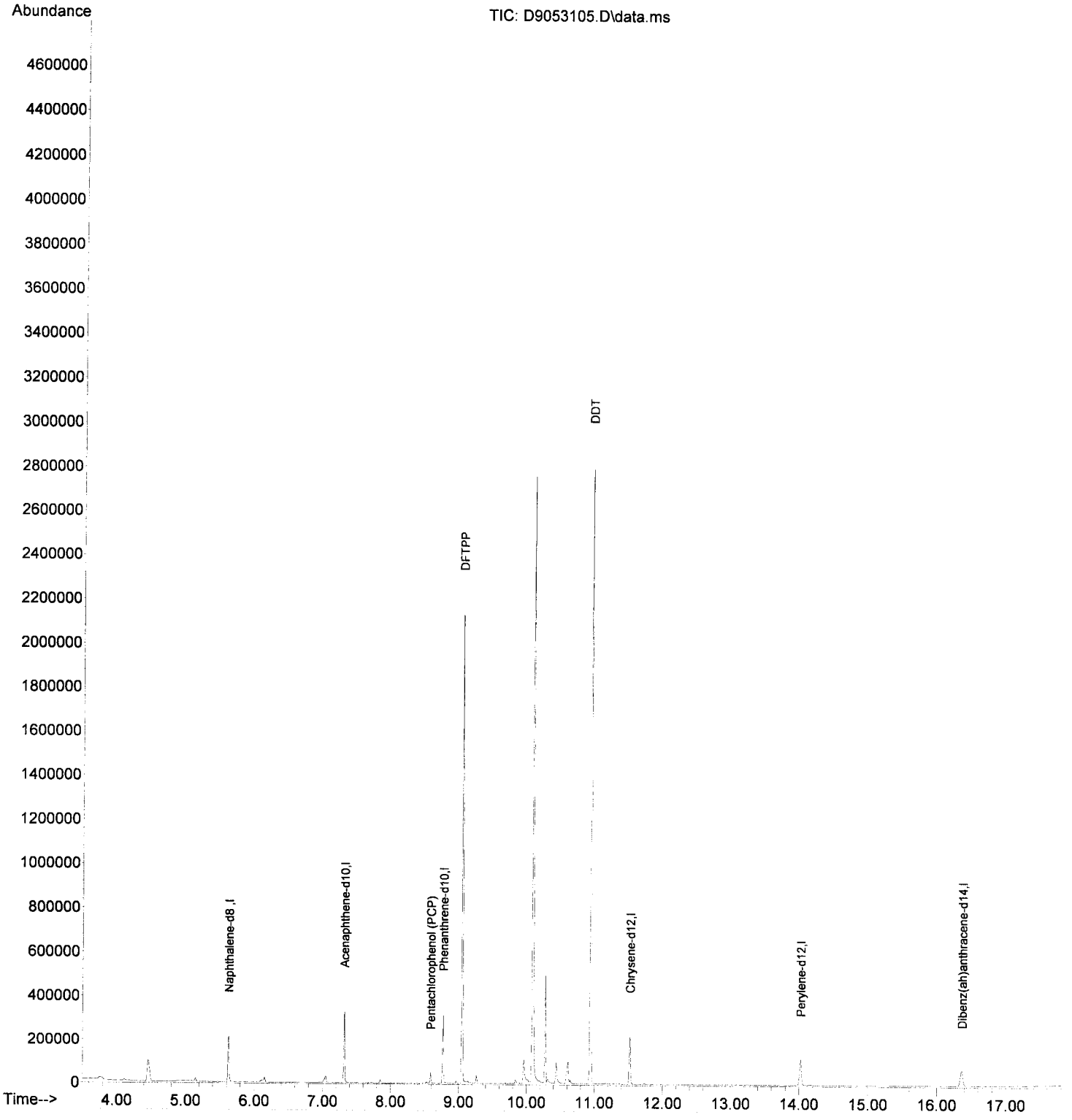
(#) = qualifier out of range (m) = manual integration (+) = signals summed

DTH 5/31/19

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053105.D
Acq On : 31 May 2019 5:44 pm
Operator : bsj
Sample : 9E31014-TUN3
Misc : 1x A19E333 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 31 18:10:48 2019
Quant Method : C:\msdchem\1\methods\DFTPP-8270.M
Quant Title : EPA 8270 SIM PAH
QLast Update : Wed Dec 05 14:43:36 2018
Response via : Initial Calibration
InstName : SV-GCMS4



Evaluate Continuing Calibration Report

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053106.D
Acq On : 31 May 2019 6:08 pm
Operator : bsj
Sample : 9E31014-CCV3
Misc : 1x A19C237@1000
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 31 18:29:23 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Naphthalene-d8 (ISTD)	2000.000	2000.000	0.0	69	0.00
2	T	Naphthlene	1000.000	1017.833	-1.8	72	0.00
3	T	2-Methylnaphthalene	1000.000	1028.263	-2.8	71	0.00
4	T	1-Methylnaphthalene	1000.000	1018.058	-1.8	71	0.00
5	I	Acenaphthene-d10 (ISTD)	2000.000	2000.000	0.0	71	0.00
6	S	2-Fluorobiphenyl(Surr)	1000.000	1050.400	-5.0	75	0.00
7	T	Acenaphthylene	1000.000	1053.469	-5.3	75	0.00
8	T	Acenaphthene	1000.000	1037.435	-3.7	73	0.00
9		Dibenzofuran	1000.000	1080.609	-8.1	76	0.00
10	T	Fluorene	1000.000	1072.418	-7.2	76	0.00
11	I	Phenanthrene-d10 (ISTD)	2000.000	2000.000	0.0	80	0.00
12	T	Phenanthrene	1000.000	1005.749	-0.6	82	0.00
13	T	Anthracene	1000.000	1046.834	-4.7	86	0.00
14		Carbazole	1000.000	1196.983	-19.7	94	0.00
15	T	Fluoranthene	1000.000	1105.571	-10.6	91	0.00
16	T	Pyrene	1000.000	1123.163	-12.3	94	0.00
17	I	Chrysene-d12 (ISTD)	2000.000	2000.000	0.0	118	0.00
18	S	Terphenyl-d14(Surr)	1000.000	883.437	11.7	104	0.00
19	T	Benz(a)Anthracene	1000.000	981.487	1.9	121	0.00
20	T	Chrysene	1000.000	1023.170	-2.3	122	0.00
21	I	Perylene-d12 (ISTD)	2000.000	2000.000	0.0	148	0.00
22	T	Benzo(b)Fluoranthene	1000.000	983.275	1.7	145	0.00
23	T	Benzo(k)Fluoranthene	1000.000	992.904	0.7	146	0.00
24	T	Benzo(b+k)Fluoranthene	2000.000	1976.342	1.2	146	0.00
25		Benzo(e) Pyrene	1000.000	953.820	4.6	139	0.00
26	T	Benzo(a)Pyrene	1000.000	1056.285	-5.6	153	0.00
27		Perylene	1000.000	1148.368	-14.8	168	0.00
28		Dibenz(a,h)anthracene-d14 (	2000.000	2000.000	0.0	189	0.00
29	T	Indeno(1,2,3-cd)Pyrene	1000.000	938.763	6.1	176	0.00
30	T	Dibenz(a,h)Anthracene	1000.000	1018.143	-1.8	191	0.00
31	T	Benzo (g,h,i) Perylene	1000.000	880.985	11.9	164	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

DTH 5/31/19

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053106.D
Acq On : 31 May 2019 6:08 pm
Operator : bsj
Sample : 9E31014-CCV3
Misc : 1x A19C237@1000
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 31 18:29:23 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Naphthalene-d8 (ISTD)	5.626	136	354596	2000.00 ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.324	164	177433	2000.00 ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.772	188	281907	2000.00 ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.525	240	198334	2000.00 ng/ml	0.00
21) Perylene-d12 (ISTD)	14.021	264	172087	2000.00 ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.360	292	147444	2000.00 ng/mL	0.00
System Monitoring Compounds					
6) 2-Fluorobiphenyl(Surr)	6.660	172	138135	1050.40 ng/ml	0.00
18) Terphenyl-d14(Surr)	10.326	244	92718	883.44 ng/ml	0.00
Target Compounds					Qvalue
2) Naphthlene	5.646	128	187075	1017.83 ng/ml	99
3) 2-Methylnaphthalene	6.308	142	122191	1028.26 ng/ml	99
4) 1-Methylnaphthalene	6.406	142	117321	1018.06 ng/ml	99
7) Acenaphthylene	7.183	152	168807	1053.47 ng/ml	98
8) Acenaphthene	7.355	153	111314	1037.44 ng/ml	96
9) Dibenzofuran	7.520	168	154607	1080.61 ng/mL	87
10) Fluorene	7.856	166	119401	1072.42 ng/ml	99
12) Phenanthrene	8.793	178	163249	1005.75 ng/ml	99
13) Anthracene	8.846	178	171587	1046.83 ng/ml	98
14) Carbazole	8.995	167	151715	1196.98 ng/mL	99
15) Fluoranthene	9.958	202	152919	1105.57 ng/ml	99
16) Pyrene	10.181	202	154595	1123.16 ng/ml	99
19) Benz(a)Anthracene	11.504	228	117455	981.49 ng/ml	96
20) Chrysene	11.554	228	119410	1023.17 ng/ml	96
22) Benzo(b)Fluoranthene	13.263	252	109246	983.27 ng/ml	68
23) Benzo(k)Fluoranthene	13.314	252	109324	992.90 ng/ml	65
24) Benzo(b+k)Fluoranthene	13.314	252	219486	1976.34 ng/ml	67
25) Benzo(e) Pyrene	13.797	252	105459	953.82 ng/mL	93
26) Benzo(a)Pyrene	13.900	252	100865	1056.29 ng/ml	67
27) Perylene	14.073	252	106053	1148.37 ng/mL	92
29) Indeno(1,2,3-cd)Pyrene	16.371	276	87019	938.76 ng/ml	67
30) Dibenz(a,h)Anthracene	16.432	278	86170	1018.14 ng/ml	66
31) Benzo (g,h,i) Perylene	16.961	276	87829	880.99 ng/ml	85

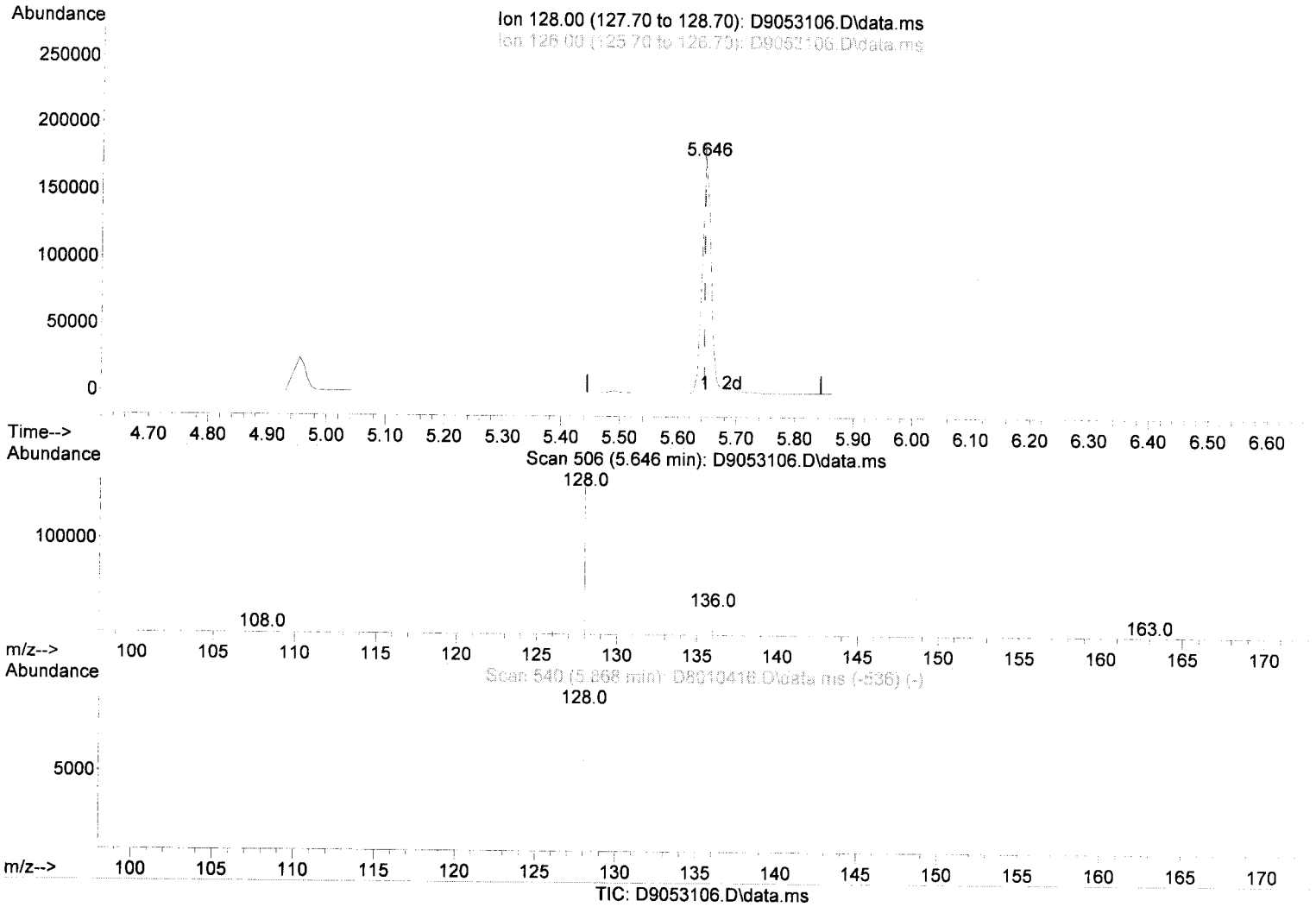
(#) = qualifier out of range (m) = manual integration (+) = signals summed

DTH 5/31/19

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053106.D
Acq On : 31 May 2019 6:08 pm
Operator : bsj
Sample : 9E31014-CCV3
Misc : 1x A19C237@1000
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 03 09:15:44 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(2) Naphthlene (T)

5.646min (+ 0.001) 1017.83 ng/ml

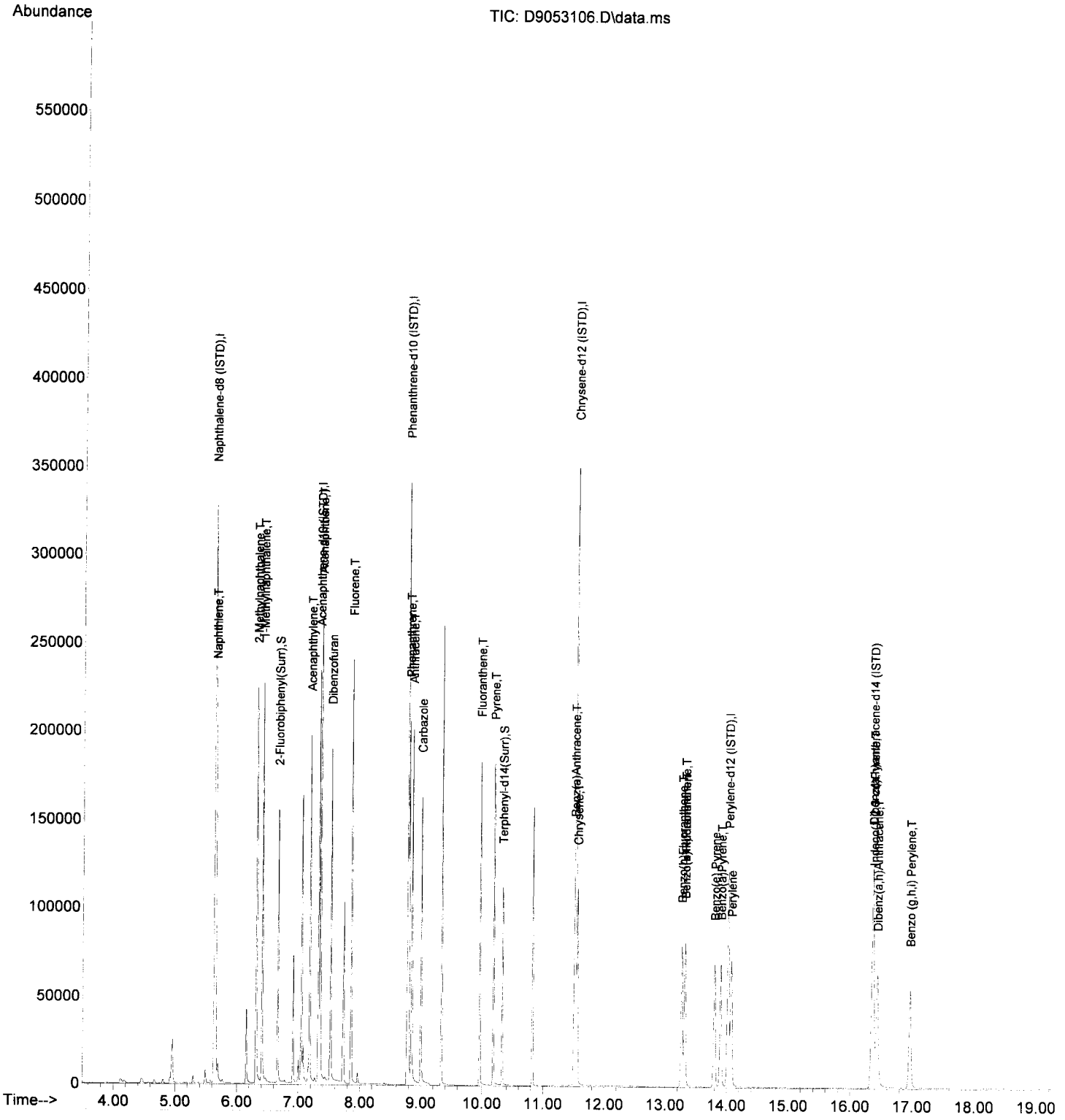
response 187075

Ion	Exp%	Act%
128.00	100.00	100.00
126.00	7.50	7.25
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053106.D
Acq On : 31 May 2019 6:08 pm
Operator : bsj
Sample : 9E31014-CCV3
Misc : 1x A19C237@1000
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 31 18:29:23 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053107.D
Acq On : 31 May 2019 6:35 pm
Operator : bsj
Sample : 9E31014-CCB1
Misc : 1x DCM+ISTD
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 03 09:17:40 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Naphthalene-d8 (ISTD)	5.632	136	326172	2000.00 ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.325	164	162858	2000.00 ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.772	188	262970	2000.00 ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.519	240	176271	2000.00 ng/ml	0.00
21) Perylene-d12 (ISTD)	14.015	264	147636	2000.00 ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.355	292	122911	2000.00 ng/mL	0.00
System Monitoring Compounds					
6) 2-Fluorobiphenyl(Surr)	0.000	172	0	0.00 ng/ml	
18) Terphenyl-d14(Surr)	0.000	244	0	0.00 ng/ml	
Target Compounds					Qvalue
2) Naphthlene	0.000		0	N.D.	
3) 2-Methylnaphthalene	0.000		0	N.D.	
4) 1-Methylnaphthalene	0.000		0	N.D.	
7) Acenaphthylene	0.000		0	N.D.	
8) Acenaphthene	0.000		0	N.D.	
9) Dibenzofuran	0.000		0	N.D.	
10) Fluorene	0.000		0	N.D.	
12) Phenanthrene	0.000		0	N.D.	
13) Anthracene	0.000		0	N.D.	
14) Carbazole	0.000		0	N.D.	
15) Fluoranthene	0.000		0	N.D.	
16) Pyrene	0.000		0	N.D.	
19) Benz(a)Anthracene	11.519	228	424	3.99 ng/ml#	55
20) Chrysene	11.519	228	424	4.09 ng/ml#	55
22) Benzo(b)Fluoranthene	0.000		0	N.D.	
23) Benzo(k)Fluoranthene	0.000		0	N.D.	
24) Benzo(b+k)Fluoranthene	0.000		0	N.D.	
25) Benzo(e) Pyrene	0.000		0	N.D.	
26) Benzo(a)Pyrene	0.000		0	N.D.	
27) Perylene	14.015	252	516	6.51 ng/mL#	1
29) Indeno(1,2,3-cd)Pyrene	16.355	276	210	2.72 ng/ml#	1
30) Dibenz(a,h)Anthracene	0.000		0	N.D.	
31) Benzo (g,h,i) Perylene	0.000		0	N.D.	

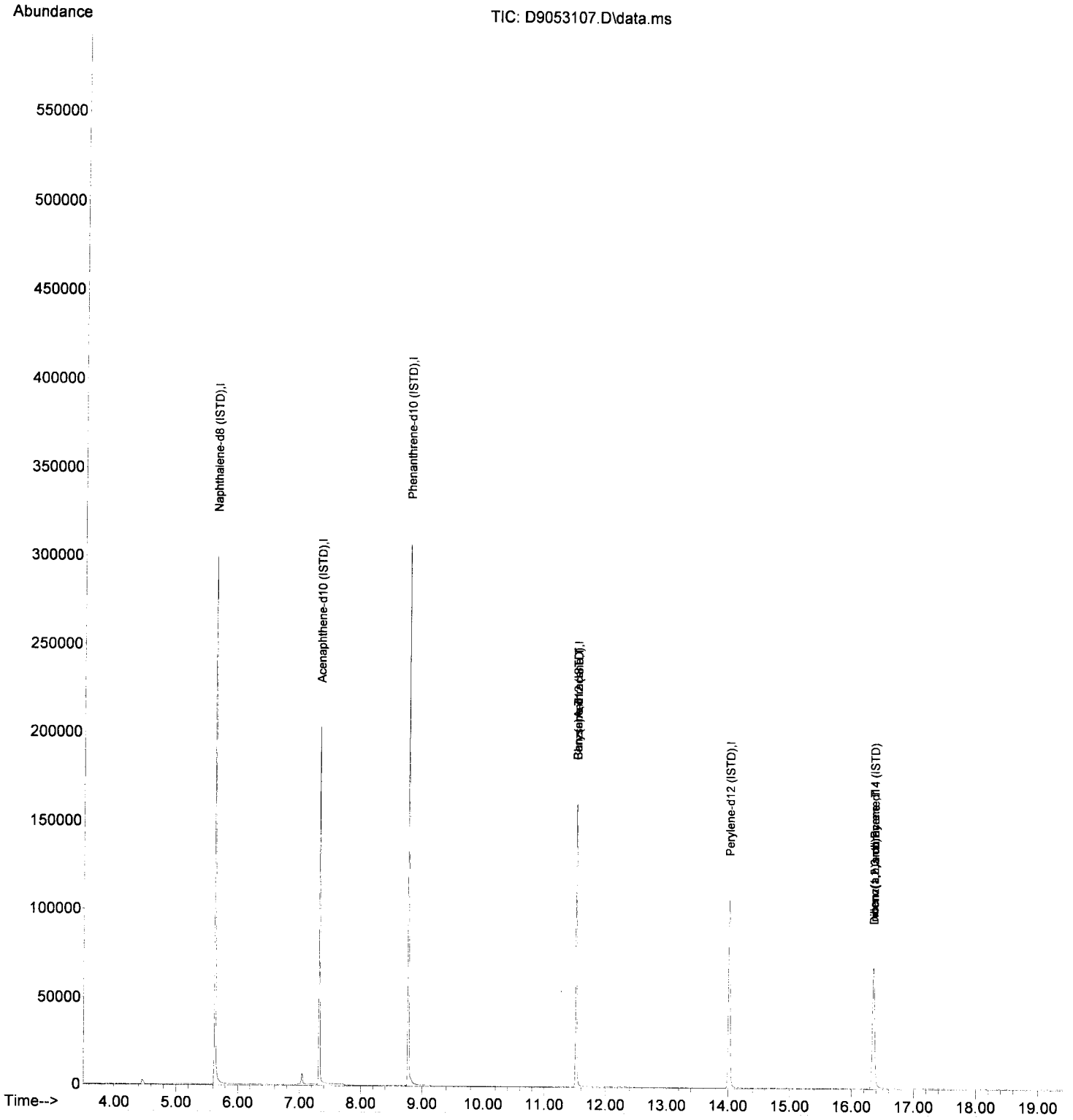
(#) = qualifier out of range (m) = manual integration (+) = signals summed

6-03-19 BSJ

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053107.D
Acq On : 31 May 2019 6:35 pm
Operator : bsj
Sample : 9E31014-CCB1
Misc : 1x DCM+ISTD
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 03 09:17:40 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053108.D
Acq On : 31 May 2019 7:01 pm
Operator : bsj
Sample : 9051460-BLK1
Misc : 1x Water 1100mL/1mL SIM PAH (1-2mL FV)
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 03 09:17:43 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Naphthalene-d8 (ISTD)	5.632	136	366535	2000.00 ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.324	164	186817	2000.00 ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.771	188	300123	2000.00 ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.518	240	211568	2000.00 ng/ml	0.00
21) Perylene-d12 (ISTD)	14.016	264	178990	2000.00 ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.349	292	155293	2000.00 ng/mL	0.00
System Monitoring Compounds					
6) 2-Fluorobiphenyl(Surr)	6.661	172	524613	3788.86 ng/ml	0.00
18) Terphenyl-d14(Surr)	10.331	244	409956	3661.81 ng/ml	0.00
Target Compounds					Qvalue
2) Naphthlene	5.652	128	1493	7.86 ng/ml#	78
3) 2-Methylnaphthalene	6.309	142	426	3.47 ng/ml	97
4) 1-Methylnaphthalene	6.406	142	257	2.16 ng/ml	99
7) Acenaphthylene	0.000		0	N.D.	
8) Acenaphthene	7.354	153	263	2.33 ng/ml#	1
9) Dibenzofuran	0.000		0	N.D.	
10) Fluorene	0.000		0	N.D.	
12) Phenanthrene	8.792	178	320	1.85 ng/ml#	59
13) Anthracene	8.792	178	320	1.83 ng/ml#	60
14) Carbazole	0.000		0	N.D.	
15) Fluoranthene	0.000		0	N.D.	
16) Pyrene	0.000		0	N.D.	
19) Benz(a)Anthracene	11.518	228	526	4.12 ng/ml#	55
20) Chrysene	11.518	228	526	4.23 ng/ml#	55
22) Benzo(b)Fluoranthene	0.000		0	N.D.	
23) Benzo(k)Fluoranthene	0.000		0	N.D.	
24) Benzo(b+k)Fluoranthene	0.000		0	N.D.	
25) Benzo(e) Pyrene	0.000		0	N.D.	
26) Benzo(a)Pyrene	0.000		0	N.D.	
27) Perylene	14.016	252	582	6.06 ng/mL#	1
29) Indeno(1,2,3-cd)Pyrene	0.000		0	N.D.	
30) Dibenz(a,h)Anthracene	0.000		0	N.D.	
31) Benzo (g,h,i) Perylene	0.000		0	N.D.	

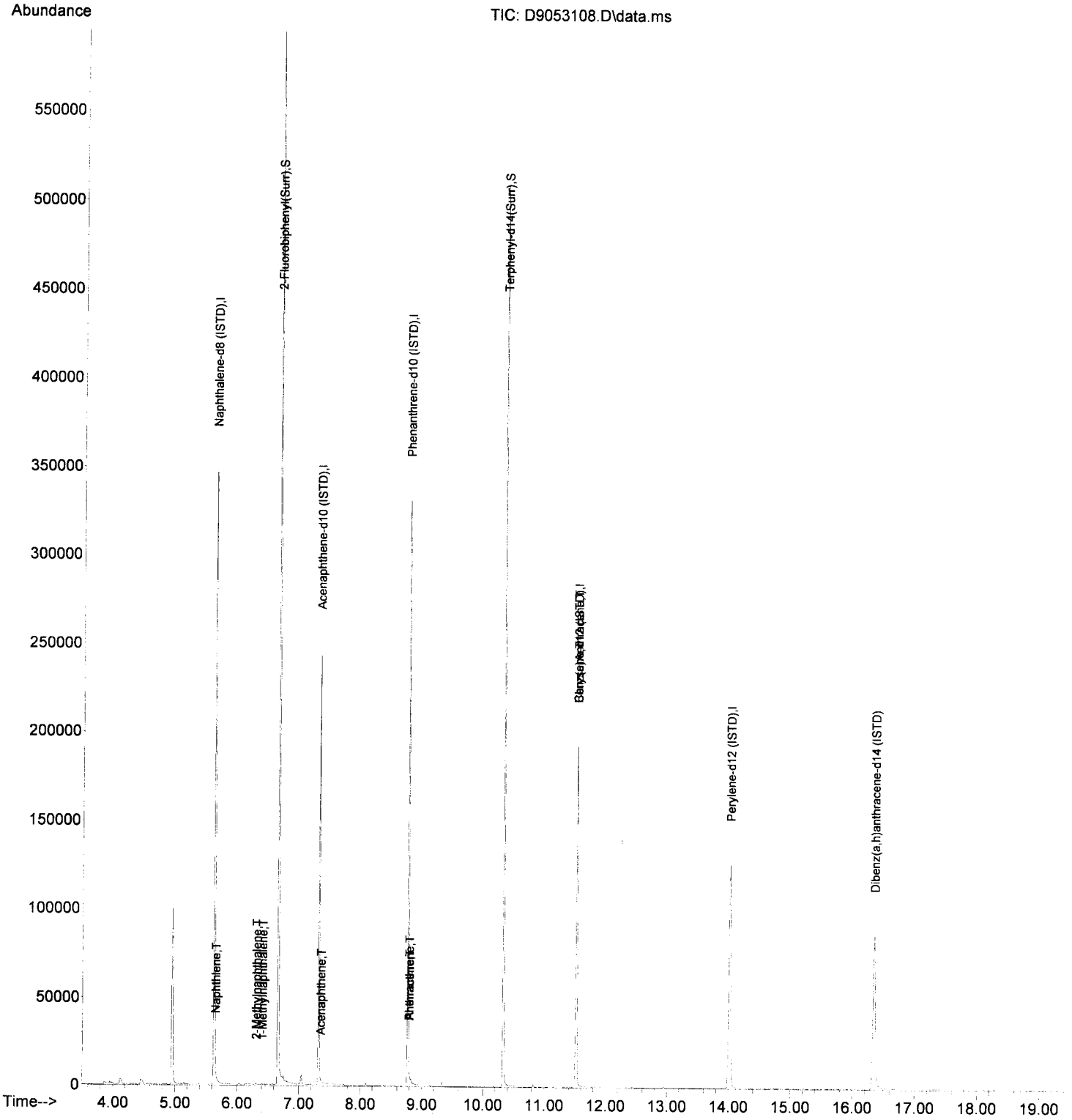
(#) = qualifier out of range (m) = manual integration (+) = signals summed

6-03-19
BSJ

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053108.D
Acq On : 31 May 2019 7:01 pm
Operator : bsj
Sample : 9051460-BLK1
Misc : 1x Water 1100mL/1mL SIM PAH (1-2mL FV)
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 03 09:17:43 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053109.D
Acq On : 31 May 2019 7:28 pm
Operator : bsj
Sample : 9051460-BS1
Misc : 1x Water 1000mL/1mL SIM PAH (1-2mL FV)
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 03 09:17:46 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8 (ISTD)	5.633	136	350728	2000.00	ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.324	164	179537	2000.00	ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.772	188	290405	2000.00	ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.526	240	204210	2000.00	ng/ml	0.00
21) Perylene-d12 (ISTD)	14.016	264	177279	2000.00	ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.365	292	154638	2000.00	ng/mL	0.00
System Monitoring Compounds						
6) 2-Fluorobiphenyl(Surr)	6.664	172	526667	3957.92	ng/ml	0.00
18) Terphenyl-d14(Surr)	10.331	244	399374	3695.83	ng/ml	0.00
Target Compounds						Qvalue
2) Naphthlene	5.646	128	600938	3305.63	ng/ml	99
3) 2-Methylnaphthalene	6.312	142	382794	3256.82	ng/ml	99
4) 1-Methylnaphthalene	6.406	142	370904	3254.03	ng/ml	98
7) Acenaphthylene	7.183	152	579973	3577.00	ng/ml	99
8) Acenaphthene	7.354	153	375755	3460.96	ng/ml	96
9) Dibenzofuran	7.526	168	531468	3671.10	ng/mL	87
10) Fluorene	7.856	166	425159	3773.88	ng/ml	99
12) Phenanthrene	8.798	178	588223	3517.90	ng/ml	98
13) Anthracene	8.846	178	621956	3683.45	ng/ml	98
14) Carbazole	9.000	167	558604	4278.24	ng/mL	99
15) Fluoranthene	9.964	202	573052	4021.81	ng/ml	99
16) Pyrene	10.187	202	573062	4041.58	ng/ml	98
19) Benz(a)Anthracene	11.512	228	447625	3632.85	ng/ml	96
20) Chrysene	11.561	228	452501	3765.71	ng/ml	96
22) Benzo(b)Fluoranthene	13.269	252	425032	3713.48	ng/ml	70
23) Benzo(k)Fluoranthene	13.321	252	417749	3682.97	ng/ml	66
24) Benzo(b+k)Fluoranthene	13.321	252	845476	7390.05	ng/ml	68
25) Benzo(e) Pyrene	0.000		0	N.D.		
26) Benzo(a)Pyrene	13.907	252	392269	3987.64	ng/ml	68
27) Perylene	14.010	252	3225	33.90	ng/mL#	5
29) Indeno(1,2,3-cd)Pyrene	16.382	276	333028	3425.57	ng/ml	65
30) Dibenz(a,h)Anthracene	16.443	278	347693	3917.05	ng/ml	69
31) Benzo (g,h,i) Perylene	16.972	276	343935	3289.41	ng/ml	85

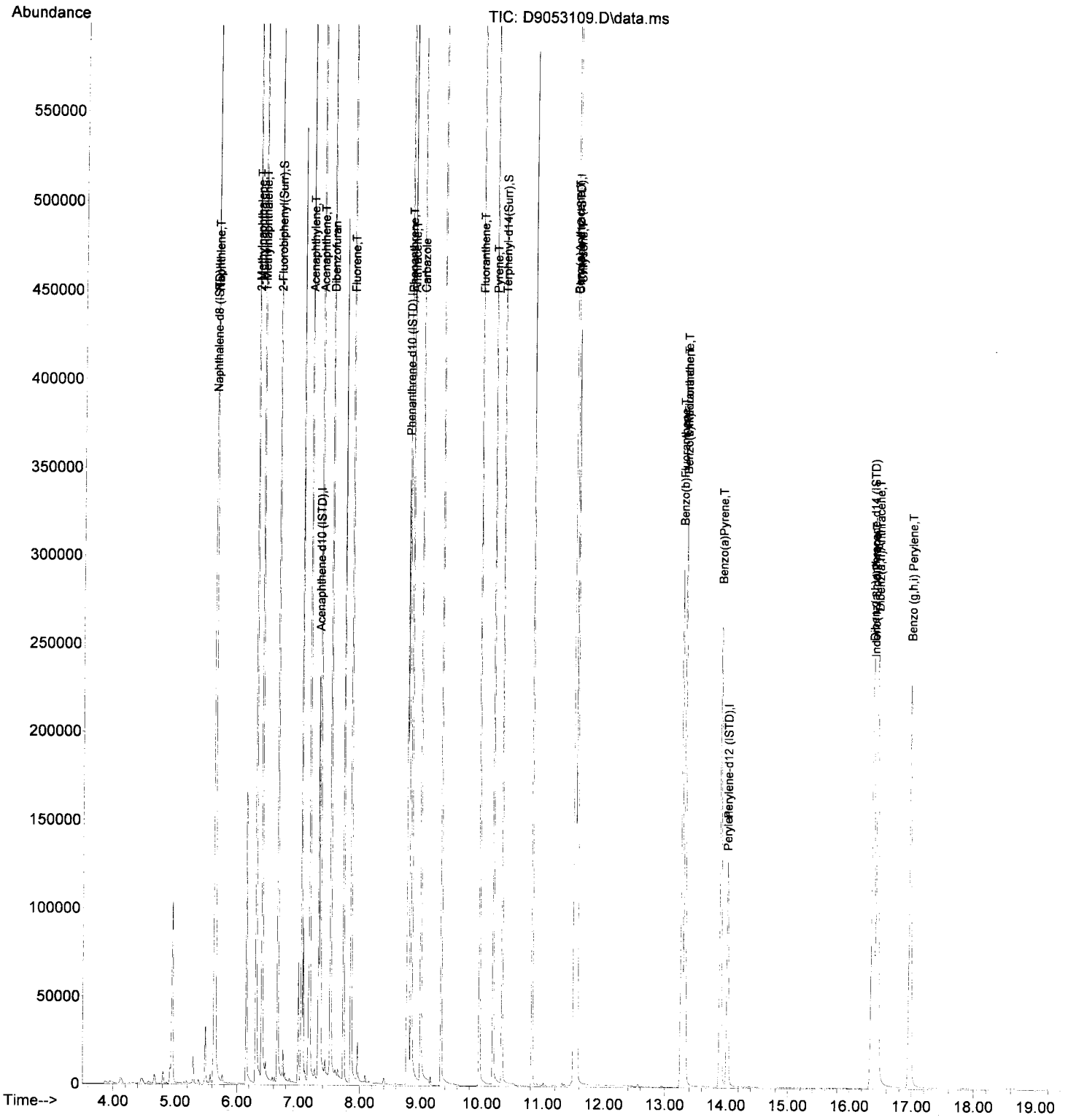
(#) = qualifier out of range (m) = manual integration (+) = signals summed

6-03-19

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053109.D
Acq On : 31 May 2019 7:28 pm
Operator : bsj
Sample : 9051460-BS1
Misc : 1x Water 1000mL/1mL SIM PAH (1-2mL FV)
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 03 09:17:46 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053110.D
Acq On : 31 May 2019 7:55 pm
Operator : bsj
Sample : 9051460-BSD1
Misc : 1x Water 1000mL/1mL SIM PAH (1-2mL FV)
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 03 09:17:49 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Q.19

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8 (ISTD)	5.633	136	352560	2000.00	ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.323	164	179426	2000.00	ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.772	188	295168	2000.00	ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.525	240	208767	2000.00	ng/ml	0.00
21) Perylene-d12 (ISTD)	14.016	264	178266	2000.00	ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.360	292	156568	2000.00	ng/mL	0.00
System Monitoring Compounds						
6) 2-Fluorobiphenyl(Surr)	6.664	172	496933	3736.78	ng/ml	0.00
18) Terphenyl-d14(Surr)	10.331	244	391494	3543.82	ng/ml	0.00
Target Compounds						Qvalue
2) Naphthlene	5.646	128	517982	2834.50	ng/ml	99
3) 2-Methylnaphthalene	6.312	142	332560	2814.72	ng/ml	100
4) 1-Methylnaphthalene	6.405	142	323237	2821.10	ng/ml	98
7) Acenaphthylene	7.182	152	550845	3399.46	ng/ml	99
8) Acenaphthene	7.354	153	349823	3224.10	ng/ml	96
9) Dibenzofuran	7.526	168	511182	3533.16	ng/mL	88
10) Fluorene	7.856	166	411380	3653.83	ng/ml	99
12) Phenanthrene	8.799	178	586681	3452.06	ng/ml	98
13) Anthracene	8.846	178	622717	3628.45	ng/ml	98
14) Carbazole	9.000	167	564817	4256.02	ng/mL	99
15) Fluoranthene	9.958	202	575391	3973.06	ng/ml	99
16) Pyrene	10.186	202	577686	4008.44	ng/ml	98
19) Benz(a)Anthracene	11.511	228	457610	3632.82	ng/ml	96
20) Chrysene	11.561	228	460299	3746.99	ng/ml	96
22) Benzo(b)Fluoranthene	13.269	252	414611	3602.38	ng/ml	67
23) Benzo(k)Fluoranthene	13.321	252	437259	3833.63	ng/ml	69
24) Benzo(b+k)Fluoranthene	13.321	252	854616	7428.58	ng/ml	68
25) Benzo(e) Pyrene	0.000		0	N.D.		
26) Benzo(a)Pyrene	13.907	252	398376	4027.30	ng/ml	68
27) Perylene	14.010	252	2729	28.53	ng/mL#	1
29) Indeno(1,2,3-cd)Pyrene	16.377	276	338552	3439.47	ng/ml	65
30) Dibenz(a,h)Anthracene	16.443	278	353965	3938.56	ng/ml	70
31) Benzo (g,h,i) Perylene	16.972	276	342843	3238.55	ng/ml	85

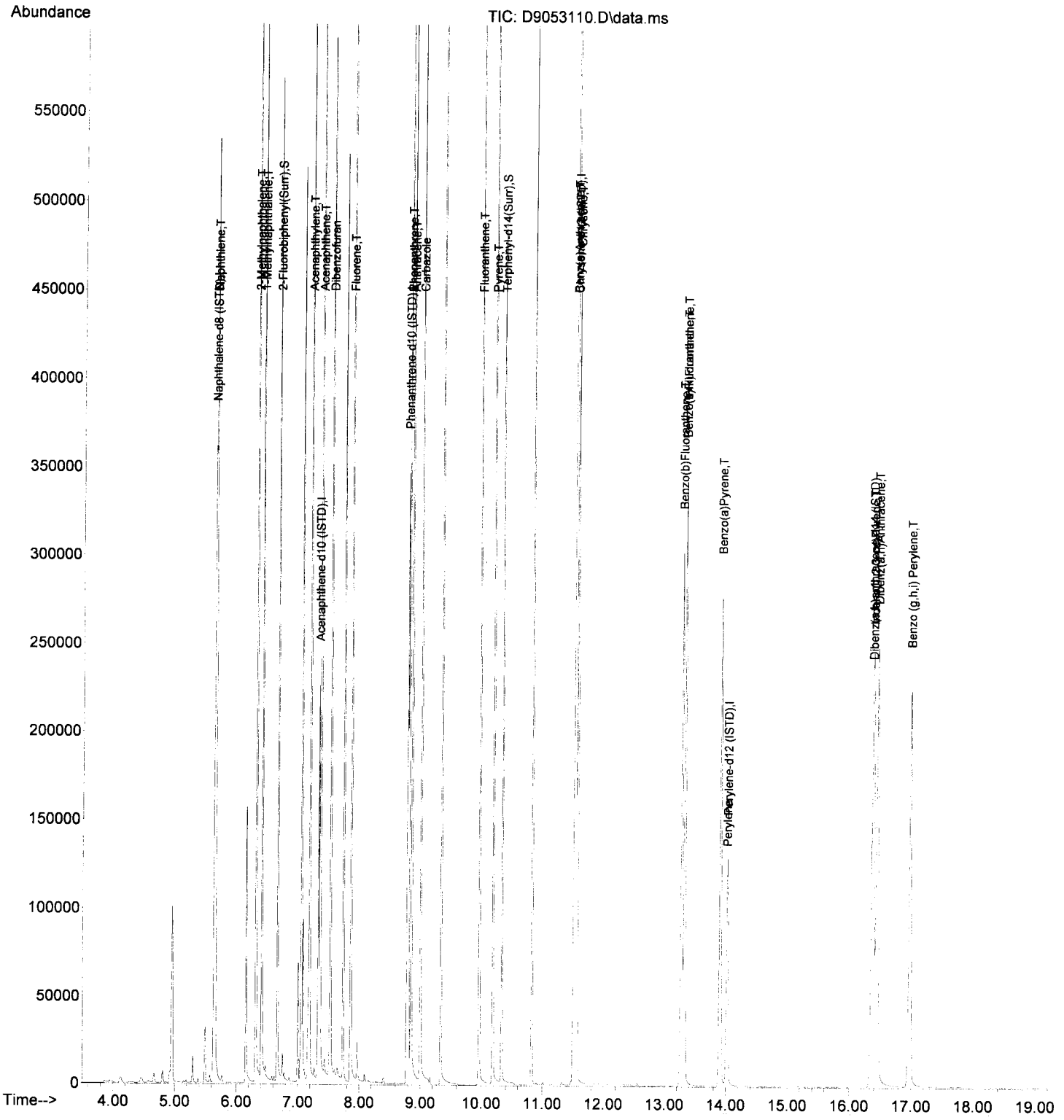
(#) = qualifier out of range (m) = manual integration (+) = signals summed

6-03-19 BBS

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053110.D
Acq On : 31 May 2019 7:55 pm
Operator : bsj
Sample : 9051460-BSD1
Misc : 1x Water 1000mL/1mL SIM PAH (1-2mL FV)
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 03 09:17:49 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053112.D
Acq On : 31 May 2019 8:48 pm
Operator : bsj
Sample : 9051465-BLK1
Misc : 1x Solid 11g/5mL SIM PAH
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 03 09:17:55 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Naphthalene-d8 (ISTD)	5.633	136	348066	2000.00 ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.325	164	173643	2000.00 ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.772	188	284191	2000.00 ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.518	240	187403	2000.00 ng/ml	0.00
21) Perylene-d12 (ISTD)	14.016	264	155893	2000.00 ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.349	292	128232	2000.00 ng/mL	-0.01
System Monitoring Compounds					
6) 2-Fluorobiphenyl(Surr)	6.662	172	105166	817.15 ng/ml	0.00
18) Terphenyl-d14(Surr)	10.326	244	73848	744.68 ng/ml	0.00
Target Compounds					Qvalue
2) Naphthlene	5.646	128	326	1.81 ng/ml#	78
3) 2-Methylnaphthalene	0.000		0	N.D.	
4) 1-Methylnaphthalene	0.000		0	N.D.	
7) Acenaphthylene	0.000		0	N.D.	
8) Acenaphthene	0.000		0	N.D.	
9) Dibenzofuran	0.000		0	N.D.	
10) Fluorene	0.000		0	N.D.	
12) Phenanthrene	8.793	178	216	1.32 ng/ml#	59
13) Anthracene	8.793	178	216	1.31 ng/ml#	60
14) Carbazole	0.000		0	N.D.	
15) Fluoranthene	0.000		0	N.D.	
16) Pyrene	0.000		0	N.D.	
19) Benz(a)Anthracene	11.518	228	495	4.38 ng/ml#	55
20) Chrysene	11.518	228	495	4.49 ng/ml#	55
22) Benzo(b)Fluoranthene	0.000		0	N.D.	
23) Benzo(k)Fluoranthene	0.000		0	N.D.	
24) Benzo(b+k)Fluoranthene	13.269	252	219	2.18 ng/ml#	58
25) Benzo(e) Pyrene	0.000		0	N.D.	
26) Benzo(a)Pyrene	0.000		0	N.D.	
27) Perylene	14.016	252	477	5.70 ng/mL#	1
29) Indeno(1,2,3-cd)Pyrene	16.354	276	314	3.89 ng/ml#	1
30) Dibenz(a,h)Anthracene	16.427	278	246	3.34 ng/ml#	53
31) Benzo (g,h,i) Perylene	16.956	276	262	3.02 ng/ml#	33

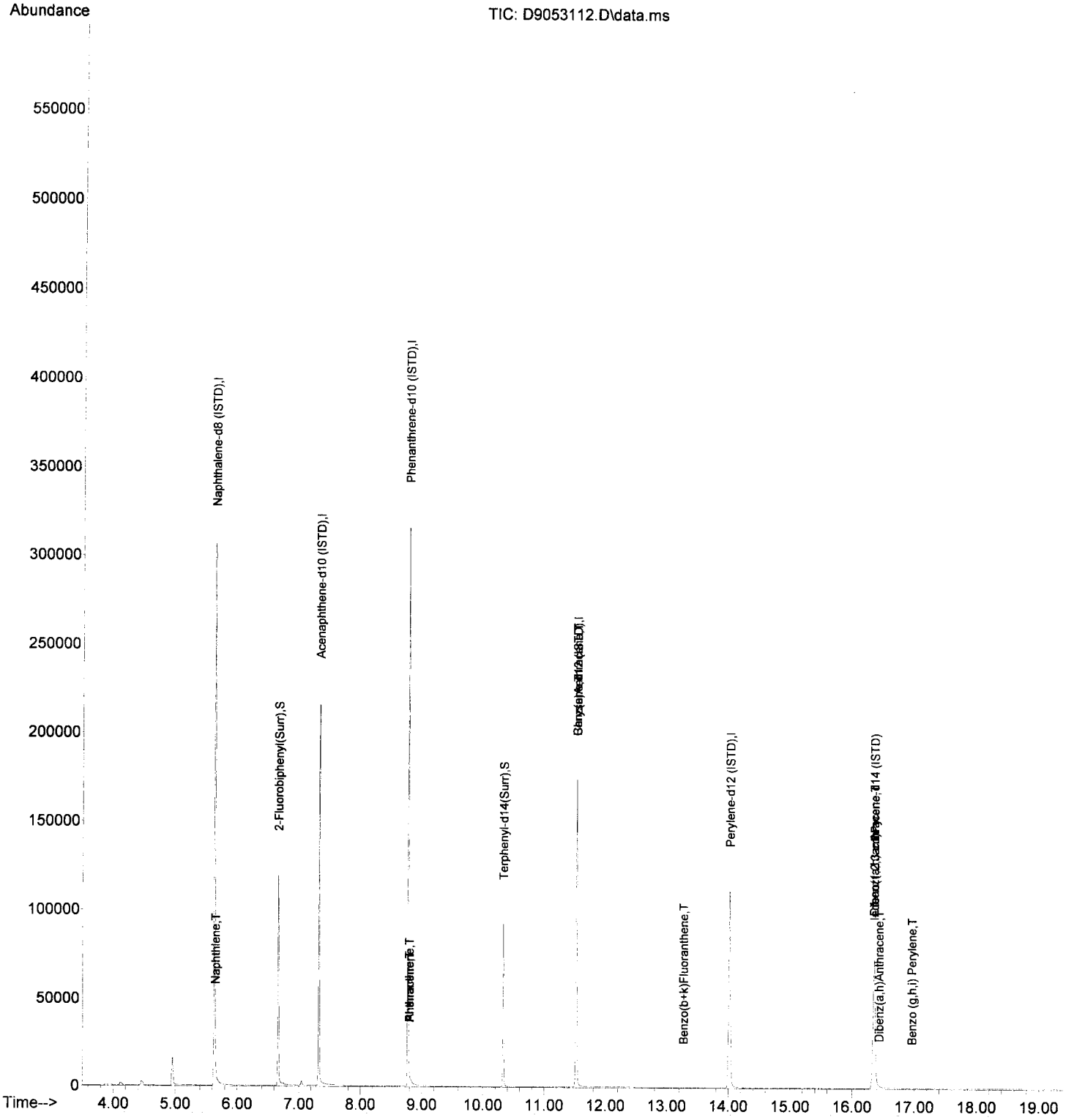
(#) = qualifier out of range (m) = manual integration (+) = signals summed

G03119 BBS

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053112.D
Acq On : 31 May 2019 8:48 pm
Operator : bsj
Sample : 9051465-BLK1
Misc : 1x Solid 11g/5mL SIM PAH
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 03 09:17:55 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053113.D
Acq On : 31 May 2019 9:14 pm
Operator : bsj
Sample : 9051465-BS1
Misc : 1x Solid 10g/5mL SIM PAH
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 03 09:17:58 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8 (ISTD)	5.632	136	379690	2000.00	ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.325	164	188165	2000.00	ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.771	188	301790	2000.00	ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.525	240	211094	2000.00	ng/ml	0.00
21) Perylene-d12 (ISTD)	14.015	264	178578	2000.00	ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.354	292	151365	2000.00	ng/mL	0.00
System Monitoring Compounds						
6) 2-Fluorobiphenyl(Surr)	6.661	172	116150	832.85	ng/ml	0.00
18) Terphenyl-d14(Surr)	10.325	244	81430	728.98	ng/ml	0.00
Target Compounds						Qvalue
2) Naphthlene	5.646	128	286343	1454.96	ng/ml	99
3) 2-Methylnaphthalene	6.309	142	187421	1472.95	ng/ml	99
4) 1-Methylnaphthalene	6.407	142	180521	1462.95	ng/ml	98
7) Acenaphthylene	7.184	152	265277	1561.08	ng/ml	99
8) Acenaphthene	7.350	153	173545	1525.17	ng/ml	95
9) Dibenzofuran	7.521	168	238997	1575.17	ng/mL	88
10) Fluorene	7.856	166	190320	1611.89	ng/ml	100
12) Phenanthrene	8.792	178	256357	1475.32	ng/ml	98
13) Anthracene	8.845	178	269844	1537.83	ng/ml	99
14) Carbazole	8.994	167	233427	1720.33	ng/mL	99
15) Fluoranthene	9.958	202	241237	1629.18	ng/ml	99
16) Pyrene	10.181	202	242275	1644.21	ng/ml	99
19) Benz(a)Anthracene	11.504	228	183384	1439.78	ng/ml	96
20) Chrysene	11.553	228	184449	1484.93	ng/ml	96
22) Benzo(b)Fluoranthene	13.269	252	164789	1429.28	ng/ml	67
23) Benzo(k)Fluoranthene	13.315	252	168654	1476.08	ng/ml	63
24) Benzo(b+k)Fluoranthene	13.315	252	334879	2905.78	ng/ml	65
25) Benzo(e) Pyrene	0.000		0	N.D.		
26) Benzo(a)Pyrene	13.901	252	156644	1580.79	ng/ml	65
27) Perylene	14.010	252	1849	19.29	ng/mL#	1
29) Indeno(1,2,3-cd)Pyrene	16.371	276	127712	1342.07	ng/ml	65
30) Dibenz(a,h)Anthracene	16.432	278	128733	1481.65	ng/ml	65
31) Benzo (g,h,i) Perylene	16.967	276	129719	1267.46	ng/ml	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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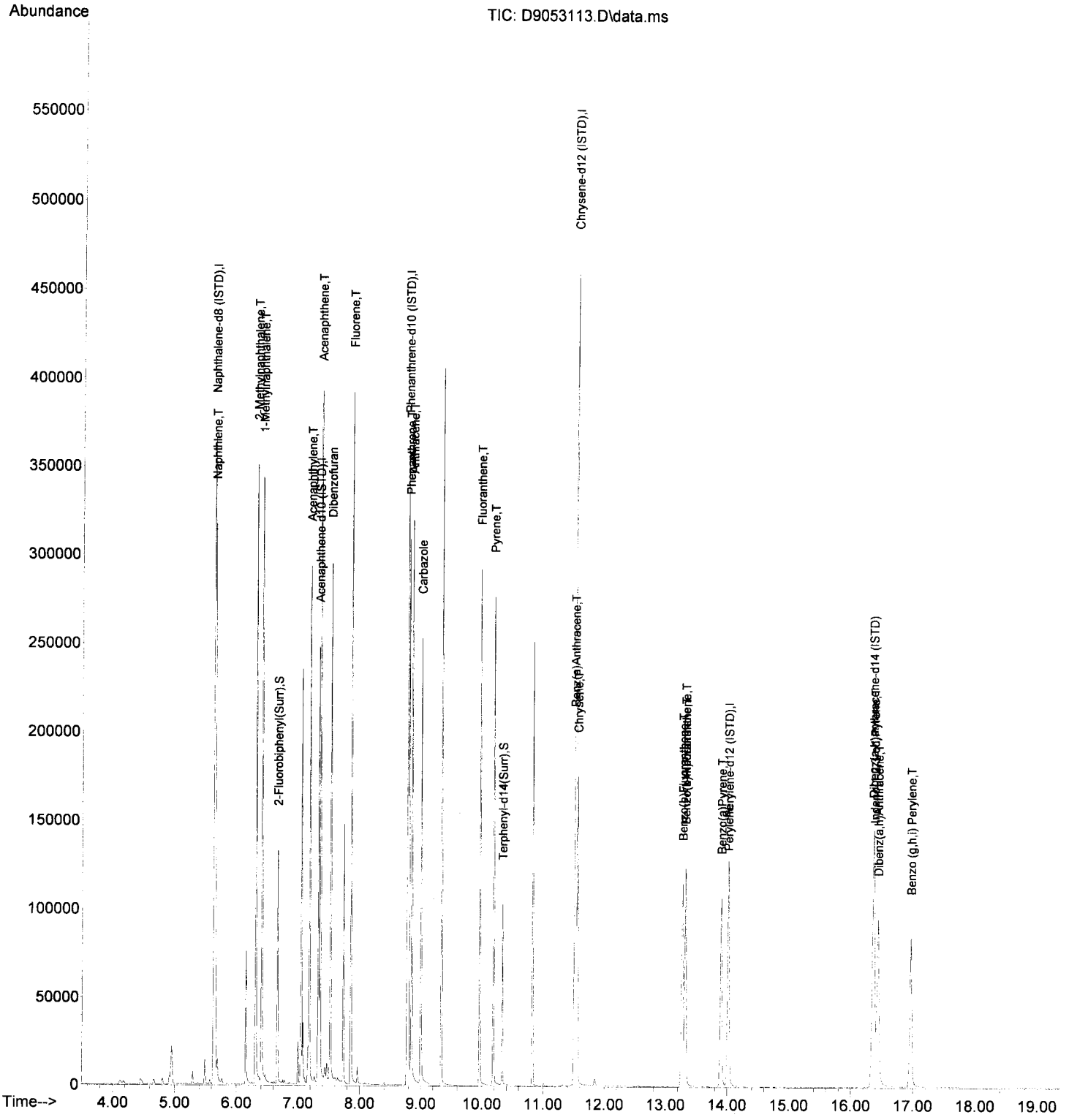
6-03-19
BSJ

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053113.D
Acq On : 31 May 2019 9:14 pm
Operator : bsj
Sample : 9051465-BS1
Misc : 1x Solid 10g/5mL SIM PAH
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 03 09:17:58 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053114.D
Acq On : 31 May 2019 9:41 pm
Operator : bsj
Sample : A9E0902-01@100
Misc : 100x Solid 10.06g/5mL SIM PAH
ALS Vial : 10 Sample Multiplier: 1

M-05
RR-2

Quant Time: Jun 03 09:18:01 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8 (ISTD)	5.632	136	365587	2000.00	ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.325	164	184400	2000.00	ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.777	188	308513	2000.00	ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.525	240	223310	2000.00	ng/ml	0.00
21) Perylene-d12 (ISTD)	14.021	264	203537	2000.00	ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.365	292	194806	2000.00	ng/mL	0.00
System Monitoring Compounds						
6) 2-Fluorobiphenyl(Surr)	6.661	172	1068	7.81	ng/ml	0.00
18) Terphenyl-d14(Surr)	10.326	244	1426	12.07	ng/ml	0.00
Target Compounds						Qvalue
2) Naphthlene	5.652	128	2334323	12318.70	ng/ml	99
3) 2-Methylnaphthalene	6.309	142	556720	4544.07	ng/ml	100
4) 1-Methylnaphthalene	6.407	142	270445	2276.24	ng/ml	100
7) Acenaphthylene	7.184	152	28008	168.18	ng/ml	93
8) Acenaphthene	7.355	153	782783	7019.82	ng/ml	98
9) Dibenzofuran	7.521	168	649136	4365.65	ng/mL	88
10) Fluorene	7.856	166	482353	4168.64	ng/ml	100
12) Phenanthrene	8.798	178	2448678	13784.89	ng/ml	98
13) Anthracene	8.846	178	744281	4149.18	ng/ml	100
14) Carbazole	8.995	167	353247	2546.66	ng/mL	99
15) Fluoranthene	9.964	202	1738357	11484.09	ng/ml	99
16) Pyrene	10.187	202	1597749	10606.90	ng/ml	98
19) Benz(a)Anthracene	11.511	228	424272	3148.81	ng/ml	97
20) Chrysene	11.561	228	376459	2864.93	ng/ml	95
22) Benzo(b)Fluoranthene	13.274	252	463229	3525.09	ng/ml	67
23) Benzo(k)Fluoranthene	13.320	252	176291	1353.71	ng/ml	73
24) Benzo(b+k)Fluoranthene	13.274	252	640602	4876.95	ng/ml	70
25) Benzo(e) Pyrene	13.803	252	231694	1771.75	ng/mL	92
26) Benzo(a)Pyrene	13.906	252	420226	3720.73	ng/ml	68
27) Perylene	14.073	252	123462	1130.31	ng/mL	95
29) Indeno(1,2,3-cd)Pyrene	16.382	276	260948	2130.69	ng/ml	57
30) Dibenz(a,h)Anthracene	16.432	278	35811	320.25	ng/ml	70
31) Benzo (g,h,i) Perylene	16.978	276	267569	2031.38	ng/ml	85

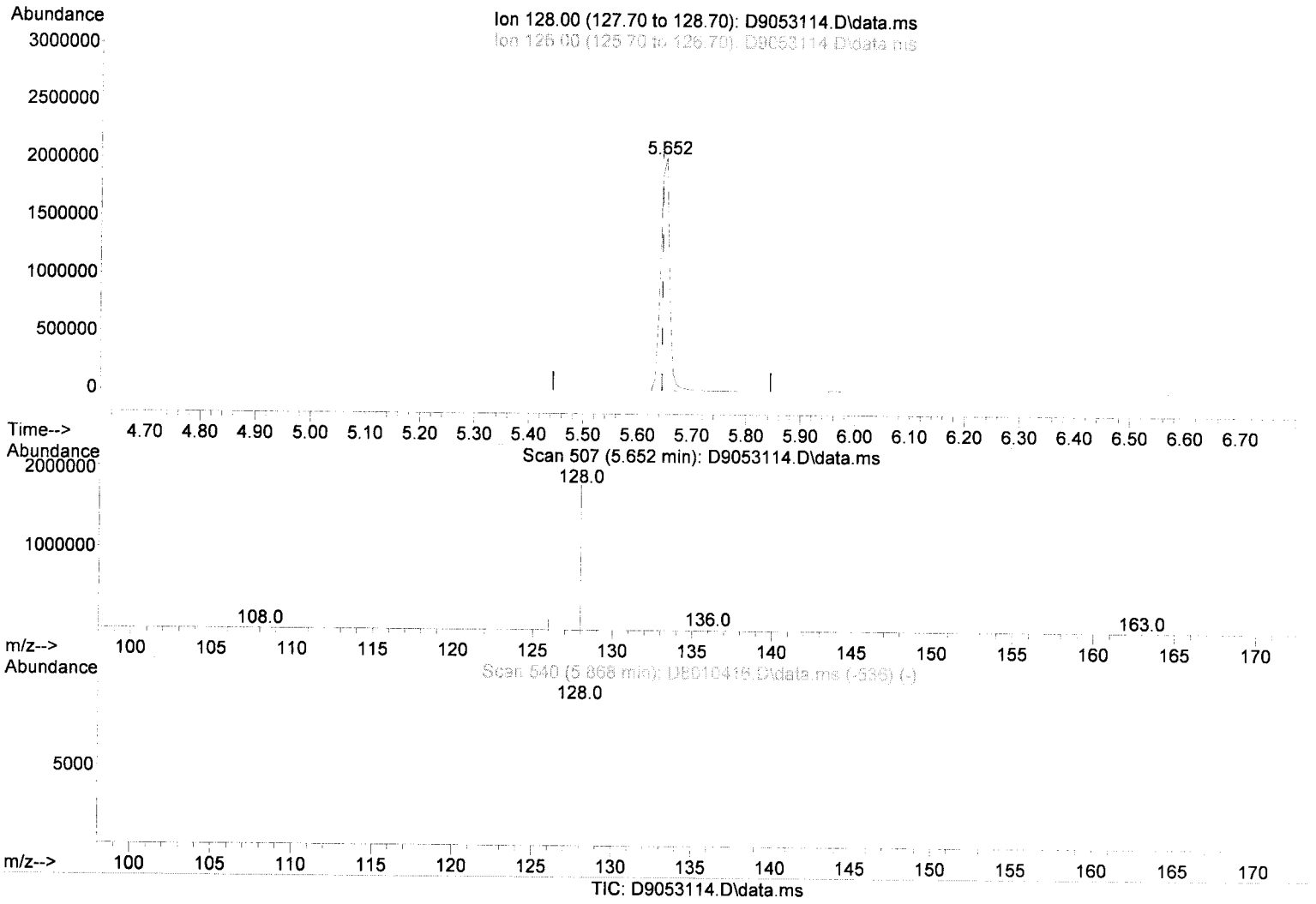
(#) = qualifier out of range (m) = manual integration (+) = signals summed

6-03-19

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053114.D
Acq On : 31 May 2019 9:41 pm
Operator : bsj
Sample : A9E0902-01@100
Misc : 100x Solid 10.06g/5mL SIM PAH
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 03 09:18:01 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(2) Naphthlene (T)

5.652min (+ 0.007) 12318.70 ng/ml

response 2334323

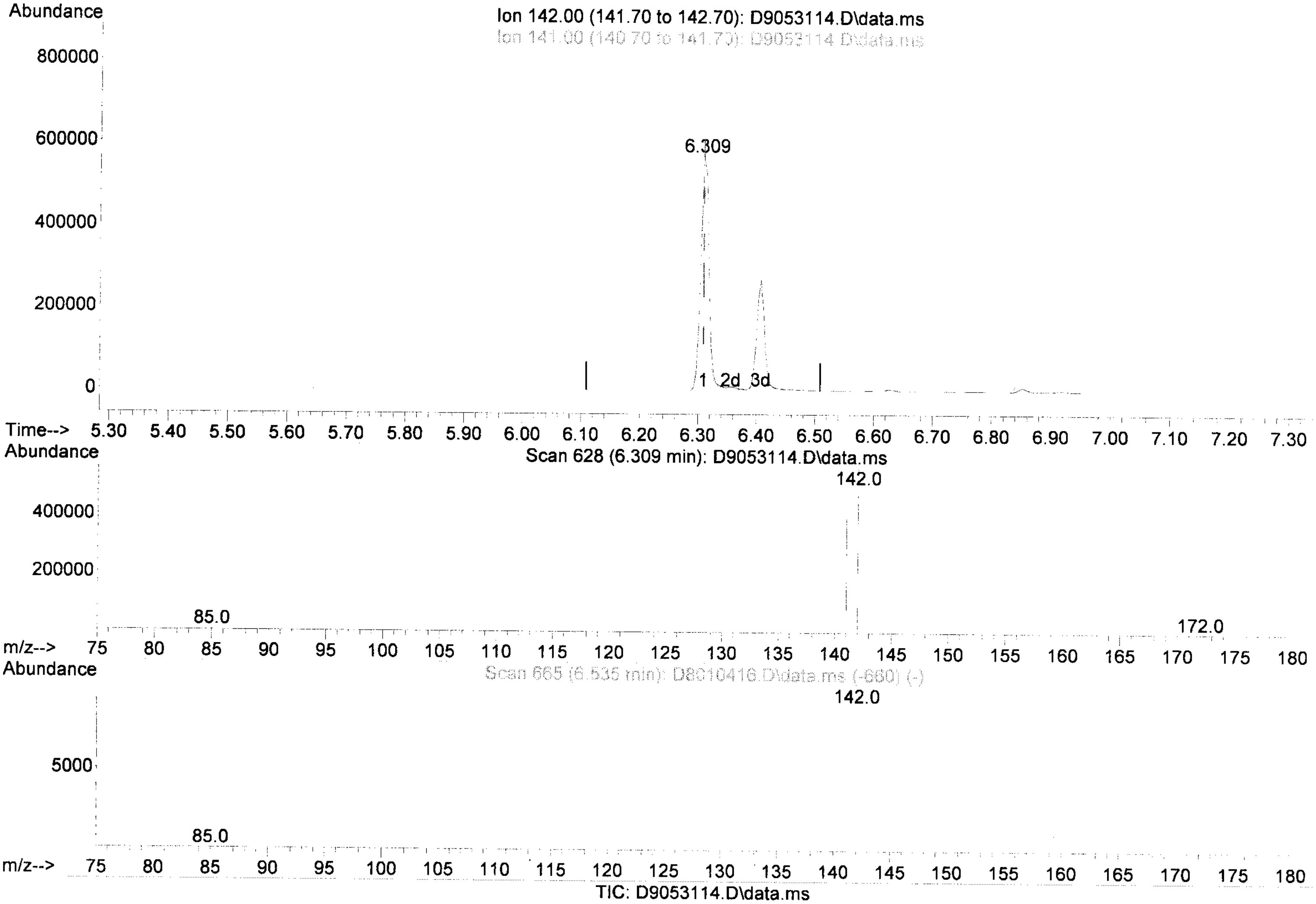
RR-2

Ion	Exp%	Act%
128.00	100.00	100.00
126.00	7.50	7.20
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053114.D
Acq On : 31 May 2019 9:41 pm
Operator : bsj
Sample : A9E0902-01@100
Misc : 100x Solid 10.06g/5mL SIM PAH
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 03 09:18:01 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(3) 2-Methylnaphthalene (T)

6.309min (+ 0.000) 4544.07 ng/ml

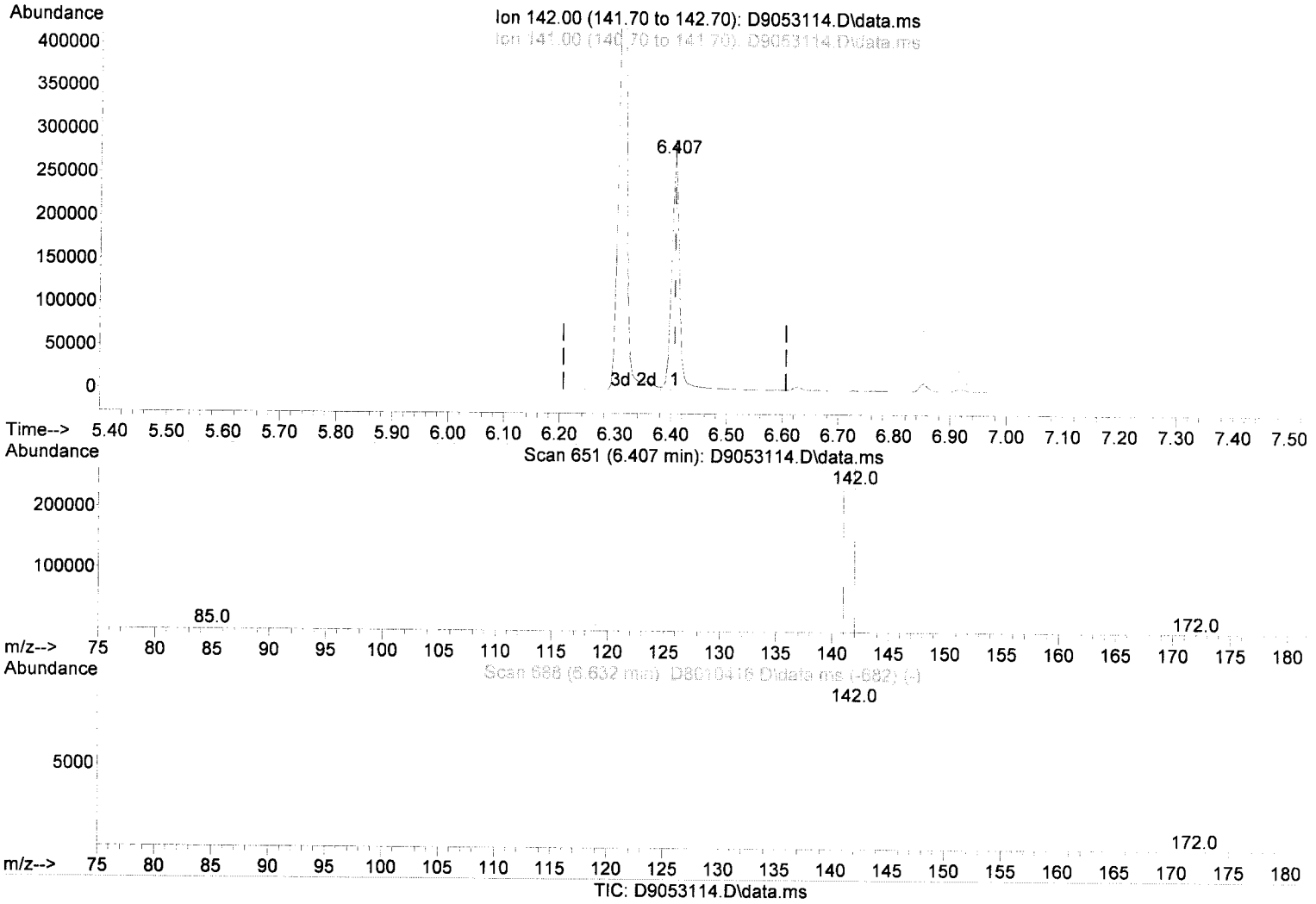
response 556720

Ion	Exp%	Act%
142.00	100.00	100.00
141.00	86.80	87.25
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053114.D
Acq On : 31 May 2019 9:41 pm
Operator : bsj
Sample : A9E0902-01@100
Misc : 100x Solid 10.06g/5mL SIM PAH
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 03 09:18:01 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



TIC: D9053114.D\data.ms

(4) 1-Methylnaphthalene (T)

6.407min (+ 0.000) 2276.24 ng/ml

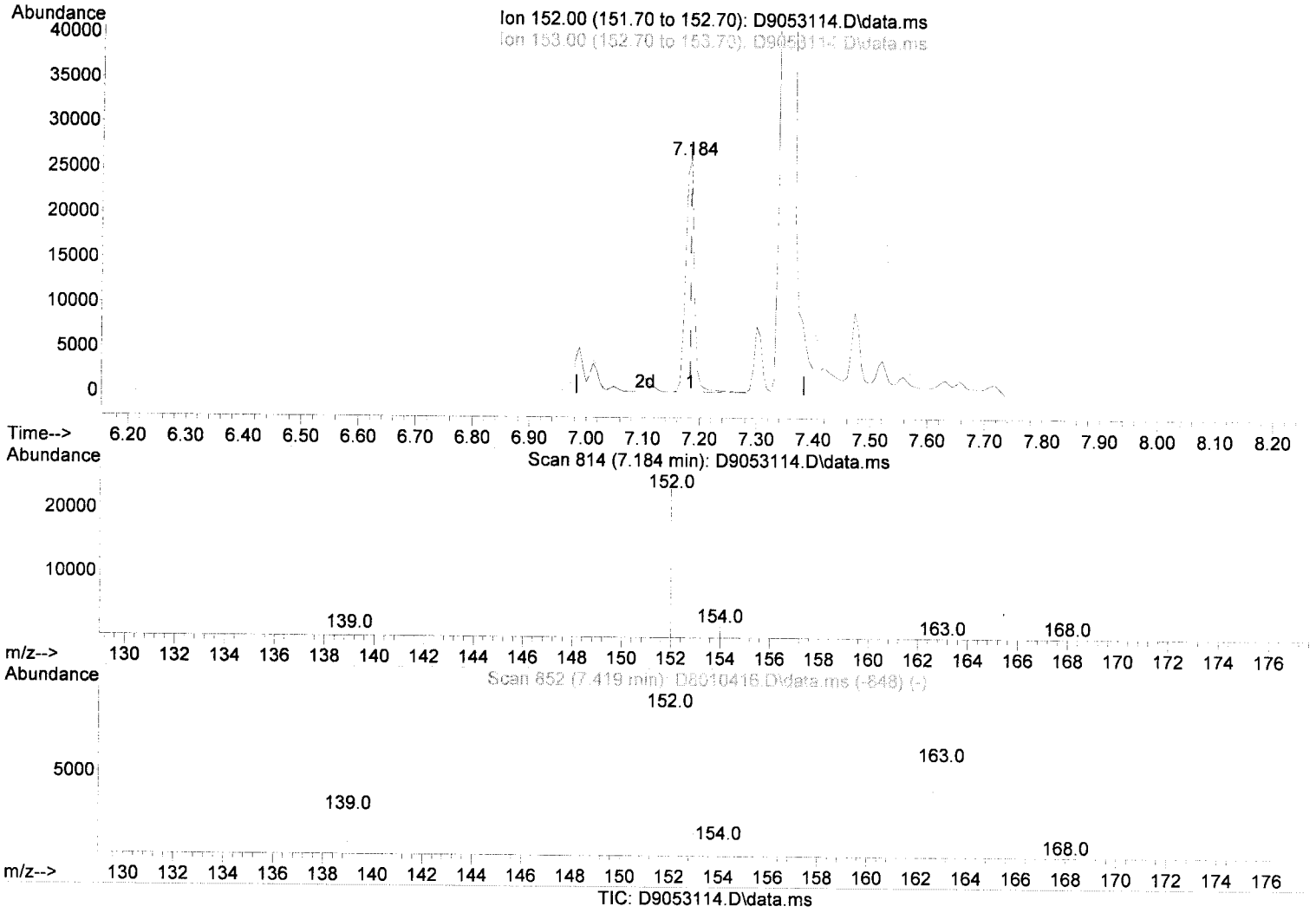
response 270445

Ion	Exp%	Act%
142.00	100.00	100.00
141.00	88.50	88.47
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053114.D
Acq On : 31 May 2019 9:41 pm
Operator : bsj
Sample : A9E0902-01@100
Misc : 100x Solid 10.06g/5mL SIM PAH
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 03 09:18:01 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(7) Acenaphthylene (T)

7.184min (+ 0.000) 168.18 ng/ml

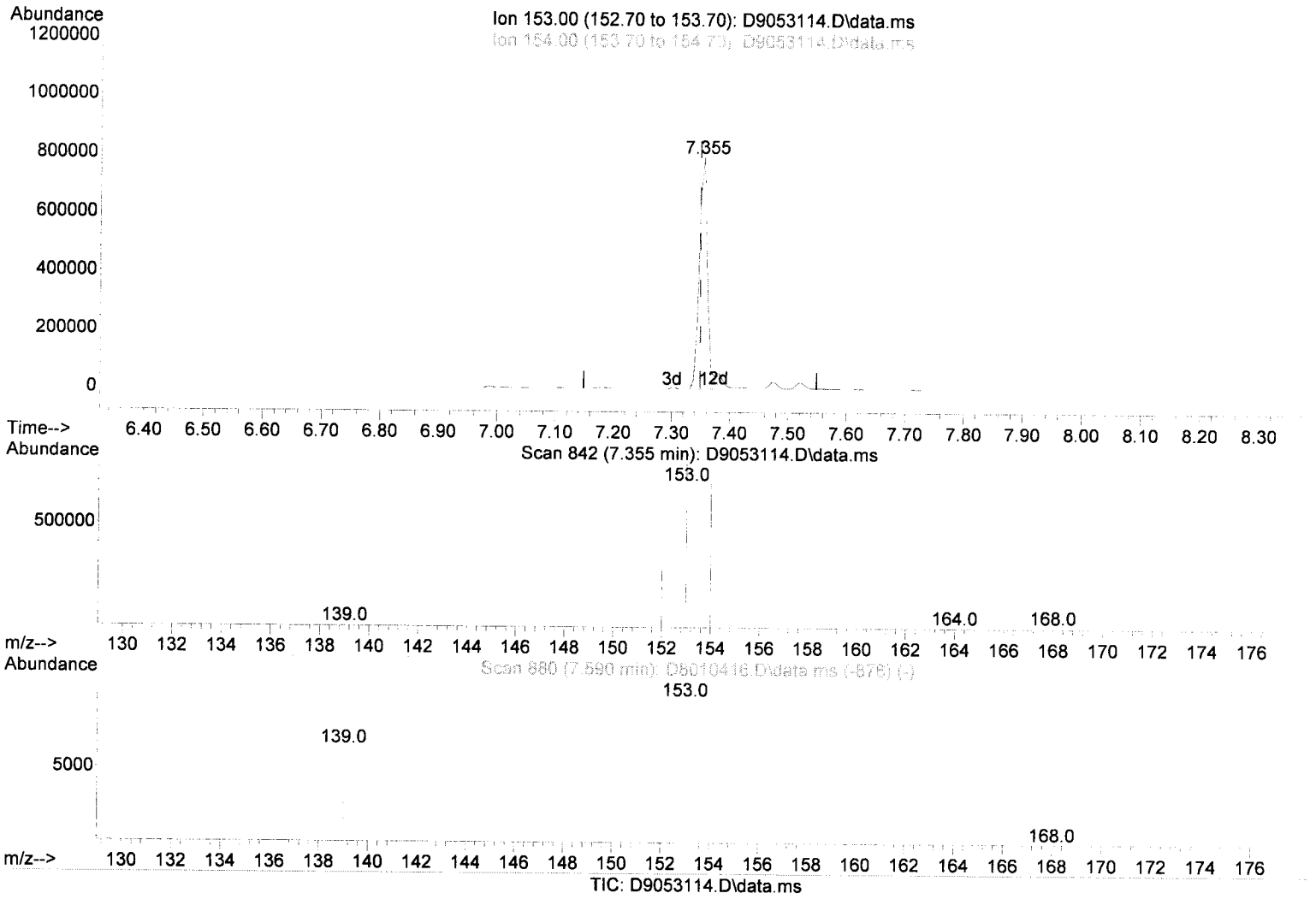
response 28008

Ion	Exp%	Act%
152.00	100.00	100.00
153.00	13.60	16.38
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053114.D
Acq On : 31 May 2019 9:41 pm
Operator : bsj
Sample : A9E0902-01@100
Misc : 100x Solid 10.06g/5mL SIM PAH
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 03 09:18:01 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(8) Acenaphthene (T)

7.355min (+ 0.006) 7019.82 ng/ml

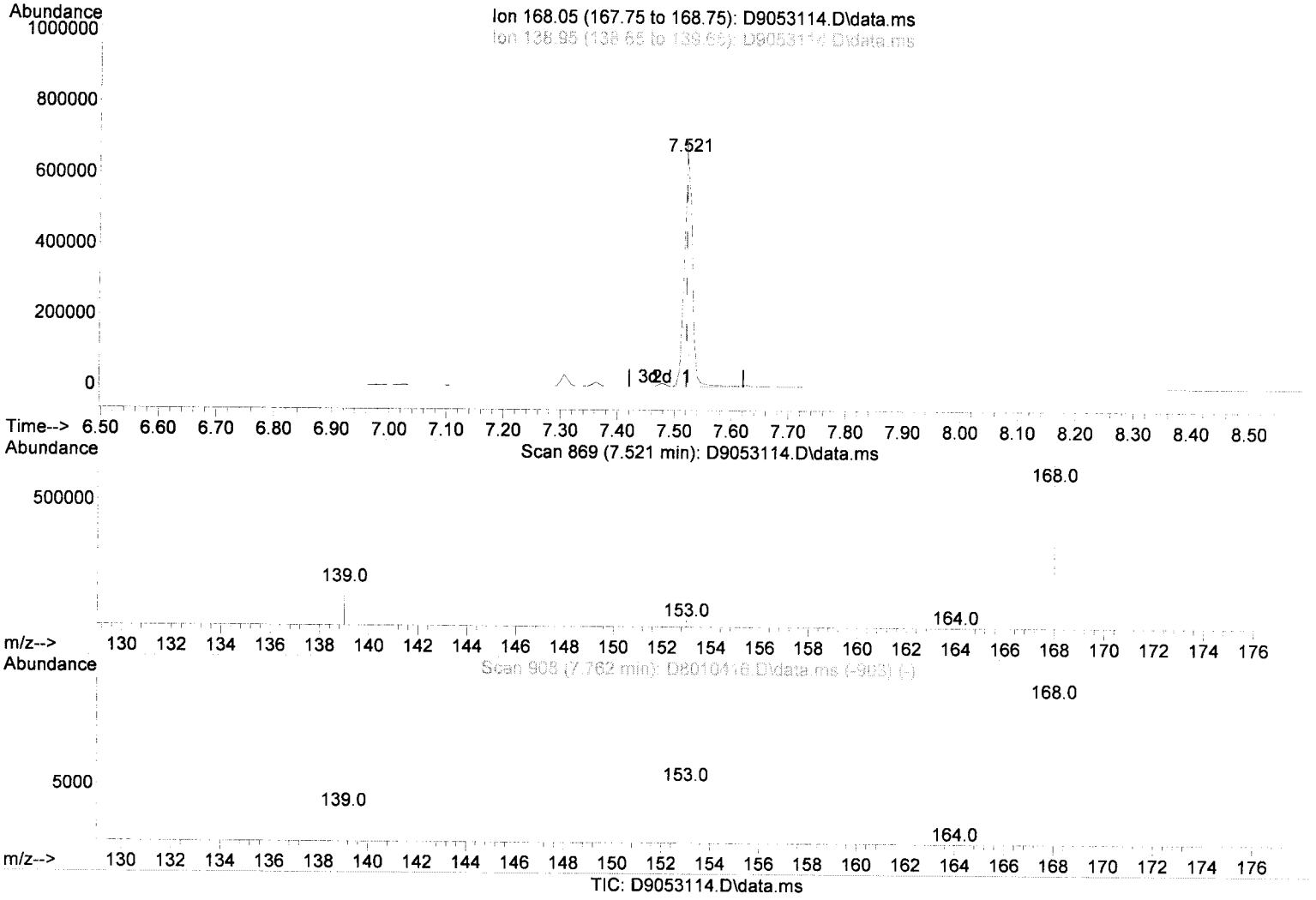
response 782783

Ion	Exp%	Act%
153.00	100.00	100.00
154.00	97.00	94.62
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053114.D
Acq On : 31 May 2019 9:41 pm
Operator : bsj
Sample : A9E0902-01@100
Misc : 100x Solid 10.06g/5mL SIM PAH
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 03 09:18:01 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(9) Dibenzofuran

7.521min (+ 0.000) 4365.65 ng/mL

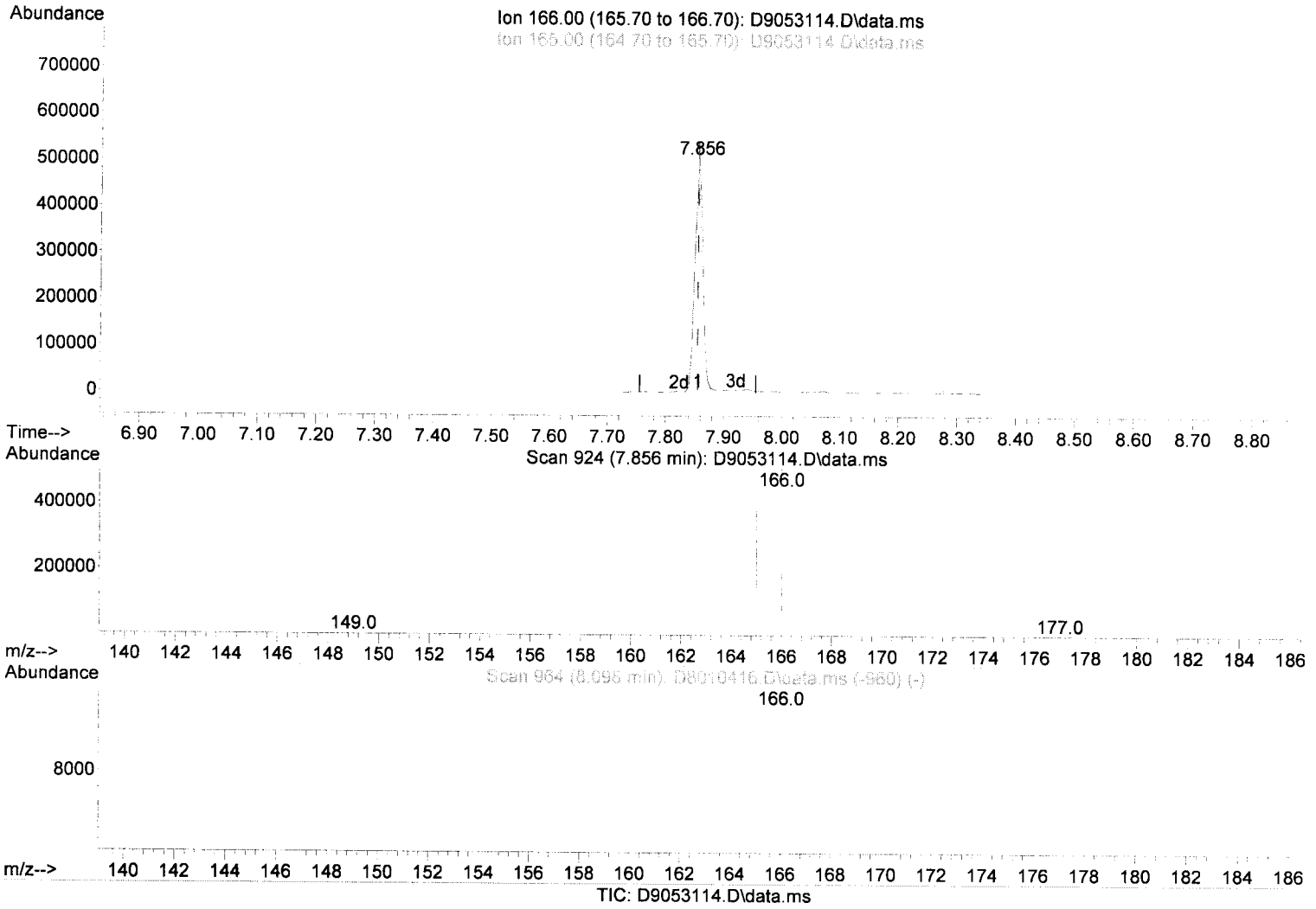
response 649136

Ion	Exp%	Act%
168.05	100.00	100.00
138.95	34.20	27.49
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053114.D
Acq On : 31 May 2019 9:41 pm
Operator : bsj
Sample : A9E0902-01@100
Misc : 100x Solid 10.06g/5mL SIM PAH
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 03 09:18:01 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(10) Fluorene (T)

7.856min (+ 0.000) 4168.64 ng/ml

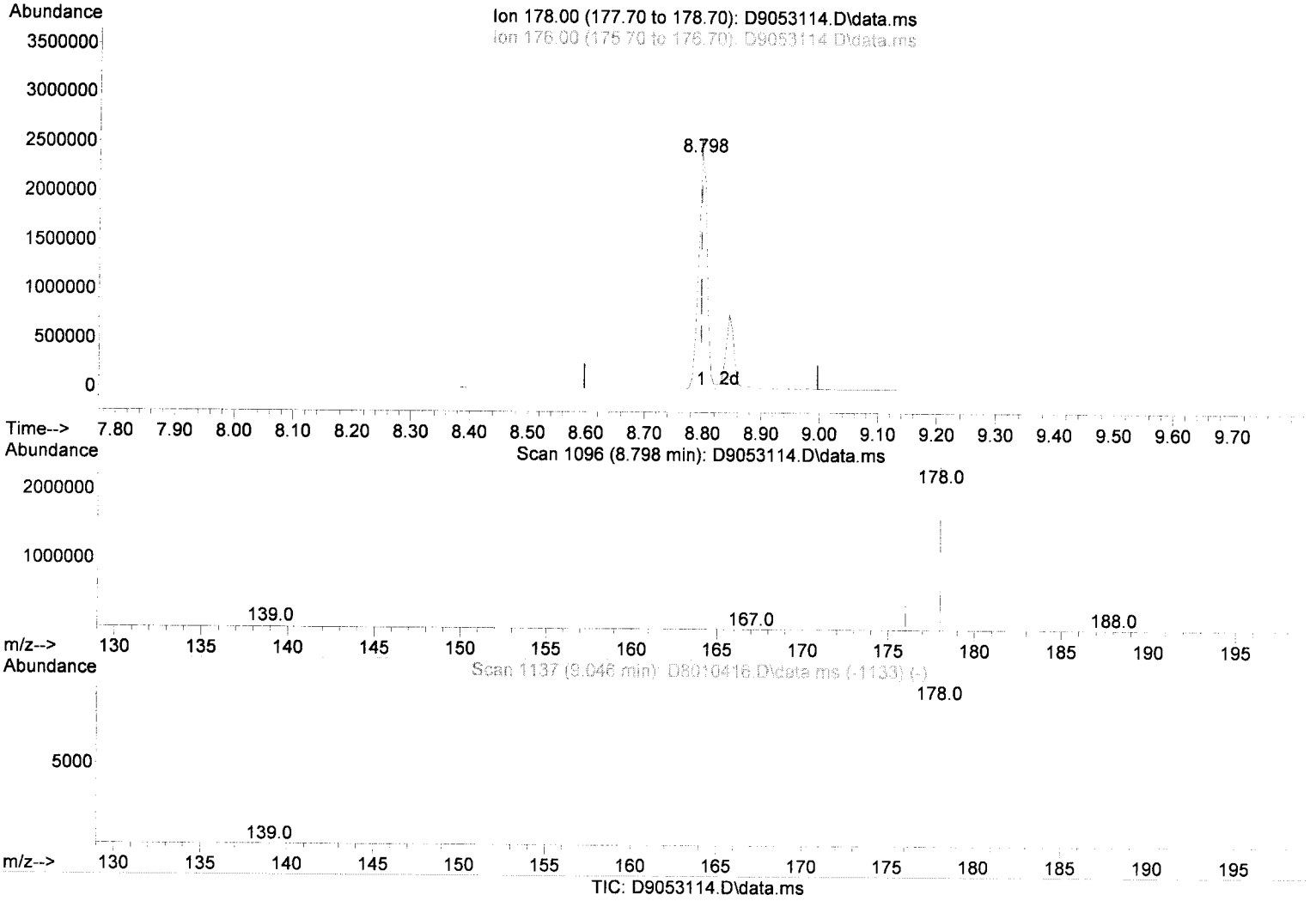
response 482353

Ion	Exp%	Act%
166.00	100.00	100.00
165.00	91.50	91.12
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053114.D
Acq On : 31 May 2019 9:41 pm
Operator : bsj
Sample : A9E0902-01@100
Misc : 100x Solid 10.06g/5mL SIM PAH
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 03 09:18:01 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(12) Phenanthrene (T)

8.798min (+ 0.001) 13784.89 ng/ml

response 2448678

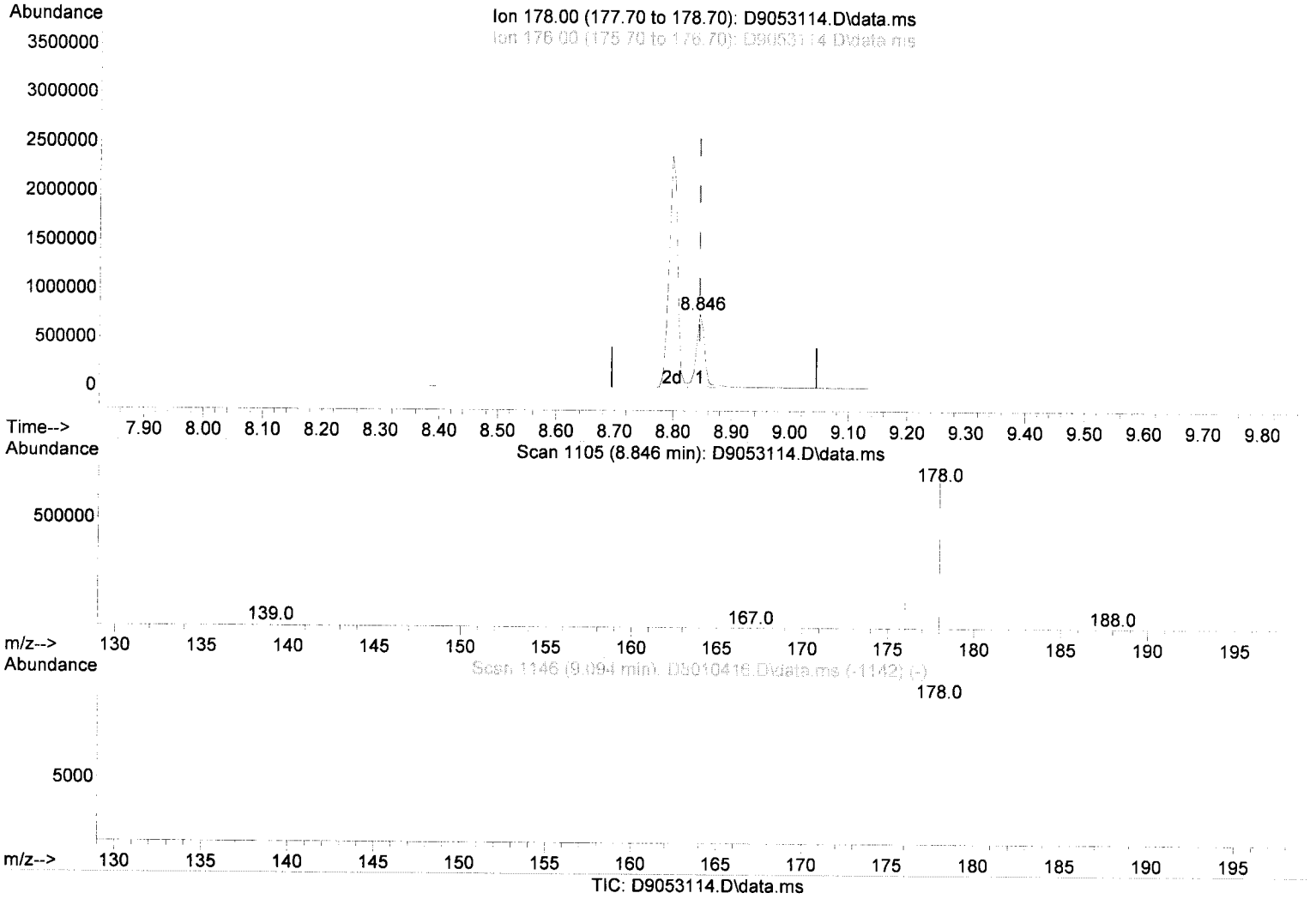
RR-2

Ion	Exp%	Act%
178.00	100.00	100.00
176.00	18.50	17.83
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053114.D
Acq On : 31 May 2019 9:41 pm
Operator : bsj
Sample : A9E0902-01@100
Misc : 100x Solid 10.06g/5mL SIM PAH
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 03 09:18:01 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(13) Anthracene (T)

8.846min (+ 0.001) 4149.18 ng/ml

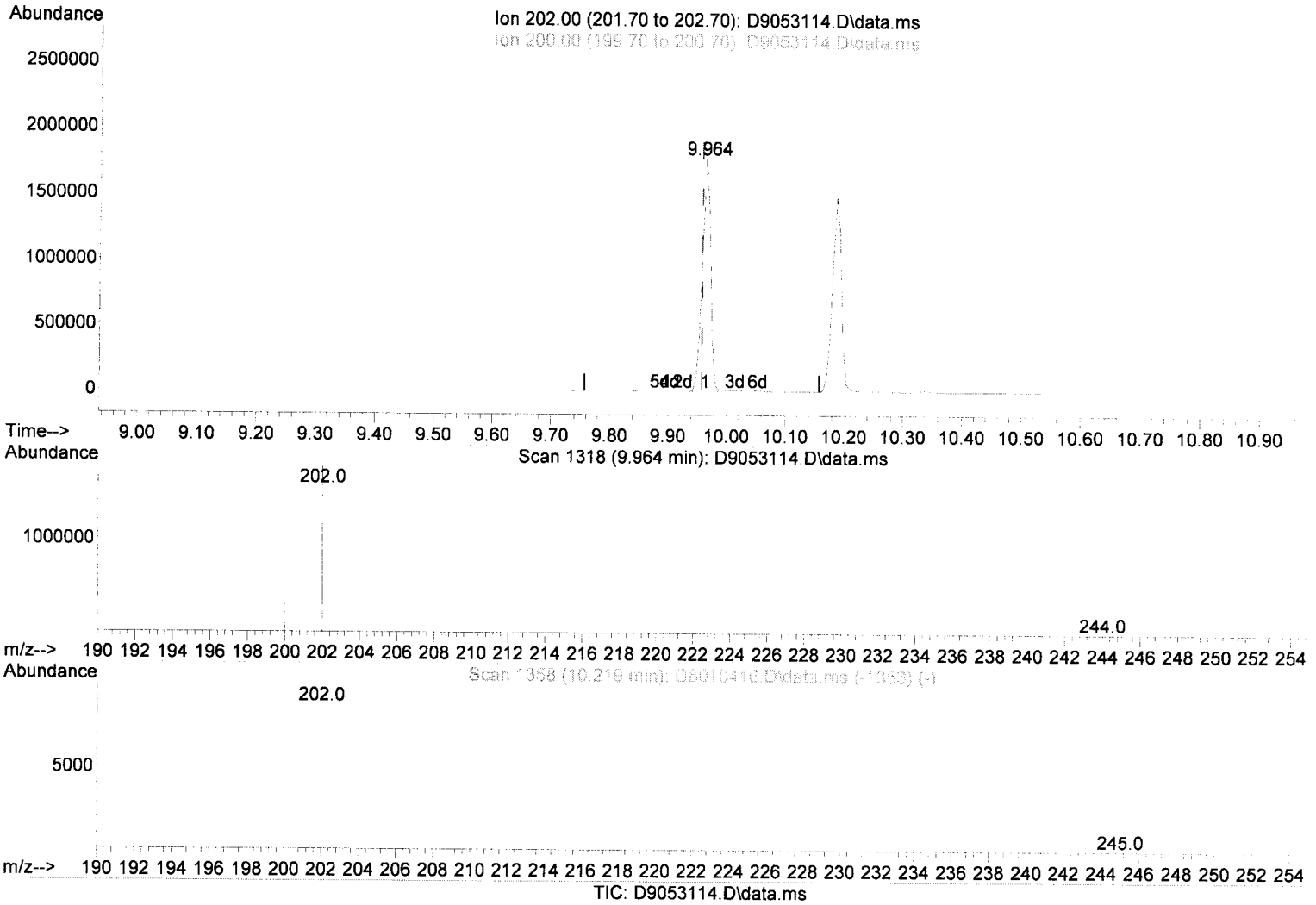
response 744281

Ion	Exp%	Act%
178.00	100.00	100.00
176.00	17.80	17.88
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053114.D
Acq On : 31 May 2019 9:41 pm
Operator : bsj
Sample : A9E0902-01@100
Misc : 100x Solid 10.06g/5mL SIM PAH
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 03 09:18:01 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(15) Fluoranthene (T)

9.964min (+ 0.006) 11484.09 ng/ml

response 1738357

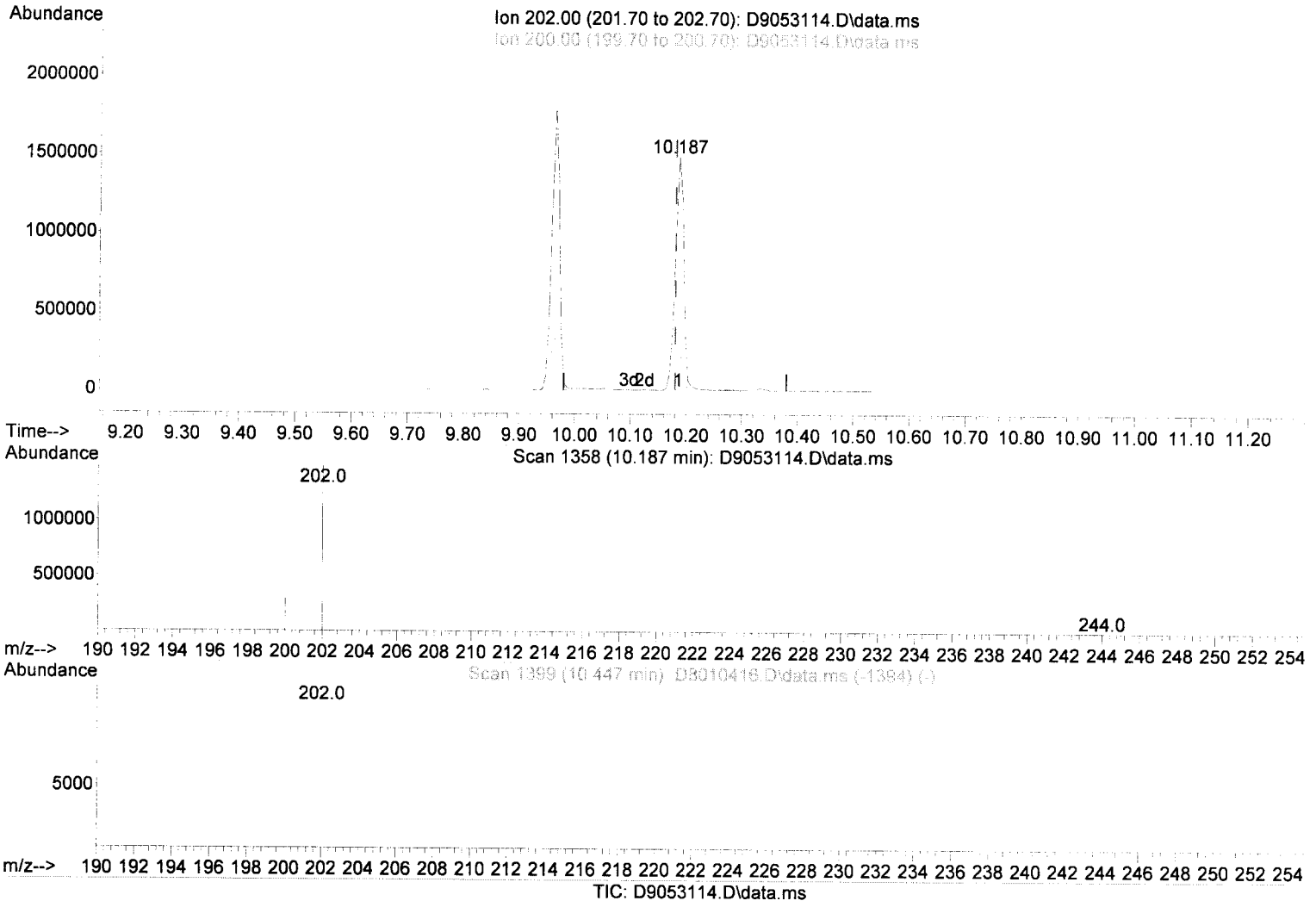
RR-2

Ion	Exp%	Act%
202.00	100.00	100.00
200.00	18.10	18.54
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053114.D
Acq On : 31 May 2019 9:41 pm
Operator : bsj
Sample : A9E0902-01@100
Misc : 100x Solid 10.06g/5mL SIM PAH
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 03 09:18:01 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(16) Pyrene (T)

10.187min (+ 0.006) 10606.90 ng/ml

response 1597749

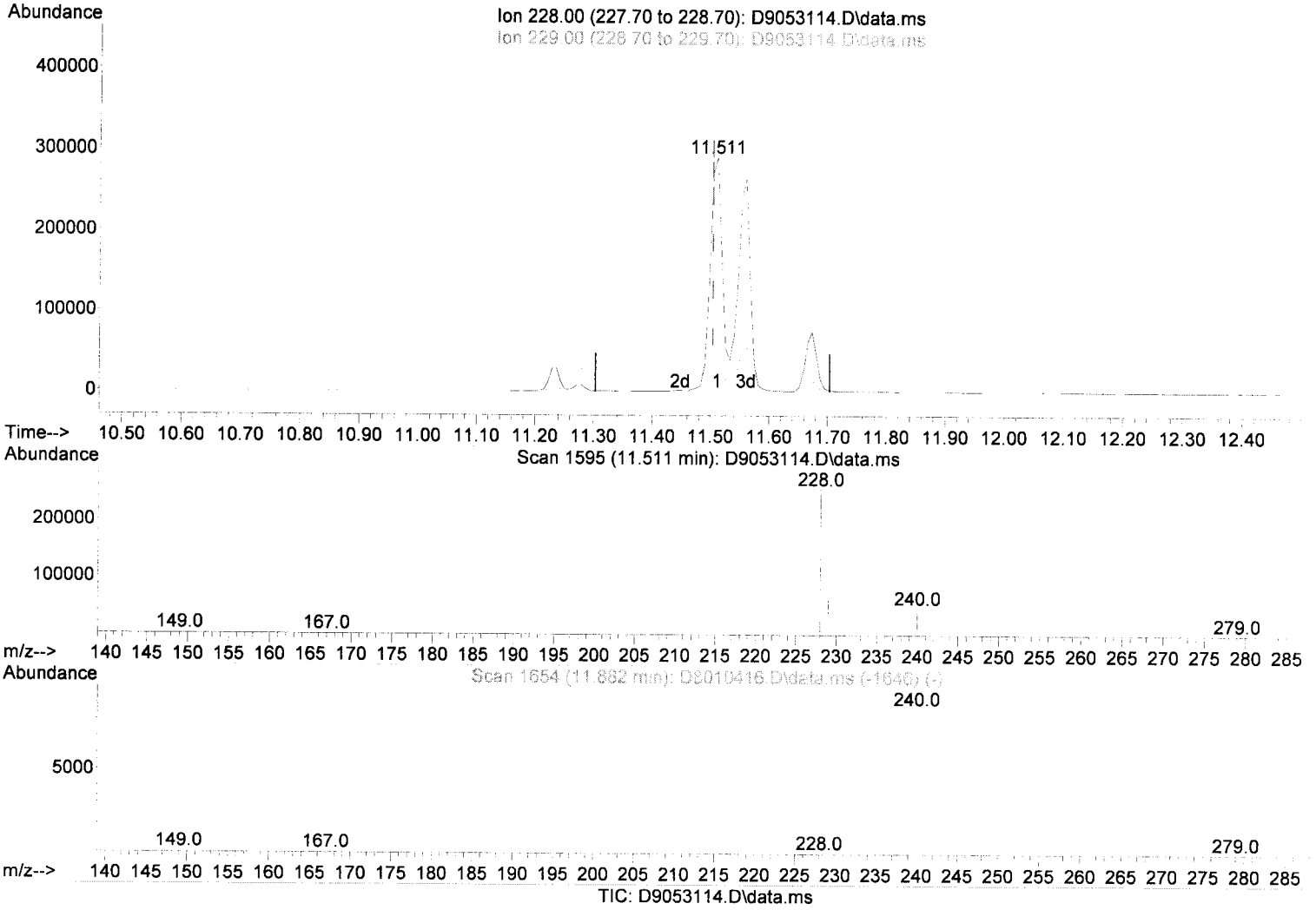
RR-2

Ion	Exp%	Act%
202.00	100.00	100.00
200.00	18.40	19.21
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053114.D
Acq On : 31 May 2019 9:41 pm
Operator : bsj
Sample : A9E0902-01@100
Misc : 100x Solid 10.06g/5mL SIM PAH
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 03 09:18:01 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(19) Benz(a)Anthracene (T)

11.511min (+ 0.008) 3148.81 ng/ml

response 424272

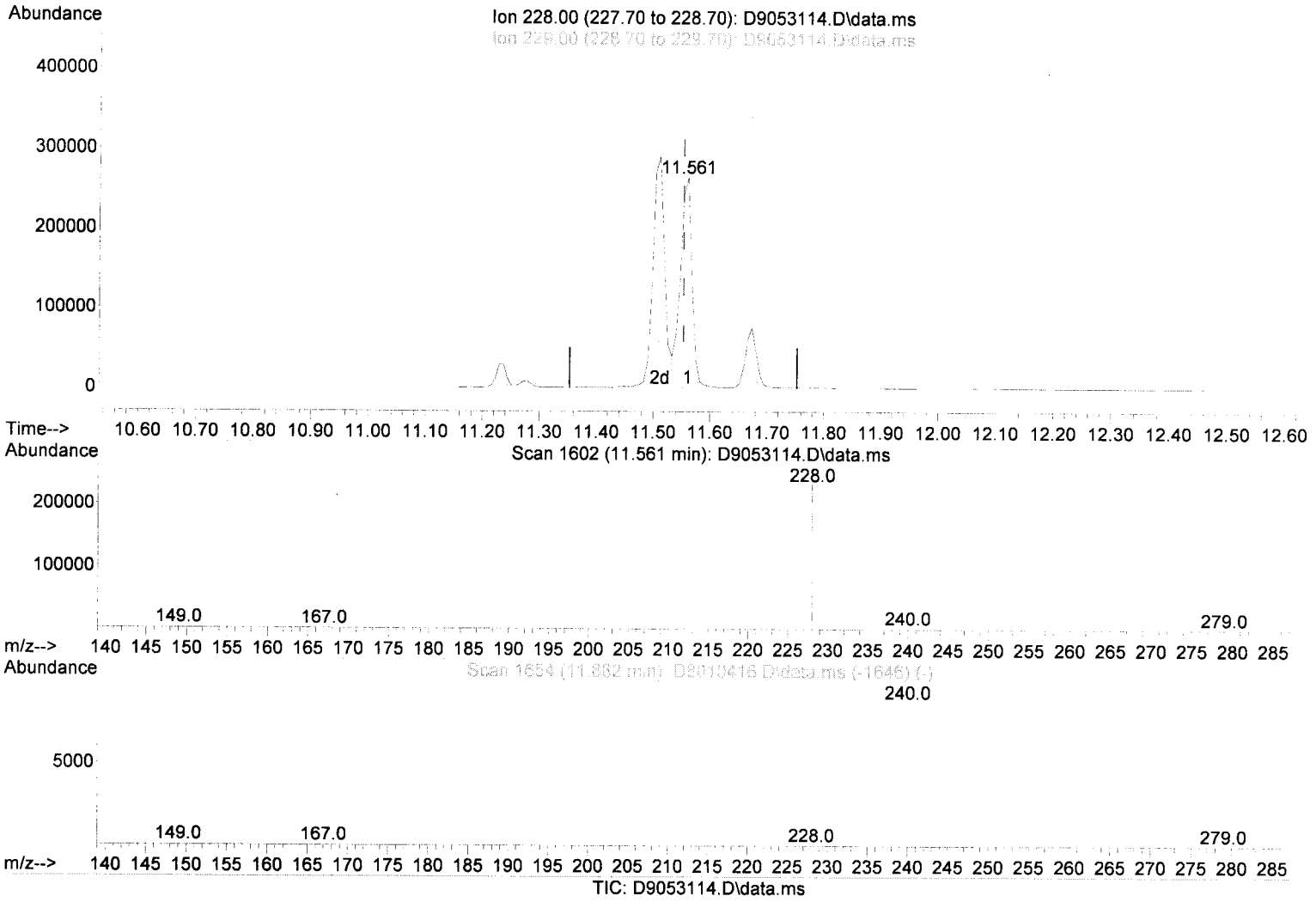
Ion	Exp%	Act%
228.00	100.00	100.00
229.00	21.40	20.17
0.00	0.00	0.00
0.00	0.00	0.00

6/3/19

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053114.D
Acq On : 31 May 2019 9:41 pm
Operator : bsj
Sample : A9E0902-01@100
Misc : 100x Solid 10.06g/5mL SIM PAH
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 03 09:18:01 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



TIC: D9053114.D\data.ms

(20) Chrysene (T)

11.561min (+ 0.008) 2864.93 ng/ml

response 376459

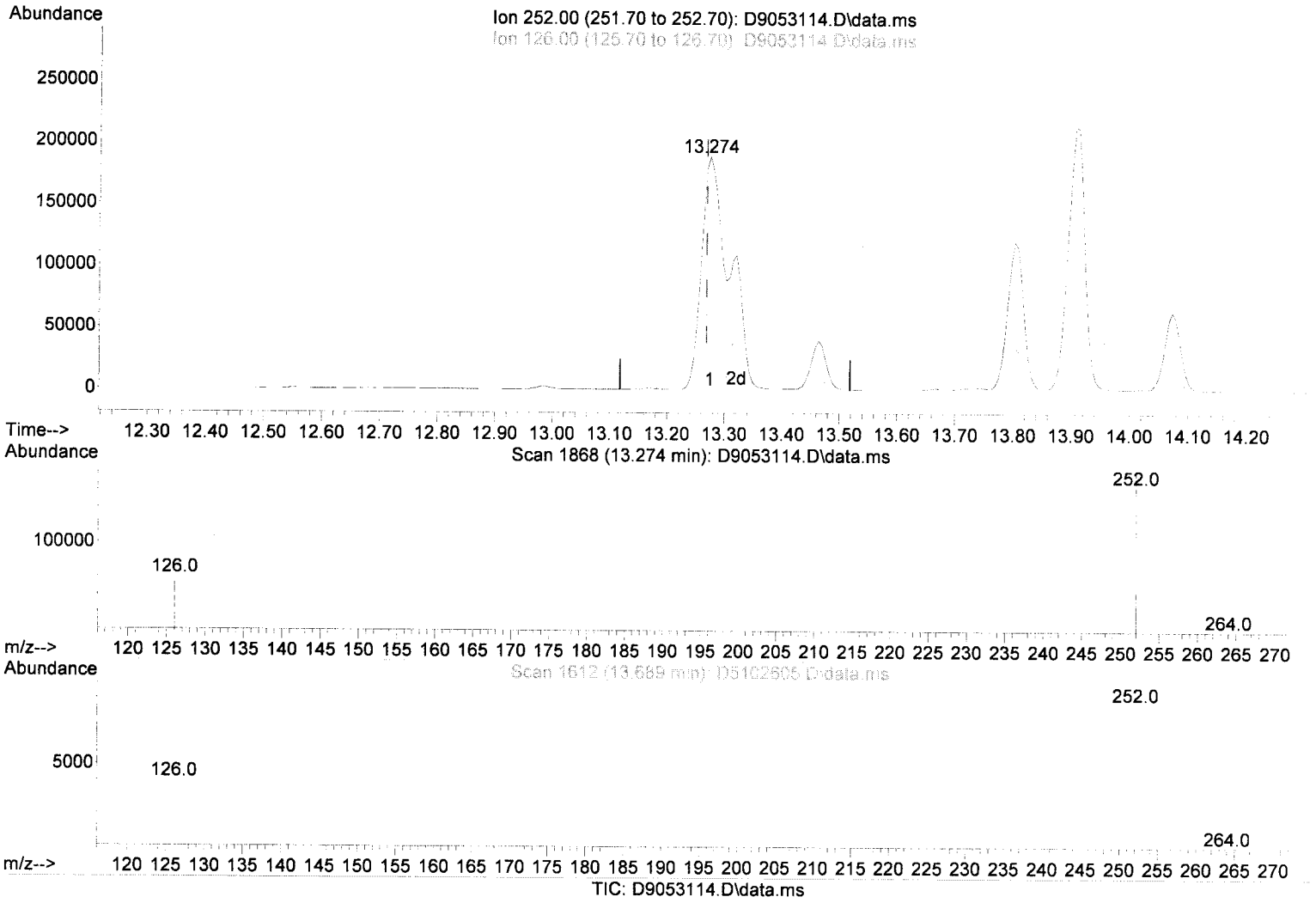
Ion	Exp%	Act%
228.00	100.00	100.00
229.00	21.20	23.65
0.00	0.00	0.00
0.00	0.00	0.00

6/3/19

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053114.D
Acq On : 31 May 2019 9:41 pm
Operator : bsj
Sample : A9E0902-01@100
Misc : 100x Solid 10.06g/5mL SIM PAH
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 03 09:18:01 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(22) Benzo(b)Fluoranthene (T)

13.274min (+ 0.006) 3525.09 ng/ml

response 463229

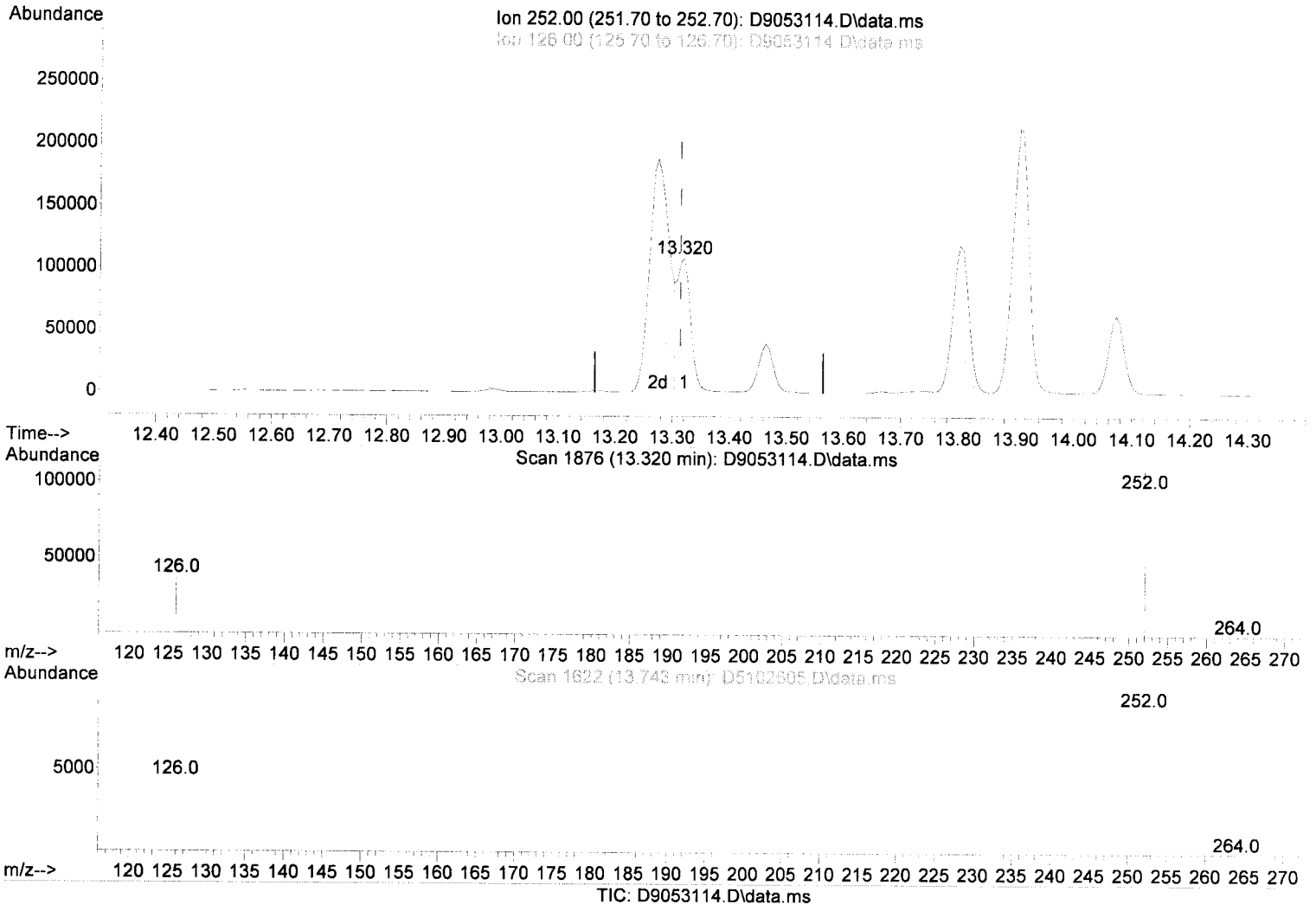
M-05

Ion	Exp%	Act%
252.00	100.00	100.00
126.00	17.90	32.68
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053114.D
Acq On : 31 May 2019 9:41 pm
Operator : bsj
Sample : A9E0902-01@100
Misc : 100x Solid 10.06g/5mL SIM PAH
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 03 09:18:01 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(23) Benzo(k)Fluoranthene (T)

13.320min (+ 0.006) 1353.71 ng/ml

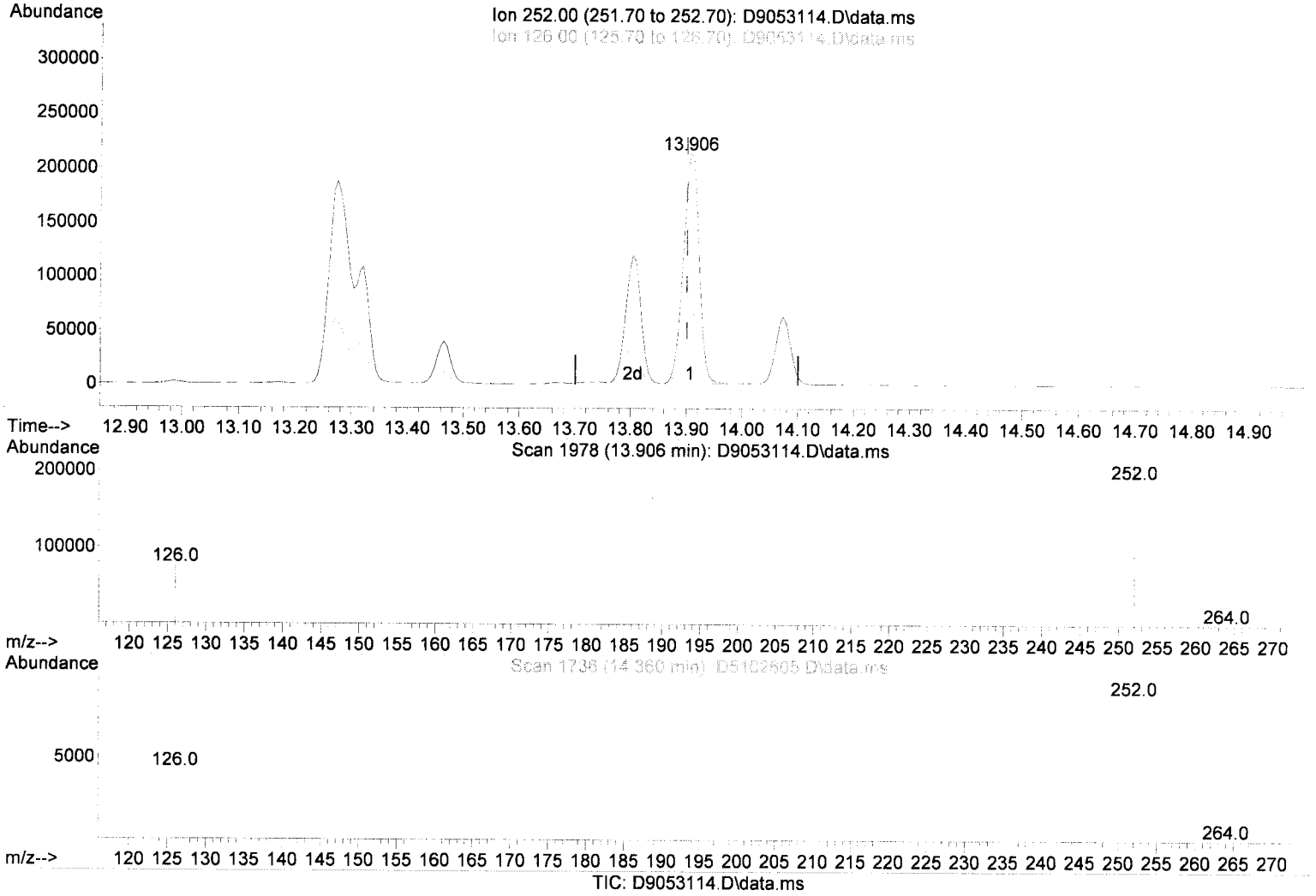
response 176291

Ion	Exp%	Act%
252.00	100.00	100.00
126.00	20.10	32.31
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053114.D
Acq On : 31 May 2019 9:41 pm
Operator : bsj
Sample : A9E0902-01@100
Misc : 100x Solid 10.06g/5mL SIM PAH
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 03 09:18:01 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(26) Benzo(a)Pyrene (T)

13.906min (+ 0.006) 3720.73 ng/ml

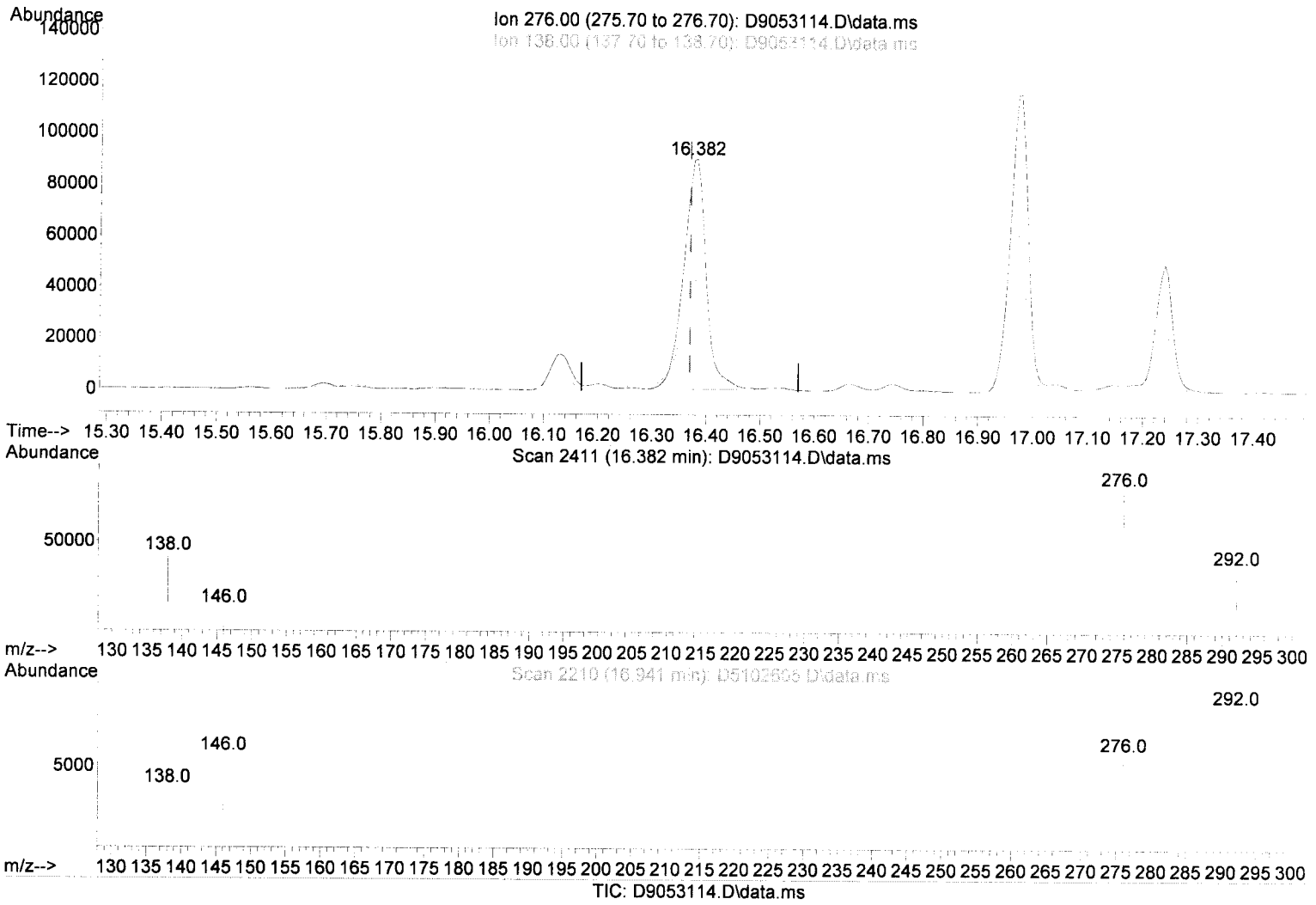
response 420226

Ion	Exp%	Act%
252.00	100.00	100.00
126.00	19.30	33.71
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053114.D
Acq On : 31 May 2019 9:41 pm
Operator : bsj
Sample : A9E0902-01@100
Misc : 100x Solid 10.06g/5mL SIM PAH
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 03 09:18:01 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(29) Indeno(1,2,3-cd)Pyrene (T)

16.382min (+ 0.012) 2130.69 ng/ml

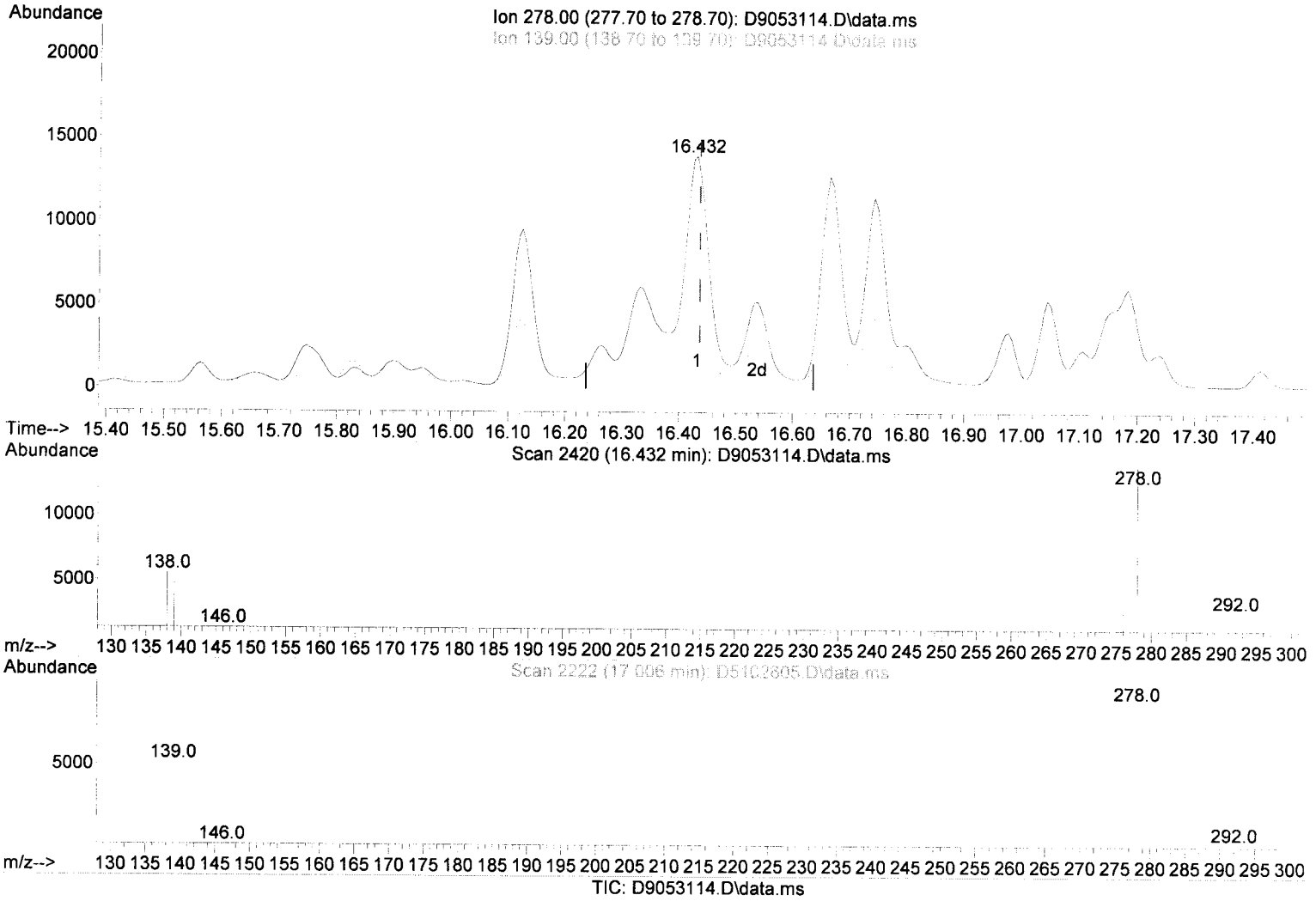
response 260948

Ion	Exp%	Act%
276.00	100.00	100.00
138.00	29.30	52.27
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053114.D
Acq On : 31 May 2019 9:41 pm
Operator : bsj
Sample : A9E0902-01@100
Misc : 100x Solid 10.06g/5mL SIM PAH
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 03 09:18:01 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(30) Dibenz(a,h)Anthracene (T)

16.432min (-0.005) 320.25 ng/ml

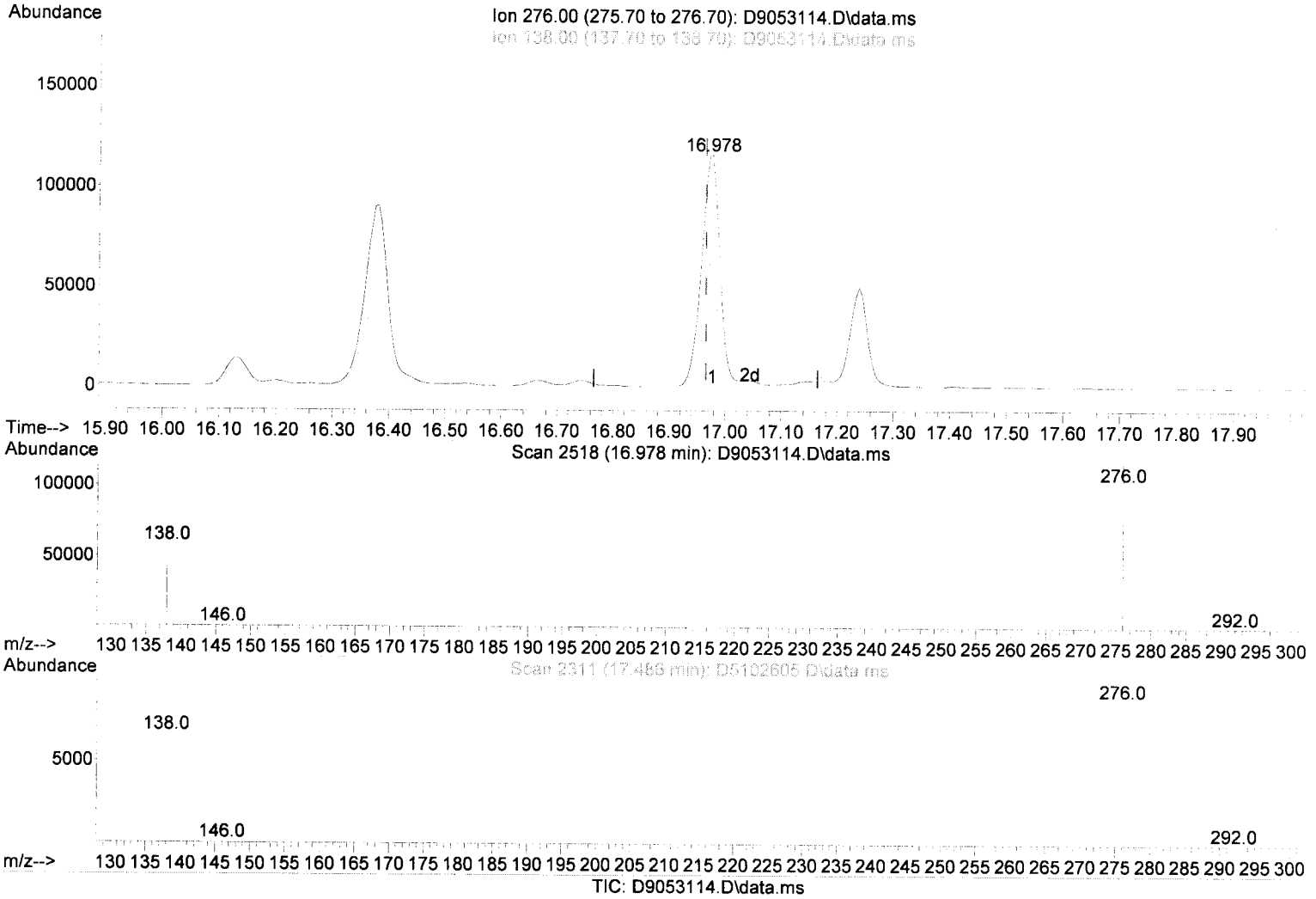
response 35811

Ion	Exp%	Act%
278.00	100.00	100.00
139.00	22.70	36.98
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053114.D
Acq On : 31 May 2019 9:41 pm
Operator : bsj
Sample : A9E0902-01@100
Misc : 100x Solid 10.06g/5mL SIM PAH
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 03 09:18:01 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(31) Benzo (g,h,i) Perylene (T)

16.978min (+ 0.012) 2031.38 ng/ml

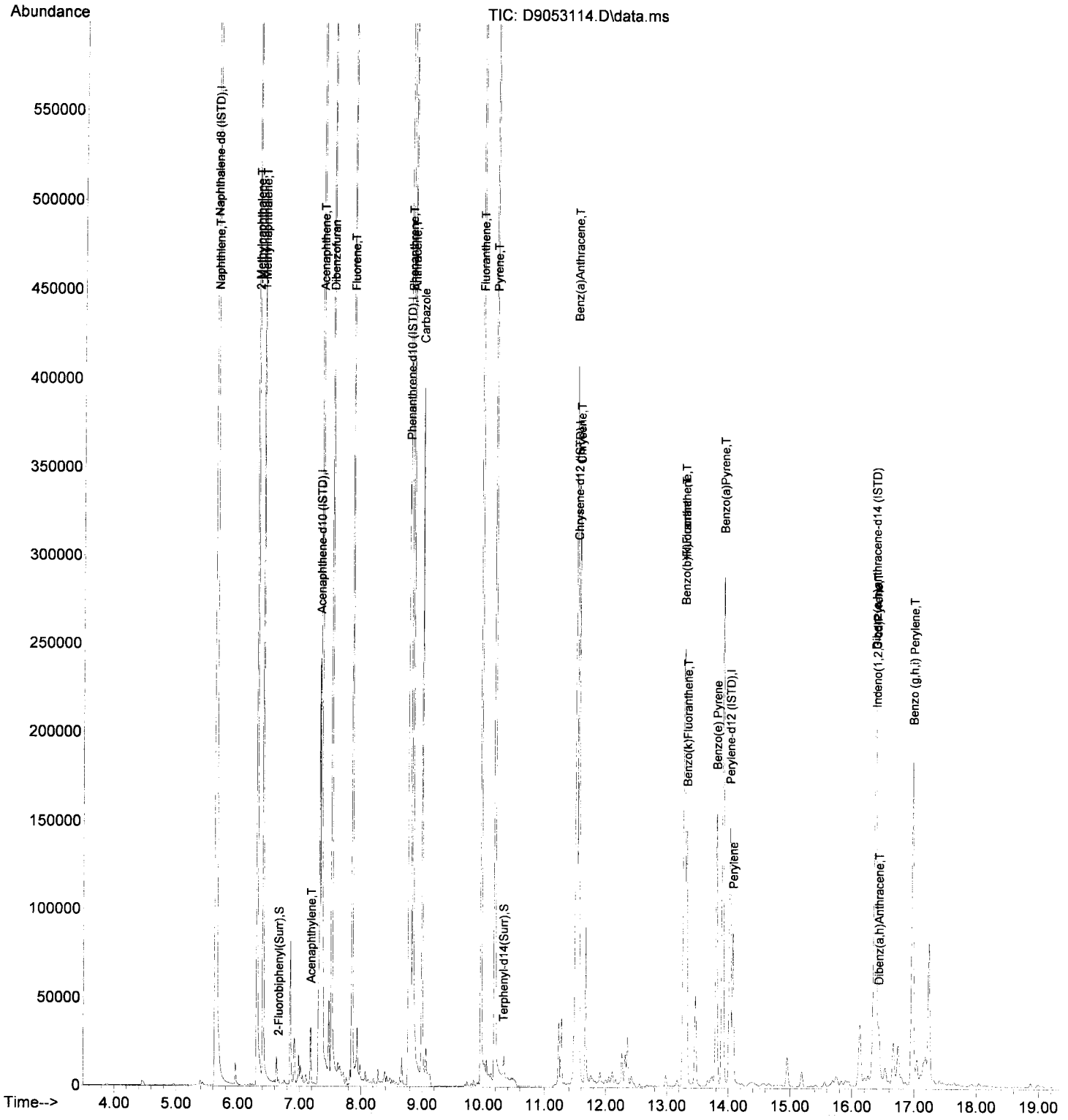
response 267569

Ion	Exp%	Act%
276.00	100.00	100.00
138.00	42.30	51.86
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053114.D
Acq On : 31 May 2019 9:41 pm
Operator : bsj
Sample : A9E0902-01@100
Misc : 100x Solid 10.06g/5mL SIM PAH
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 03 09:18:01 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053115.D
Acq On : 31 May 2019 10:07 pm
Operator : bsj
Sample : 9051465-DUP1@100
Misc : 100x Solid 10.13g/5mL SIM PAH
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 03 09:18:04 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4

M-05
RR-2

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8 (ISTD)	5.632	136	366077	2000.00	ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.324	164	187029	2000.00	ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.776	188	311667	2000.00	ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.525	240	228123	2000.00	ng/ml	0.00
21) Perylene-d12 (ISTD)	14.020	264	212467	2000.00	ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.361	292	193217	2000.00	ng/mL	0.00
System Monitoring Compounds						
6) 2-Fluorobiphenyl(Surr)	6.661	172	1112	8.02	ng/ml	0.00
18) Terphenyl-d14(Surr)	10.325	244	1251	10.36	ng/ml	0.00
Target Compounds						Qvalue
2) Naphthlene	5.652	128	1818648	9584.53	ng/ml	99
3) 2-Methylnaphthalene	6.309	142	438842	3577.13	ng/ml	100
4) 1-Methylnaphthalene	6.406	142	208527	1752.75	ng/ml	100
7) Acenaphthylene	7.183	152	22071	130.67	ng/ml	94
8) Acenaphthene	7.355	153	603745	5338.14	ng/ml	95
9) Dibenzofuran	7.520	168	510509	3385.07	ng/mL	88
10) Fluorene	7.855	166	372287	3172.19	ng/ml	100
12) Phenanthrene	8.797	178	1965294	10951.71	ng/ml	98
13) Anthracene	8.845	178	592875	3271.69	ng/ml	99
14) Carbazole	8.999	167	283766	2025.05	ng/mL	99
15) Fluoranthene	9.963	202	1419023	9279.61	ng/ml	99
16) Pyrene	10.186	202	1314005	8634.94	ng/ml	98
19) Benz(a)Anthracene	11.511	228	352486	2560.84	ng/ml	97
20) Chrysene	11.553	228	313764	2337.43	ng/ml	95
22) Benzo(b)Fluoranthene	13.274	252	396891	2893.32	ng/ml	71
23) Benzo(k)Fluoranthene	13.314	252	141521	1041.04	ng/ml	60
24) Benzo(b+k)Fluoranthene	13.274	252	539542	3934.93	ng/ml	70
25) Benzo(e) Pyrene	13.802	252	196070	1436.32	ng/mL	91
26) Benzo(a)Pyrene	13.905	252	348109	2952.65	ng/ml	67
27) Perylene	14.072	252	104029	912.37	ng/mL	94
29) Indeno(1,2,3-cd)Pyrene	16.377	276	219023	1803.07	ng/ml	57
30) Dibenz(a,h)Anthracene	16.433	278	29932	269.88	ng/ml	70
31) Benzo (g,h,i) Perylene	16.973	276	227565	1741.88	ng/ml	84

S-05

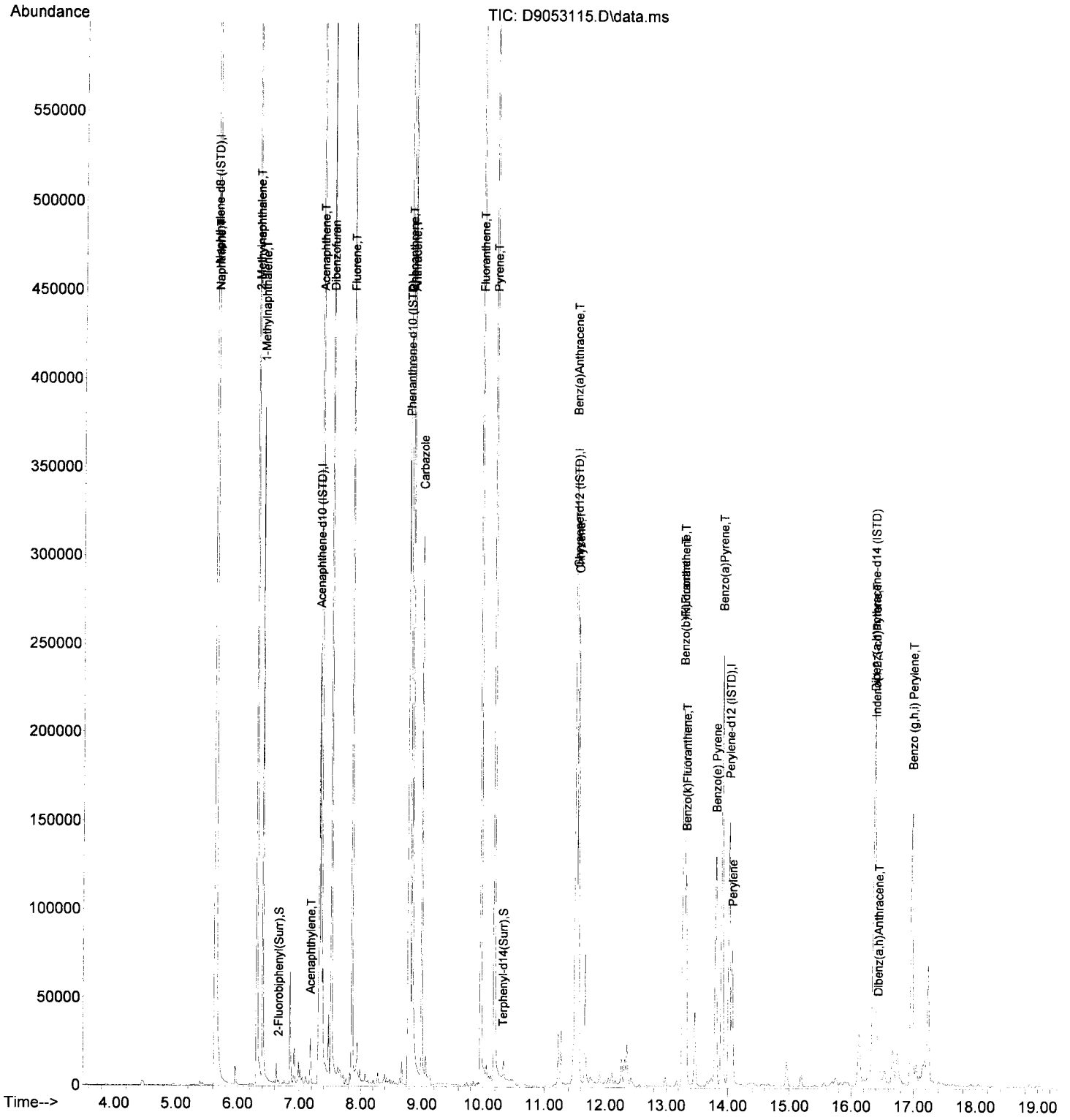
(#) = qualifier out of range (m) = manual integration (+) = signals summed

6-03-19

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E31014\
Data File : D9053115.D
Acq On : 31 May 2019 10:07 pm
Operator : bsj
Sample : 9051465-DUP1@100
Misc : 100x Solid 10.13g/5mL SIM PAH
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 03 09:18:04 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



APEX LABORATORIES, LLC
6700 SW Sandburg St. Tigard OR 97223 phone 503-718-2323

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Benchsheet & Analysis Sequence Data

Sequence 9F03035 (A9E0902-01RE1)

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence:	**9F03035**	Instrument:	**SV-GCMS4**
Date:	**06/03/19 08:57**	Calibration:	**A9E0902**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9F03035-TUN1	Solid	QC	QC			A19D031	A19E333
2	9F03035-CCV1	Solid	QC	QC			A19B027	A19C237
3	9F03035-CCB1	Solid	QC	QC			A19B027	
4	A9E0902-01RE1	Solid	8270 SIM PAH	Hahn and Associates	06/03/19	9051465	A19B027	
5	9051465-DUP2	Solid	QC	QC		9051465	A19B027	
6	9051421-BLK2	Water	QC	QC		9051421	A19B027	
7	A9E0895-21	Water	8270 SIM PAH		06/04/19	9051421	A19B027	
8	9060489-BLK1	Soil	QC	QC		9060489	A19B027	
9	9060489-BS1	Soil	QC	QC		9060489	A19B027	
10	A9E0699-01	Soil	8270 SIM PAH (16)		06/04/19	9060489	A19B027	
11	"	Soil	8270 SIM PAH	(QC Source)		9060489	A19B027	
12	9060489-DUP1	Soil	QC	QC		9060489	A19B027	
13	A9E0790-02	Soil	8270 SIM PAH (16)		06/04/19	9060489	A19B027	
14	A9E0801-08RE1	Soil	8270 SIM PAH		06/06/19	9060489	A19B027	
15	A9E0819-01	Soil	8270 SIM PAH (16)		06/05/19	9060489	A19B027	
16	A9E0831-01	Soil	8270 SIM PAH (16)		06/04/19	9060489	A19B027	
17	A9E0834-01	Soil	8270 SIM PAH (16)		06/04/19	9060489	A19B027	
18	A9E0929-01	Soil	8270 SIM PAH		06/11/19	9060489	A19B027	
19	A9E0929-02	Soil	8270 SIM PAH		06/11/19	9060489	A19B027	
20	A9E0929-03	Soil	8270 SIM PAH		06/11/19	9060489	A19B027	
21	A9E0932-01	Soil	8270 SIM PAH (16)	(QC Source)		9060489	A19B027	
22	"	Soil	8270 SIM PAH	"	06/11/19	9060489	A19B027	
23	9060489-MS1	Soil	QC	QC		9060489	A19B027	
24	9F03035-IBL1	Solid	QC	QC			A19B027	

Comments:

Data Entered By: BSJ 6-04-19

Data Reviewed By: 6/4/19

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence: **9F03035** Instrument: **SV-GCMS4**

Date: **06/03/19 08:57** Calibration: **A9E0902**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9F03035-TUN1	Solid	QC	QC			A19D031	A19E333
2	9F03035-CCV1	Solid	QC	QC			A19B027	A19C237
3	9F03035-CCB1	Solid	QC	QC			A19B027	
4	A9E0902-01RE1	Solid	8270 SIM PAH	Hahn and Associates	06/03/19	9051465	A19B027	
5	9051465-DUP2	Solid	QC	QC		9051465	A19B027	
6	9051421-BLK2	Water	QC	QC		9051421	A19B027	
7	A9E0895-21	Water	8270 SIM PAH		06/04/19	9051421	A19B027	

Data Entered By: BSS 6/03/19

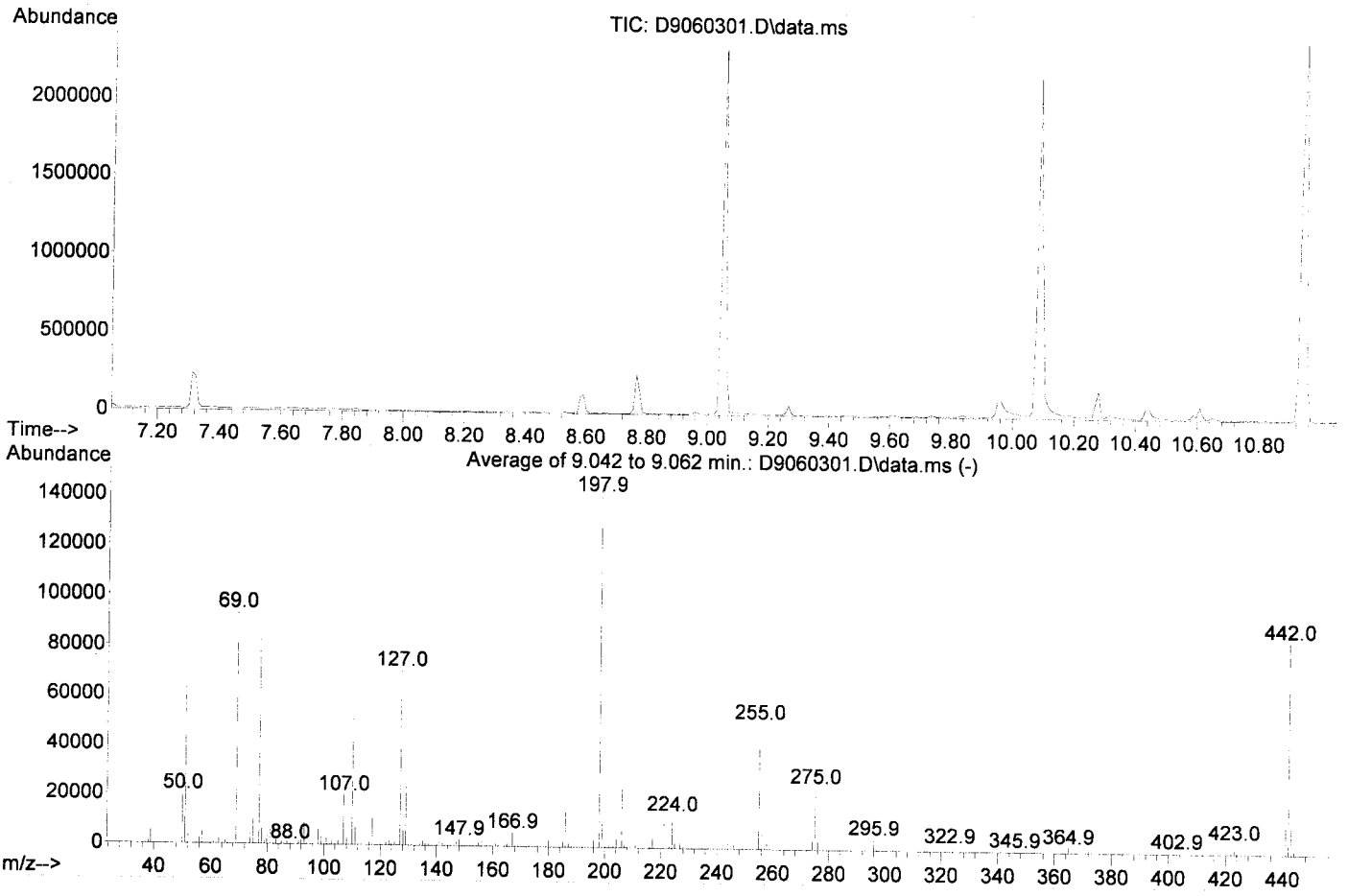
Data Reviewed By: 6/3/19

Comments:

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060301.D
Acq On : 3 Jun 2019 9:46 am
Operator : bsj
Sample : 9F03035-TUN1
Misc : 1x A19E333 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\methods\DFTPP-8270.M
Title : EPA 8270 SIM PAH
Last Update : Wed Dec 05 14:43:36 2018



AutoFind: Scans 542, 543, 544; Background Corrected with Scan 539

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	47.9	68486	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	65.0	92923	PASS
70	69	0.00	2	0.1	97	PASS
127	198	10	80	49.1	70242	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	143013	PASS
199	198	5	9	6.9	9879	PASS
275	198	10	60	17.5	25050	PASS
365	198	1	100	1.4	2014	PASS
441	442	0.01	24	14.4	12223	PASS
442	198	50	200	59.5	85029	PASS
443	442	15	24	19.3	16425	PASS

✓

6-03-19

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060301.D
Acq On : 3 Jun 2019 9:46 am
Operator : bsj
Sample : 9F03035-TUN1
Misc : 1x A19E333 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 03 10:52:59 2019
Quant Method : C:\msdchem\1\methods\DFTPP-8270.M
Quant Title : EPA 8270 SIM PAH
QLast Update : Wed Dec 05 14:43:36 2018
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	5.625	136	124878	2000.00	ng/ml	0.00
2) Acenaphthene-d10	7.313	162	58062	2000.00	ng/ml	0.00
3) Phenanthrene-d10	8.766	188	97656	2000.00	ng/ml	0.00
7) Chrysene-d12	11.528	240	70988	2000.00	ng/ml	0.00
8) Perylene-d12	14.024	264	57558	2000.00	ng/ml	0.00
9) Dibenz(ah)anthracene-d14	16.356	292	54023	2000.00	ng/mL	-0.01
Target Compounds						Qvalue
4) Pentachlorophenol (PCP)	8.592	266	16796	5.89	ng/mL	97
5) DFTPP	9.052	198	265573	38.00	ng/mL	84
6) DDT	10.945	TIC	2856675	32342.73	ng/mL#	1

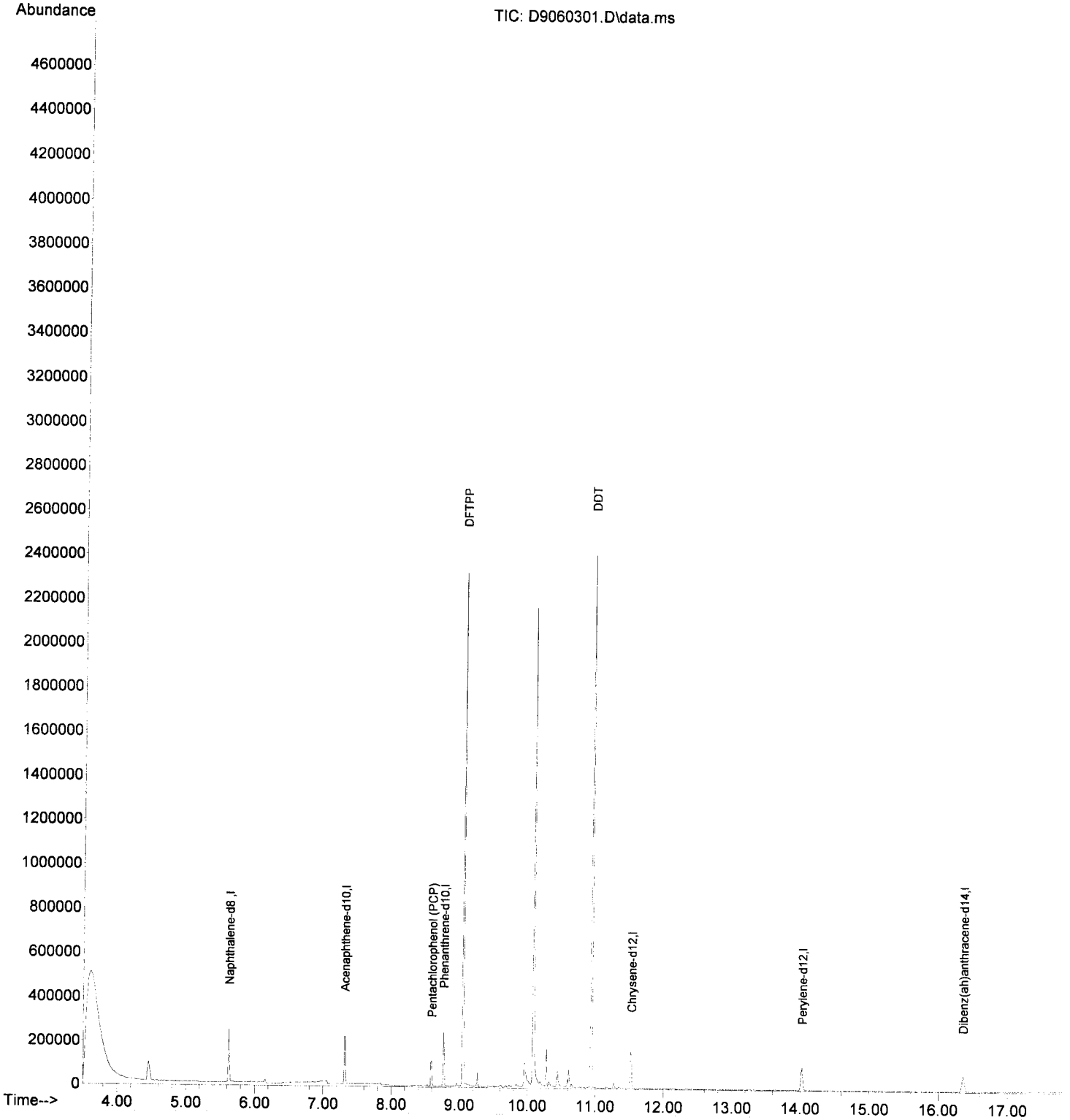
(#) = qualifier out of range (m) = manual integration (+) = signals summed

6-0319
BBS

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060301.D
Acq On : 3 Jun 2019 9:46 am
Operator : bsj
Sample : 9F03035-TUN1
Misc : 1x A19E333 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 03 10:52:59 2019
Quant Method : C:\msdchem\1\methods\DFTPP-8270.M
Quant Title : EPA 8270 SIM PAH
QLast Update : Wed Dec 05 14:43:36 2018
Response via : Initial Calibration
InstName : SV-GCMS4



Evaluate Continuing Calibration Report

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060302.D
Acq On : 3 Jun 2019 10:10 am
Operator : bsj
Sample : 9F03035-CCV1
Misc : 1x A19C237@1000
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 03 10:30:46 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Naphthalene-d8 (ISTD)	2000.000	2000.000	0.0	66	0.00
2	T	Naphthlene	1000.000	1036.982	-3.7	69	0.00
3	T	2-Methylnaphthalene	1000.000	1049.054	-4.9	69	0.00
4	T	1-Methylnaphthalene	1000.000	1052.707	-5.3	69	0.00
5	I	Acenaphthene-d10 (ISTD)	2000.000	2000.000	0.0	68	0.00
6	S	2-Fluorobiphenyl(Surr)	1000.000	1050.292	-5.0	71	0.00
7	T	Acenaphthylene	1000.000	1060.487	-6.0	72	0.00
8	T	Acenaphthene	1000.000	1046.493	-4.6	70	0.00
9		Dibenzofuran	1000.000	1086.574	-8.7	74	0.00
10	T	Fluorene	1000.000	1078.713	-7.9	74	0.00
11	I	Phenanthrene-d10 (ISTD)	2000.000	2000.000	0.0	75	0.00
12	T	Phenanthrene	1000.000	1026.623	-2.7	78	0.00
13	T	Anthracene	1000.000	1067.896	-6.8	82	0.00
14		Carbazole	1000.000	1216.547	-21.7#	89	0.00
15	T	Fluoranthene	1000.000	1114.570	-11.5	86	0.00
16	T	Pyrene	1000.000	1132.325	-13.2	88	0.00
17	I	Chrysene-d12 (ISTD)	2000.000	2000.000	0.0	108	0.00
18	S	Terphenyl-d14(Surr)	1000.000	846.818	15.3	91	0.00
19	T	Benz(a)Anthracene	1000.000	1010.192	-1.0	113	0.00
20	T	Chrysene	1000.000	1047.427	-4.7	113	0.00
21	I	Perylene-d12 (ISTD)	2000.000	2000.000	0.0	136	0.00
22	T	Benzo(b)Fluoranthene	1000.000	964.162	3.6	131	0.00
23	T	Benzo(k)Fluoranthene	1000.000	1021.616	-2.2	138	0.00
24	T	Benzo(b+k)Fluoranthene	2000.000	1985.165	0.7	135	0.00
25		Benzo(e) Pyrene	1000.000	956.068	4.4	129	0.00
26	T	Benzo(a)Pyrene	1000.000	1063.627	-6.4	141	0.00
27		Perylene	1000.000	1172.326	-17.2	158	0.00
28		Dibenz(a,h)anthracene-d14 (	2000.000	2000.000	0.0	165	0.00
29	T	Indeno(1,2,3-cd)Pyrene	1000.000	1001.161	-0.1	164	0.00
30	T	Dibenz(a,h)Anthracene	1000.000	1063.571	-6.4	174	0.00
31	T	Benzo (g,h,i) Perylene	1000.000	934.252	6.6	152	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

NR

6-0379

BSJ

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060302.D
Acq On : 3 Jun 2019 10:10 am
Operator : bsj
Sample : 9F03035-CCV1
Misc : 1x A19C237@1000
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 03 10:30:46 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Naphthalene-d8 (ISTD)	5.632	136	337263	2000.00 ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.324	164	169782	2000.00 ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.771	188	262506	2000.00 ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.518	240	180013	2000.00 ng/ml	0.00
21) Perylene-d12 (ISTD)	14.015	264	158229	2000.00 ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.349	292	128442	2000.00 ng/mL	0.00
System Monitoring Compounds					
6) 2-Fluorobiphenyl(Surr)	6.661	172	132165	1050.29 ng/ml	0.00
18) Terphenyl-d14(Surr)	10.325	244	80665	846.82 ng/ml	0.00
Target Compounds					Qvalue
2) Naphthlene	5.645	128	181278	1036.98 ng/ml	99
3) 2-Methylnaphthalene	6.309	142	118568	1049.05 ng/ml	99
4) 1-Methylnaphthalene	6.407	142	115384	1052.71 ng/ml	98
7) Acenaphthylene	7.183	152	162604	1060.49 ng/ml	98
8) Acenaphthene	7.348	153	107444	1046.49 ng/ml	95
9) Dibenzofuran	7.520	168	148757	1086.57 ng/mL	88
10) Fluorene	7.855	166	114923	1078.71 ng/ml	99
12) Phenanthrene	8.792	178	155169	1026.62 ng/ml	98
13) Anthracene	8.845	178	162993	1067.90 ng/ml	98
14) Carbazole	8.994	167	143583	1216.55 ng/mL	99
15) Fluoranthene	9.957	202	143554	1114.57 ng/ml	99
16) Pyrene	10.180	202	145130	1132.33 ng/ml	99
19) Benz(a)Anthracene	11.504	228	109723	1010.19 ng/ml	96
20) Chrysene	11.553	228	110949	1047.43 ng/ml	96
22) Benzo(b)Fluoranthene	13.262	252	98496	964.16 ng/ml	58
23) Benzo(k)Fluoranthene	13.314	252	103427	1021.62 ng/ml	61
24) Benzo(b+k)Fluoranthene	13.314	252	202712	1985.17 ng/ml	60
25) Benzo(e) Pyrene	13.797	252	97195	956.07 ng/mL	88
26) Benzo(a)Pyrene	13.894	252	93387	1063.63 ng/ml	60
27) Perylene	14.067	252	99547	1172.33 ng/mL	87
29) Indeno(1,2,3-cd)Pyrene	16.361	276	80843	1001.16 ng/ml	59
30) Dibenz(a,h)Anthracene	16.427	278	78414	1063.57 ng/ml	58
31) Benzo (g,h,i) Perylene	16.962	276	81136	934.25 ng/ml	77

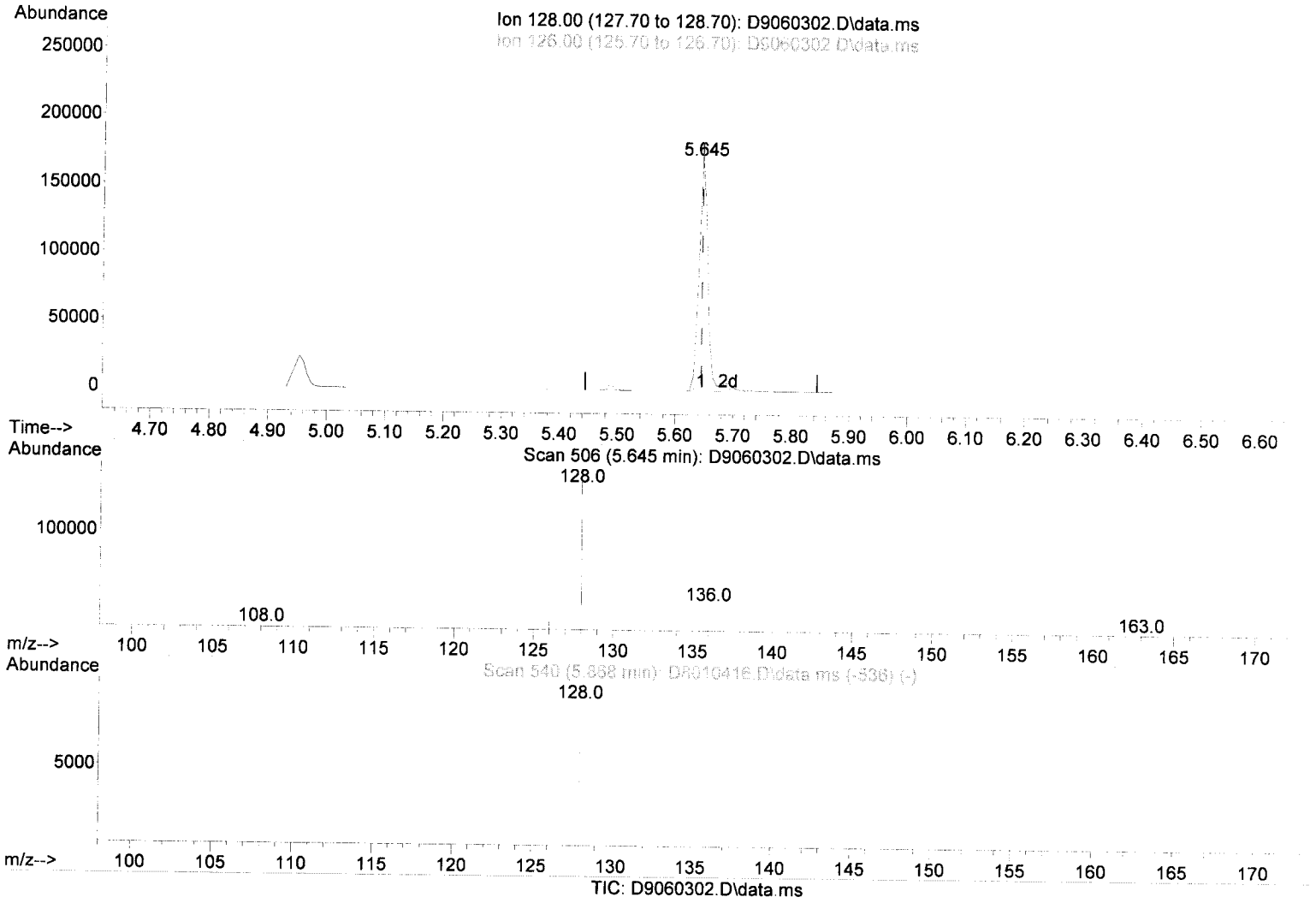
(#) = qualifier out of range (m) = manual integration (+) = signals summed

6-03-19 ✓

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060302.D
Acq On : 3 Jun 2019 10:10 am
Operator : bsj
Sample : 9F03035-CCV1
Misc : 1x A19C237@1000
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 03 10:30:46 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(2) Naphthlene (T)

5.645min (-0.000) 1036.98 ng/ml

response 181278

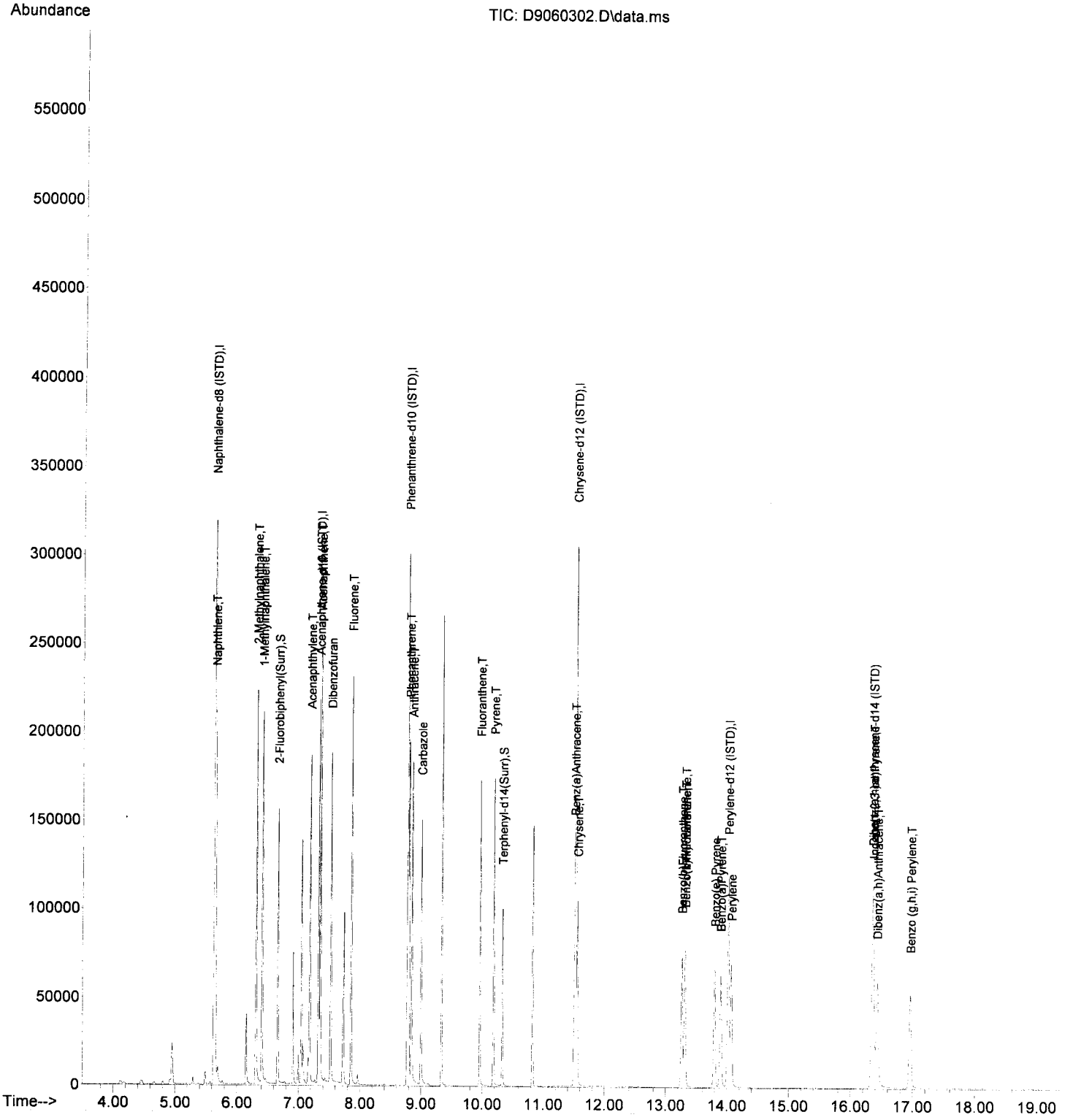
Ion	Exp%	Act%
128.00	100.00	100.00
126.00	7.50	7.25
0.00	0.00	0.00
0.00	0.00	0.00

✓

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060302.D
Acq On : 3 Jun 2019 10:10 am
Operator : bsj
Sample : 9F03035-CCV1
Misc : 1x A19C237@1000
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 03 10:30:46 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060303.D
Acq On : 3 Jun 2019 10:38 am
Operator : bsj
Sample : 99F03035-CCB1
Misc : 1x DCM+ISTD
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 03 11:30:54 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Naphthalene-d8 (ISTD)	5.627	136	320944	2000.00 ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.324	164	157151	2000.00 ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.770	188	252865	2000.00 ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.519	240	165317	2000.00 ng/ml	0.00
21) Perylene-d12 (ISTD)	14.022	264	139721	2000.00 ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.355	292	111604	2000.00 ng/mL	0.00
System Monitoring Compounds					
6) 2-Fluorobiphenyl(Surr)	0.000	172	0	0.00 ng/ml	
18) Terphenyl-d14(Surr)	0.000	244	0	0.00 ng/ml	
Target Compounds					Qvalue
2) Naphthlene	0.000		0	N.D.	
3) 2-Methylnaphthalene	0.000		0	N.D.	
4) 1-Methylnaphthalene	0.000		0	N.D.	
7) Acenaphthylene	0.000		0	N.D.	
8) Acenaphthene	0.000		0	N.D.	
9) Dibenzofuran	0.000		0	N.D.	
10) Fluorene	0.000		0	N.D.	
12) Phenanthrene	0.000		0	N.D.	
13) Anthracene	0.000		0	N.D.	
14) Carbazole	0.000		0	N.D.	
15) Fluoranthene	0.000		0	N.D.	
16) Pyrene	0.000		0	N.D.	
19) Benz(a)Anthracene	11.519	228	415	4.16 ng/ml#	55
20) Chrysene	11.519	228	415	4.27 ng/ml#	55
22) Benzo(b)Fluoranthene	0.000		0	N.D.	
23) Benzo(k)Fluoranthene	0.000		0	N.D.	
24) Benzo(b+k)Fluoranthene	0.000		0	N.D.	
25) Benzo(e) Pyrene	0.000		0	N.D.	
26) Benzo(a)Pyrene	0.000		0	N.D.	
27) Perylene	14.016	252	471	6.28 ng/mL#	1
29) Indeno(1,2,3-cd)Pyrene	0.000		0	N.D.	
30) Dibenz(a,h)Anthracene	0.000		0	N.D.	
31) Benzo (g,h,i) Perylene	0.000		0	N.D.	

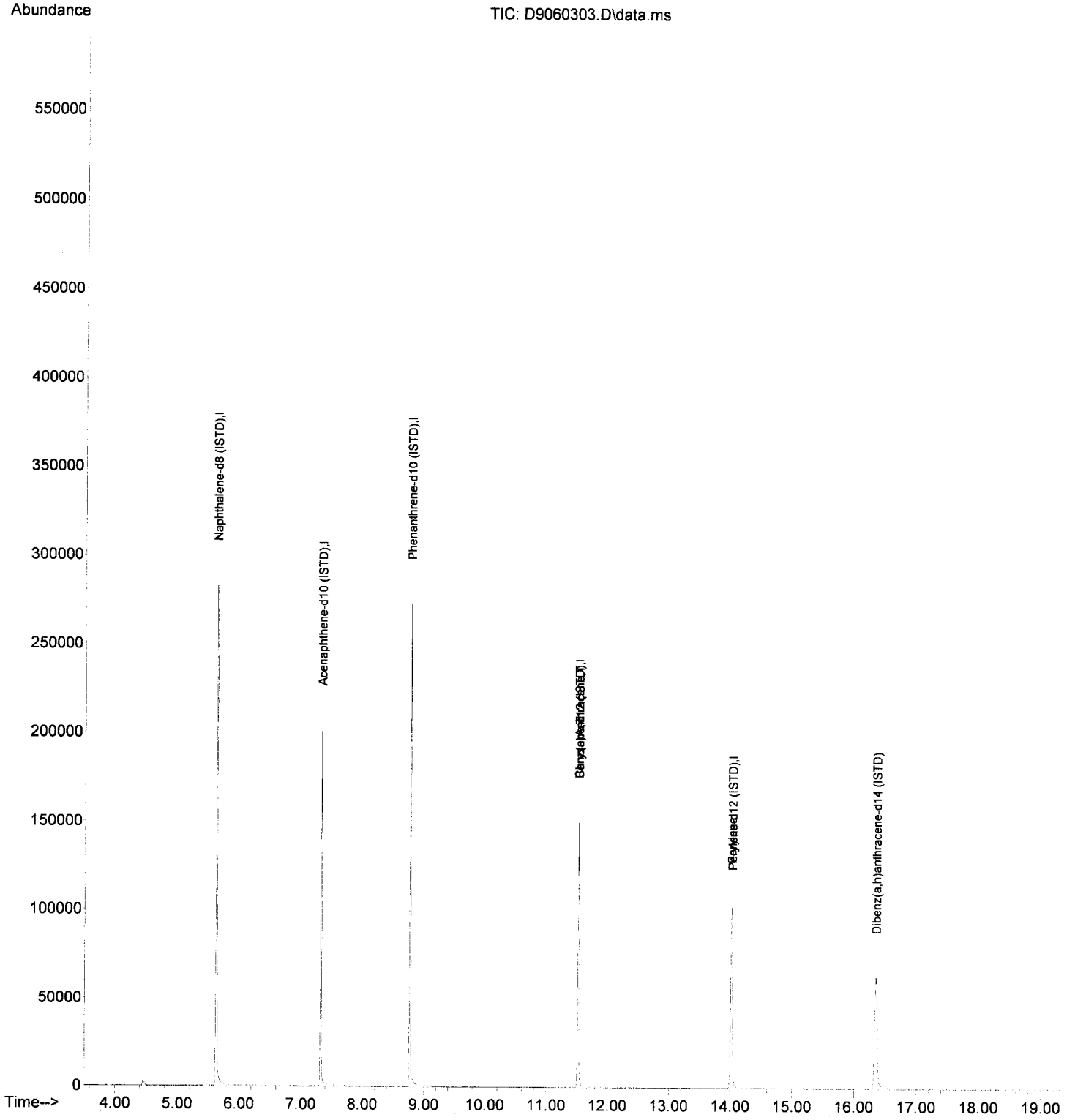
(#) = qualifier out of range (m) = manual integration (+) = signals summed

6-0319 BSS

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060303.D
Acq On : 3 Jun 2019 10:38 am
Operator : bsj
Sample : 99F03035-CCB1
Misc : 1x DCM+ISTD
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 03 11:30:54 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060304.D
Acq On : 3 Jun 2019 11:04 am
Operator : bsj
Sample : A9E0902-01RE1@1000
Misc : 1000x Solid 10.06g/5mL SIM PAH (#2,12,15,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 03 11:30:58 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8 (ISTD)	5.632	136	306678	2000.00	ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.325	164	149035	2000.00	ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.772	188	236411	2000.00	ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.518	240	160583	2000.00	ng/ml	0.00
21) Perylene-d12 (ISTD)	14.015	264	141190	2000.00	ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.349	292	121190	2000.00	ng/mL	-0.01
System Monitoring Compounds						
6) 2-Fluorobiphenyl(Surr)	0.000	172	0	0.00	ng/ml	S-01
18) Terphenyl-d14(Surr)	10.326	244	205	2.41	ng/ml	0.00 S-05
Target Compounds						Qvalue
2) Naphthlene	5.646	128	380163	2391.56	ng/ml	99
3) 2-Methylnaphthalene	6.309	142	90558	881.14	ng/ml	98
4) 1-Methylnaphthalene	6.406	142	42825	429.68	ng/ml	98
7) Acenaphthylene	7.184	152	5217	38.76	ng/ml	95
8) Acenaphthene	7.349	153	124464	1381.02	ng/ml	98
9) Dibenzofuran	7.521	168	103547	861.63	ng/mL	89
10) Fluorene	7.856	166	74393	795.49	ng/ml	100
12) Phenanthrene	8.793	178	401292	2948.07	ng/ml	98
13) Anthracene	8.846	178	122048	887.90	ng/ml	99
14) Carbazole	8.995	167	53172	500.24	ng/mL	99
15) Fluoranthene	9.958	202	275059	2371.32	ng/ml	99
16) Pyrene	10.181	202	248251	2150.68	ng/ml	98
19) Benz(a)Anthracene	11.504	228	60458	623.97	ng/ml	99
20) Chrysene	11.553	228	57833	612.04	ng/ml	95
22) Benzo(b)Fluoranthene	13.263	252	65946	723.44	ng/ml	65
23) Benzo(k)Fluoranthene	13.309	252	24131	267.12	ng/ml	54
24) Benzo(b+k)Fluoranthene	13.263	252	90359	991.68	ng/ml	64
25) Benzo(e) Pyrene	13.791	252	32820	361.80	ng/mL	86
26) Benzo(a)Pyrene	13.895	252	57036	728.00	ng/ml	61
27) Perylene	14.067	252	17386	229.46	ng/mL	88
29) Indeno(1,2,3-cd)Pyrene	16.365	276	34927	458.42	ng/ml	51
30) Dibenz(a,h)Anthracene	16.421	278	4380	62.96	ng/ml	61
31) Benzo (g,h,i) Perylene	16.956	276	36391	444.10	ng/ml	82

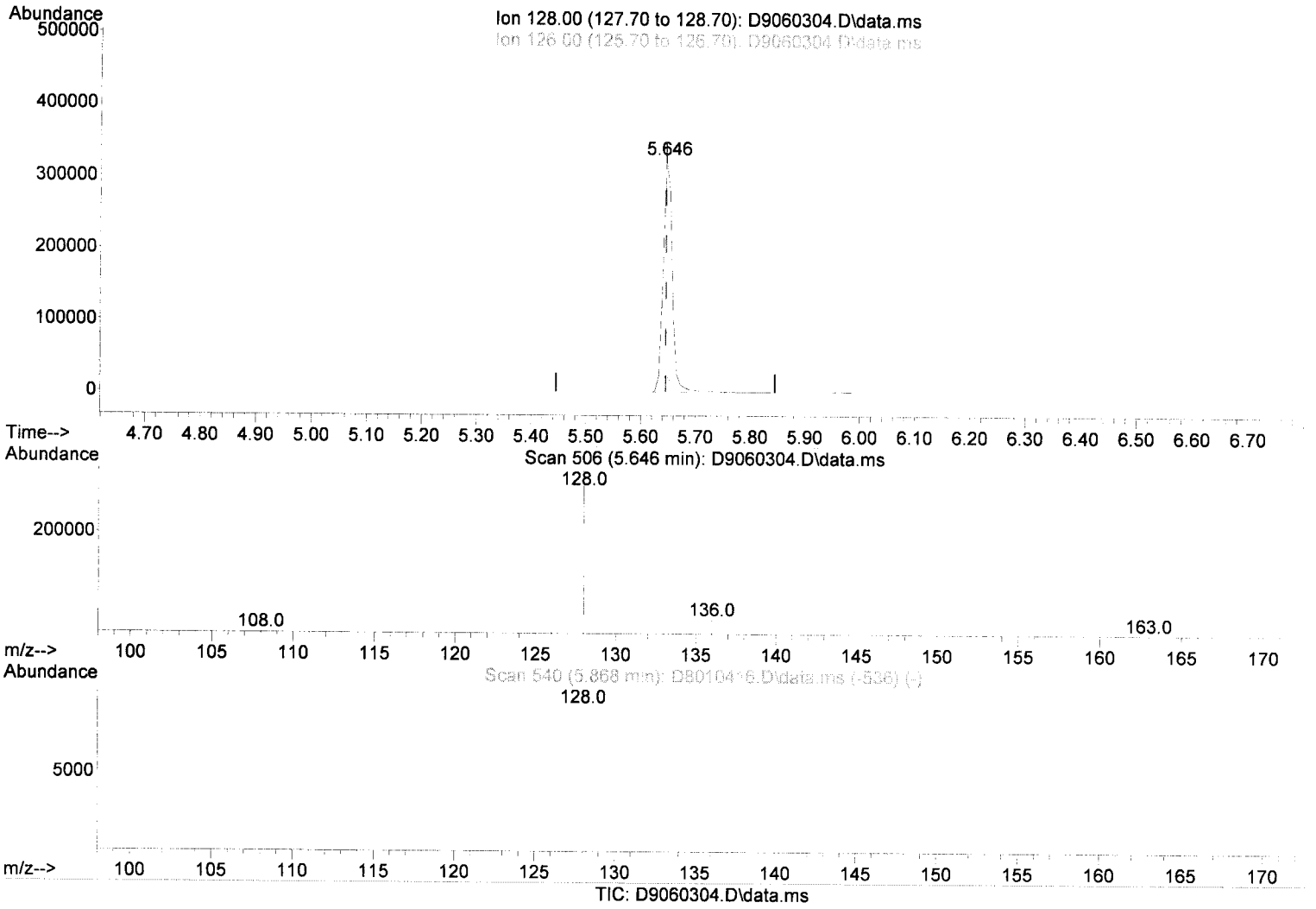
(#) = qualifier out of range (m) = manual integration (+) = signals summed

6-03-19 BSJ

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060304.D
Acq On : 3 Jun 2019 11:04 am
Operator : bsj
Sample : A9E0902-01RE1@1000
Misc : 1000x Solid 10.06g/5mL SIM PAH (#2,12,15,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 03 11:30:58 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(2) Naphthlene (T)

5.646min (+ 0.000) 2391.56 ng/ml

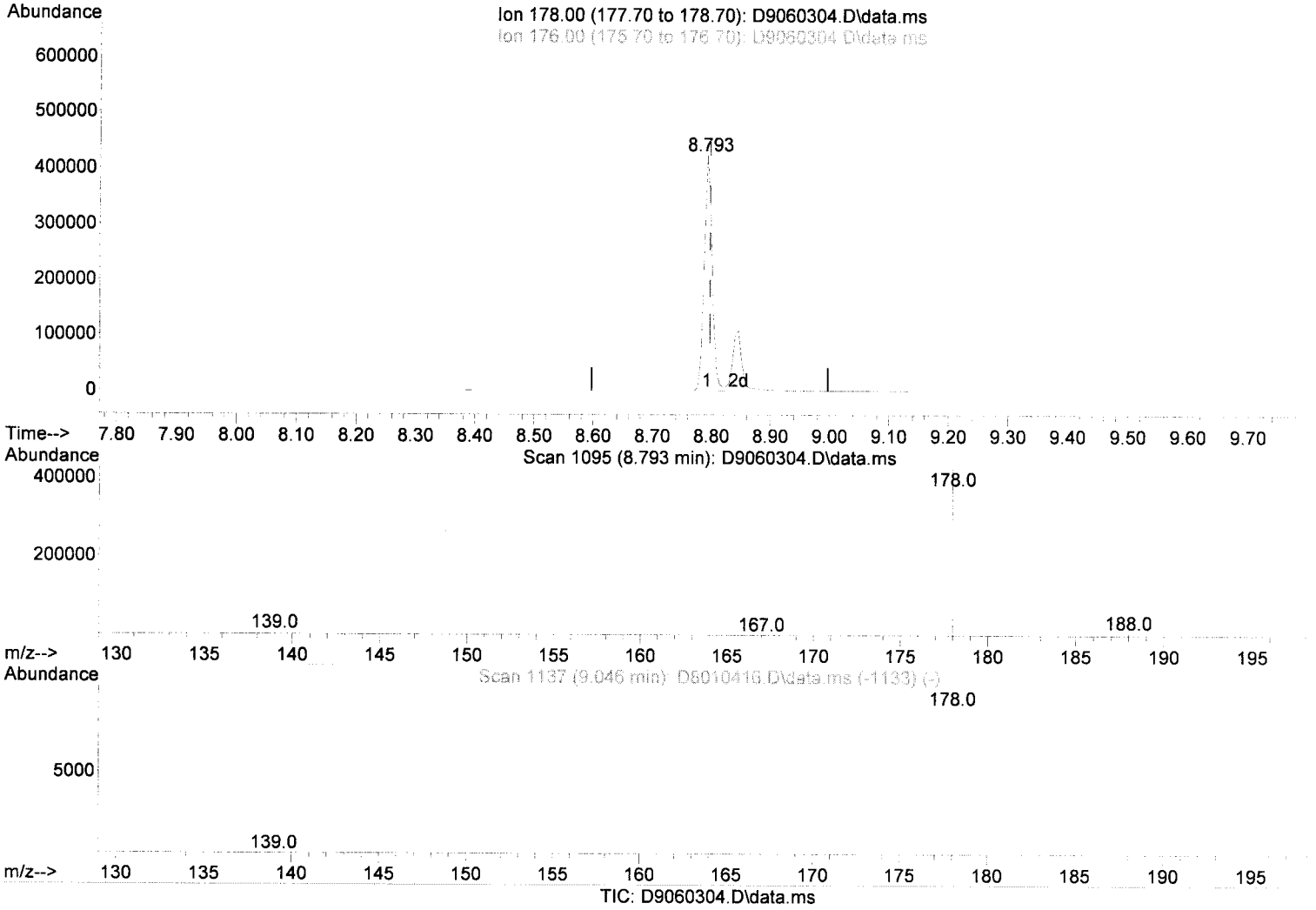
response 380163

Ion	Exp%	Act%
128.00	100.00	100.00
126.00	7.50	7.20
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060304.D
Acq On : 3 Jun 2019 11:04 am
Operator : bsj
Sample : A9E0902-01RE1@1000
Misc : 1000x Solid 10.06g/5mL SIM PAH (#2,12,15,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 03 11:30:58 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



TIC: D9060304.D\data.ms

(12) Phenanthrene (T)

8.793min (-0.005) 2948.07 ng/ml

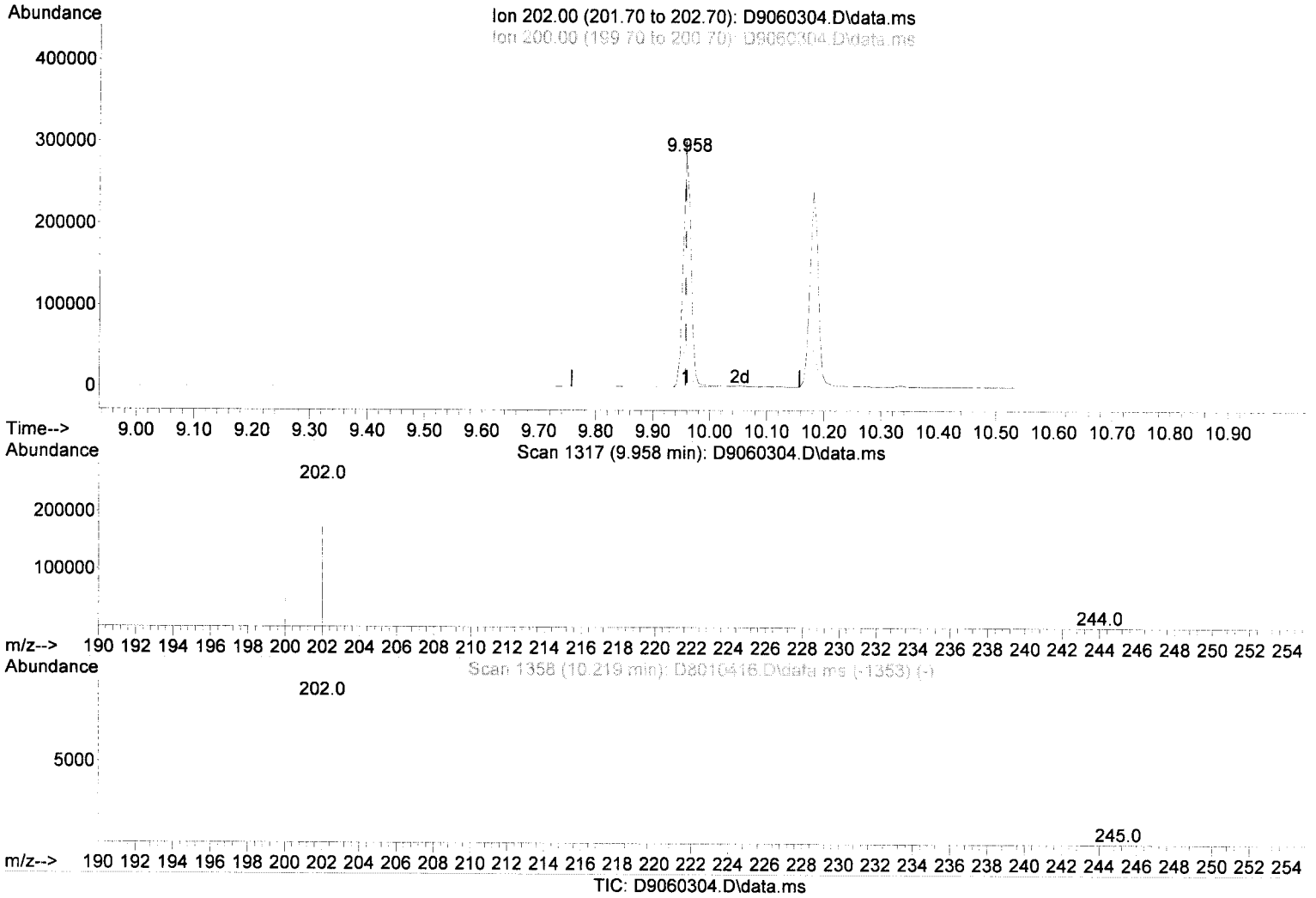
response 401292

Ion	Exp%	Act%
178.00	100.00	100.00
176.00	18.50	17.80
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060304.D
Acq On : 3 Jun 2019 11:04 am
Operator : bsj
Sample : A9E0902-01RE1@1000
Misc : 1000x Solid 10.06g/5mL SIM PAH (#2,12,15,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 03 11:30:58 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(15) Fluoranthene (T)

9.958min (+ 0.000) 2371.32 ng/ml

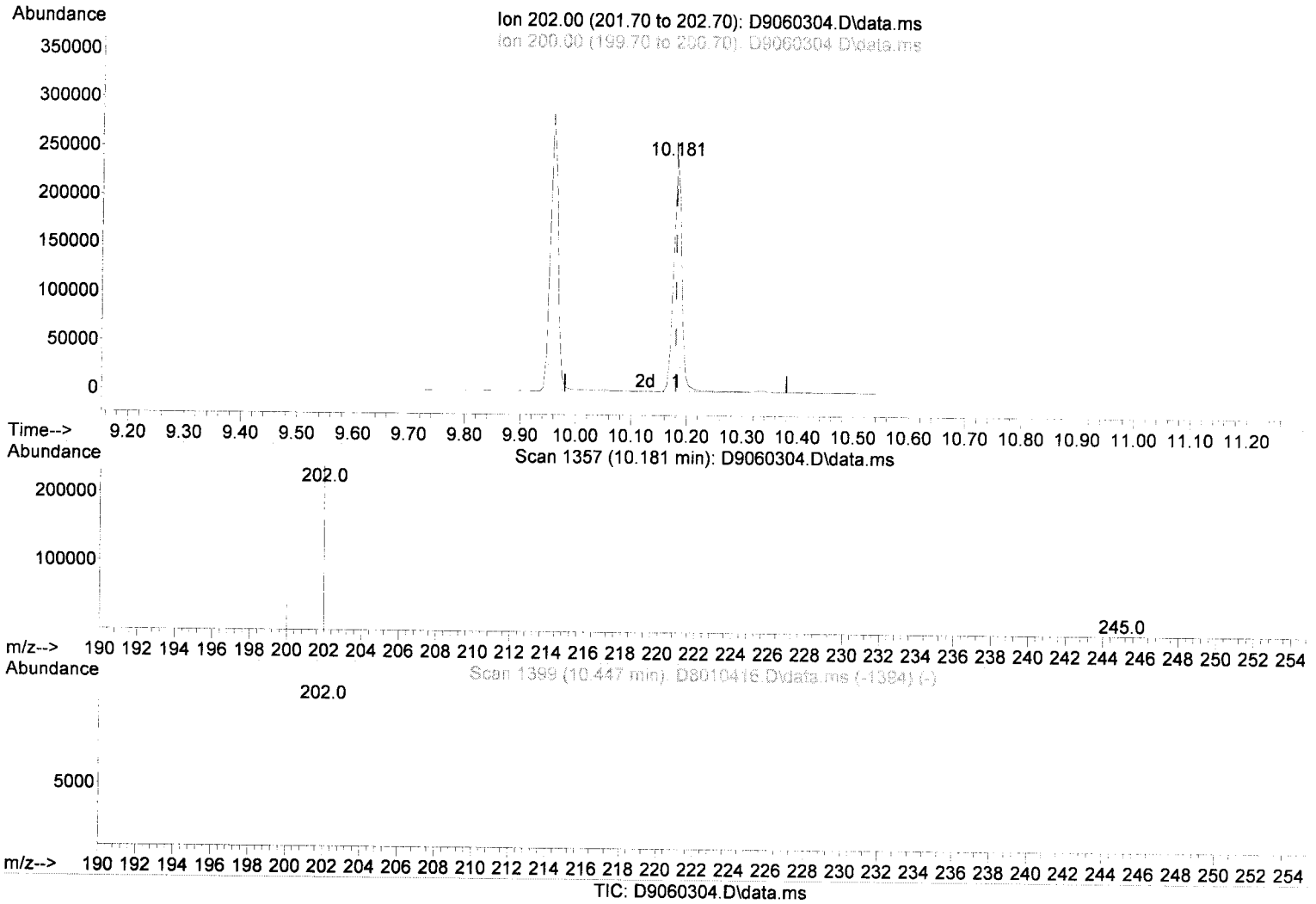
response 275059

Ion	Exp%	Act%
202.00	100.00	100.00
200.00	18.10	18.37
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060304.D
Acq On : 3 Jun 2019 11:04 am
Operator : bsj
Sample : A9E0902-01RE1@1000
Misc : 1000x Solid 10.06g/5mL SIM PAH (#2,12,15,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 03 11:30:58 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



(16) Pyrene (T)

10.181min (+ 0.000) 2150.68 ng/ml

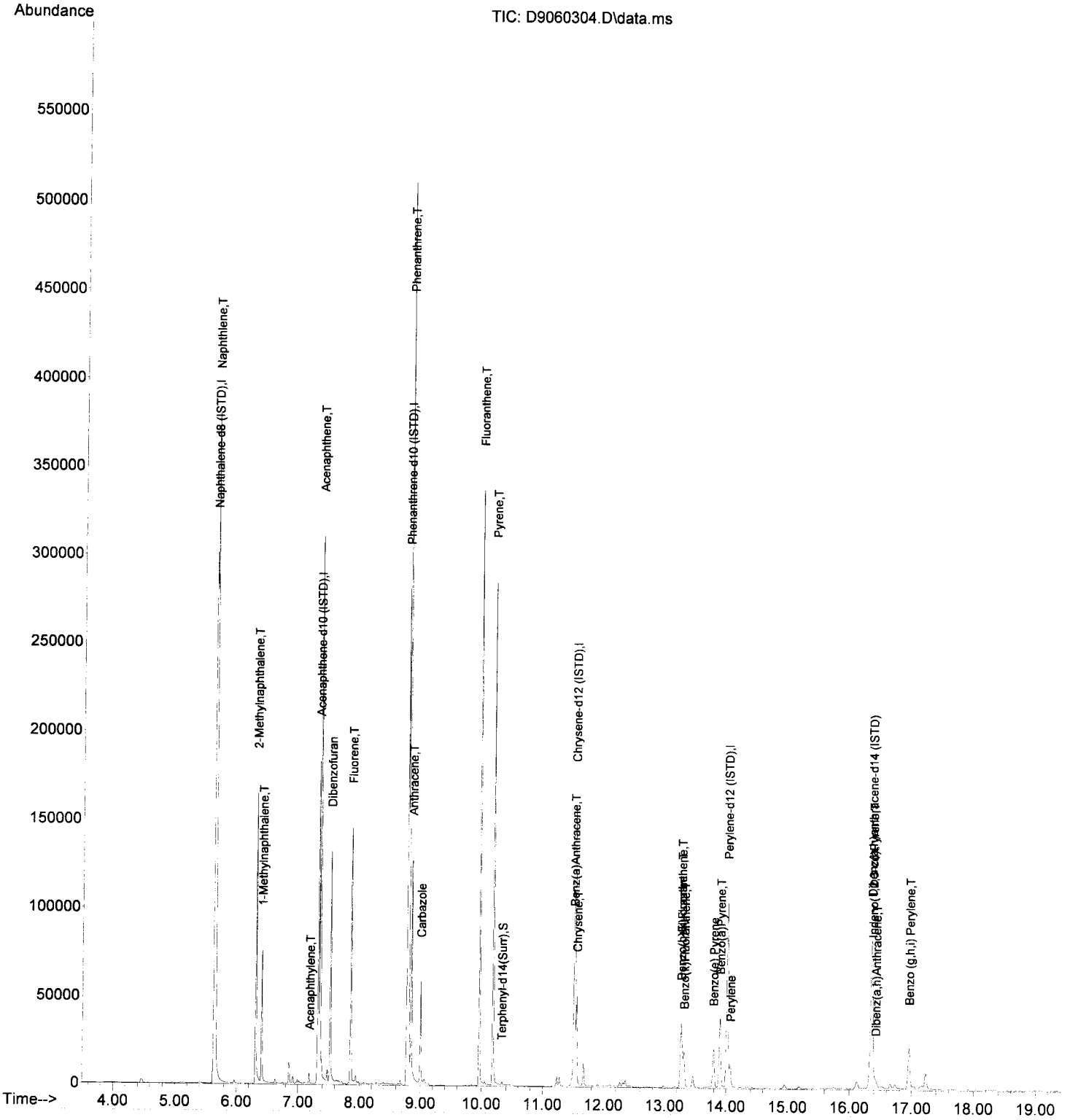
response 248251

Ion	Exp%	Act%
202.00	100.00	100.00
200.00	18.40	19.08
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060304.D
Acq On : 3 Jun 2019 11:04 am
Operator : bsj
Sample : A9E0902-01RE1@1000
Misc : 1000x Solid 10.06g/5mL SIM PAH (#2,12,15,
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 03 11:30:58 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060305.D
Acq On : 3 Jun 2019 11:31 am
Operator : bsj
Sample : 9051465-DUP2@1000
Misc : 1000x Solid 10.13g/5mL SIM PAH
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 03 11:55:54 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Naphthalene-d8 (ISTD)	5.632	136	333820	2000.00 ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.325	164	162318	2000.00 ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.772	188	256800	2000.00 ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.518	240	171133	2000.00 ng/ml	0.00
21) Perylene-d12 (ISTD)	14.015	264	149073	2000.00 ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.348	292	128162	2000.00 ng/mL	-0.01
System Monitoring Compounds					
6) 2-Fluorobiphenyl(Surr)	0.000	172	0	0.00 ng/ml	
18) Terphenyl-d14(Surr)	0.000	244	0	0.00 ng/ml	
Target Compounds					Qvalue
2) Naphthlene	5.646	128	320993	1855.15 ng/ml	99
3) 2-Methylnaphthalene	6.310	142	75209	672.29 ng/ml	98
4) 1-Methylnaphthalene	6.407	142	36869	339.84 ng/ml	100
7) Acenaphthylene	7.184	152	4301	29.34 ng/ml	94
8) Acenaphthene	7.349	153	104753	1067.20 ng/ml	97
9) Dibenzofuran	7.521	168	85116	650.31 ng/mL	89
10) Fluorene	7.856	166	61952	608.25 ng/ml	99
12) Phenanthrene	8.793	178	333659	2256.59 ng/ml	98
13) Anthracene	8.841	178	102684	687.71 ng/ml	98
14) Carbazole	8.995	167	44616	386.42 ng/mL	99
15) Fluoranthene	9.958	202	232062	1841.79 ng/ml	99
16) Pyrene	10.181	202	210816	1681.36 ng/ml	98
19) Benz(a)Anthracene	11.504	228	51048	494.37 ng/ml	98
20) Chrysene	11.553	228	48894	485.54 ng/ml	95
22) Benzo(b)Fluoranthene	13.263	252	56650	588.60 ng/ml	66
23) Benzo(k)Fluoranthene	13.309	252	20111	210.85 ng/ml	54
24) Benzo(b+k)Fluoranthene	13.263	252	76983	800.20 ng/ml	64
25) Benzo(e) Pyrene	13.797	252	27850	290.77 ng/mL	86
26) Benzo(a)Pyrene	13.895	252	48308	583.99 ng/ml	61
27) Perylene	14.067	252	14745	184.31 ng/mL	90
29) Indeno(1,2,3-cd)Pyrene	16.359	276	29586	367.19 ng/ml	50
30) Dibenz(a,h)Anthracene	16.421	278	3749	50.96 ng/ml	61
31) Benzo (g,h,i) Perylene	16.961	276	30513	352.11 ng/ml	84

S-01

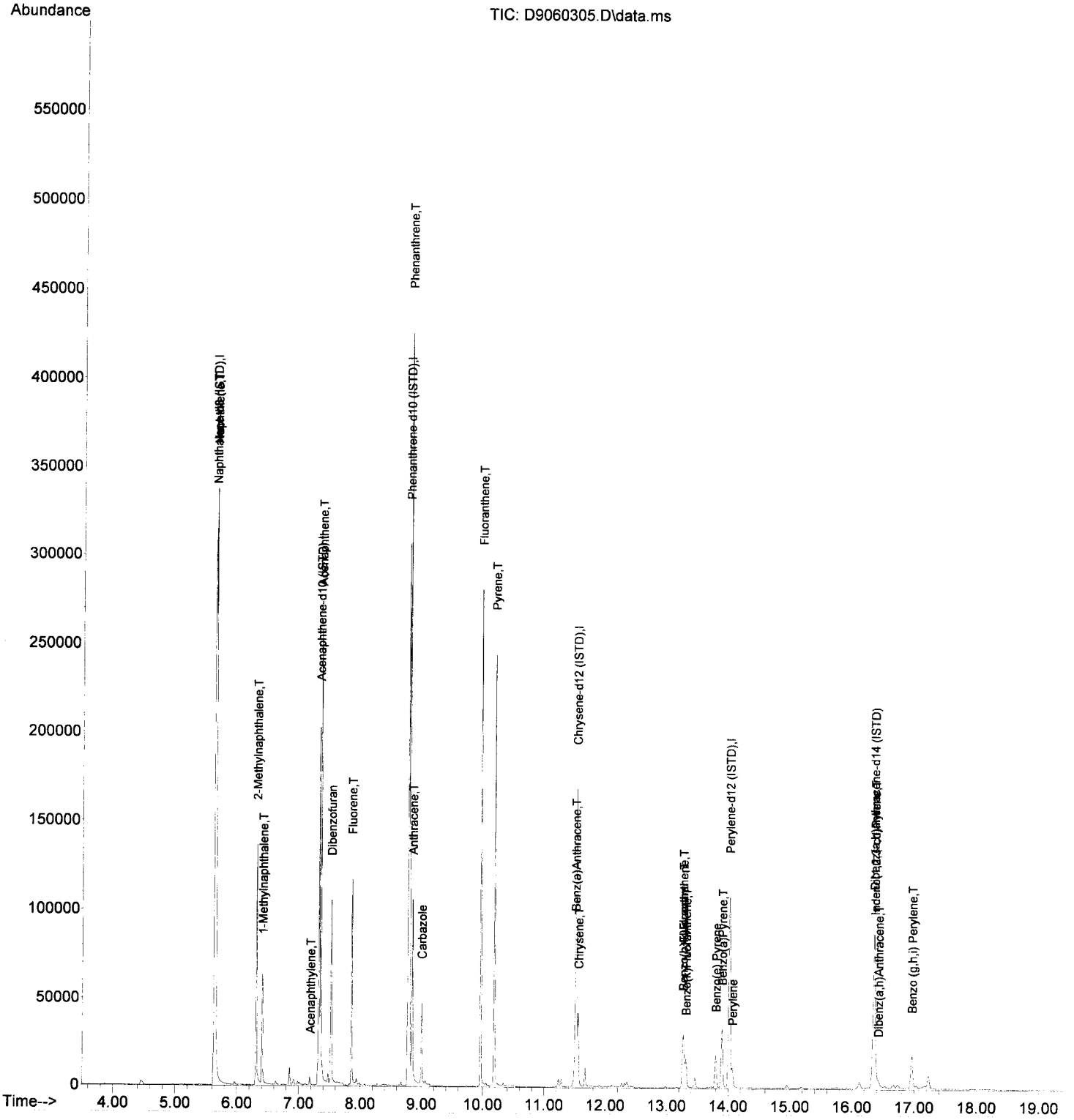
(#) = qualifier out of range (m) = manual integration (+) = signals summed

6-03-19 BSJ

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060305.D
Acq On : 3 Jun 2019 11:31 am
Operator : bsj
Sample : 9051465-DUP2@1000
Misc : 1000x Solid 10.13g/5mL SIM PAH
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 03 11:55:54 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060306.D
Acq On : 3 Jun 2019 11:57 am
Operator : bsj
Sample : 9051421-BLK2
Misc : 1x Water 1100mL/2mL SIM PAH (Dx Ext)
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 03 12:17:49 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Naphthalene-d8 (ISTD)	5.626	136	338189	2000.00 ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.324	164	166121	2000.00 ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.771	188	265010	2000.00 ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.517	240	174799	2000.00 ng/ml	0.00
21) Perylene-d12 (ISTD)	14.016	264	145948	2000.00 ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.350	292	121801	2000.00 ng/mL	0.00
System Monitoring Compounds					
6) 2-Fluorobiphenyl(Surr)	0.000	172	0	0.00 ng/ml	
18) Terphenyl-d14(Surr)	0.000	244	0	0.00 ng/ml	
Target Compounds					Qvalue
2) Naphthlene	5.646	128	1715	9.78 ng/ml#	78
3) 2-Methylnaphthalene	6.308	142	323	2.85 ng/ml	92
4) 1-Methylnaphthalene	6.406	142	244	2.22 ng/ml#	5
7) Acenaphthylene	0.000		0	N.D.	
8) Acenaphthene	0.000		0	N.D.	
9) Dibenzofuran	0.000		0	N.D.	
10) Fluorene	0.000		0	N.D.	
12) Phenanthrene	8.792	178	280	1.84 ng/ml#	1
13) Anthracene	8.792	178	280	1.82 ng/ml#	1
14) Carbazole	0.000		0	N.D.	
15) Fluoranthene	0.000		0	N.D.	
16) Pyrene	0.000		0	N.D.	
19) Benz(a)Anthracene	11.517	228	441	4.18 ng/ml#	55
20) Chrysene	11.517	228	441	4.29 ng/ml#	55
22) Benzo(b)Fluoranthene	0.000		0	N.D.	
23) Benzo(k)Fluoranthene	0.000		0	N.D.	
24) Benzo(b+k)Fluoranthene	0.000		0	N.D.	
25) Benzo(e) Pyrene	0.000		0	N.D.	
26) Benzo(a)Pyrene	0.000		0	N.D.	
27) Perylene	14.016	252	436	5.57 ng/mL#	1
29) Indeno(1,2,3-cd)Pyrene	0.000		0	N.D.	
30) Dibenz(a,h)Anthracene	0.000		0	N.D.	
31) Benzo (g,h,i) Perylene	0.000		0	N.D.	

0-22

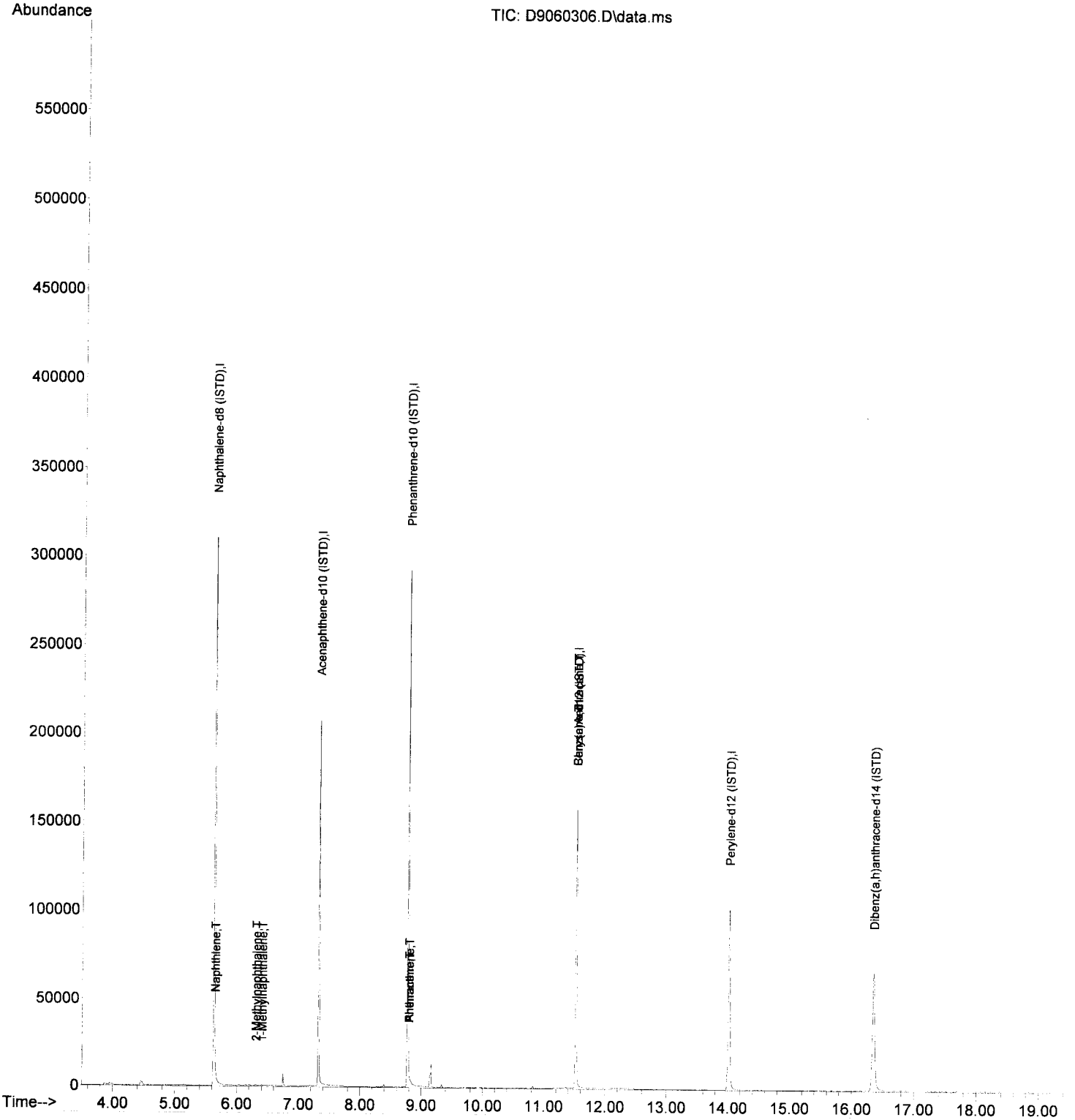
(#) = qualifier out of range (m) = manual integration (+) = signals summed

6-03-19

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060306.D
Acq On : 3 Jun 2019 11:57 am
Operator : bsj
Sample : 9051421-BLK2
Misc : 1x Water 1100mL/2mL SIM PAH (Dx Ext)
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 03 12:17:49 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060308.D
Acq On : 3 Jun 2019 1:27 pm
Operator : bsj
Sample : 9060489-BLK1
Misc : 1x Soil 12.00g/5mL SIM PAH
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 03 14:39:43 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Naphthalene-d8 (ISTD)	5.632	136	302927	2000.00 ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.324	164	147813	2000.00 ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.771	188	231999	2000.00 ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.525	240	146693	2000.00 ng/ml	0.00
21) Perylene-d12 (ISTD)	14.026	264	123833	2000.00 ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.359	292	103837	2000.00 ng/mL	0.00
System Monitoring Compounds					
6) 2-Fluorobiphenyl(Surr)	6.661	172	101071	922.57 ng/ml	0.00
18) Terphenyl-d14(Surr)	10.331	244	64623	832.50 ng/ml	0.00
Target Compounds					Qvalue
2) Naphthlene	5.645	128	204	1.30 ng/ml#	78
3) 2-Methylnaphthalene	0.000		0	N.D.	
4) 1-Methylnaphthalene	0.000		0	N.D.	
7) Acenaphthylene	0.000		0	N.D.	
8) Acenaphthene	0.000		0	N.D.	
9) Dibenzofuran	0.000		0	N.D.	
10) Fluorene	0.000		0	N.D.	
12) Phenanthrene	0.000		0	N.D.	
13) Anthracene	0.000		0	N.D.	
14) Carbazole	0.000		0	N.D.	
15) Fluoranthene	0.000		0	N.D.	
16) Pyrene	0.000		0	N.D.	
19) Benz(a)Anthracene	11.525	228	360	4.07 ng/ml#	55
20) Chrysene	11.525	228	360	4.17 ng/ml#	55
22) Benzo(b)Fluoranthene	0.000		0	N.D.	
23) Benzo(k)Fluoranthene	0.000		0	N.D.	
24) Benzo(b+k)Fluoranthene	0.000		0	N.D.	
25) Benzo(e) Pyrene	0.000		0	N.D.	
26) Benzo(a)Pyrene	0.000		0	N.D.	
27) Perylene	14.021	252	405	6.09 ng/mL#	1
29) Indeno(1,2,3-cd)Pyrene	0.000		0	N.D.	
30) Dibenz(a,h)Anthracene	0.000		0	N.D.	
31) Benzo (g,h,i) Perylene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

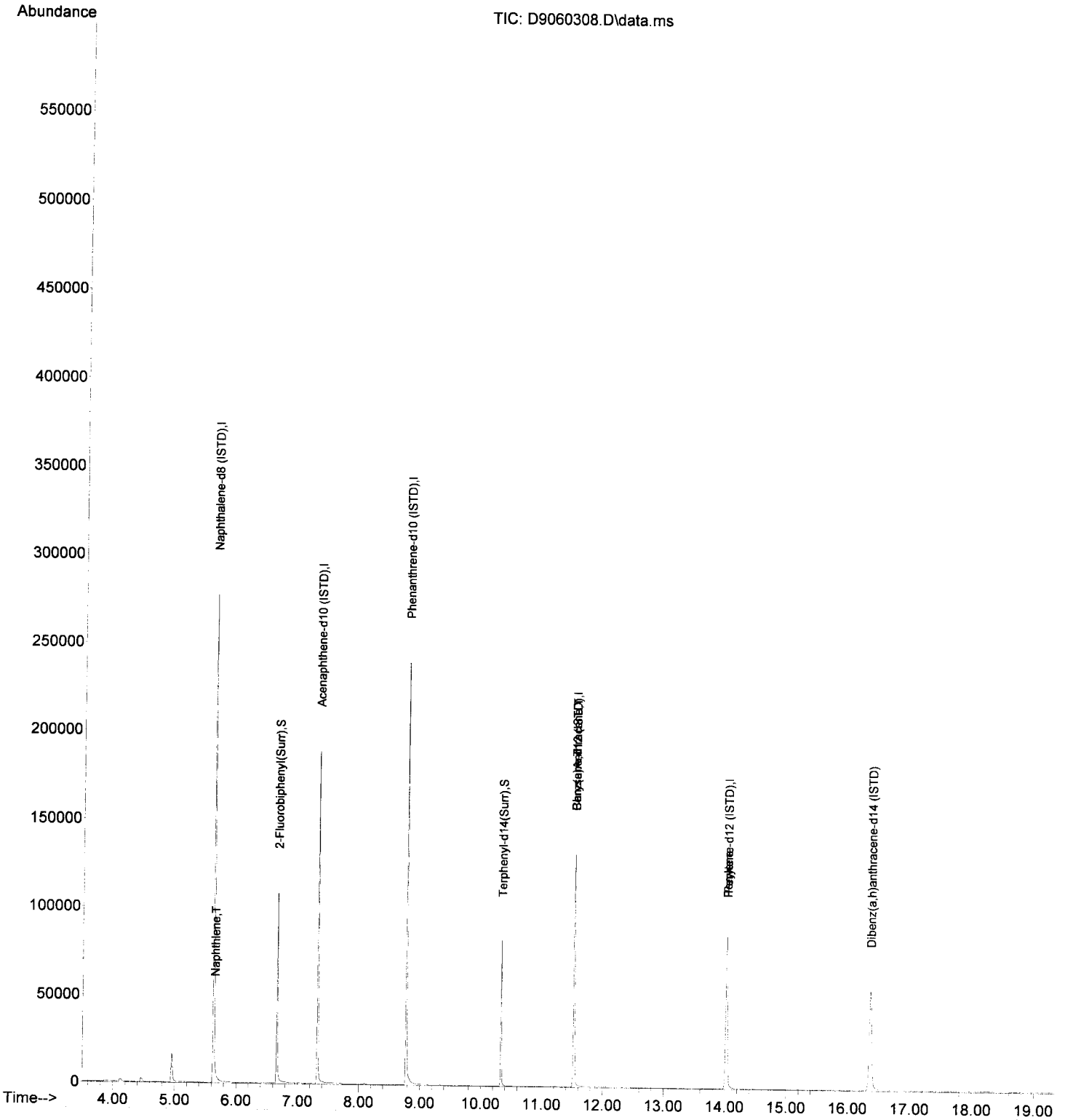
✓

6-0379

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060308.D
Acq On : 3 Jun 2019 1:27 pm
Operator : bsj
Sample : 9060489-BLK1
Misc : 1x Soil 12.00g/5mL SIM PAH
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 03 14:39:43 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060309.D
Acq On : 3 Jun 2019 1:54 pm
Operator : bsj
Sample : 9060489-BS1
Misc : 1x Soil 10.00g/5mL SIM PAH
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 03 14:39:46 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8 (ISTD)	5.627	136	324997	2000.00	ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.325	164	155764	2000.00	ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.772	188	241780	2000.00	ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.518	240	157557	2000.00	ng/ml	0.00
21) Perylene-d12 (ISTD)	14.016	264	131980	2000.00	ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.354	292	111335	2000.00	ng/mL	0.00
System Monitoring Compounds						
6) 2-Fluorobiphenyl(Surr)	6.661	172	108891	943.21	ng/ml	0.00
18) Terphenyl-d14(Surr)	10.325	244	68075	816.50	ng/ml	0.00
Target Compounds						Qvalue
2) Naphthlene	5.646	128	264461	1569.92	ng/ml	99
3) 2-Methylnaphthalene	6.309	142	171905	1578.37	ng/ml	99
4) 1-Methylnaphthalene	6.407	142	165815	1569.91	ng/ml	98
7) Acenaphthylene	7.178	152	244962	1741.39	ng/ml	98
8) Acenaphthene	7.350	153	158055	1677.98	ng/ml	96
9) Dibenzofuran	7.521	168	215656	1716.99	ng/mL	88
10) Fluorene	7.856	166	170745	1746.91	ng/ml	99
12) Phenanthrene	8.793	178	226395	1626.27	ng/ml	98
13) Anthracene	8.846	178	237785	1691.47	ng/ml	98
14) Carbazole	8.995	167	203026	1867.65	ng/mL	99
15) Fluoranthene	9.958	202	209114	1762.76	ng/ml	99
16) Pyrene	10.180	202	210616	1784.12	ng/ml	98
19) Benz(a)Anthracene	11.504	228	155553	1636.25	ng/ml	96
20) Chrysene	11.554	228	155757	1680.02	ng/ml	96
22) Benzo(b)Fluoranthene	13.263	252	140056	1643.66	ng/ml	65
23) Benzo(k)Fluoranthene	13.315	252	138706	1642.58	ng/ml	60
24) Benzo(b+k)Fluoranthene	13.315	252	280071	3288.24	ng/ml	63
25) Benzo(e) Pyrene	0.000		0	N.D.		
26) Benzo(a)Pyrene	13.901	252	131322	1793.16	ng/ml	63
27) Perylene	14.016	252	1441	20.35	ng/mL#	1
29) Indeno(1,2,3-cd)Pyrene	16.365	276	109205	1560.20	ng/ml	62
30) Dibenz(a,h)Anthracene	16.432	278	108152	1692.32	ng/ml	62
31) Benzo (g,h,i) Perylene	16.961	276	113143	1502.98	ng/ml	80

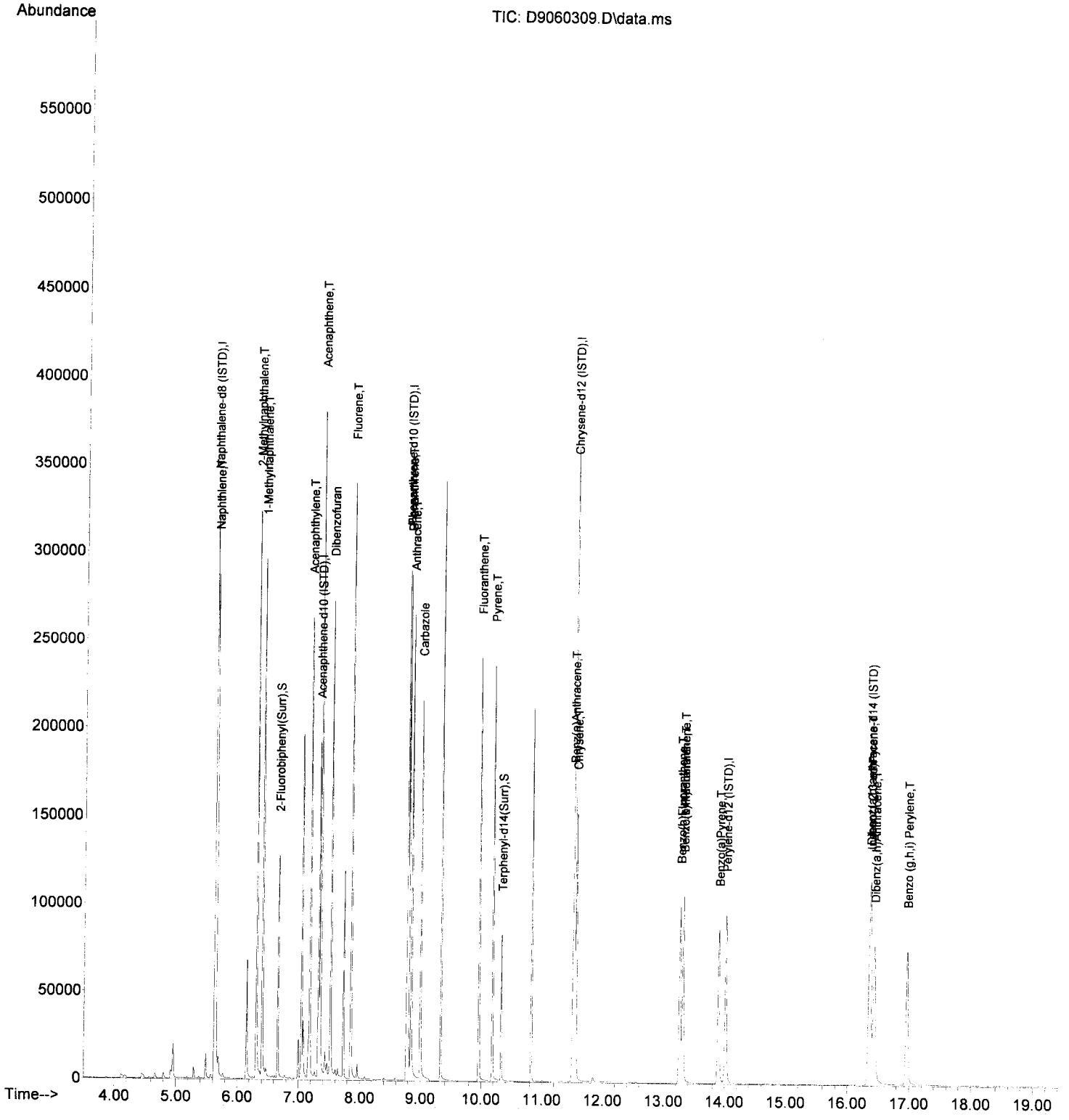
(#) = qualifier out of range (m) = manual integration (+) = signals summed

6-0319 BS

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060309.D
Acq On : 3 Jun 2019 1:54 pm
Operator : bsj
Sample : 9060489-BS1
Misc : 1x Soil 10.00g/5mL SIM PAH
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 03 14:39:46 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060321.D
Acq On : 3 Jun 2019 7:11 pm
Operator : bsj
Sample : 9060489-MS1@10
Misc : 10x Soil 10.90g/5mL SIM PAH (932-01)
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 04 08:45:59 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Naphthalene-d8 (ISTD)	5.632	136	328613	2000.00 ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.324	164	165719	2000.00 ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.771	188	273838	2000.00 ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.518	240	184617	2000.00 ng/ml	0.00
21) Perylene-d12 (ISTD)	14.016	264	163200	2000.00 ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.349	292	150692	2000.00 ng/mL	0.00
System Monitoring Compounds					
6) 2-Fluorobiphenyl(Surr)	6.660	172	11746	95.63 ng/ml	0.00
18) Terphenyl-d14(Surr)	10.326	244	8183	83.76 ng/ml	0.00
Target Compounds					Qvalue
2) Naphthlene	5.645	128	35238	206.88 ng/ml	99
3) 2-Methylnaphthalene	6.308	142	19330	175.53 ng/ml	100
4) 1-Methylnaphthalene	6.406	142	18543	173.63 ng/ml	100
7) Acenaphthylene	7.183	152	33070	220.97 ng/ml	99
8) Acenaphthene	7.349	153	20206	201.63 ng/ml	94
9) Dibenzofuran	7.521	168	24694	184.80 ng/mL	88
10) Fluorene	7.856	166	20019	192.51 ng/ml	100
12) Phenanthrene	8.792	178	62622	397.17 ng/ml	98
13) Anthracene	8.845	178	35434	222.55 ng/ml	98
14) Carbazole	8.999	167	26381	214.27 ng/mL	99
15) Fluoranthene	9.959	202	89625	667.06 ng/ml	99
16) Pyrene	10.181	202	111633	834.93 ng/ml	99
19) Benz(a)Anthracene	11.504	228	51435	461.74 ng/ml	97
20) Chrysene	11.553	228	62184	572.42 ng/ml	100
22) Benzo(b)Fluoranthene	13.264	252	60681	575.90 ng/ml	68
23) Benzo(k)Fluoranthene	13.310	252	34502	330.42 ng/ml	62
24) Benzo(b+k)Fluoranthene	13.264	252	95618	907.87 ng/ml	61
25) Benzo(e) Pyrene	13.798	252	31505	300.46 ng/mL	91
26) Benzo(a)Pyrene	13.896	252	54259	599.16 ng/ml	64
27) Perylene	14.068	252	10988	125.46 ng/mL	91
29) Indeno(1,2,3-cd)Pyrene	16.360	276	49445	521.92 ng/ml	68
30) Dibenz(a,h)Anthracene	16.427	278	19280	222.89 ng/ml	64
31) Benzo (g,h,i) Perylene	16.962	276	53846	528.47 ng/ml	81

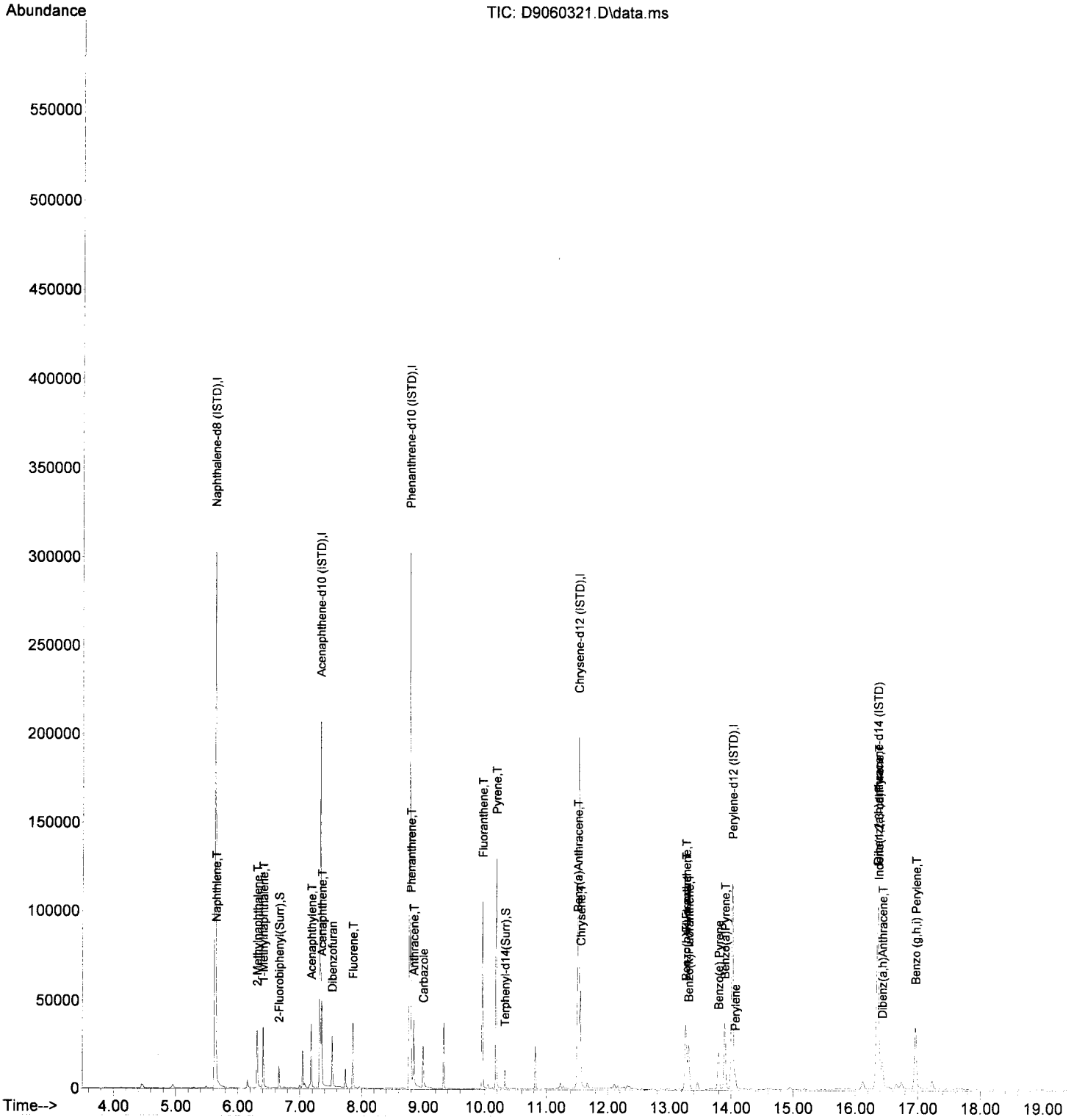
(#) = qualifier out of range (m) = manual integration (+) = signals summed

6-04-19 BSJ

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-06\9F03035\
Data File : D9060321.D
Acq On : 3 Jun 2019 7:11 pm
Operator : bsj
Sample : 9060489-MS1@10
Misc : 10x Soil 10.90g/5mL SIM PAH (932-01)
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 04 08:45:59 2019
Quant Method : C:\msdchem\1\methods\SV4_050919R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Fri May 31 18:09:49 2019
Response via : Initial Calibration
InstName : SV-GCMS4



APEX LABORATORIES, LLC
6700 SW Sandburg St. Tigard OR 97223 phone 503-718-2323

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Calibration Data

Sequence 9E08049 (A9E0902) SV-GCMS4

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence:	**9E08049**	Instrument:	**SV-GCMS4**
Date:	**05/08/19 14:06**	Calibration:	**A9E0902**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9E08049-TUN1	Water	QC	QC			A19D031	A19D323
2	9E08049-ICB1	Water	QC	QC			A19D031	
3	9E08049-CAL1	Water	QC	QC			A19D031	A19D053
4	9E08049-CAL2	Water	QC	QC			A19D031	A19D054
5	9E08049-CAL3	Water	QC	QC			A19D031	A19D055
6	9E08049-CAL4	Water	QC	QC			A19D031	A19D056
7	9E08049-CAL5	Water	QC	QC			A19D031	A19D057
8	9E08049-CAL6	Water	QC	QC			A19D031	A19D058
9	9E08049-CAL7	Water	QC	QC			A19D031	A19D059
10	9E08049-CAL8	Water	QC	QC			A19D031	A19D060
11	9E08049-CAL9	Water	QC	QC			A19D031	A19D061
12	9E08049-CALA	Water	QC	QC			A19D031	A19D062
13	9E08049-IBL1	Water	QC	QC			A19B027	
14	9E08049-ICV1	Water	QC	QC			A19B027	A19C239
15	9E08049-IBL2	Water	QC	QC			A19B027	

Data Entered By: BGS 5-09-19

Data Reviewed By: GJH 5/9/19

Comments:

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9E08049

Analysis Included

8270 SIM PAH
8270 SIM PAH (16)
8270 SIM Naphthalene
8270 SIM PAH (1-2mL FV)

INSTRUMENT SEQUENCE LOG

SampleID	SampleName	Matrix	STDID	ISTD ID	Analyzed
9E08049-TUN1	MS Tune	Water	A19D323	A19D031	5/8/2019 2:14:00PM
9E08049-ICB1	Initial Cal Blank	Water		A19D031	5/8/2019 2:39:00PM
9E08049-CAL1	Cal Standard	Water	A19D053	"	5/8/2019 3:06:00PM
9E08049-CAL2	Cal Standard	Water	A19D054	"	5/8/2019 3:33:00PM
9E08049-CAL3	Cal Standard	Water	A19D055	"	5/8/2019 4:00:00PM
9E08049-CAL4	Cal Standard	Water	A19D056	"	5/8/2019 4:27:00PM
9E08049-CAL5	Cal Standard	Water	A19D057	"	5/8/2019 4:53:00PM
9E08049-CAL6	Cal Standard	Water	A19D058	"	5/8/2019 5:20:00PM
9E08049-CAL7	Cal Standard	Water	A19D059	"	5/8/2019 5:47:00PM
9E08049-CAL8	Cal Standard	Water	A19D060	"	5/8/2019 6:14:00PM
9E08049-CAL9	Cal Standard	Water	A19D061	"	5/8/2019 6:40:00PM
9E08049-CALA	Cal Standard	Water	A19D062	"	5/8/2019 7:07:00PM
9E08049-ICV1	Initial Cal Check	Water	A19C239	"	5/8/2019 8:01:00PM

CALIBRATION STANDARD RECOVERIES

Calibration: A9E0902 Instrument: SV-GCMS4

8270 SIM PAH Sequence: 9E08049 Matrix: Water

9E08049-CAL1	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08049-CAL2	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08049-CAL3	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08049-CAL4	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08049-CAL5	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08049-CAL6	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08049-CAL7	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08049-CAL8	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08049-CAL9	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08049-CALA	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9E08049

Compounds listed above have recalculated recoveries outside 70-130% of the true values, and the calibration levels are above the reporting level. If no compounds are listed, all are OK. Please see the next section for quadatic fit compounds.

Analytes With Quadratic Curve Fits

Qualifier	iMDL	iMRL	Spike Amt	%Difference	OK?	Raise MRL to ?
				———	☐	☐ ———

Analytes listed above have quadratic curve fits. If they are using a weighting otpion, they must be checked against the requanted curve points to determine if the recalculated results are within limits (70-130 or as specified).

ICV RECOVERIES

Calibration: **A9E0902** Instrument: **SV-GCMS4**

8270 SIM PAH Sequence: **9E08049** Matrix: **Water**

9E08049-ICV1	Inst. MRL	ICV Level	Result	%Rec.	Qual

Compounds listed above have Initial Calibration Verification standard recoveries outside 70-130% of the true values. If no compounds are listed, all have passing recoveries.

Calibration Status Report SV-GCMS4

Method Path : C:\msdchem\1\methods\
Method File : SV4_050919.M
Title : EPA 8270 SIM PAH/PCP/PTH
Last Update : Thu May 09 08:52:03 2019
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	20	20	2000	P:\DATA\2019-05\9E08049\D9050803.D
2	50	50	2000	P:\DATA\2019-05\9E08049\D9050804.D
3	100	100	2000	P:\DATA\2019-05\9E08049\D9050805.D
4	200	200	2000	P:\DATA\2019-05\9E08049\D9050806.D
5	500	500	2000	P:\DATA\2019-05\9E08049\D9050807.D
6	1000	1000	2000	P:\DATA\2019-05\9E08049\D9050808.D
7	2000	2000	2000	P:\DATA\2019-05\9E08049\D9050809.D
8	4000	4000	2000	P:\DATA\2019-05\9E08049\D9050810.D
9	6000	6000	2000	P:\DATA\2019-05\9E08049\D9050811.D
10	8000	8000	2000	P:\DATA\2019-05\9E08049\D9050812.D

#	ID	Update Time	Quant Time	Acquisition Time
1	20	May 09 08:50 2019	May 08 15:33 2019	8 May 2019 3:06 pm
2	50	May 09 08:50 2019	May 08 16:05 2019	8 May 2019 3:33 pm
3	100	May 09 08:50 2019	May 08 16:20 2019	8 May 2019 4:00 pm
4	200	May 09 08:51 2019	May 08 16:46 2019	8 May 2019 4:27 pm
5	500	May 09 08:51 2019	May 09 08:45 2019	8 May 2019 4:53 pm
6	1000	May 09 08:51 2019	May 09 08:46 2019	8 May 2019 5:20 pm
7	2000	May 09 08:51 2019	May 09 08:46 2019	8 May 2019 5:47 pm
8	4000	May 09 08:51 2019	May 09 08:46 2019	8 May 2019 6:14 pm
9	6000	May 09 08:51 2019	May 09 08:46 2019	8 May 2019 6:40 pm
10	8000	May 09 08:52 2019	May 09 08:46 2019	8 May 2019 7:07 pm

SV4_050919.M Thu May 09 08:56:22 2019

5-09-19
BSS

Compound List Report SV-GCMS4

Method Path : C:\msdchem\1\methods\
Method File : SV4_050919.M
Title : EPA 8270 SIM PAH/PCP/PTH
Last Update : Thu May 09 08:52:03 2019
Response Via : Initial Calibration

Total Cpnds : 31

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	Naphthalene-d8 (ISTD)	136	5.756	1.000	A	1	A	R
2	T	Naphthlene	128	5.769	1.002	A	1	A	R
3	T	2-Methylnaphthalene	142	6.434	1.118	A	1	A	R
4	T	1-Methylnaphthalene	142	6.532	1.135	A	1	A	R
5	I	Acenaphthene-d10 (ISTD)	164	7.452	1.000	A	1	A	R
6	S	2-Fluorobiphenyl(Surr)	172	6.791	0.911	A	1	A	R
7	T	Acenaphthylene	152	7.317	0.982	A	1	A	R
8	T	Acenaphthene	153	7.483	1.004	A	1	A	R
9		Dibenzofuran	168	7.654	1.027	A	1	A	R
10	T	Fluorene	166	7.989	1.072	A	1	A	R
11	I	Phenanthrene-d10 (ISTD)	188	8.910	1.000	A	1	A	R
12	T	Phenanthrene	178	8.931	1.002	A	1	A	R
13	T	Anthracene	178	8.985	1.008	A	1	A	R
14		Carbazole	167	9.133	1.025	A	1	A	R
15	T	Fluoranthene	202	10.103	1.134	A	1	A	R
16	T	Pyrene	202	10.326	1.159	A	1	A	R
17	I	Chrysene-d12 (ISTD)	240	11.720	1.000	A	1	A	R
18	S	Terphenyl-d14(Surr)	244	10.465	0.893	A	1	A	R
19	T	Benz(a)Anthracene	228	11.699	0.998	A	1	A	R
20	T	Chrysene	228	11.756	1.003	A	1	A	R
21	I	Perylene-d12 (ISTD)	264	14.313	1.000	A	1	A	R
22	T	Benzo(b)Fluoranthene	252	13.543	0.946	A	1	A	R
23	T	Benzo(k)Fluoranthene	252	13.595	0.950	A	1	A	R
24	T	Benzo(b+k)Fluoranthene	252	13.595	0.950	A	1	A	R
25		Benzo(e) Pyrene	252	14.095	0.985	A	1	A	R
26	T	Benzo(a)Pyrene	252	14.198	0.992	A	1	A	R
27		Perylene	252	14.370	1.004	A	1	A	R
28	I	Dibenz(a,h)anthracene-d14 (...	292	16.727	1.000	A	1	A	R
29	T	Indeno(1,2,3-cd)Pyrene	276	16.738	1.001	A	1	A	R
30	T	Dibenz(a,h)Anthracene	278	16.800	1.004	A	1	A	R
31	T	Benzo (g,h,i) Perylene	276	17.290	1.034	A	1	A	R

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

SV4_050919.M Thu May 09 08:56:05 2019

5-9-19

Response Factor Report SV-GCMS4

Method Path : C:\msdchem\1\methods\
Method File : SV4_050919.M
Title : EPA 8270 SIM PAH/PCP/PTH
Last Update : Thu May 09 08:52:03 2019
Response Via : Initial Calibration

Calibration Files
20 =D9050803.D 50 =D9050804.D 100 =D9050805.D 200 =D9050806.D 500 =D9050807.D 1000=D9050808.D 2000=D9050809.D
4000=D9050810.D 6000=D9050811.D 8000=D9050812.D

		Compound	20	50	100	200	500	1000	2000	4000	6000	8000	Avg	%RSD
														4.52
1)	I	Naphthalene-d8 (ISTD)	----------ISTD----------											
2)	T	Naphthlene	1.006	1.024	1.060	1.059	1.048	1.022	1.036	1.041	1.033	1.037	1.037	1.61
3)	T	2-Methylnaphth...	0.629	0.660	0.668	0.675	0.674	0.669	0.673	0.687	0.674	0.693	0.670	2.56
4)	T	1-Methylnaphth...	0.601	0.632	0.652	0.663	0.659	0.650	0.657	0.671	0.651	0.664	0.650	3.08
														5.61
5)	I	Acenaphthene-d10 (...	----------ISTD----------											
6)	S	2-Fluorobiphen...	1.387	1.446	1.535	1.459	1.520	1.478	1.492	1.549	1.439	1.518	1.482	3.39
7)	T	Acenaphthylene	1.721	1.762	1.799	1.766	1.858	1.799	1.837	1.847	1.814	1.858	1.806	2.55
8)	T	Acenaphthene	1.150	1.177	1.225	1.217	1.234	1.219	1.216	1.211	1.222	1.224	1.209	2.13
9)		Dibenzofuran	1.483	1.572	1.632	1.622	1.668	1.611	1.634	1.646	1.622	1.638	1.613	3.21
10)	T	Fluorene	1.155	1.207	1.255	1.262	1.295	1.246	1.245	1.290	1.298	1.297	1.255	3.65
														7.65
11)	I	Phenanthrene-d10 (...	----------ISTD----------											
12)	T	Phenanthrene	1.178	1.159	1.153	1.150	1.167	1.133	1.132	1.155	1.142	1.148	1.152	1.25
13)	T	Anthracene	1.127	1.118	1.144	1.142	1.184	1.136	1.163	1.212	1.193	1.208	1.163	2.96
14)		Carbazole	0.907	0.905	0.924	0.944	0.971	0.917	0.887	0.739			0.899	7.75
15)	T	Fluoranthene	0.945	0.948	0.984	0.977	1.007	0.954	0.977	1.006	0.992	1.022	0.981	2.69
16)	T	Pyrene	0.944	0.959	0.972	0.980	0.991	0.938	0.961	1.006	1.000	1.014	0.977	2.69
														11.64
17)	I	Chrysene-d12 (ISTD)	----------ISTD----------											
18)	S	Terphenyl-d14(...	1.035	1.077	1.070	1.027	1.081	1.062	1.055	1.095	1.045	1.037	1.058	2.11
19)	T	Benz(a)Anthracene	1.402	1.228	1.212	1.181	1.205	1.160	1.163	1.172	1.168	1.178	1.207	5.97
20)	T	Chrysene	1.154	1.160	1.204	1.192	1.211	1.171	1.166	1.191	1.145	1.174	1.177	1.87
														6.72
21)	I	Perylene-d12 (ISTD)	----------ISTD----------											
22)	T	Benzo(b)Fluora...	1.192	1.210	1.240	1.283	1.301	1.291	1.274	1.381	1.356	1.385	1.291	5.19
23)	T	Benzo(k)Fluora...	1.171	1.200	1.221	1.234	1.285	1.288	1.289	1.356	1.370	1.382	1.280	5.73
24)	T	Benzo(b+k)Fluo...	1.204	1.214	1.234	1.264	1.296	1.292	1.283	1.370	1.365	1.385	1.291	5.02
25)		Benzo(e) Pyrene	1.231	1.234	1.262	1.279	1.302	1.298	1.272	1.326	1.328	1.317	1.285	2.76
26)	T	Benzo(a)Pyrene	0.990	1.000	1.036	1.066	1.096	1.134	1.150	1.202	1.196	1.228	1.110	7.71
27)		Perylene	1.038	1.017	1.060	1.080	1.086	1.084	1.078	1.103	1.090	1.097	1.073	2.54
														6.80
28)		Dibenz(a,h)anthrac...	----------ISTD----------											
29)	T	Indeno(1,2,3-c...	1.268	1.236	1.271	1.259	1.303	1.265	1.238	1.255	1.241	1.238	1.257	1.65
30)	T	Dibenz(a,h)Ant...	1.014	1.058	1.119	1.132	1.166	1.154	1.158	1.195	1.236	1.249	1.148	6.34
31)	T	Benzo (g,h,i) ...	1.308	1.317	1.353	1.334	1.411	1.372	1.356	1.369	1.383	1.322	1.352	2.40

(#) = Out of Range

529.9

BDS

Evaluate Continuing Calibration Report

Data Path : P:\DATA\2019-05\9E08049_Requant\
Data File : D9050803.D
Acq On : 8 May 2019 3:06 pm
Operator : bsj
Sample : 9E08049-CAL1
Misc : 1x A19D053@20 .
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 09 09:38:48 2019
Quant Method : C:\msdchem\1\methods\SV4_050919.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu May 09 08:52:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Naphthalene-d8 (ISTD)	2000.000	2000.000	0.0	100	0.00
2	T	Naphthlene	20.000	19.401	3.0	100	0.00
3	T	2-Methylnaphthalene	20.000	18.770	6.2	100	0.00
4	T	1-Methylnaphthalene	20.000	18.504	7.5	100	0.00
5	I	Acenaphthene-d10 (ISTD)	2000.000	2000.000	0.0	100	0.00
6	S	2-Fluorobiphenyl(Surr)	20.000	18.731	6.3	100	0.00
7	T	Acenaphthylene	20.000	19.068	4.7	100	0.00
8	T	Acenaphthene	20.000	19.023	4.9	100	0.00
9		Dibenzofuran	20.000	18.406	8.0	100	0.00
10	T	Fluorene	20.000	18.423	7.9	100	0.00
11	I	Phenanthrene-d10 (ISTD)	2000.000	2000.000	0.0	100	0.00
12	T	Phenanthrene	20.000	20.465	-2.3	100	0.00
13	T	Anthracene	20.000	19.391	3.0	100	0.00
14		Carbazole	20.000	20.169	-0.8	100	0.00
15	T	Fluoranthene	20.000	19.251	3.7	100	0.00
16	T	Pyrene	20.000	19.326	3.4	100	0.00
17	I	Chrysene-d12 (ISTD)	2000.000	2000.000	0.0	100	0.00
18	S	Terphenyl-d14(Surr)	20.000	19.561	2.2	100	0.00
19	T	Benz(a)Anthracene	20.000	23.235	-16.2	100	0.00
20	T	Chrysene	20.000	19.612	1.9	100	0.00
21	I	Perylene-d12 (ISTD)	2000.000	2000.000	0.0	100	0.00
22	T	Benzo(b)Fluoranthene	20.000	18.470	7.7	100	-0.02
23	T	Benzo(k)Fluoranthene	20.000	18.306	8.5	100	-0.01
24	T	Benzo(b+k)Fluoranthene	40.000	37.443	6.4	100	-0.01
25		Benzo(e) Pyrene	20.000	19.168	4.2	100	-0.01
26	T	Benzo(a)Pyrene	20.000	17.850	10.7	100	-0.02
27		Perylene	20.000	19.342	3.3	100	-0.01
28		Dibenz(a,h)anthracene-d14 (	2000.000	2000.000	0.0	100	-0.01
29	T	Indeno(1,2,3-cd)Pyrene	20.000	20.164	-0.8	100	-0.02
30	T	Dibenz(a,h)Anthracene	20.000	17.663	11.7	100	-0.01
31	T	Benzo (g,h,i) Perylene	20.000	19.341	3.3	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

5-09-19 BSJ

Evaluate Continuing Calibration Report

Data Path : P:\DATA\2019-05\9E08049_Requant\
Data File : D9050804.D
Acq On : 8 May 2019 3:33 pm
Operator : bsj
Sample : 9E08049-CAL2
Misc : 1x A19D054@50
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 09 09:38:52 2019
Quant Method : C:\msdchem\1\methods\SV4_050919.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu May 09 08:52:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Naphthalene-d8 (ISTD)	2000.000	2000.000	0.0	100	0.00
2	T	Naphthlene	50.000	49.385	1.2	100	0.00
3	T	2-Methylnaphthalene	50.000	49.202	1.6	100	0.00
4	T	1-Methylnaphthalene	50.000	48.613	2.8	100	0.00
5	I	Acenaphthene-d10 (ISTD)	2000.000	2000.000	0.0	100	0.00
6	S	2-Fluorobiphenyl(Surr)	50.000	48.811	2.4	100	0.00
7	T	Acenaphthylene	50.000	48.822	2.4	100	0.00
8	T	Acenaphthene	50.000	48.714	2.6	100	0.00
9		Dibenzofuran	50.000	48.765	2.5	100	0.00
10	T	Fluorene	50.000	48.169	3.7	100	0.00
11	I	Phenanthrene-d10 (ISTD)	2000.000	2000.000	0.0	100	0.00
12	T	Phenanthrene	50.000	50.315	-0.6	100	0.00
13	T	Anthracene	50.000	48.079	3.8	100	0.00
14		Carbazole	50.000	50.331	-0.7	100	0.00
15	T	Fluoranthene	50.000	48.326	3.3	100	0.00
16	T	Pyrene	50.000	49.127	1.7	100	0.00
17	I	Chrysene-d12 (ISTD)	2000.000	2000.000	0.0	100	0.00
18	S	Terphenyl-d14(Surr)	50.000	50.913	-1.8	100	0.00
19	T	Benz(a)Anthracene	50.000	50.903	-1.8	100	0.00
20	T	Chrysene	50.000	49.317	1.4	100	0.00
21	I	Perylene-d12 (ISTD)	2000.000	2000.000	0.0	100	0.00
22	T	Benzo(b)Fluoranthene	50.000	46.885	6.2	100	-0.01
23	T	Benzo(k)Fluoranthene	50.000	46.906	6.2	100	-0.01
24	T	Benzo(b+k)Fluoranthene	100.000	94.583	5.4	100	-0.01
25		Benzo(e) Pyrene	50.000	48.024	4.0	100	-0.02
26	T	Benzo(a)Pyrene	50.000	45.074	9.9	100	-0.01
27		Perylene	50.000	47.392	5.2	100	-0.01
28		Dibenz(a,h)anthracene-d14 (	2000.000	2000.000	0.0	100	-0.02
29	T	Indeno(1,2,3-cd)Pyrene	50.000	49.127	1.7	100	-0.02
30	T	Dibenz(a,h)Anthracene	50.000	46.034	7.9	100	-0.01
31	T	Benzo (g,h,i) Perylene	50.000	48.660	2.7	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

5-09-19

Evaluate Continuing Calibration Report

Data Path : P:\DATA\2019-05\9E08049_Requant\
Data File : D9050805.D
Acq On : 8 May 2019 4:00 pm
Operator : bsj
Sample : 9E08049-CAL3
Misc : 1x A19D055@100
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 09 09:38:55 2019
Quant Method : C:\msdchem\1\methods\SV4_050919.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu May 09 08:52:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Naphthalene-d8 (ISTD)	2000.000	2000.000	0.0	100	0.00
2	T	Naphthlene	100.000	102.189	-2.2	100	0.00
3	T	2-Methylnaphthalene	100.000	99.695	0.3	100	0.00
4	T	1-Methylnaphthalene	100.000	100.298	-0.3	100	0.00
5	I	Acenaphthene-d10 (ISTD)	2000.000	2000.000	0.0	100	0.00
6	S	2-Fluorobiphenyl(Surr)	100.000	103.629	-3.6	100	0.00
7	T	Acenaphthylene	100.000	99.690	0.3	100	0.00
8	T	Acenaphthene	100.000	101.318	-1.3	100	0.00
9		Dibenzofuran	100.000	101.237	-1.2	100	0.00
10	T	Fluorene	100.000	100.189	-0.2	100	0.00
11	I	Phenanthrene-d10 (ISTD)	2000.000	2000.000	0.0	100	0.00
12	T	Phenanthrene	100.000	100.132	-0.1	100	0.00
13	T	Anthracene	100.000	98.378	1.6	100	0.00
14		Carbazole	100.000	102.722	-2.7	100	0.00
15	T	Fluoranthene	100.000	100.300	-0.3	100	0.00
16	T	Pyrene	100.000	99.528	0.5	100	0.00
17	I	Chrysene-d12 (ISTD)	2000.000	2000.000	0.0	100	0.00
18	S	Terphenyl-d14(Surr)	100.000	101.154	-1.2	100	0.00
19	T	Benz(a)Anthracene	100.000	100.436	-0.4	100	0.00
20	T	Chrysene	100.000	102.348	-2.3	100	0.00
21	I	Perylene-d12 (ISTD)	2000.000	2000.000	0.0	100	0.00
22	T	Benzo(b)Fluoranthene	100.000	96.056	3.9	100	-0.02
23	T	Benzo(k)Fluoranthene	100.000	95.436	4.6	100	-0.01
24	T	Benzo(b+k)Fluoranthene	200.000	191.995	4.0	100	-0.07
25		Benzo(e) Pyrene	100.000	98.238	1.8	100	-0.02
26	T	Benzo(a)Pyrene	100.000	93.428	6.6	100	-0.02
27		Perylene	100.000	98.831	1.2	100	-0.01
28		Dibenz(a,h)anthracene-d14 (	2000.000	2000.000	0.0	100	-0.01
29	T	Indeno(1,2,3-cd)Pyrene	100.000	100.958	-1.0	100	-0.02
30	T	Dibenz(a,h)Anthracene	100.000	97.398	2.6	100	-0.01
31	T	Benzo (g,h,i) Perylene	100.000	99.928	0.1	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

5-29-19 BBJ

Evaluate Continuing Calibration Report

Data Path : P:\DATA\2019-05\9E08049_Requant\
Data File : D9050806.D
Acq On : 8 May 2019 4:27 pm
Operator : bsj
Sample : 9E08049-CAL4
Misc : 1x A19D056@200
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 09 09:38:58 2019
Quant Method : C:\msdchem\1\methods\SV4_050919.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu May 09 08:52:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Naphthalene-d8 (ISTD)	2000.000	2000.000	0.0	100	0.00
2	T	Naphthlene	200.000	204.234	-2.1	100	0.00
3	T	2-Methylnaphthalene	200.000	201.294	-0.6	100	0.00
4	T	1-Methylnaphthalene	200.000	203.873	-1.9	100	0.00
5	I	Acenaphthene-d10 (ISTD)	2000.000	2000.000	0.0	100	0.00
6	S	2-Fluorobiphenyl(Surr)	200.000	196.897	1.6	100	0.00
7	T	Acenaphthylene	200.000	195.496	2.3	100	0.00
8	T	Acenaphthene	200.000	201.178	-0.6	100	0.00
9		Dibenzofuran	200.000	201.211	-0.6	100	0.00
10	T	Fluorene	200.000	201.127	-0.6	100	0.00
11	I	Phenanthrene-d10 (ISTD)	2000.000	2000.000	0.0	100	0.00
12	T	Phenanthrene	200.000	199.669	0.2	100	0.00
13	T	Anthracene	200.000	196.405	1.8	100	0.00
14		Carbazole	200.000	209.749	-4.9	100	0.00
15	T	Fluoranthene	200.000	199.149	0.4	100	0.00
16	T	Pyrene	200.000	200.736	-0.4	100	0.00
17	I	Chrysene-d12 (ISTD)	2000.000	2000.000	0.0	100	0.00
18	S	Terphenyl-d14(Surr)	200.000	194.130	2.9	100	0.00
19	T	Benz(a)Anthracene	200.000	195.672	2.2	100	0.00
20	T	Chrysene	200.000	202.615	-1.3	100	0.00
21	I	Perylene-d12 (ISTD)	2000.000	2000.000	0.0	100	0.00
22	T	Benzo(b)Fluoranthene	200.000	198.770	0.6	100	-0.02
23	T	Benzo(k)Fluoranthene	200.000	193.009	3.5	100	-0.02
24	T	Benzo(b+k)Fluoranthene	400.000	392.699	1.8	100	-0.07
25		Benzo(e) Pyrene	200.000	199.145	0.4	100	-0.02
26	T	Benzo(a)Pyrene	200.000	192.166	3.9	100	-0.02
27		Perylene	200.000	201.306	-0.7	100	-0.02
28		Dibenz(a,h)anthracene-d14 (	2000.000	2000.000	0.0	100	-0.01
29	T	Indeno(1,2,3-cd)Pyrene	200.000	200.182	-0.1	100	-0.01
30	T	Dibenz(a,h)Anthracene	200.000	197.277	1.4	100	-0.01
31	T	Benzo (g,h,i) Perylene	200.000	197.172	1.4	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

5-09-19

Evaluate Continuing Calibration Report

Data Path : P:\DATA\2019-05\9E08049_Requant\
Data File : D9050807.D
Acq On : 8 May 2019 4:53 pm
Operator : bsj
Sample : 9E08049-CAL5
Misc : 1x A19D057@500
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 09 09:39:01 2019
Quant Method : C:\msdchem\1\methods\SV4_050919.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu May 09 08:52:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Naphthalene-d8 (ISTD)	2000.000	2000.000	0.0	100	0.00
2	T	Naphthlene	500.000	505.315	-1.1	100	0.00
3	T	2-Methylnaphthalene	500.000	502.758	-0.6	100	0.00
4	T	1-Methylnaphthalene	500.000	506.657	-1.3	100	0.00
5	I	Acenaphthene-d10 (ISTD)	2000.000	2000.000	0.0	100	0.00
6	S	2-Fluorobiphenyl(Surr)	500.000	512.678	-2.5	100	0.00
7	T	Acenaphthylene	500.000	514.425	-2.9	100	0.00
8	T	Acenaphthene	500.000	510.151	-2.0	100	0.00
9		Dibenzofuran	500.000	517.019	-3.4	100	0.00
10	T	Fluorene	500.000	516.327	-3.3	100	0.00
11	I	Phenanthrene-d10 (ISTD)	2000.000	2000.000	0.0	100	0.00
12	T	Phenanthrene	500.000	506.538	-1.3	100	0.00
13	T	Anthracene	500.000	509.236	-1.8	100	0.00
14		Carbazole	500.000	539.638	-7.9	100	0.00
15	T	Fluoranthene	500.000	512.859	-2.6	100	0.00
16	T	Pyrene	500.000	507.453	-1.5	100	0.00
17	I	Chrysene-d12 (ISTD)	2000.000	2000.000	0.0	100	-0.01
18	S	Terphenyl-d14(Surr)	500.000	510.668	-2.1	100	0.00
19	T	Benz(a)Anthracene	500.000	499.212	0.2	100	0.00
20	T	Chrysene	500.000	514.685	-2.9	100	-0.01
21	I	Perylene-d12 (ISTD)	2000.000	2000.000	0.0	100	0.00
22	T	Benzo(b)Fluoranthene	500.000	504.021	-0.8	100	-0.02
23	T	Benzo(k)Fluoranthene	500.000	502.555	-0.5	100	-0.02
24	T	Benzo(b+k)Fluoranthene	1000.000	1005.849	-0.6	100	-0.07
25		Benzo(e) Pyrene	500.000	506.874	-1.4	100	-0.02
26	T	Benzo(a)Pyrene	500.000	493.134	1.4	100	-0.02
27		Perylene	500.000	509.720	-1.9	101	-0.01
28		Dibenz(a,h)anthracene-d14 (	2000.000	2000.000	0.0	100	-0.02
29	T	Indeno(1,2,3-cd)Pyrene	500.000	517.726	-3.5	100	-0.02
30	T	Dibenz(a,h)Anthracene	500.000	507.407	-1.5	100	-0.01
31	T	Benzo (g,h,i) Perylene	500.000	521.815	-4.4	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

5-09-19 BSJ

Evaluate Continuing Calibration Report

Data Path : P:\DATA\2019-05\9E08049_Requant\
Data File : D9050808.D
Acq On : 8 May 2019 5:20 pm
Operator : bsj
Sample : 9E08049-CAL6
Misc : 1x A19D058@1000
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 09 09:39:04 2019
Quant Method : C:\msdchem\1\methods\SV4_050919.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu May 09 08:52:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Naphthalene-d8 (ISTD)	2000.000	2000.000	0.0	100	0.00
2	T	Naphthlene	1000.000	985.378	1.5	100	0.00
3	T	2-Methylnaphthalene	1000.000	998.049	0.2	100	0.00
4	T	1-Methylnaphthalene	1000.000	999.522	0.0	100	0.00
5	I	Acenaphthene-d10 (ISTD)	2000.000	2000.000	0.0	100	0.00
6	S	2-Fluorobiphenyl(Surr)	1000.000	996.430	0.4	100	0.00
7	T	Acenaphthylene	1000.000	996.036	0.4	100	0.00
8	T	Acenaphthene	1000.000	1008.200	-0.8	100	0.00
9		Dibenzofuran	1000.000	999.161	0.1	100	0.00
10	T	Fluorene	1000.000	994.567	0.5	100	0.00
11	I	Phenanthrene-d10 (ISTD)	2000.000	2000.000	0.0	100	0.00
12	T	Phenanthrene	1000.000	983.685	1.6	100	0.00
13	T	Anthracene	1000.000	977.380	2.3	100	0.00
14		Carbazole	1000.000	1019.379	-1.9	100	0.00
15	T	Fluoranthene	1000.000	972.455	2.8	100	0.00
16	T	Pyrene	1000.000	960.449	4.0	100	0.00
17	I	Chrysene-d12 (ISTD)	2000.000	2000.000	0.0	100	0.00
18	S	Terphenyl-d14(Surr)	1000.000	1003.219	-0.3	100	0.00
19	T	Benz(a)Anthracene	1000.000	961.783	3.8	100	0.00
20	T	Chrysene	1000.000	994.872	0.5	100	0.00
21	I	Perylene-d12 (ISTD)	2000.000	2000.000	0.0	100	0.00
22	T	Benzo(b)Fluoranthene	1000.000	999.939	0.0	100	-0.01
23	T	Benzo(k)Fluoranthene	1000.000	1008.528	-0.9	100	-0.01
24	T	Benzo(b+k)Fluoranthene	2000.000	2005.845	-0.3	100	-0.06
25		Benzo(e) Pyrene	1000.000	1010.766	-1.1	100	-0.02
26	T	Benzo(a)Pyrene	1000.000	1015.327	-1.5	99	-0.01
27		Perylene	1000.000	1011.781	-1.2	100	-0.01
28		Dibenz(a,h)anthracene-d14 (	2000.000	2000.000	0.0	100	-0.01
29	T	Indeno(1,2,3-cd)Pyrene	1000.000	1005.780	-0.6	100	-0.02
30	T	Dibenz(a,h)Anthracene	1000.000	1005.056	-0.5	100	-0.01
31	T	Benzo (g,h,i) Perylene	1000.000	1014.667	-1.5	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

5-09-19

Evaluate Continuing Calibration Report

Data Path : P:\DATA\2019-05\9E08049_Requant\
Data File : D9050809.D
Acq On : 8 May 2019 5:47 pm
Operator : bsj
Sample : 9E08049-CAL7
Misc : 1x A19D059@2000
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 09 09:39:07 2019
Quant Method : C:\msdchem\1\methods\SV4_050919.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu May 09 08:52:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Naphthalene-d8 (ISTD)	2000.000	2000.000	0.0	100	0.00
2	T	Naphthlene	2000.000	1999.086	0.0	100	0.00
3	T	2-Methylnaphthalene	2000.000	2008.329	-0.4	100	0.00
4	T	1-Methylnaphthalene	2000.000	2019.812	-1.0	100	0.00
5	I	Acenaphthene-d10 (ISTD)	2000.000	2000.000	0.0	100	0.00
6	S	2-Fluorobiphenyl(Surr)	2000.000	2013.539	-0.7	100	0.00
7	T	Acenaphthylene	2000.000	2034.657	-1.7	100	0.00
8	T	Acenaphthene	2000.000	2013.728	-0.7	100	0.00
9		Dibenzofuran	2000.000	2026.380	-1.3	100	0.00
10	T	Fluorene	2000.000	1987.676	0.6	100	0.00
11	I	Phenanthrene-d10 (ISTD)	2000.000	2000.000	0.0	100	0.00
12	T	Phenanthrene	2000.000	1965.804	1.7	100	0.00
13	T	Anthracene	2000.000	2002.318	-0.1	100	0.00
14		Carbazole	2000.000	1970.893	1.5	100	0.00
15	T	Fluoranthene	2000.000	1991.513	0.4	100	0.00
16	T	Pyrene	2000.000	1967.950	1.6	100	0.00
17	I	Chrysene-d12 (ISTD)	2000.000	2000.000	0.0	100	0.00
18	S	Terphenyl-d14(Surr)	2000.000	1994.288	0.3	100	0.00
19	T	Benz(a)Anthracene	2000.000	1927.661	3.6	100	0.00
20	T	Chrysene	2000.000	1982.421	0.9	100	0.00
21	I	Perylene-d12 (ISTD)	2000.000	2000.000	0.0	100	0.00
22	T	Benzo(b)Fluoranthene	2000.000	1973.818	1.3	100	-0.01
23	T	Benzo(k)Fluoranthene	2000.000	2017.796	-0.9	100	-0.01
24	T	Benzo(b+k)Fluoranthene	4000.000	3984.999	0.4	100	-0.01
25		Benzo(e) Pyrene	2000.000	1981.098	0.9	100	-0.01
26	T	Benzo(a)Pyrene	2000.000	2060.553	-3.0	99	-0.01
27		Perylene	2000.000	2008.563	-0.4	100	-0.01
28		Dibenz(a,h)anthracene-d14 (	2000.000	2000.000	0.0	100	-0.01
29	T	Indeno(1,2,3-cd)Pyrene	2000.000	1968.263	1.6	100	-0.01
30	T	Dibenz(a,h)Anthracene	2000.000	2018.100	-0.9	100	-0.01
31	T	Benzo (g,h,i) Perylene	2000.000	2004.634	-0.2	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

5-29-19

Evaluate Continuing Calibration Report

Data Path : P:\DATA\2019-05\9E08049_Requant\
Data File : D9050810.D
Acq On : 8 May 2019 6:14 pm
Operator : bsj
Sample : 9E08049-CAL8
Misc : 1x A19D060@4000
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 09 09:39:10 2019
Quant Method : C:\msdchem\1\methods\SV4_050919.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu May 09 08:52:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Naphthalene-d8 (ISTD)	2000.000	2000.000	0.0	100	0.00
2	T	Naphthlene	4000.000	4017.508	-0.4	100	0.00
3	T	2-Methylnaphthalene	4000.000	4098.876	-2.5	100	0.00
4	T	1-Methylnaphthalene	4000.000	4125.194	-3.1	100	0.00
5	I	Acenaphthene-d10 (ISTD)	2000.000	2000.000	0.0	100	0.00
6	S	2-Fluorobiphenyl(Surr)	4000.000	4179.091	-4.5	100	0.00
7	T	Acenaphthylene	4000.000	4090.217	-2.3	100	0.00
8	T	Acenaphthene	4000.000	4007.424	-0.2	100	0.00
9		Dibenzofuran	4000.000	4081.430	-2.0	100	0.00
10	T	Fluorene	4000.000	4114.948	-2.9	100	0.00
11	I	Phenanthrene-d10 (ISTD)	2000.000	2000.000	0.0	100	0.00
12	T	Phenanthrene	4000.000	4011.238	-0.3	100	0.00
13	T	Anthracene	4000.000	4171.775	-4.3	100	0.00
14		Carbazole	4000.000	3287.499	17.8	100	0.00
15	T	Fluoranthene	4000.000	4101.863	-2.5	100	0.00
16	T	Pyrene	4000.000	4119.489	-3.0	100	0.00
17	I	Chrysene-d12 (ISTD)	2000.000	2000.000	0.0	100	0.00
18	S	Terphenyl-d14(Surr)	4000.000	4136.931	-3.4	100	0.00
19	T	Benz(a)Anthracene	4000.000	3884.221	2.9	100	0.00
20	T	Chrysene	4000.000	4049.535	-1.2	100	0.00
21	I	Perylene-d12 (ISTD)	2000.000	2000.000	0.0	100	0.00
22	T	Benzo(b)Fluoranthene	4000.000	4280.258	-7.0	100	-0.01
23	T	Benzo(k)Fluoranthene	4000.000	4242.185	-6.1	100	-0.01
24	T	Benzo(b+k)Fluoranthene	8000.000	8505.529	-6.3	100	-0.01
25		Benzo(e) Pyrene	4000.000	4128.422	-3.2	100	0.00
26	T	Benzo(a)Pyrene	4000.000	4313.024	-7.8	100	0.00
27		Perylene	4000.000	4115.140	-2.9	100	0.00
28		Dibenz(a,h)anthracene-d14 (	2000.000	2000.000	0.0	100	-0.01
29	T	Indeno(1,2,3-cd)Pyrene	4000.000	3991.431	0.2	100	0.00
30	T	Dibenz(a,h)Anthracene	4000.000	4166.534	-4.2	100	-0.01
31	T	Benzo (g,h,i) Perylene	4000.000	4047.286	-1.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

5-29-19

Evaluate Continuing Calibration Report

Data Path : P:\DATA\2019-05\9E08049_Requant\
Data File : D9050811.D
Acq On : 8 May 2019 6:40 pm
Operator : bsj
Sample : 9E08049-CAL9
Misc : 1x A19D061@6000
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 09 09:39:13 2019
Quant Method : C:\msdchem\1\methods\SV4_050919.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu May 09 08:52:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Naphthalene-d8 (ISTD)	2000.000	2000.000	0.0	100	0.00
2	T	Naphthlene	6000.000	5979.655	0.3	100	0.00
3	T	2-Methylnaphthalene	6000.000	6036.944	-0.6	100	0.00
4	T	1-Methylnaphthalene	6000.000	5995.961	0.1	100	0.00
5	I	Acenaphthene-d10 (ISTD)	2000.000	2000.000	0.0	100	0.00
6	S	2-Fluorobiphenyl(Surr)	6000.000	5823.605	2.9	100	0.00
7	T	Acenaphthylene	6000.000	6024.866	-0.4	100	0.00
8	T	Acenaphthene	6000.000	6064.123	-1.1	100	0.00
9		Dibenzofuran	6000.000	6033.664	-0.6	100	0.00
10	T	Fluorene	6000.000	6211.987	-3.5	100	0.00
11	I	Phenanthrene-d10 (ISTD)	2000.000	2000.000	0.0	100	0.00
12	T	Phenanthrene	6000.000	5947.620	0.9	100	0.00
13	T	Anthracene	6000.000	6162.422	-2.7	100	0.00
14		Carbazole	-1.000	3491.536	0.0	0	0.00
15	T	Fluoranthene	6000.000	6063.200	-1.1	100	0.00
16	T	Pyrene	6000.000	6147.280	-2.5	100	0.00
17	I	Chrysene-d12 (ISTD)	2000.000	2000.000	0.0	100	0.00
18	S	Terphenyl-d14(Surr)	6000.000	5922.990	1.3	100	0.00
19	T	Benz(a)Anthracene	6000.000	5805.664	3.2	100	0.00
20	T	Chrysene	6000.000	5837.504	2.7	100	0.00
21	I	Perylene-d12 (ISTD)	2000.000	2000.000	0.0	100	0.00
22	T	Benzo(b)Fluoranthene	6000.000	6300.116	-5.0	100	0.00
23	T	Benzo(k)Fluoranthene	6000.000	6430.483	-7.2	100	0.00
24	T	Benzo(b+k)Fluoranthene	12000.000	12703.467	-5.9	100	0.00
25		Benzo(e) Pyrene	6000.000	6201.092	-3.4	100	0.00
26	T	Benzo(a)Pyrene	6000.000	6429.991	-7.2	99	0.00
27		Perylene	6000.000	6095.447	-1.6	100	0.00
28		Dibenz(a,h)anthracene-d14 (	2000.000	2000.000	0.0	100	0.00
29	T	Indeno(1,2,3-cd)Pyrene	6000.000	5918.545	1.4	100	0.00
30	T	Dibenz(a,h)Anthracene	6000.000	6459.691	-7.7	100	0.00
31	T	Benzo (g,h,i) Perylene	6000.000	6132.681	-2.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0 ✓

5-09-19 BS

Evaluate Continuing Calibration Report

Data Path : P:\DATA\2019-05\9E08049_Requant\
Data File : D9050812.D
Acq On : 8 May 2019 7:07 pm
Operator : bsj
Sample : 9E08049-CALA
Misc : 1x A19D062@8000
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 09 09:39:16 2019
Quant Method : C:\msdchem\1\methods\SV4_050919.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu May 09 08:52:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Naphthalene-d8 (ISTD)	2000.000	2000.000	0.0	100	0.00
2	T	Naphthlene	8000.000	8002.496	-0.0	100	0.00
3	T	2-Methylnaphthalene	8000.000	8266.616	-3.3	100	0.00
4	T	1-Methylnaphthalene	8000.000	8165.606	-2.1	100	0.00
5	I	Acenaphthene-d10 (ISTD)	2000.000	2000.000	0.0	100	0.00
6	S	2-Fluorobiphenyl(Surr)	8000.000	8193.401	-2.4	100	0.00
7	T	Acenaphthylene	8000.000	8231.164	-2.9	100	0.00
8	T	Acenaphthene	8000.000	8098.877	-1.2	100	0.00
9		Dibenzofuran	8000.000	8125.270	-1.6	100	0.00
10	T	Fluorene	8000.000	8283.212	-3.5	100	0.00
11	I	Phenanthrene-d10 (ISTD)	2000.000	2000.000	0.0	100	0.00
12	T	Phenanthrene	8000.000	7975.676	0.3	100	0.00
13	T	Anthracene	8000.000	8321.163	-4.0	100	0.00
14		Carbazole	-1.000	3337.829	0.0	0	0.00
15	T	Fluoranthene	8000.000	8334.939	-4.2	100	0.00
16	T	Pyrene	8000.000	8307.521	-3.8	100	0.00
17	I	Chrysene-d12 (ISTD)	2000.000	2000.000	0.0	100	0.00
18	S	Terphenyl-d14(Surr)	8000.000	7838.305	2.0	100	0.00
19	T	Benz(a)Anthracene	8000.000	7805.361	2.4	100	0.00
20	T	Chrysene	8000.000	7977.393	0.3	100	0.00
21	I	Perylene-d12 (ISTD)	2000.000	2000.000	0.0	100	0.00
22	T	Benzo(b)Fluoranthene	8000.000	8580.755	-7.3	100	0.00
23	T	Benzo(k)Fluoranthene	8000.000	8647.510	-8.1	100	0.00
24	T	Benzo(b+k)Fluoranthene	16000.000	17189.992	-7.4	100	0.00
25		Benzo(e) Pyrene	8000.000	8204.381	-2.6	100	0.00
26	T	Benzo(a)Pyrene	8000.000	8810.294	-10.1	100	0.00
27		Perylene	8000.000	8183.341	-2.3	100	0.00
28		Dibenz(a,h)anthracene-d14 (	2000.000	2000.000	0.0	100	0.00
29	T	Indeno(1,2,3-cd)Pyrene	8000.000	7874.013	1.6	100	0.00
30	T	Dibenz(a,h)Anthracene	8000.000	8703.460	-8.8	100	0.00
31	T	Benzo (g,h,i) Perylene	8000.000	7815.608	2.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

5-09-19

Evaluate Continuing Calibration Report

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050814.D
Acq On : 8 May 2019 8:01 pm
Operator : bsj
Sample : 9E08049-ICV1
Misc : 1x A19C239@1000
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 09 08:54:28 2019
Quant Method : C:\msdchem\1\methods\SV4_050919.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu May 09 08:52:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Naphthalene-d8 (ISTD)	2000.000	2000.000	0.0	98	0.00
2	T	Naphthlene	1000.000	985.358	1.5	98	0.00
3	T	2-Methylnaphthalene	1000.000	988.696	1.1	97	0.00
4	T	1-Methylnaphthalene	1000.000	977.119	2.3	95	0.00
5	I	Acenaphthene-d10 (ISTD)	2000.000	2000.000	0.0	98	0.00
6	S	2-Fluorobiphenyl(Surr)	1000.000	1003.710	-0.4	98	0.00
7	T	Acenaphthylene	1000.000	1019.108	-1.9	100	0.00
8	T	Acenaphthene	1000.000	1000.206	-0.0	97	0.00
9		Dibenzofuran	1000.000	1010.082	-1.0	99	0.00
10	T	Fluorene	1000.000	1016.207	-1.6	100	0.00
11	I	Phenanthrene-d10 (ISTD)	2000.000	2000.000	0.0	98	0.00
12	T	Phenanthrene	1000.000	988.123	1.2	99	0.00
13	T	Anthracene	1000.000	996.855	0.3	100	0.00
14		Carbazole	1000.000	1041.877	-4.2	101	0.00
15	T	Fluoranthene	1000.000	999.448	0.1	101	0.00
16	T	Pyrene	1000.000	1002.920	-0.3	103	0.00
17	I	Chrysene-d12 (ISTD)	2000.000	2000.000	0.0	107	0.00
18	S	Terphenyl-d14(Surr)	1000.000	983.792	1.6	105	0.00
19	T	Benz(a)Anthracene	1000.000	975.006	2.5	108	0.00
20	T	Chrysene	1000.000	995.085	0.5	107	0.00
21	I	Perylene-d12 (ISTD)	2000.000	2000.000	0.0	104	0.00
22	T	Benzo(b)Fluoranthene	1000.000	1007.192	-0.7	105	-0.02
23	T	Benzo(k)Fluoranthene	1000.000	1012.400	-1.2	105	-0.02
24	T	Benzo(b+k)Fluoranthene	2000.000	2016.921	-0.8	105	-0.07
25		Benzo(e) Pyrene	1000.000	991.973	0.8	102	-0.02
26	T	Benzo(a)Pyrene	1000.000	999.914	0.0	102	-0.01
27		Perylene	1000.000	1147.382	-14.7	118	-0.01
28		Dibenz(a,h)anthracene-d14 (	2000.000	2000.000	0.0	98	-0.01
29	T	Indeno(1,2,3-cd)Pyrene	1000.000	989.127	1.1	96	-0.01
30	T	Dibenz(a,h)Anthracene	1000.000	986.734	1.3	96	-0.01
31	T	Benzo (g,h,i) Perylene	1000.000	988.075	1.2	95	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

5-09-19

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050814.D
Acq On : 8 May 2019 8:01 pm
Operator : bsj
Sample : 9E08049-ICV1
Misc : 1x A19C239@1000
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 09 08:54:28 2019
Quant Method : C:\msdchem\1\methods\SV4_050919.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu May 09 08:52:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Naphthalene-d8 (ISTD)	5.749	136	498732	2000.00 ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.452	164	245258	2000.00 ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.904	188	345376	2000.00 ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.713	240	179105	2000.00 ng/ml	0.00
21) Perylene-d12 (ISTD)	14.307	264	121300	2000.00 ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.715	292	76104	2000.00 ng/mL	-0.01
System Monitoring Compounds					
6) 2-Fluorobiphenyl(Surr)	6.786	172	182451	1003.71 ng/ml	0.00
18) Terphenyl-d14(Surr)	10.464	244	93240	983.79 ng/ml	0.00
Target Compounds					Qvalue
2) Naphthlene	5.769	128	254722	985.36 ng/ml	99
3) 2-Methylnaphthalene	6.434	142	165246	988.70 ng/ml	99
4) 1-Methylnaphthalene	6.532	142	158374	977.12 ng/ml	98
7) Acenaphthylene	7.311	152	225724	1019.11 ng/ml	98
8) Acenaphthene	7.482	153	148343	1000.21 ng/ml	97
9) Dibenzofuran	7.648	168	199759	1010.08 ng/mL	89
10) Fluorene	7.983	166	156392	1016.21 ng/ml	99
12) Phenanthrene	8.931	178	196498	988.12 ng/ml	98
13) Anthracene	8.979	178	200182	996.86 ng/ml	98
14) Carbazole	9.127	167	161787	1041.88 ng/mL	99
15) Fluoranthene	10.097	202	169364	999.45 ng/ml	99
16) Pyrene	10.319	202	169124	1002.92 ng/ml	98
19) Benz(a)Anthracene	11.692	228	105367	975.01 ng/ml	96
20) Chrysene	11.748	228	104873	995.08 ng/ml	96
22) Benzo(b)Fluoranthene	13.525	252	78878	1007.19 ng/ml	67
23) Benzo(k)Fluoranthene	13.577	252	78573	1012.40 ng/ml	70
24) Benzo(b+k)Fluoranthene	13.525	252	157887	2016.92 ng/ml#	58
25) Benzo(e) Pyrene	14.077	252	77309	991.97 ng/mL	95
26) Benzo(a)Pyrene	14.186	252	67303	999.91 ng/ml	69
27) Perylene	14.358	252	74690	1147.38 ng/mL	94
29) Indeno(1,2,3-cd)Pyrene	16.726	276	47325	989.13 ng/ml	69
30) Dibenz(a,h)Anthracene	16.788	278	43105	986.73 ng/ml	69
31) Benzo (g,h,i) Perylene	17.278	276	50844	988.08 ng/ml	87

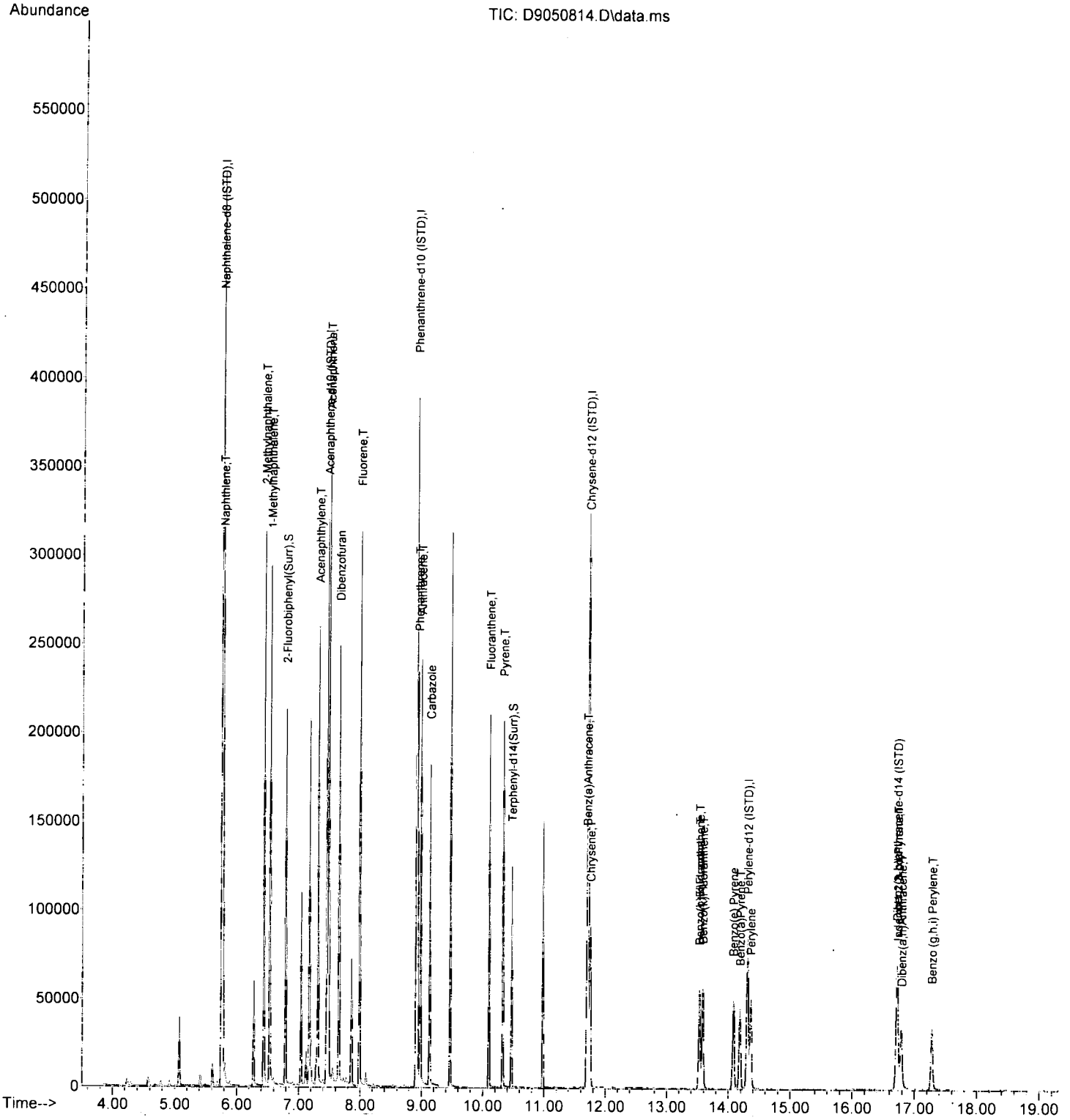
(#) = qualifier out of range (m) = manual integration (+) = signals summed

5-9-19

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050814.D
Acq On : 8 May 2019 8:01 pm
Operator : bsj
Sample : 9E08049-ICV1
Misc : 1x A19C239@1000
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 09 08:54:28 2019
Quant Method : C:\msdchem\1\methods\SV4_050919.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu May 09 08:52:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4



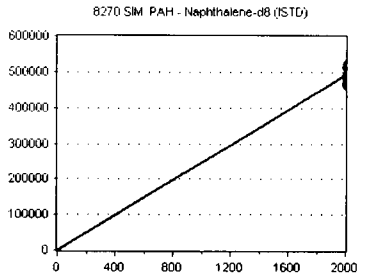
Element Calibration Review Sheet

Calibration ID: **A9E0902** Instrument: **SV-GCMS4** Calibration Date: **05/09/2019**

Analysis: **8270 SIM PAH** Instrument Cal ID: **A9E0902**

Naphthalene-d8 (ISTD)

Curve Fit: **AVERAGE RF**

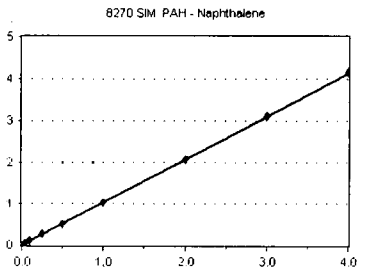


Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	2000	466187	233.093	5.75
9E08049-CAL2	2000	463733	231.867	5.75
9E08049-CAL3	2000	471590	235.795	5.75
9E08049-CAL4	2000	492717	246.358	5.75
9E08049-CAL5	2000	492814	246.407	5.75
9E08049-CAL6	2000	510967	255.483	5.75
9E08049-CAL7	2000	476839	238.420	5.75
9E08049-CAL8	2000	517036	258.518	5.75
9E08049-CAL9	2000	521237	260.618	5.75
9E08049-CALA	2000	514968	257.484	5.76

AVE RF **246.404** RF RSD **4.52** AVE RT **5.75**

Naphthalene

Curve Fit: **AVERAGE RF**

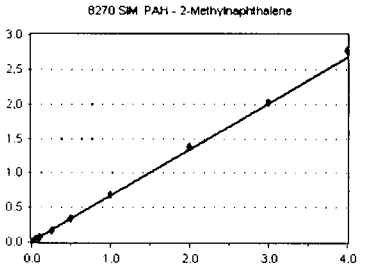


Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	20	4689	1.006	5.77
9E08049-CAL2	50	11873	1.024	5.77
9E08049-CAL3	100	24984	1.060	5.77
9E08049-CAL4	200	52183	1.059	5.77
9E08049-CAL5	500	129108	1.048	5.77
9E08049-CAL6	1000	261032	1.022	5.77
9E08049-CAL7	2000	494185	1.036	5.77
9E08049-CAL8	4000	1076783	1.041	5.77
9E08049-CAL9	6000	1615843	1.033	5.77
9E08049-CALA	8000	2136745	1.037	5.77

AVE RF **1.037** RF RSD **1.61** AVE RT **5.77**

2-Methylnaphthalene

Curve Fit: **AVERAGE RF**

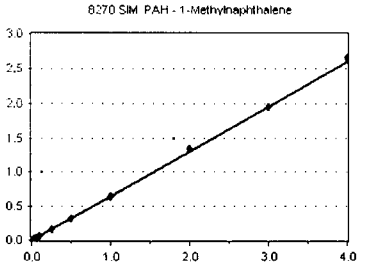


Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	20	2933	0.629	6.43
9E08049-CAL2	50	7648	0.660	6.43
9E08049-CAL3	100	15759	0.668	6.43
9E08049-CAL4	200	33247	0.675	6.43
9E08049-CAL5	500	83046	0.674	6.43
9E08049-CAL6	1000	170938	0.669	6.44
9E08049-CAL7	2000	320988	0.673	6.43
9E08049-CAL8	4000	710284	0.687	6.43
9E08049-CAL9	6000	1054717	0.674	6.43
9E08049-CALA	8000	1427088	0.693	6.43

AVE RF **0.670** RF RSD **2.56** AVE RT **6.43**

1-Methylnaphthalene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	20	2804	0.601	6.53
9E08049-CAL2	50	7328	0.632	6.53
9E08049-CAL3	100	15375	0.652	6.53
9E08049-CAL4	200	32655	0.663	6.53
9E08049-CAL5	500	81160	0.659	6.53
9E08049-CAL6	1000	166096	0.650	6.53
9E08049-CAL7	2000	313064	0.657	6.53
9E08049-CAL8	4000	693878	0.671	6.53
9E08049-CAL9	6000	1017377	0.651	6.53
9E08049-CALA	8000	1368536	0.664	6.53

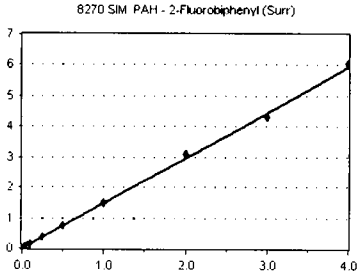
AVE RF **0.650** RF RSD **3.08** AVE RT **6.53**

Element Calibration Review Sheet

Calibration ID: **A9E0902** Instrument: **SV-GCMS4** Calibration Date: **05/09/2019**

Analysis: **8270 SIM PAH** Instrument Cal ID: **A9E0902**

2-Fluorobiphenyl (Surr)

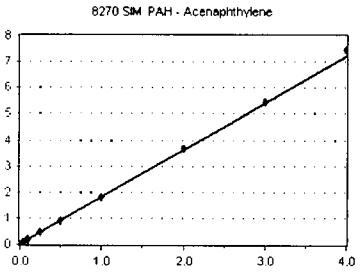


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	20	3198	1.387	6.79
9E08049-CAL2	50	8018	1.446	6.79
9E08049-CAL3	100	17297	1.535	6.79
9E08049-CAL4	200	36441	1.459	6.79
9E08049-CAL5	500	90965	1.520	6.79
9E08049-CAL6	1000	185360	1.478	6.79
9E08049-CAL7	2000	347194	1.492	6.79
9E08049-CAL8	4000	774141	1.549	6.79
9E08049-CAL9	6000	1120425	1.439	6.79
9E08049-CALA	8000	1562167	1.518	6.79

AVE RF **1.482** RF RSD **3.39** AVE RT **6.79**

Acenaphthylene

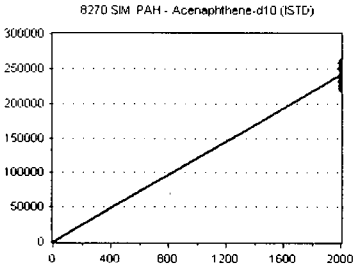


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	20	3967	1.721	7.31
9E08049-CAL2	50	9772	1.762	7.31
9E08049-CAL3	100	20275	1.799	7.31
9E08049-CAL4	200	44087	1.766	7.31
9E08049-CAL5	500	111217	1.858	7.31
9E08049-CAL6	1000	225669	1.799	7.31
9E08049-CAL7	2000	427487	1.837	7.31
9E08049-CAL8	4000	923218	1.847	7.31
9E08049-CAL9	6000	1412401	1.814	7.32
9E08049-CALA	8000	1912248	1.858	7.32

AVE RF **1.806** RF RSD **2.55** AVE RT **7.31**

Acenaphthene-d10 (ISTD)

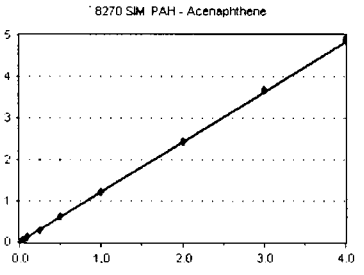


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	2000	230511	115.255	7.45
9E08049-CAL2	2000	221804	110.902	7.45
9E08049-CAL3	2000	225358	112.679	7.45
9E08049-CAL4	2000	249711	124.855	7.45
9E08049-CAL5	2000	239395	119.698	7.45
9E08049-CAL6	2000	250878	125.439	7.45
9E08049-CAL7	2000	232647	116.324	7.45
9E08049-CAL8	2000	249933	124.966	7.45
9E08049-CAL9	2000	259583	129.791	7.45
9E08049-CALA	2000	257246	128.623	7.45

AVE RF **120.853** RF RSD **5.61** AVE RT **7.45**

Acenaphthene



Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	20	2650	1.150	7.48
9E08049-CAL2	50	6529	1.177	7.48
9E08049-CAL3	100	13798	1.225	7.48
9E08049-CAL4	200	30379	1.217	7.48
9E08049-CAL5	500	73853	1.234	7.48
9E08049-CAL6	1000	152955	1.219	7.48
9E08049-CAL7	2000	282947	1.216	7.48
9E08049-CAL8	4000	605481	1.211	7.48
9E08049-CAL9	6000	951380	1.222	7.48
9E08049-CALA	8000	1259183	1.224	7.48

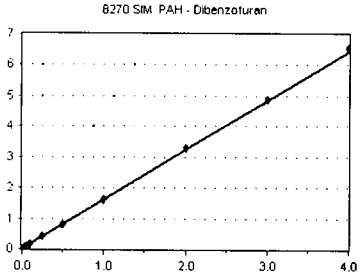
AVE RF **1.209** RF RSD **2.13** AVE RT **7.48**

Element Calibration Review Sheet

Calibration ID: **A9E0902** Instrument: **SV-GCMS4** Calibration Date: **05/09/2019**

Analysis: **8270 SIM PAH** Instrument Cal ID: **A9E0902**

Dibenzofuran

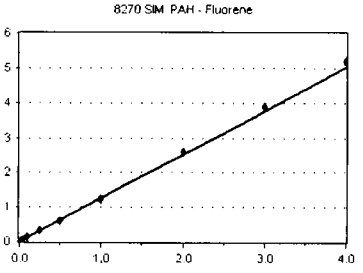


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	20	3419	1.483	7.65
9E08049-CAL2	50	8715	1.572	7.65
9E08049-CAL3	100	18384	1.632	7.65
9E08049-CAL4	200	40515	1.622	7.65
9E08049-CAL5	500	99804	1.668	7.65
9E08049-CAL6	1000	202127	1.611	7.65
9E08049-CAL7	2000	380141	1.634	7.65
9E08049-CAL8	4000	822550	1.646	7.65
9E08049-CAL9	6000	1262943	1.622	7.65
9E08049-CALA	8000	1685438	1.638	7.65

AVE RF **1.613** RF RSD **3.21** AVE RT **7.65**

Fluorene

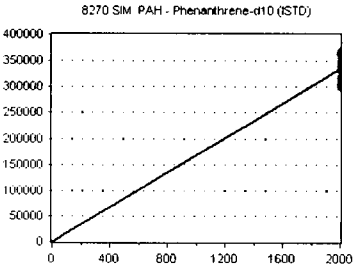


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	20	2663	1.155	7.98
9E08049-CAL2	50	6694	1.207	7.98
9E08049-CAL3	100	14137	1.255	7.98
9E08049-CAL4	200	31515	1.262	7.98
9E08049-CAL5	500	77520	1.295	7.98
9E08049-CAL6	1000	156316	1.246	7.98
9E08049-CAL7	2000	289620	1.245	7.99
9E08049-CAL8	4000	644798	1.290	7.99
9E08049-CAL9	6000	1010699	1.298	7.99
9E08049-CALA	8000	1334221	1.297	7.99

AVE RF **1.255** RF RSD **3.65** AVE RT **7.99**

Phenanthrene-d10 (ISTD)

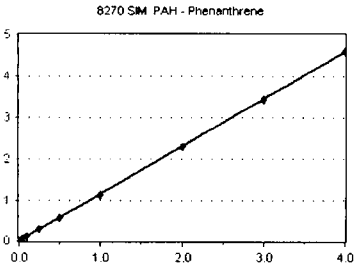


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	2000	304584	152.292	8.91
9E08049-CAL2	2000	301378	150.689	8.90
9E08049-CAL3	2000	306553	153.276	8.90
9E08049-CAL4	2000	338434	169.217	8.90
9E08049-CAL5	2000	332652	166.326	8.90
9E08049-CAL6	2000	350771	175.385	8.91
9E08049-CAL7	2000	318049	159.025	8.90
9E08049-CAL8	2000	360425	180.213	8.91
9E08049-CAL9	2000	362274	181.137	8.91
9E08049-CALA	2000	368024	184.012	8.91

AVE RF **167.157** RF RSD **7.65** AVE RT **8.91**

Phenanthrene



Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	20	3589	1.178	8.93
9E08049-CAL2	50	8731	1.159	8.93
9E08049-CAL3	100	17675	1.153	8.93
9E08049-CAL4	200	38909	1.150	8.93
9E08049-CAL5	500	97019	1.167	8.93
9E08049-CAL6	1000	198671	1.133	8.93
9E08049-CAL7	2000	359989	1.132	8.93
9E08049-CAL8	4000	832431	1.155	8.93
9E08049-CAL9	6000	1240610	1.142	8.93
9E08049-CALA	8000	1690046	1.148	8.93

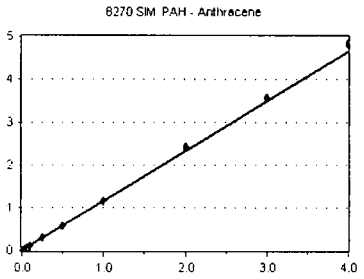
AVE RF **1.152** RF RSD **1.25** AVE RT **8.93**

Element Calibration Review Sheet

Calibration ID: **A9E0902** Instrument: **SV-GCMS4** Calibration Date: **05/09/2019**

Analysis: **8270 SIM PAH** Instrument Cal ID: **A9E0902**

Anthracene

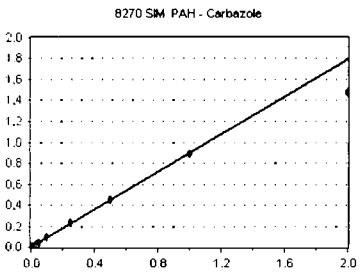


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	20	3434	1.127	8.98
9E08049-CAL2	50	8425	1.118	8.98
9E08049-CAL3	100	17535	1.144	8.98
9E08049-CAL4	200	38648	1.142	8.98
9E08049-CAL5	500	98494	1.184	8.98
9E08049-CAL6	1000	199237	1.136	8.98
9E08049-CAL7	2000	369906	1.163	8.98
9E08049-CAL8	4000	873705	1.212	8.98
9E08049-CAL9	6000	1296799	1.193	8.98
9E08049-CALA	8000	1778933	1.208	8.99

AVE RF **1.163** RF RSD **2.96** AVE RT **8.98**

Carbazole

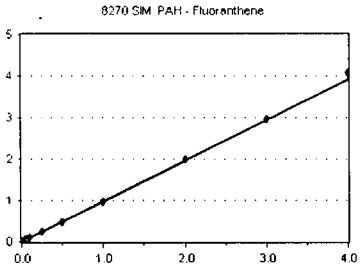


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	20	2762	0.907	9.13
9E08049-CAL2	50	6820	0.905	9.13
9E08049-CAL3	100	14166	0.924	9.13
9E08049-CAL4	200	31934	0.944	9.13
9E08049-CAL5	500	80782	0.971	9.13
9E08049-CAL6	1000	160766	0.917	9.13
9E08049-CAL7	2000	282079	0.887	9.13
9E08049-CAL8	4000	532740	0.739	9.13
~~9E08049-CAL9~~	~~6000~~	~~573298~~	~~0.527~~	~~9.13~~
~~9E08049-CALA~~	~~8000~~	~~552300~~	~~0.375~~	~~9.13~~

AVE RF **0.899** RF RSD **7.75** AVE RT **9.13**

Fluoranthene

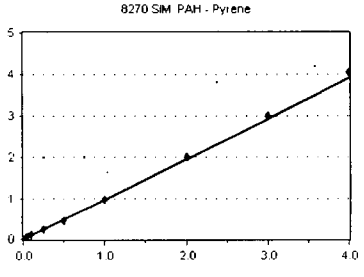


Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	20	2877	0.945	10.10
9E08049-CAL2	50	7146	0.948	10.10
9E08049-CAL3	100	15086	0.984	10.10
9E08049-CAL4	200	33069	0.977	10.10
9E08049-CAL5	500	83706	1.007	10.10
9E08049-CAL6	1000	167364	0.954	10.10
9E08049-CAL7	2000	310889	0.977	10.10
9E08049-CAL8	4000	725379	1.006	10.10
9E08049-CAL9	6000	1077725	0.992	10.10
9E08049-CALA	8000	1505038	1.022	10.10

AVE RF **0.981** RF RSD **2.69** AVE RT **10.10**

Pyrene



Curve Fit: **AVERAGE RF**

Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	20	2874	0.944	10.32
9E08049-CAL2	50	7229	0.959	10.32
9E08049-CAL3	100	14897	0.972	10.32
9E08049-CAL4	200	33170	0.980	10.32
9E08049-CAL5	500	82420	0.991	10.32
9E08049-CAL6	1000	164492	0.938	10.32
9E08049-CAL7	2000	305607	0.961	10.32
9E08049-CAL8	4000	724953	1.006	10.33
9E08049-CAL9	6000	1087344	1.000	10.33
9E08049-CALA	8000	1492775	1.014	10.33

AVE RF **0.977** RF RSD **2.69** AVE RT **10.32**

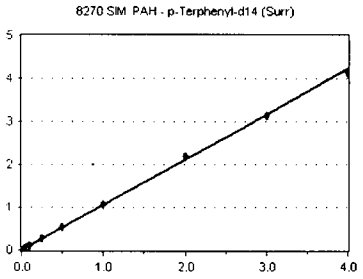
Element Calibration Review Sheet

Calibration ID: **A9E0902** Instrument: **SV-GCMS4** Calibration Date: **05/09/2019**

Analysis: **8270 SIM PAH** Instrument Cal ID: **A9E0902**

p-Terphenyl-d14 (Surr)

Curve Fit: **AVERAGE RF**

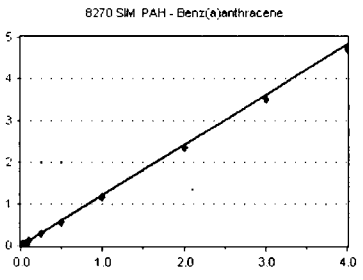


Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	20	1566	1.035	10.46
9E08049-CAL2	50	3785	1.077	10.47
9E08049-CAL3	100	7976	1.070	10.46
9E08049-CAL4	200	17883	1.027	10.47
9E08049-CAL5	500	45061	1.081	10.46
9E08049-CAL6	1000	88878	1.062	10.47
9E08049-CAL7	2000	168672	1.055	10.46
9E08049-CAL8	4000	404521	1.095	10.47
9E08049-CAL9	6000	610757	1.045	10.47
9E08049-CALA	8000	826441	1.037	10.47

AVE RF **1.058** RF RSD **2.11** AVE RT **10.46**

Benz(a)anthracene

Curve Fit: **AVERAGE RF**

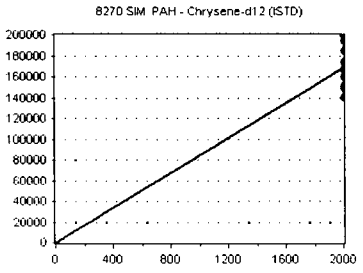


Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	20	2121	1.402	11.70
9E08049-CAL2	50	4315	1.228	11.69
9E08049-CAL3	100	9030	1.212	11.69
9E08049-CAL4	200	20553	1.181	11.69
9E08049-CAL5	500	50228	1.205	11.69
9E08049-CAL6	1000	97157	1.160	11.69
9E08049-CAL7	2000	185923	1.163	11.69
9E08049-CAL8	4000	433129	1.172	11.70
9E08049-CAL9	6000	682737	1.168	11.70
9E08049-CALA	8000	938499	1.178	11.70

AVE RF **1.207** RF RSD **5.97** AVE RT **11.69**

Chrysene-d12 (ISTD)

Curve Fit: **AVERAGE RF**

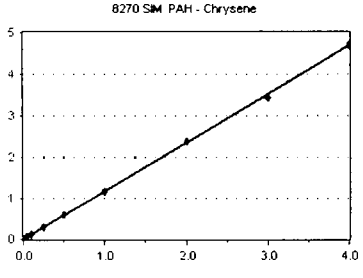


Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	2000	151327	75.664	11.71
9E08049-CAL2	2000	140551	70.276	11.71
9E08049-CAL3	2000	149032	74.516	11.71
9E08049-CAL4	2000	174083	87.041	11.71
9E08049-CAL5	2000	166780	83.390	11.71
9E08049-CAL6	2000	167448	83.724	11.71
9E08049-CAL7	2000	159832	79.916	11.71
9E08049-CAL8	2000	184787	92.394	11.71
9E08049-CAL9	2000	194906	97.453	11.71
9E08049-CALA	2000	199250	99.625	11.72

AVE RF **84.400** RF RSD **11.64** AVE RT **11.71**

Chrysene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	20	1746	1.154	11.75
9E08049-CAL2	50	4077	1.160	11.75
9E08049-CAL3	100	8974	1.204	11.75
9E08049-CAL4	200	20755	1.192	11.75
9E08049-CAL5	500	50502	1.211	11.74
9E08049-CAL6	1000	98010	1.171	11.75
9E08049-CAL7	2000	186429	1.166	11.75
9E08049-CAL8	4000	440324	1.191	11.75
9E08049-CAL9	6000	669359	1.145	11.75
9E08049-CALA	8000	935309	1.174	11.76

AVE RF **1.177** RF RSD **1.87** AVE RT **11.75**

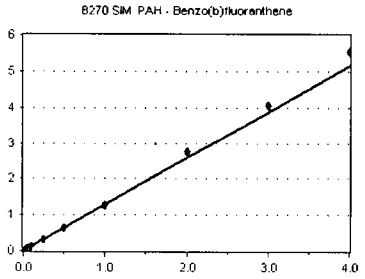
Element Calibration Review Sheet

Calibration ID: **A9E0902** Instrument: **SV-GCMS4** Calibration Date: **05/09/2019**

Analysis: **8270 SIM PAH** Instrument Cal ID: **A9E0902**

Benzo(b)fluoranthene

Curve Fit: **AVERAGE RF**

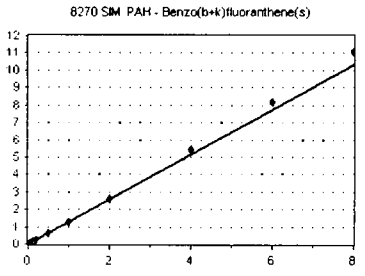


Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	20	1405	1.192	13.53
9E08049-CAL2	50	3160	1.210	13.53
9E08049-CAL3	100	7211	1.240	13.53
9E08049-CAL4	200	16784	1.283	13.53
9E08049-CAL5	500	41100	1.301	13.53
9E08049-CAL6	1000	75164	1.291	13.53
9E08049-CAL7	2000	142711	1.274	13.53
9E08049-CAL8	4000	333201	1.381	13.53
9E08049-CAL9	6000	505566	1.356	13.54
9E08049-CALA	8000	710929	1.385	13.54

AVE RF **1.291** RF RSD **5.19** AVE RT **13.53**

Benzo(b+k)fluoranthene(s)

Curve Fit: **AVERAGE RF**

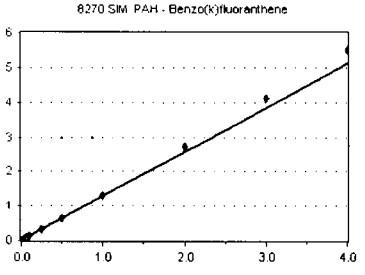


Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	40	2839	1.204	13.58
9E08049-CAL2	100	6341	1.214	13.58
9E08049-CAL3	200	14356	1.234	13.53
9E08049-CAL4	400	33074	1.264	13.53
9E08049-CAL5	1000	81849	1.296	13.53
9E08049-CAL6	2000	150464	1.292	13.53
9E08049-CAL7	4000	287540	1.283	13.58
9E08049-CAL8	8000	660960	1.370	13.58
9E08049-CAL9	12000	1017771	1.365	13.59
9E08049-CALA	16000	1421874	1.385	13.60

AVE RF **1.291** RF RSD **5.02** AVE RT **13.56**

Benzo(k)fluoranthene

Curve Fit: **AVERAGE RF**

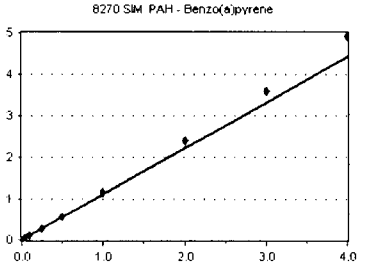


Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	20	1380	1.171	13.58
9E08049-CAL2	50	3133	1.200	13.58
9E08049-CAL3	100	7100	1.221	13.58
9E08049-CAL4	200	16151	1.234	13.58
9E08049-CAL5	500	40573	1.285	13.58
9E08049-CAL6	1000	75023	1.288	13.58
9E08049-CAL7	2000	144437	1.289	13.58
9E08049-CAL8	4000	327011	1.356	13.58
9E08049-CAL9	6000	511108	1.370	13.59
9E08049-CALA	8000	709605	1.382	13.60

AVE RF **1.280** RF RSD **5.73** AVE RT **13.58**

Benzo(a)pyrene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	20	1167	0.990	14.18
9E08049-CAL2	50	2611	1.000	14.19
9E08049-CAL3	100	6028	1.036	14.18
9E08049-CAL4	200	13946	1.066	14.18
9E08049-CAL5	500	34623	1.096	14.18
9E08049-CAL6	1000	66021	1.134	14.19
9E08049-CAL7	2000	128808	1.150	14.19
9E08049-CAL8	4000	289898	1.202	14.19
9E08049-CAL9	6000	445993	1.196	14.19
9E08049-CALA	8000	630473	1.228	14.20

AVE RF **1.110** RF RSD **7.71** AVE RT **14.19**

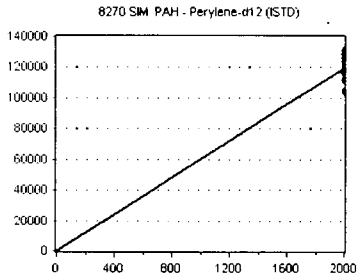
Element Calibration Review Sheet

Calibration ID: **A9E0902** Instrument: **SV-GCMS4** Calibration Date: **05/09/2019**

Analysis: **8270 SIM PAH** Instrument Cal ID: **A9E0902**

Perylene-d12 (ISTD)

Curve Fit: **AVERAGE RF**

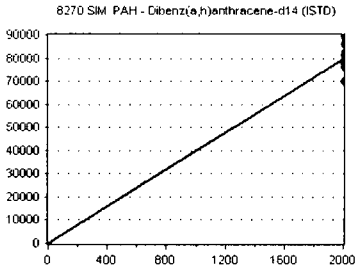


Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	2000	117866	58.933	14.31
9E08049-CAL2	2000	104431	52.216	14.31
9E08049-CAL3	2000	116316	58.158	14.31
9E08049-CAL4	2000	130840	65.420	14.31
9E08049-CAL5	2000	126329	63.164	14.31
9E08049-CAL6	2000	116473	58.236	14.31
9E08049-CAL7	2000	112021	56.011	14.31
9E08049-CAL8	2000	120610	60.305	14.31
9E08049-CAL9	2000	124314	62.157	14.31
9E08049-CALA	2000	128368	64.184	14.31

AVE RF **59.878** RF RSD **6.72** AVE RT **14.31**

Dibenz(a,h)anthracene-d14 (ISTD

Curve Fit: **AVERAGE RF**

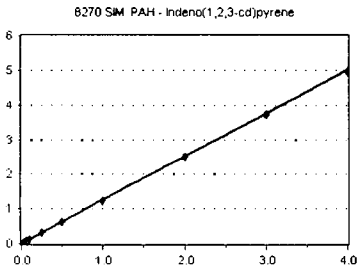


Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	2000	82315	41.158	16.72
9E08049-CAL2	2000	69899	34.949	16.71
9E08049-CAL3	2000	77795	38.898	16.72
9E08049-CAL4	2000	89555	44.778	16.72
9E08049-CAL5	2000	78494	39.247	16.71
9E08049-CAL6	2000	78010	39.005	16.72
9E08049-CAL7	2000	77875	38.938	16.72
9E08049-CAL8	2000	76553	38.277	16.72
9E08049-CAL9	2000	81338	40.669	16.72
9E08049-CALA	2000	86139	43.069	16.73

AVE RF **39.899** RF RSD **6.80** AVE RT **16.72**

Indeno(1,2,3-cd)pyrene

Curve Fit: **AVERAGE RF**

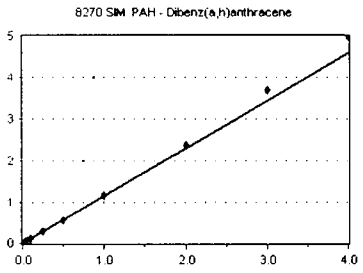


Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	20	1044	1.268	16.72
9E08049-CAL2	50	2160	1.236	16.72
9E08049-CAL3	100	4943	1.271	16.72
9E08049-CAL4	200	11276	1.259	16.73
9E08049-CAL5	500	25561	1.303	16.72
9E08049-CAL6	1000	49327	1.265	16.72
9E08049-CAL7	2000	96408	1.238	16.73
9E08049-CAL8	4000	192188	1.255	16.73
9E08049-CAL9	6000	302787	1.241	16.74
9E08049-CALA	8000	426588	1.238	16.74

AVE RF **1.257** RF RSD **1.65** AVE RT **16.73**

Dibenz(a,h)anthracene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	20	835	1.014	16.79
9E08049-CAL2	50	1848	1.058	16.79
9E08049-CAL3	100	4354	1.119	16.79
9E08049-CAL4	200	10135	1.132	16.79
9E08049-CAL5	500	22873	1.166	16.79
9E08049-CAL6	1000	45005	1.154	16.79
9E08049-CAL7	2000	90151	1.158	16.79
9E08049-CAL8	4000	182971	1.195	16.79
9E08049-CAL9	6000	301613	1.236	16.79
9E08049-CALA	8000	430375	1.249	16.80

AVE RF **1.148** RF RSD **6.34** AVE RT **16.79**

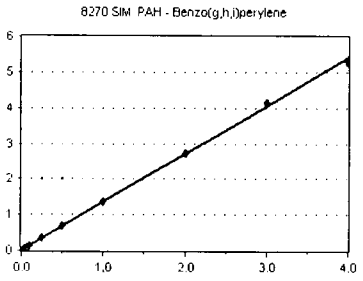
Element Calibration Review Sheet

Calibration ID: **A9E0902** Instrument: **SV-GCMS4** Calibration Date: **05/09/2019**

Analysis: **8270 SIM PAH** Instrument Cal ID: **A9E0902**

Benzo(g,h,i)perylene

Curve Fit: **AVERAGE RF**



Standard	Concentration	Response	Response Factor	RT
9E08049-CAL1	20	1077	1.308	17.28
9E08049-CAL2	50	2301	1.317	17.28
9E08049-CAL3	100	5262	1.353	17.28
9E08049-CAL4	200	11945	1.334	17.28
9E08049-CAL5	500	27694	1.411	17.28
9E08049-CAL6	1000	53499	1.372	17.28
9E08049-CAL7	2000	105570	1.356	17.28
9E08049-CAL8	4000	209532	1.369	17.28
9E08049-CAL9	6000	337352	1.383	17.29
9E08049-CALA	8000	455393	1.322	17.29

AVE RF **1.352** RF RSD **2.40** AVE RT **17.28**

Sequence Name: C:\HPCHEM\1\SEQUENCE\9E08049.S
Comment: EPA 8270 SIM PAH
Operator: bsj
Data Path: C:\HPCHEM\1\DATA\2019-05\9E08049\
Pre-Seq Cmd:
Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

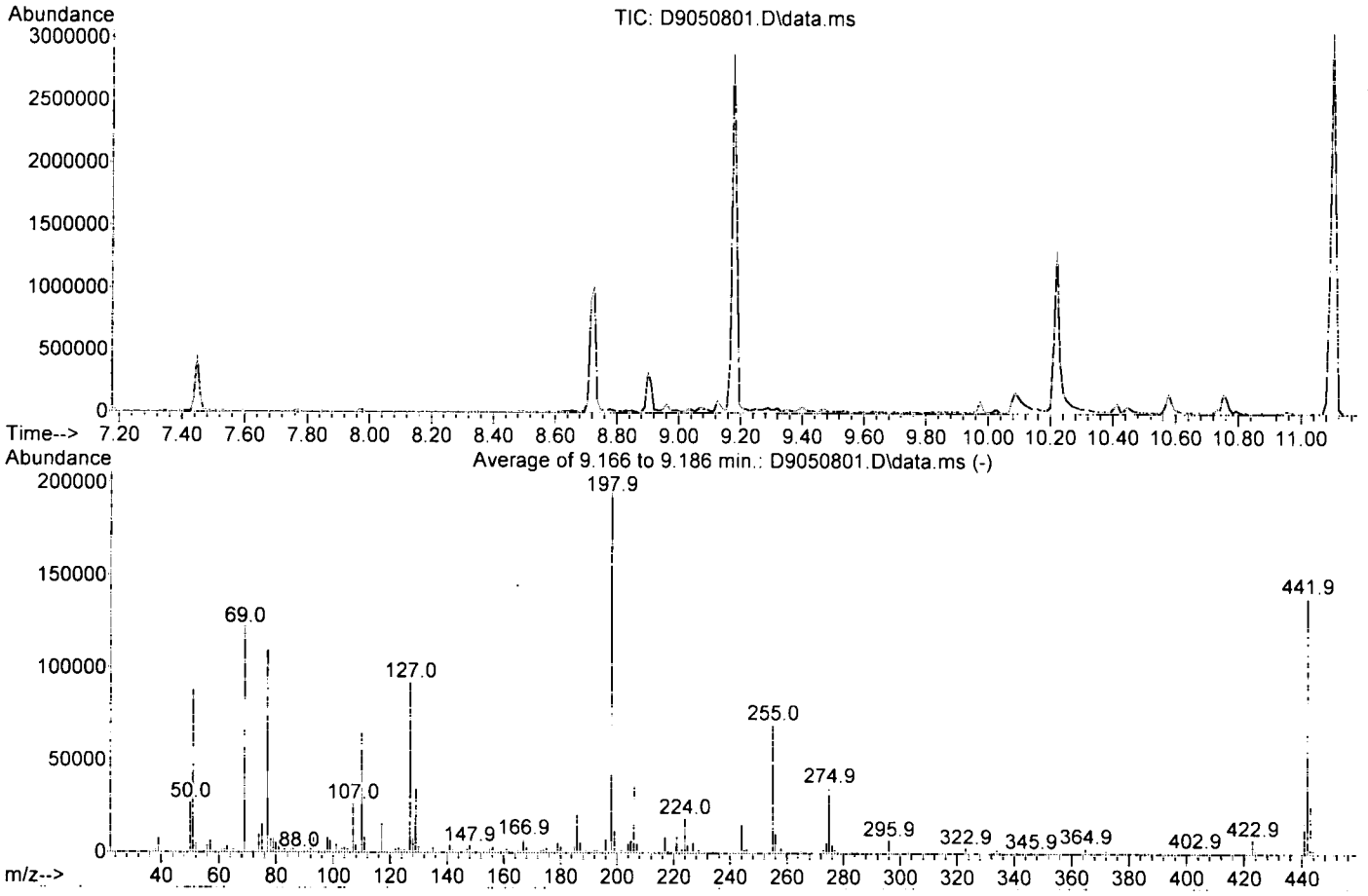
Line	Type	Vial	DataFile	Method	Sample Name
1	Sample	1	D9050801	DAQ808DF	9E08049-TUN1
2	Sample	2	D9050802	DAQ81024	9E08049-ICB1
3	Sample	3	D9050803	DAQ81024	9E08049-CAL1
4	Sample	4	D9050804	DAQ81024	9E08049-CAL2
5	Sample	5	D9050805	DAQ81024	9E08049-CAL3
6	Sample	6	D9050806	DAQ81024	9E08049-CAL4
7	Sample	7	D9050807	DAQ81024	9E08049-CAL5
8	Sample	8	D9050808	DAQ81024	9E08049-CAL6
9	Sample	9	D9050809	DAQ81024	9E08049-CAL7
10	Sample	10	D9050810	DAQ81024	9E08049-CAL8
11	Sample	11	D9050811	DAQ81024	9E08049-CAL9
12	Sample	12	D9050812	DAQ81024	9E08049-CALA
13	Sample	2	D9050813	DAQ81024	9E08049-IBL1
14	Sample	13	D9050814	DAQ81024	9E08049-ICV1
15	Sample	2	D9050815	DAQ81024	9E08049-IBL2

5-09-19
BBS

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050801.D
Acq On : 8 May 2019 2:14 pm
Operator : bsj
Sample : 9E08049-TUN1
Misc : 1x A19D323 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\methods\DFTPP-8270.M
Title : EPA 8270 SIM PAH
Last Update : Wed Dec 05 14:43:36 2018



AutoFind: Scans 554, 555, 556; Background Corrected with Scan 552

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	45.1	88601	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	62.2	122039	PASS
70	69	0.00	2	0.1	150	PASS
127	198	10	80	47.0	92267	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	196341	PASS
199	198	5	9	6.6	12872	PASS
275	198	10	60	18.3	35965	PASS
365	198	1	100	1.6	3135	PASS
441	442	0.01	24	14.3	19926	PASS
442	198	50	200	70.8	138970	PASS
443	442	15	24	19.4	26942	PASS

5-08-19
BSJ

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050801.D
Acq On : 8 May 2019 2:14 pm
Operator : bsj
Sample : 9E08049-TUN1
Misc : 1x A19D323 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 08 14:47:14 2019
Quant Method : C:\msdchem\1\methods\DFTPP-8270.M
Quant Title : EPA 8270 SIM PAH
QLast Update : Wed Dec 05 14:43:36 2018
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	5.749	136	199239	2000.00	ng/ml	0.00
2) Acenaphthene-d10	7.447	162	88247	2000.00	ng/ml	0.00
3) Phenanthrene-d10	8.900	188	132573	2000.00	ng/ml	-0.01
7) Chrysene-d12	11.713	240	67709	2000.00	ng/ml	0.00
8) Perylene-d12	14.311	264	43647	2000.00	ng/ml	0.01
9) Dibenz(ah)anthracene-d14	16.715	292	29722	2000.00	ng/mL	0.02
Target Compounds						Qvalue
4) Pentachlorophenol (PCP)	8.726	266	138799	35.88	ng/mL	98
5) DFTPP	9.176	198	365798	38.56	ng/mL	74
6) DDT	11.099	TIC	3527056	29415.22	ng/mL#	1

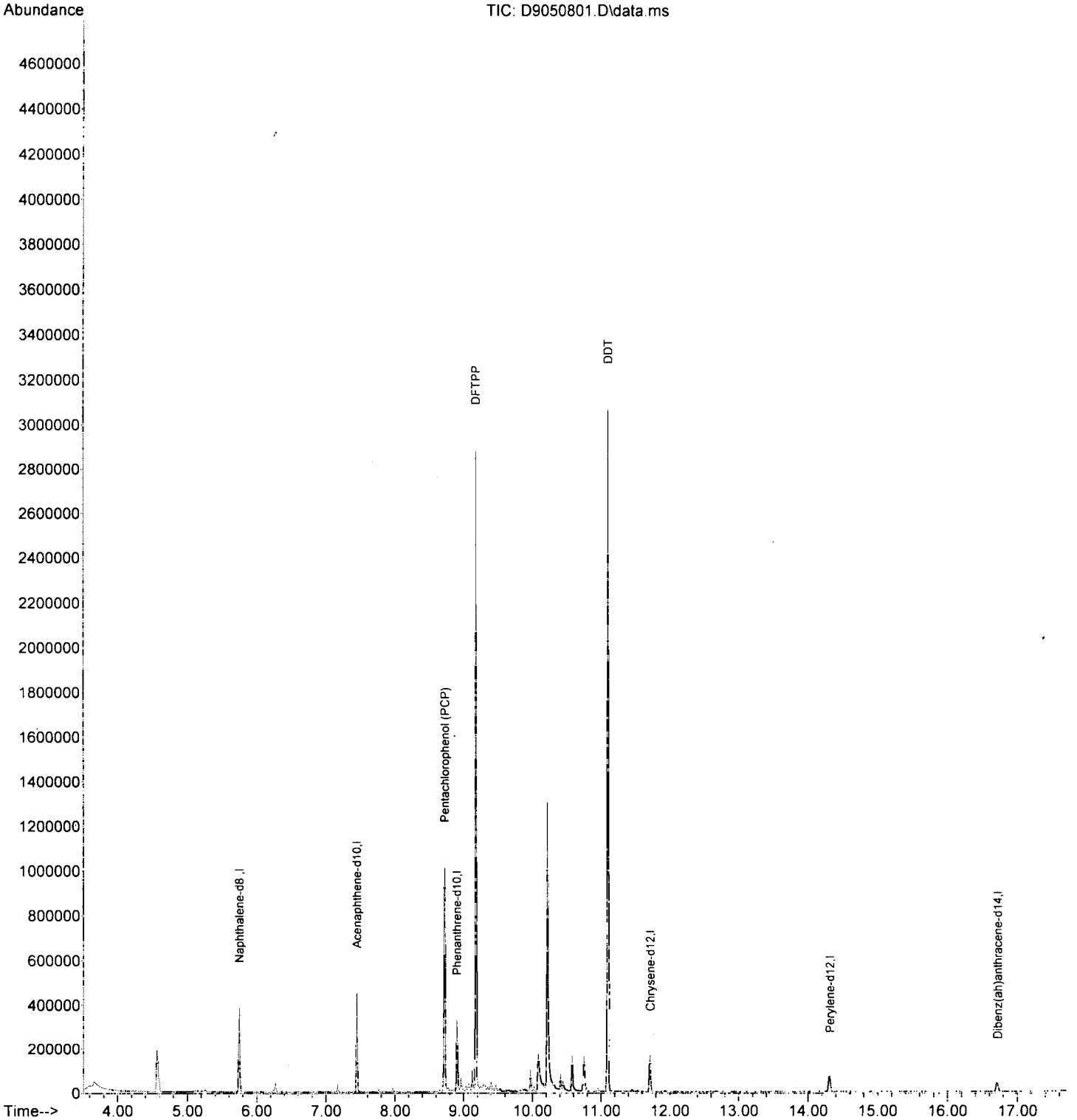
(#) = qualifier out of range (m) = manual integration (+) = signals summed

5-08-19 BSS

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050801.D
Acq On : 8 May 2019 2:14 pm
Operator : bsj
Sample : 9E08049-TUN1
Misc : 1x A19D323 DFTPP@45
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 08 14:47:14 2019
Quant Method : C:\msdchem\1\methods\DFTPP-8270.M
Quant Title : EPA 8270 SIM PAH
QLast Update : Wed Dec 05 14:43:36 2018
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050802.D
Acq On : 8 May 2019 2:39 pm
Operator : bsj
Sample : 9E08049-ICB1
Misc : 1x DCM + ISTD
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 08 15:03:26 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8 (ISTD)	5.749	136	502696	2000.00	ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.452	164	247403	2000.00	ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.905	188	344194	2000.00	ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.713	240	181302	2000.00	ng/ml	0.01
21) Perylene-d12 (ISTD)	14.307	264	143120	2000.00	ng/ml	0.02
28) Dibenz(a,h)anthracene-...	16.710	292	93997	2000.00	ng/mL	0.02
System Monitoring Compounds						
6) 2-Fluorobiphenyl(Surr)	0.000	172	0	0.00	ng/ml	
18) Terphenyl-d14(Surr)	0.000	244	0	0.00	ng/ml	
Target Compounds						Qvalue
2) Naphthlene	0.000		0	N.D.		
3) 2-Methylnaphthalene	0.000		0	N.D.		
4) 1-Methylnaphthalene	0.000		0	N.D.		
7) Acenaphthylene	0.000		0	N.D.		
8) Acenaphthene	0.000		0	N.D.		
9) Dibenzofuran	0.000		0	N.D.		
10) Fluorene	0.000		0	N.D.		
12) Phenanthrene	0.000		0	N.D.		
13) Anthracene	0.000		0	N.D.		
14) Carbazole	0.000		0	N.D.		
15) Fluoranthene	0.000		0	N.D.		
16) Pyrene	0.000		0	N.D.		
19) Benz(a)Anthracene	11.706	228	428	3.60	ng/ml#	55
20) Chrysene	11.706	228	428	3.72	ng/ml#	55
22) Benzo(b)Fluoranthene	0.000		0	N.D.		
23) Benzo(k)Fluoranthene	0.000		0	N.D.		
24) Benzo(b+k)Fluoranthene	0.000		0	N.D.		
25) Benzo(e) Pyrene	0.000		0	N.D.		
26) Benzo(a)Pyrene	0.000		0	N.D.		
27) Perylene	14.307	252	446	5.58	ng/mL#	1
29) Indeno(1,2,3-cd)Pyrene	0.000		0	N.D.		
30) Dibenz(a,h)Anthracene	0.000		0	N.D.		
31) Benzo (g,h,i) Perylene	0.000		0	N.D.		

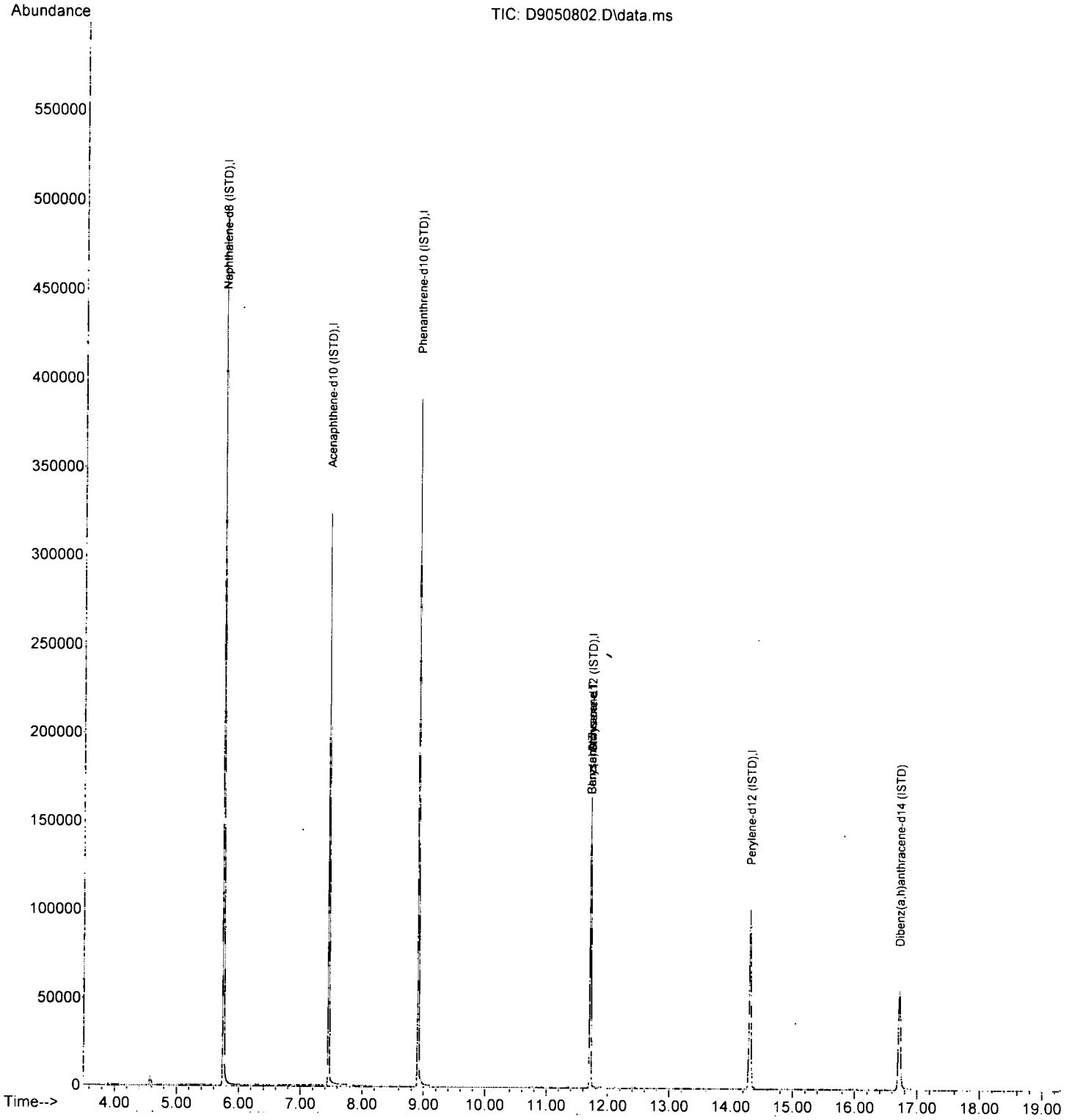
(#) = qualifier out of range (m) = manual integration (+) = signals summed

5-08-19
BSS

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050802.D
Acq On : 8 May 2019 2:39 pm
Operator : bsj
Sample : 9E08049-ICB1
Misc : 1x DCM + ISTD
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 08 15:03:26 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050803.D
Acq On : 8 May 2019 3:06 pm
Operator : bsj
Sample : 9E08049-CAL1
Misc : 1x A19D053@20
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 08 15:33:41 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8 (ISTD)	5.749	136	466187	2000.00	ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.451	164	230511	2000.00	ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.905	188	304584	2000.00	ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.713	240	151327	2000.00	ng/ml	0.00
21) Perylene-d12 (ISTD)	14.306	264	117866	2000.00	ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.715	292	82315	2000.00	ng/mL	0.00
System Monitoring Compounds						
6) 2-Fluorobiphenyl(Surr)	6.786	172	3198	18.45	ng/ml	0.00
18) Terphenyl-d14(Surr)	10.464	244	1566	23.23	ng/ml	0.00
Target Compounds						Qvalue
2) Naphthlene	5.769	128	4689	19.42	ng/ml	96
3) 2-Methylnaphthalene	6.434	142	2933	18.12	ng/ml	97
4) 1-Methylnaphthalene	6.531	142	2804	17.88	ng/ml	99
7) Acenaphthylene	7.310	152	3967	18.73	ng/ml	98
8) Acenaphthene	7.482	153	2650	19.24	ng/ml	96
9) Dibenzofuran	7.654	168	3419	17.63	ng/mL	90
10) Fluorene	7.983	166	2663	17.56	ng/ml	98
12) Phenanthrene	8.926	178	3589	20.16	ng/ml	97
13) Anthracene	8.979	178	3434	18.53	ng/ml	98
14) Carbazole	9.128	167	2762	17.33	ng/mL	99
15) Fluoranthene	10.096	202	2877	16.75	ng/ml	99
16) Pyrene	10.319	202	2874	16.61	ng/ml	99
19) Benz(a)Anthracene	11.698	228	2121	21.40	ng/ml	99
20) Chrysene	11.748	228	1746	18.19	ng/ml	95
22) Benzo(b)Fluoranthene	13.525	252	1405	18.68	ng/ml	64
23) Benzo(k)Fluoranthene	13.582	252	1380	18.51	ng/ml	71
24) Benzo(b+k)Fluoranthene	13.582	252	2839	37.69	ng/ml	66
25) Benzo(e) Pyrene	14.082	252	1451	19.39	ng/mL	92
26) Benzo(a)Pyrene	14.180	252	1167	16.56	ng/ml	68
27) Perylene	14.358	252	1223	18.59	ng/mL	96
29) Indeno(1,2,3-cd)Pyrene	16.721	276	1044	18.36	ng/ml#	24
30) Dibenz(a,h)Anthracene	16.787	278	835	15.84	ng/ml	77
31) Benzo (g,h,i) Perylene	17.277	276	1077	18.05	ng/ml	88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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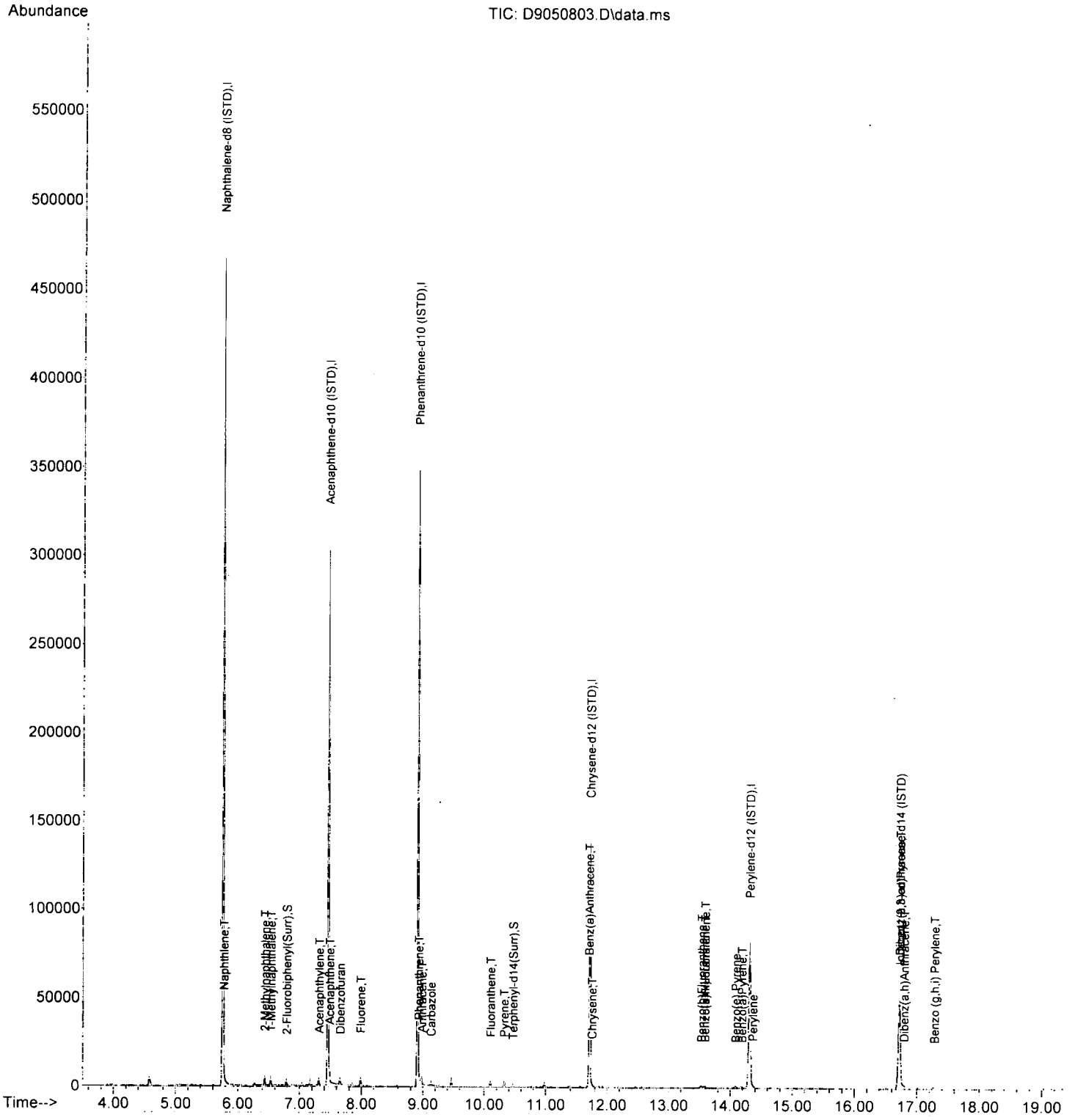
5-08-19
BSS

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050803.D
Acq On : 8 May 2019 3:06 pm
Operator : bsj
Sample : 9E08049-CAL1
Misc : 1x A19D053@20
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 08 15:33:41 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050804.D
Acq On : 8 May 2019 3:33 pm
Operator : bsj
Sample : 9E08049-CAL2
Misc : 1x A19D054@50
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 08 16:05:55 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8 (ISTD)	5.749	136	463733	2000.00	ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.451	164	221804	2000.00	ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.904	188	301378	2000.00	ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.712	240	140551	2000.00	ng/ml	0.00
21) Perylene-d12 (ISTD)	14.306	264	104431	2000.00	ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.709	292	69899	2000.00	ng/mL	-0.01
System Monitoring Compounds						
6) 2-Fluorobiphenyl(Surr)	6.785	172	8018	48.06	ng/ml	0.00
18) Terphenyl-d14(Surr)	10.465	244	3785	60.45	ng/ml	0.00
Target Compounds						Qvalue
2) Naphthlene	5.769	128	11873	49.44	ng/ml	99
3) 2-Methylnaphthalene	6.433	142	7648	47.49	ng/ml	98
4) 1-Methylnaphthalene	6.531	142	7328	46.97	ng/ml	97
7) Acenaphthylene	7.310	152	9772	47.95	ng/ml	98
8) Acenaphthene	7.482	153	6529	49.27	ng/ml	98
9) Dibenzofuran	7.653	168	8715	46.71	ng/mL	89
10) Fluorene	7.984	166	6694	45.86	ng/ml	99
12) Phenanthrene	8.930	178	8731	49.58	ng/ml	98
13) Anthracene	8.978	178	8425	45.94	ng/ml	97
14) Carbazole	9.127	167	6820	43.26	ng/mL	100
15) Fluoranthene	10.098	202	7146	42.06	ng/ml	99
16) Pyrene	10.320	202	7229	42.22	ng/ml	99
19) Benz(a)Anthracene	11.691	228	4315	46.87	ng/ml	99
20) Chrysene	11.748	228	4077	45.73	ng/ml	96
22) Benzo(b)Fluoranthene	13.530	252	3160	47.41	ng/ml	67
23) Benzo(k)Fluoranthene	13.582	252	3133	47.42	ng/ml	72
24) Benzo(b+k)Fluoranthene	13.582	252	6341	95.01	ng/ml	66
25) Benzo(e) Pyrene	14.076	252	3221	48.58	ng/mL	95
26) Benzo(a)Pyrene	14.185	252	2611	41.81	ng/ml	69
27) Perylene	14.358	252	2655	45.56	ng/mL	95
29) Indeno(1,2,3-cd)Pyrene	16.720	276	2160	44.73	ng/ml	51
30) Dibenz(a,h)Anthracene	16.787	278	1848	41.28	ng/ml	68
31) Benzo (g,h,i) Perylene	17.277	276	2301	45.43	ng/ml	89

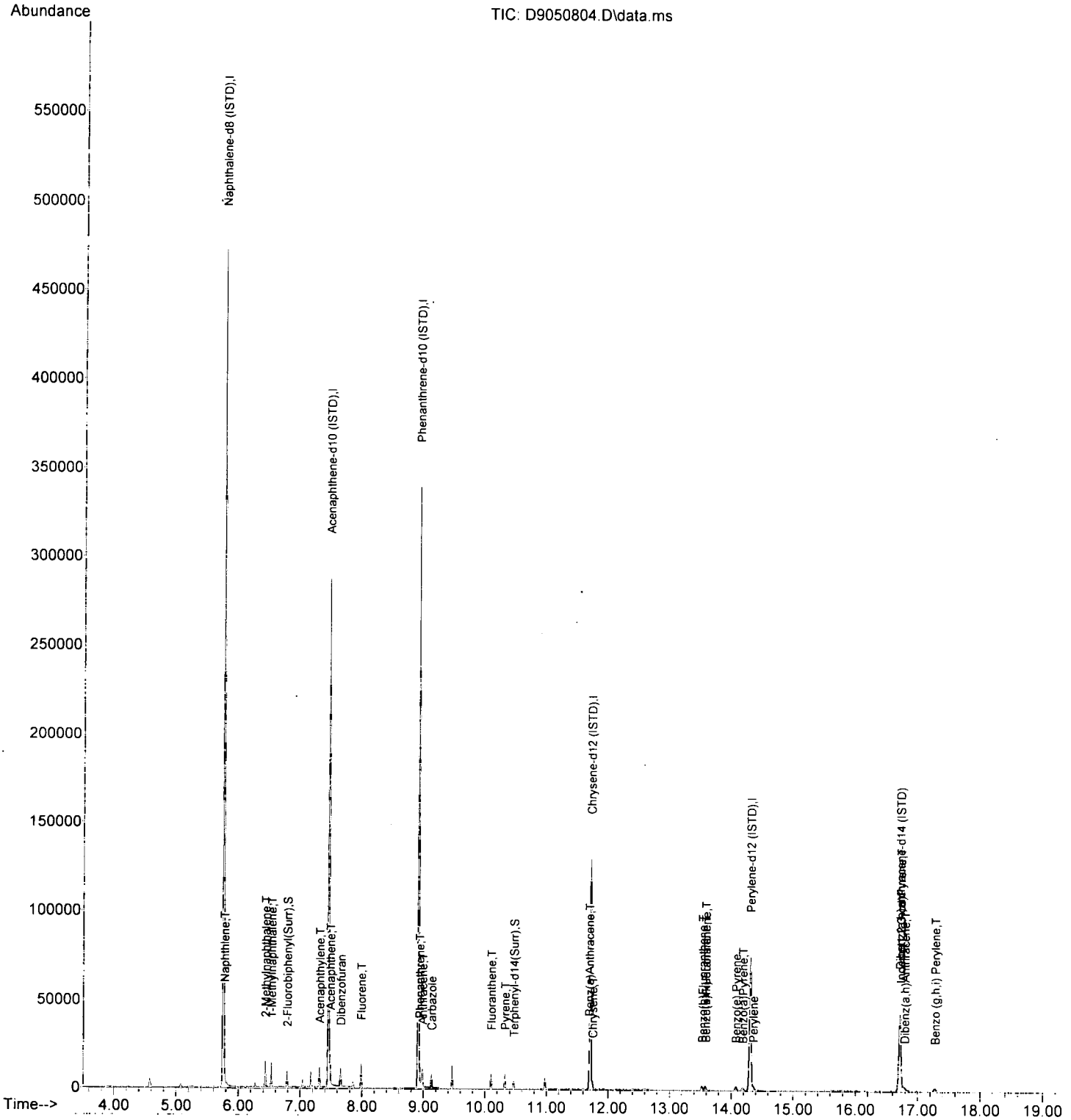
(#) = qualifier out of range (m) = manual integration (+) = signals summed

5-29-19
BJ

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050804.D
Acq On : 8 May 2019 3:33 pm
Operator : bsj
Sample : 9E08049-CAL2
Misc : 1x A19D054@50
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 08 16:05:55 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050805.D
Acq On : 8 May 2019 4:00 pm
Operator : bsj
Sample : 9E08049-CAL3
Misc : 1x A19D055@100
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 08 16:20:54 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8 (ISTD)	5.748	136	471590	2000.00	ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.451	164	225358	2000.00	ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.904	188	306553	2000.00	ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.713	240	149032	2000.00	ng/ml	0.00
21) Perylene-d12 (ISTD)	14.307	264	116316	2000.00	ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.715	292	77795	2000.00	ng/mL	0.00
System Monitoring Compounds						
6) 2-Fluorobiphenyl(Surr)	6.786	172	17297	102.05	ng/ml	0.00
18) Terphenyl-d14(Surr)	10.464	244	7976	120.13	ng/ml	0.00
Target Compounds						Qvalue
2) Naphthlene	5.768	128	24984	102.30	ng/ml	100
3) 2-Methylnaphthalene	6.434	142	15759	96.23	ng/ml	98
4) 1-Methylnaphthalene	6.531	142	15375	96.91	ng/ml	98
7) Acenaphthylene	7.310	152	20275	97.91	ng/ml	98
8) Acenaphthene	7.482	153	13798	102.49	ng/ml	97
9) Dibenzofuran	7.648	168	18384	96.99	ng/mL	89
10) Fluorene	7.983	166	14137	95.33	ng/ml	100
12) Phenanthrene	8.926	178	17675	98.67	ng/ml	99
13) Anthracene	8.979	178	17535	94.00	ng/ml	98
14) Carbazole	9.127	167	14166	88.34	ng/mL	100
15) Fluoranthene	10.096	202	15086	87.29	ng/ml	99
16) Pyrene	10.319	202	14897	85.54	ng/ml	99
19) Benz(a)Anthracene	11.691	228	9030	92.49	ng/ml	96
20) Chrysene	11.748	228	8974	94.92	ng/ml	96
22) Benzo(b)Fluoranthene	13.525	252	7211	97.13	ng/ml	71
23) Benzo(k)Fluoranthene	13.583	252	7100	96.48	ng/ml	71
24) Benzo(b+k)Fluoranthene	13.525	252	14356	193.13	ng/ml#	58
25) Benzo(e) Pyrene	14.077	252	7339	99.37	ng/mL	96
26) Benzo(a)Pyrene	14.180	252	6028	86.65	ng/ml	71
27) Perylene	14.358	252	6167	95.00	ng/mL	93
29) Indeno(1,2,3-cd)Pyrene	16.721	276	4943	91.98	ng/ml	62
30) Dibenz(a,h)Anthracene	16.788	278	4354	87.38	ng/ml	75
31) Benzo (g,h,i) Perylene	17.278	276	5262	93.34	ng/ml	88

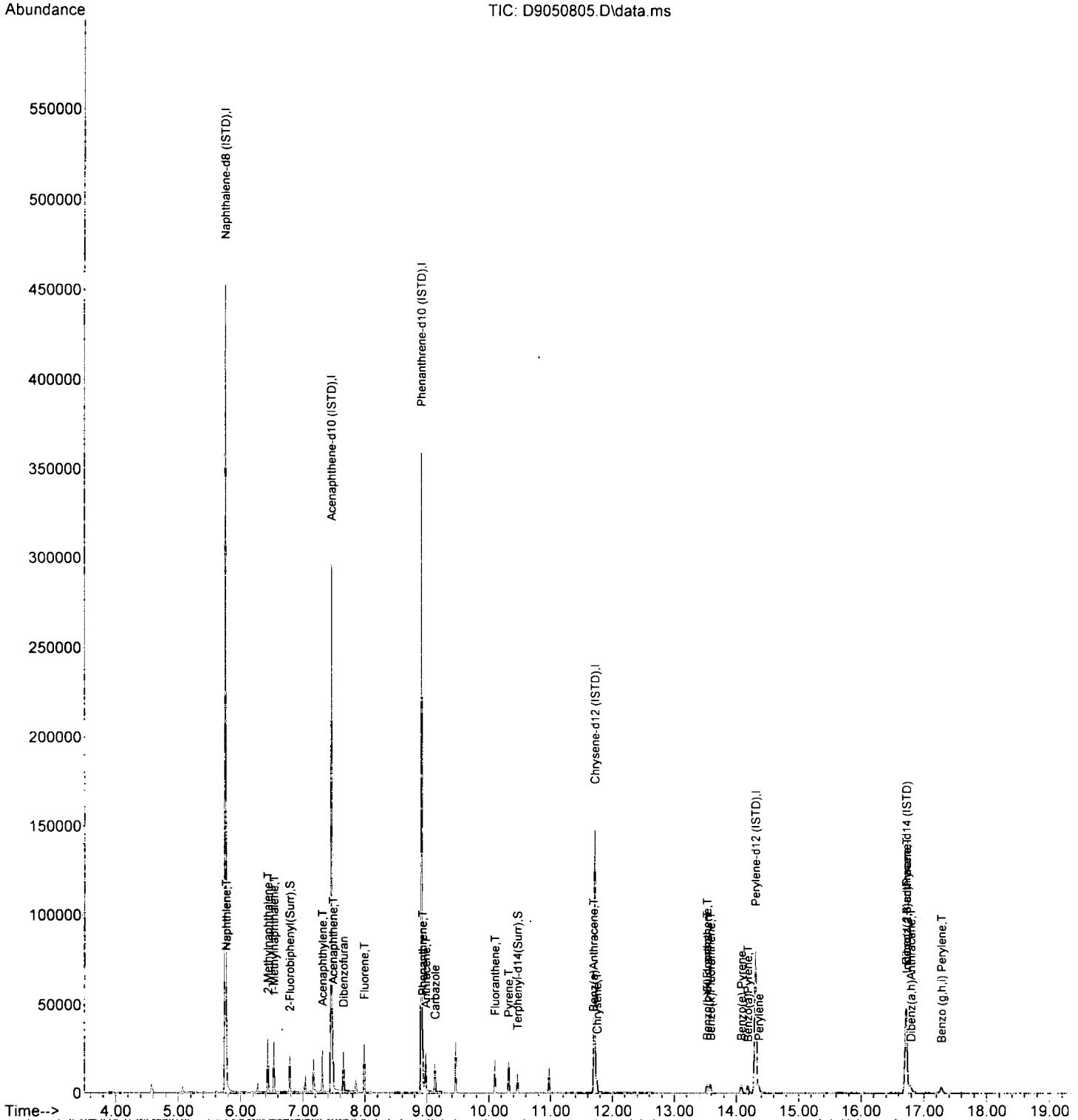
(#) = qualifier out of range (m) = manual integration (+) = signals summed

5-09-19
BSJ

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050805.D
Acq On : 8 May 2019 4:00 pm
Operator : bsj
Sample : 9E08049-CAL3
Misc : 1x A19D055@100
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 08 16:20:54 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050806.D
Acq On : 8 May 2019 4:27 pm
Operator : bsj
Sample : 9E08049-CAL4
Misc : 1x A19D056@200
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 08 16:46:38 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8 (ISTD)	5.749	136	492717	2000.00	ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.451	164	249711	2000.00	ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.904	188	338434	2000.00	ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.713	240	174083	2000.00	ng/ml	0.00
21) Perylene-d12 (ISTD)	14.307	264	130840	2000.00	ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.715	292	89555	2000.00	ng/mL	0.00
System Monitoring Compounds						
6) 2-Fluorobiphenyl(Surr)	6.785	172	36441	194.02	ng/ml	0.00
18) Terphenyl-d14(Surr)	10.465	244	17883	230.58	ng/ml	0.00
Target Compounds						Qvalue
2) Naphthlene	5.769	128	52183	204.51	ng/ml	99
3) 2-Methylnaphthalene	6.433	142	33247	194.32	ng/ml	98
4) 1-Methylnaphthalene	6.530	142	32655	197.00	ng/ml	98
7) Acenaphthylene	7.310	152	44087	192.13	ng/ml	99
8) Acenaphthene	7.482	153	30379	203.65	ng/ml	97
9) Dibenzofuran	7.654	168	40515	192.90	ng/mL	89
10) Fluorene	7.984	166	31515	191.79	ng/ml	99
12) Phenanthrene	8.931	178	38909	196.74	ng/ml	99
13) Anthracene	8.978	178	38648	187.66	ng/ml	99
14) Carbazole	9.127	167	31934	180.38	ng/mL	99
15) Fluoranthene	10.098	202	33069	173.32	ng/ml	100
16) Pyrene	10.320	202	33170	172.53	ng/ml	99
19) Benz(a)Anthracene	11.691	228	20553	180.23	ng/ml	96
20) Chrysene	11.748	228	20755	187.95	ng/ml	96
22) Benzo(b)Fluoranthene	13.526	252	16784	200.98	ng/ml	70
23) Benzo(k)Fluoranthene	13.578	252	16151	195.12	ng/ml	67
24) Benzo(b+k)Fluoranthene	13.526	252	33074	395.55	ng/ml#	58
25) Benzo(e) Pyrene	14.078	252	16734	201.43	ng/mL	95
26) Benzo(a)Pyrene	14.181	252	13946	178.22	ng/ml	68
27) Perylene	14.353	252	14129	193.50	ng/mL	95
29) Indeno(1,2,3-cd)Pyrene	16.726	276	11276	182.27	ng/ml	67
30) Dibenz(a,h)Anthracene	16.787	278	10135	176.69	ng/ml	72
31) Benzo (g,h,i) Perylene	17.277	276	11945	184.06	ng/ml	87

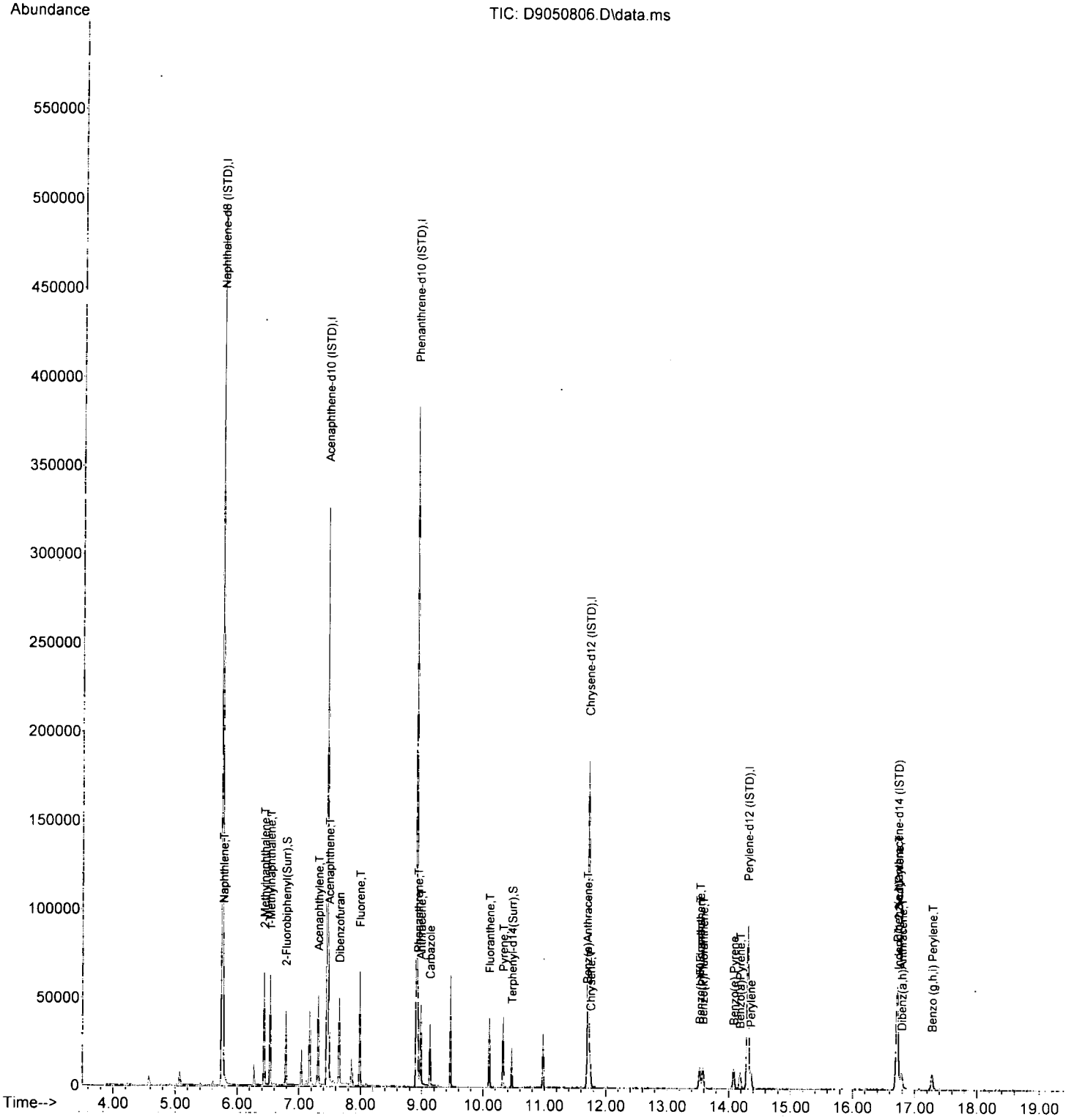
(#) = qualifier out of range (m) = manual integration (+) = signals summed

5-09-19
BSJ

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050806.D
Acq On : 8 May 2019 4:27 pm
Operator : bsj
Sample : 9E08049-CAL4
Misc : 1x A19D056@200
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 08 16:46:38 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050807.D
Acq On : 8 May 2019 4:53 pm
Operator : bsj
Sample : 9E08049-CAL5
Misc : 1x A19D057@500
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 09 08:45:56 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8 (ISTD)	5.749	136	492814	2000.00	ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.451	164	239395	2000.00	ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.904	188	332652	2000.00	ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.706	240	166780	2000.00	ng/ml	0.00
21) Perylene-d12 (ISTD)	14.307	264	126329	2000.00	ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.709	292	78494	2000.00	ng/mL	-0.01
System Monitoring Compounds						
6) 2-Fluorobiphenyl(Surr)	6.786	172	90965	505.19	ng/ml	0.00
18) Terphenyl-d14(Surr)	10.464	244	45061	606.45	ng/ml	0.00
Target Compounds						Qvalue
2) Naphthlene	5.769	128	129108	505.88	ng/ml	99
3) 2-Methylnaphthalene	6.434	142	83046	485.29	ng/ml	98
4) 1-Methylnaphthalene	6.531	142	81160	489.53	ng/ml	98
7) Acenaphthylene	7.310	152	111217	505.58	ng/ml	98
8) Acenaphthene	7.482	153	73853	516.41	ng/ml	97
9) Dibenzofuran	7.648	168	99804	495.65	ng/mL	89
10) Fluorene	7.984	166	77520	492.09	ng/ml	99
12) Phenanthrene	8.925	178	97019	499.10	ng/ml	98
13) Anthracene	8.978	178	98494	486.56	ng/ml	98
14) Carbazole	9.127	167	80782	464.22	ng/mL	99
15) Fluoranthene	10.096	202	83706	446.33	ng/ml	99
16) Pyrene	10.319	202	82420	436.15	ng/ml	98
19) Benz(a)Anthracene	11.692	228	50228	459.73	ng/ml	96
20) Chrysene	11.741	228	50502	477.34	ng/ml	96
22) Benzo(b)Fluoranthene	13.525	252	41100	509.72	ng/ml	72
23) Benzo(k)Fluoranthene	13.577	252	40573	507.65	ng/ml	70
24) Benzo(b+k)Fluoranthene	13.525	252	81849	1013.82	ng/ml#	58
25) Benzo(e) Pyrene	14.077	252	41132	512.80	ng/mL	96
26) Benzo(a)Pyrene	14.180	252	34623	458.26	ng/ml	71
27) Perylene	14.358	252	34311	486.67	ng/mL	95
29) Indeno(1,2,3-cd)Pyrene	16.721	276	25561	471.41	ng/ml	69
30) Dibenz(a,h)Anthracene	16.787	278	22873	454.94	ng/ml	70
31) Benzo (g,h,i) Perylene	17.277	276	27694	486.86	ng/ml	88

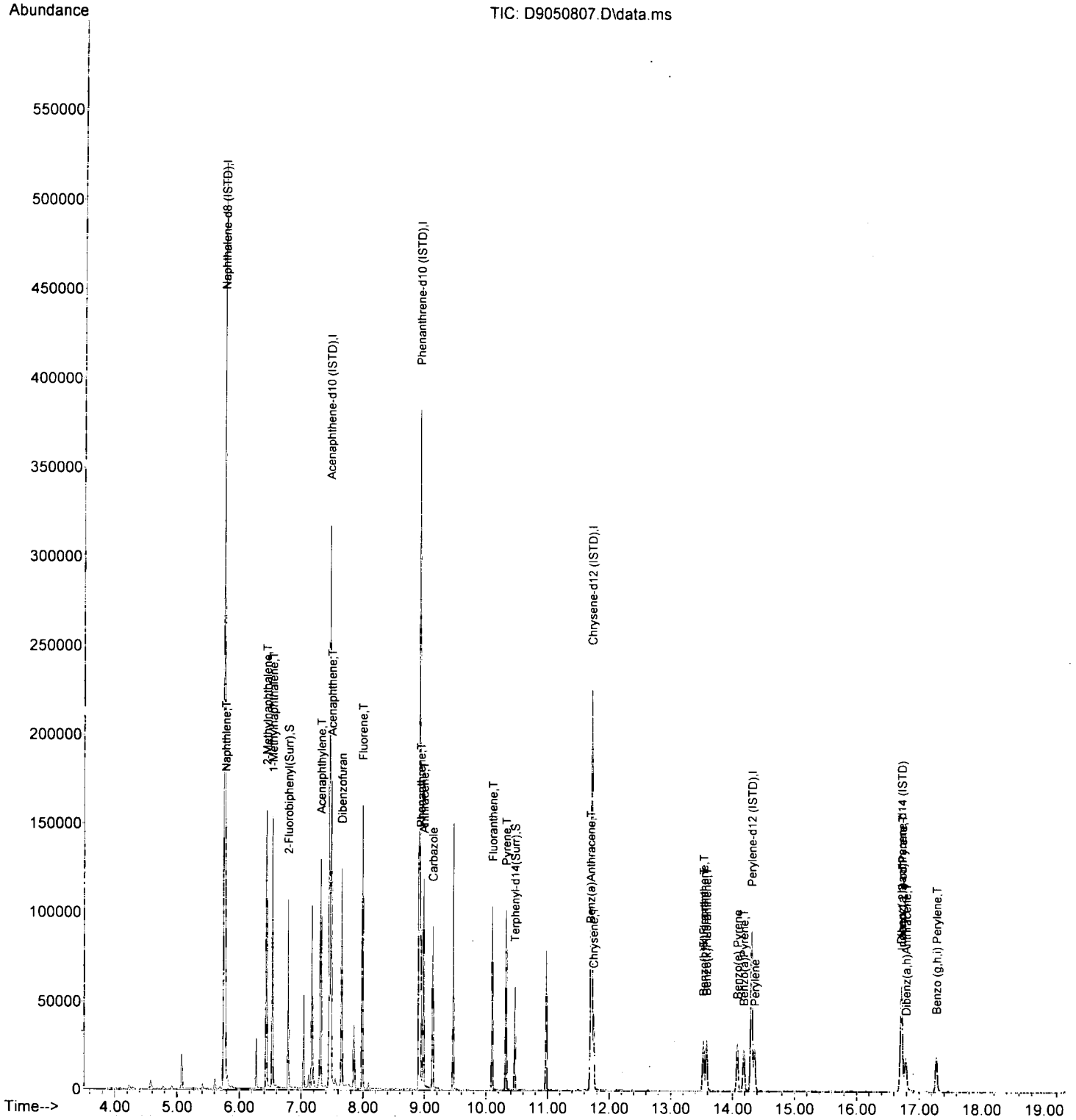
(#) = qualifier out of range (m) = manual integration (+) = signals summed

5-09-19
BSJ

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050807.D
Acq On : 8 May 2019 4:53 pm
Operator : bsj
Sample : 9E08049-CAL5
Misc : 1x A19D057@500
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 09 08:45:56 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050808.D
Acq On : 8 May 2019 5:20 pm
Operator : bsj
Sample : 9E08049-CAL6
Misc : 1x A19D058@1000
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 09 08:46:00 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Naphthalene-d8 (ISTD)	5.748	136	510967	2000.00 ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.452	164	250878	2000.00 ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.905	188	350771	2000.00 ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.713	240	167448	2000.00 ng/ml	0.00
21) Perylene-d12 (ISTD)	14.307	264	116473	2000.00 ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.716	292	78010	2000.00 ng/mL	0.00
System Monitoring Compounds					
6) 2-Fluorobiphenyl(Surr)	6.786	172	185360	982.31 ng/ml	0.00
18) Terphenyl-d14(Surr)	10.465	244	88878	1191.39 ng/ml	0.00
Target Compounds					Qvalue
2) Naphthlene	5.768	128	261032	986.46 ng/ml	99
3) 2-Methylnaphthalene	6.435	142	170938	963.41 ng/ml	99
4) 1-Methylnaphthalene	6.532	142	166096	966.24 ng/ml	98
7) Acenaphthylene	7.311	152	225669	978.90 ng/ml	99
8) Acenaphthene	7.483	153	152955	1020.57 ng/ml	96
9) Dibenzofuran	7.649	168	202127	957.87 ng/mL	88
10) Fluorene	7.984	166	156316	946.87 ng/ml	100
12) Phenanthrene	8.931	178	198671	969.24 ng/ml	98
13) Anthracene	8.979	178	199237	933.38 ng/ml	98
14) Carbazole	9.128	167	160766	876.13 ng/mL	99
15) Fluoranthene	10.097	202	167364	846.31 ng/ml	100
16) Pyrene	10.320	202	164492	825.50 ng/ml	98
19) Benz(a)Anthracene	11.692	228	97157	885.72 ng/ml	96
20) Chrysene	11.748	228	98010	922.69 ng/ml	96
22) Benzo(b)Fluoranthene	13.531	252	75164	1011.05 ng/ml	67
23) Benzo(k)Fluoranthene	13.583	252	75023	1018.13 ng/ml	70
24) Benzo(b+k)Fluoranthene	13.531	252	150464	2021.42 ng/ml#	58
25) Benzo(e) Pyrene	14.077	252	75609	1022.40 ng/mL	95
26) Benzo(a)Pyrene	14.186	252	66021	947.79 ng/ml	70
27) Perylene	14.359	252	63145	971.45 ng/mL	94
29) Indeno(1,2,3-cd)Pyrene	16.722	276	49327	915.36 ng/ml	69
30) Dibenz(a,h)Anthracene	16.788	278	45005	900.70 ng/ml	69
31) Benzo (g,h,i) Perylene	17.278	276	53499	946.34 ng/ml	87

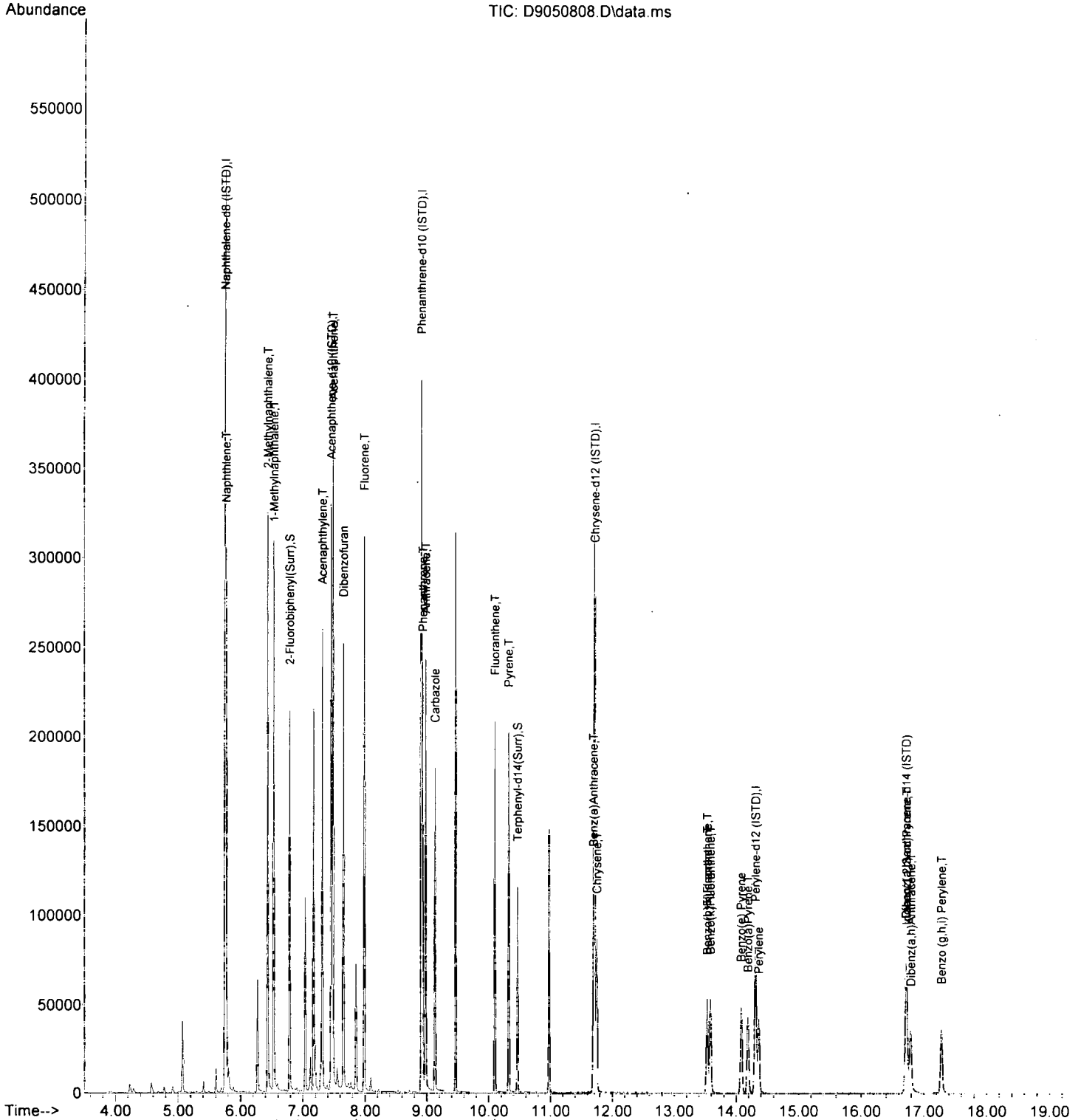
(#) = qualifier out of range (m) = manual integration (+) = signals summed

5-09-19
BSJ

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050808.D
Acq On : 8 May 2019 5:20 pm
Operator : bsj
Sample : 9E08049-CAL6
Misc : 1x A19D058@1000
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 09 08:46:00 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050809.D
Acq On : 8 May 2019 5:47 pm
Operator : bsj
Sample : 9E08049-CAL7
Misc : 1x A19D059@2000
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 09 08:46:03 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8 (ISTD)	5.749	136	476839	2000.00	ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.452	164	232647	2000.00	ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.904	188	318049	2000.00	ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.713	240	159832	2000.00	ng/ml	0.00
21) Perylene-d12 (ISTD)	14.307	264	112021	2000.00	ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.715	292	77875	2000.00	ng/mL	0.00
System Monitoring Compounds						
6) 2-Fluorobiphenyl(Surr)	6.786	172	347194	1984.13	ng/ml	0.00
18) Terphenyl-d14(Surr)	10.464	244	168672	2368.74	ng/ml	0.00
Target Compounds						Qvalue
2) Naphthlene	5.769	128	494185	2001.22	ng/ml	100
3) 2-Methylnaphthalene	6.434	142	320988	1938.58	ng/ml	99
4) 1-Methylnaphthalene	6.532	142	313064	1951.56	ng/ml	98
7) Acenaphthylene	7.311	152	427487	1999.66	ng/ml	98
8) Acenaphthene	7.483	153	282947	2035.87	ng/ml	97
9) Dibenzofuran	7.654	168	380141	1942.64	ng/mL	88
10) Fluorene	7.989	166	289620	1891.82	ng/ml	100
12) Phenanthrene	8.931	178	359989	1936.93	ng/ml	98
13) Anthracene	8.979	178	369906	1911.22	ng/ml	99
14) Carbazole	9.127	167	282079	1695.41	ng/mL	99
15) Fluoranthene	10.097	202	310889	1733.82	ng/ml	99
16) Pyrene	10.320	202	305607	1691.47	ng/ml	99
19) Benz(a)Anthracene	11.692	228	185923	1775.72	ng/ml	96
20) Chrysene	11.749	228	186429	1838.72	ng/ml	96
22) Benzo(b)Fluoranthene	13.531	252	142711	1995.94	ng/ml	72
23) Benzo(k)Fluoranthene	13.583	252	144437	2038.03	ng/ml	74
24) Benzo(b+k)Fluoranthene	13.583	252	287540	4016.51	ng/ml	73
25) Benzo(e) Pyrene	14.083	252	142542	2004.09	ng/mL	98
26) Benzo(a)Pyrene	14.186	252	128808	1922.64	ng/ml	74
27) Perylene	14.358	252	120711	1930.87	ng/mL	98
29) Indeno(1,2,3-cd)Pyrene	16.727	276	96408	1792.15	ng/ml	74
30) Dibenz(a,h)Anthracene	16.788	278	90151	1807.35	ng/ml	73
31) Benzo (g,h,i) Perylene	17.278	276	105570	1870.66	ng/ml	92

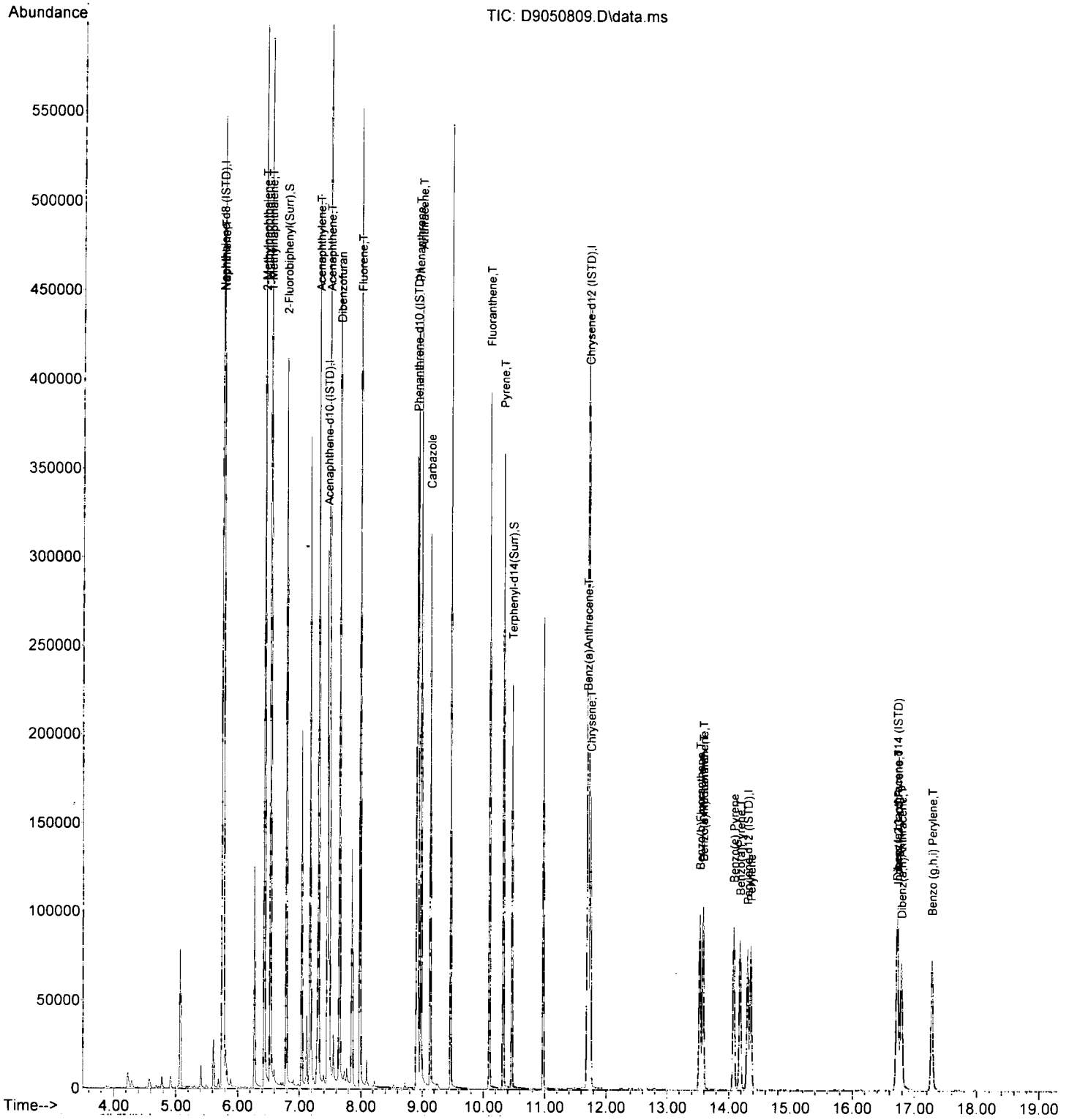
(#) = qualifier out of range (m) = manual integration (+) = signals summed

5-09-19
BSJ

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050809.D
Acq On : 8 May 2019 5:47 pm
Operator : bsj
Sample : 9E08049-CAL7
Misc : 1x A19D059@2000
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 09 08:46:03 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050810.D
Acq On : 8 May 2019 6:14 pm
Operator : bsj
Sample : 9E08049-CAL8
Misc : 1x A19D060@4000
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 09 08:46:06 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8 (ISTD)	5.749	136	517036	2000.00	ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.452	164	249933	2000.00	ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.906	188	360425	2000.00	ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.713	240	184787	2000.00	ng/ml	0.00
21) Perylene-d12 (ISTD)	14.307	264	120610	2000.00	ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.716	292	76553	2000.00	ng/mL	0.00
System Monitoring Compounds						
6) 2-Fluorobiphenyl(Surr)	6.786	172	774141	4118.05	ng/ml	0.00
18) Terphenyl-d14(Surr)	10.465	244	404521	4913.69	ng/ml	0.00
Target Compounds						Qvalue
2) Naphthlene	5.769	128	1076783	4021.46	ng/ml	100
3) 2-Methylnaphthalene	6.434	142	710284	3956.19	ng/ml	99
4) 1-Methylnaphthalene	6.532	142	693878	3989.17	ng/ml	98
7) Acenaphthylene	7.311	152	923218	4019.86	ng/ml	99
8) Acenaphthene	7.483	153	605481	4055.27	ng/ml	97
9) Dibenzofuran	7.654	168	822550	3912.77	ng/mL	89
10) Fluorene	7.989	166	644798	3920.56	ng/ml	100
12) Phenanthrene	8.932	178	832431	3952.32	ng/ml	98
13) Anthracene	8.980	178	873705	3983.48	ng/ml	99
14) Carbazole	9.129	167	532740	2825.53	ng/mL	99
15) Fluoranthene	10.097	202	725379	3569.79	ng/ml	99
16) Pyrene	10.326	202	724953	3540.71	ng/ml	99
19) Benz(a)Anthracene	11.699	228	433129	3578.08	ng/ml	96
20) Chrysene	11.749	228	440324	3756.36	ng/ml	96
22) Benzo(b)Fluoranthene	13.532	252	333201	4328.25	ng/ml	72
23) Benzo(k)Fluoranthene	13.583	252	327011	4285.60	ng/ml	69
24) Benzo(b+k)Fluoranthene	13.583	252	660960	8575.15	ng/ml	71
25) Benzo(e) Pyrene	14.089	252	319821	4176.36	ng/mL	97
26) Benzo(a)Pyrene	14.192	252	289898	4018.98	ng/ml	72
27) Perylene	14.365	252	266166	3954.34	ng/mL	96
29) Indeno(1,2,3-cd)Pyrene	16.733	276	192188	3634.31	ng/ml	69
30) Dibenz(a,h)Anthracene	16.788	278	182971	3731.54	ng/ml	69
31) Benzo (g,h,i) Perylene	17.284	276	209532	3776.94	ng/ml	89

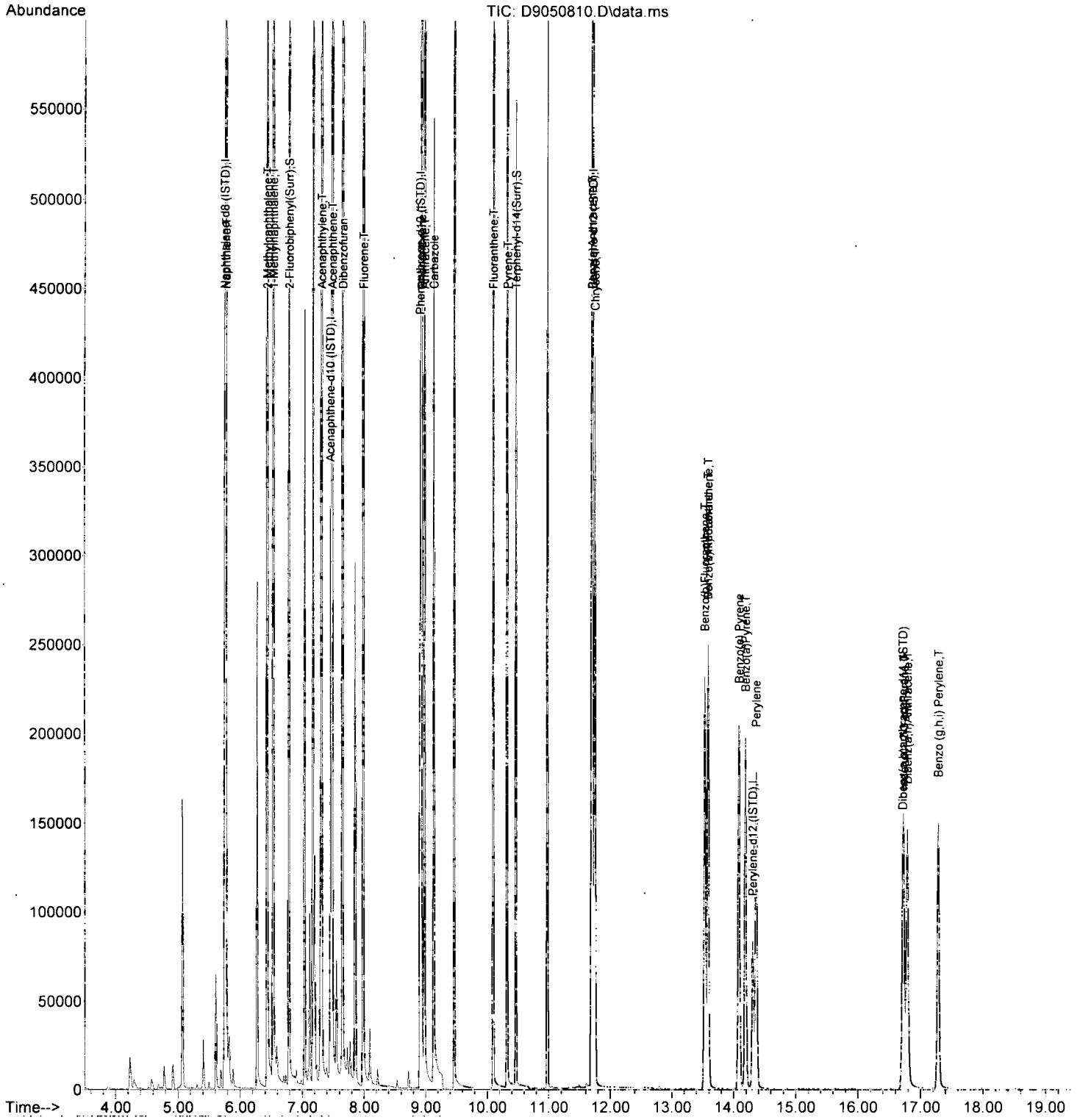
(#) = qualifier out of range (m) = manual integration (+) = signals summed

5-09-19

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050810.D
Acq On : 8 May 2019 6:14 pm
Operator : bsj
Sample : 9E08049-CAL8
Misc : 1x A19D060@4000
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 09 08:46:06 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050811.D
Acq On : 8 May 2019 6:40 pm
Operator : bsj
Sample : 9E08049-CAL9
Misc : 1x A19D061@6000
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 09 08:46:09 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8 (ISTD)	5.749	136	521237	2000.00	ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.451	164	259583	2000.00	ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.906	188	362274	2000.00	ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.714	240	194906	2000.00	ng/ml	0.00
21) Perylene-d12 (ISTD)	14.313	264	124314	2000.00	ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.721	292	81338	2000.00	ng/mL	0.00
System Monitoring Compounds						
6) 2-Fluorobiphenyl(Surr)	6.789	172	1120425	5738.54	ng/ml	0.00
18) Terphenyl-d14(Surr)	10.465	244	610757	7033.66	ng/ml	0.00
Target Compounds						Qvalue
2) Naphthlene	5.769	128	1615843	5986.05	ng/ml	100
3) 2-Methylnaphthalene	6.433	142	1054717	5827.29	ng/ml	99
4) 1-Methylnaphthalene	6.531	142	1017377	5801.86	ng/ml	98
7) Acenaphthylene	7.316	152	1412401	5921.23	ng/ml	98
8) Acenaphthene	7.481	153	951380	6135.09	ng/ml	97
9) Dibenzofuran	7.653	168	1262943	5784.32	ng/mL	88
10) Fluorene	7.989	166	1010699	5916.90	ng/ml	100
12) Phenanthrene	8.932	178	1240610	5860.26	ng/ml	98
13) Anthracene	8.980	178	1296799	5882.32	ng/ml	99
14) Carbazole	9.129	167	573298	3025.12	ng/mL	99
15) Fluoranthene	10.098	202	1077725	5276.71	ng/ml	99
16) Pyrene	10.326	202	1087344	5283.54	ng/ml	99
19) Benz(a)Anthracene	11.700	228	682737	5347.28	ng/ml	95
20) Chrysene	11.749	228	669359	5413.78	ng/ml	96
22) Benzo(b)Fluoranthene	13.538	252	505566	6371.58	ng/ml	70
23) Benzo(k)Fluoranthene	13.589	252	511108	6498.68	ng/ml	73
24) Benzo(b+k)Fluoranthene	13.589	252	1017771	12810.91	ng/ml	72
25) Benzo(e) Pyrene	14.089	252	495204	6273.90	ng/mL	98
26) Benzo(a)Pyrene	14.193	252	445993	5998.77	ng/ml	72
27) Perylene	14.365	252	406431	5858.30	ng/mL	96
29) Indeno(1,2,3-cd)Pyrene	16.738	276	302787	5388.92	ng/ml	69
30) Dibenz(a,h)Anthracene	16.794	278	301613	5789.29	ng/ml	73
31) Benzo (g,h,i) Perylene	17.289	276	337352	5723.24	ng/ml	92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

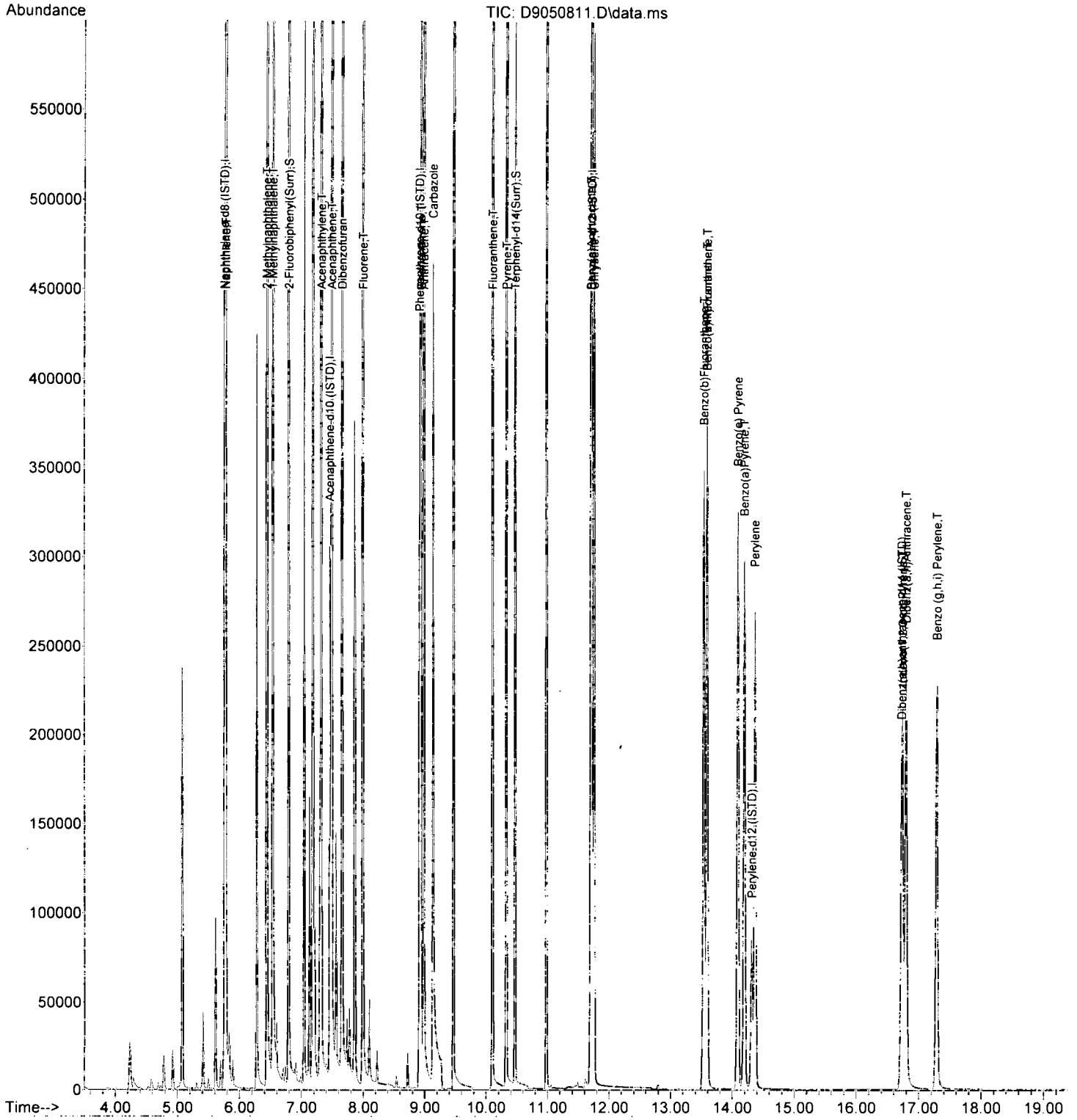
5-09-19

BSS

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050811.D
Acq On : 8 May 2019 6:40 pm
Operator : bsj
Sample : 9E08049-CAL9
Misc : 1x A19D061@6000
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 09 08:46:09 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050812.D
Acq On : 8 May 2019 7:07 pm
Operator : bsj
Sample : 9E08049-CALA
Misc : 1x A19D062@8000
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 09 08:46:12 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Naphthalene-d8 (ISTD)	5.756	136	514968	2000.00 ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.452	164	257246	2000.00 ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.910	188	368024	2000.00 ng/ml	0.01
17) Chrysene-d12 (ISTD)	11.720	240	199250	2000.00 ng/ml	0.01
21) Perylene-d12 (ISTD)	14.313	264	128368	2000.00 ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.727	292	86139	2000.00 ng/mL	0.00
System Monitoring Compounds					
6) 2-Fluorobiphenyl(Surr)	6.791	172	1562167	8073.72 ng/ml	0.00
18) Terphenyl-d14(Surr)	10.465	244	826441	9310.04 ng/ml	0.00
Target Compounds					Qvalue
2) Naphthlene	5.769	128	2136745	8012.15 ng/ml	100
3) 2-Methylnaphthalene	6.434	142	1427088	7980.62 ng/ml	99
4) 1-Methylnaphthalene	6.532	142	1368536	7899.45 ng/ml	98
7) Acenaphthylene	7.317	152	1912248	8089.57 ng/ml	98
8) Acenaphthene	7.483	153	1259183	8193.76 ng/ml	97
9) Dibenzofuran	7.654	168	1685438	7789.49 ng/mL	88
10) Fluorene	7.989	166	1334221	7881.84 ng/ml	99
12) Phenanthrene	8.931	178	1690046	7858.53 ng/ml	98
13) Anthracene	8.985	178	1778933	7943.22 ng/ml	99
14) Carbazole	9.133	167	552300	2868.78 ng/mL	99
15) Fluoranthene	10.103	202	1505038	7253.76 ng/ml	99
16) Pyrene	10.326	202	1492775	7140.25 ng/ml	99
19) Benz(a)Anthracene	11.699	228	938499	7190.18 ng/ml	96
20) Chrysene	11.756	228	935309	7399.86 ng/ml	96
22) Benzo(b)Fluoranthene	13.543	252	710929	8676.78 ng/ml	73
23) Benzo(k)Fluoranthene	13.595	252	709605	8737.60 ng/ml	71
24) Benzo(b+k)Fluoranthene	13.595	252	1421874	17332.22 ng/ml	72
25) Benzo(e) Pyrene	14.095	252	676446	8299.47 ng/mL	98
26) Benzo(a)Pyrene	14.198	252	630473	8212.28 ng/ml	74
27) Perylene	14.370	252	563164	7861.09 ng/mL	97
29) Indeno(1,2,3-cd)Pyrene	16.738	276	426588	7169.14 ng/ml	73
30) Dibenz(a,h)Anthracene	16.800	278	430375	7800.38 ng/ml	76
31) Benzo (g,h,i) Perylene	17.290	276	455393	7295.23 ng/ml	93

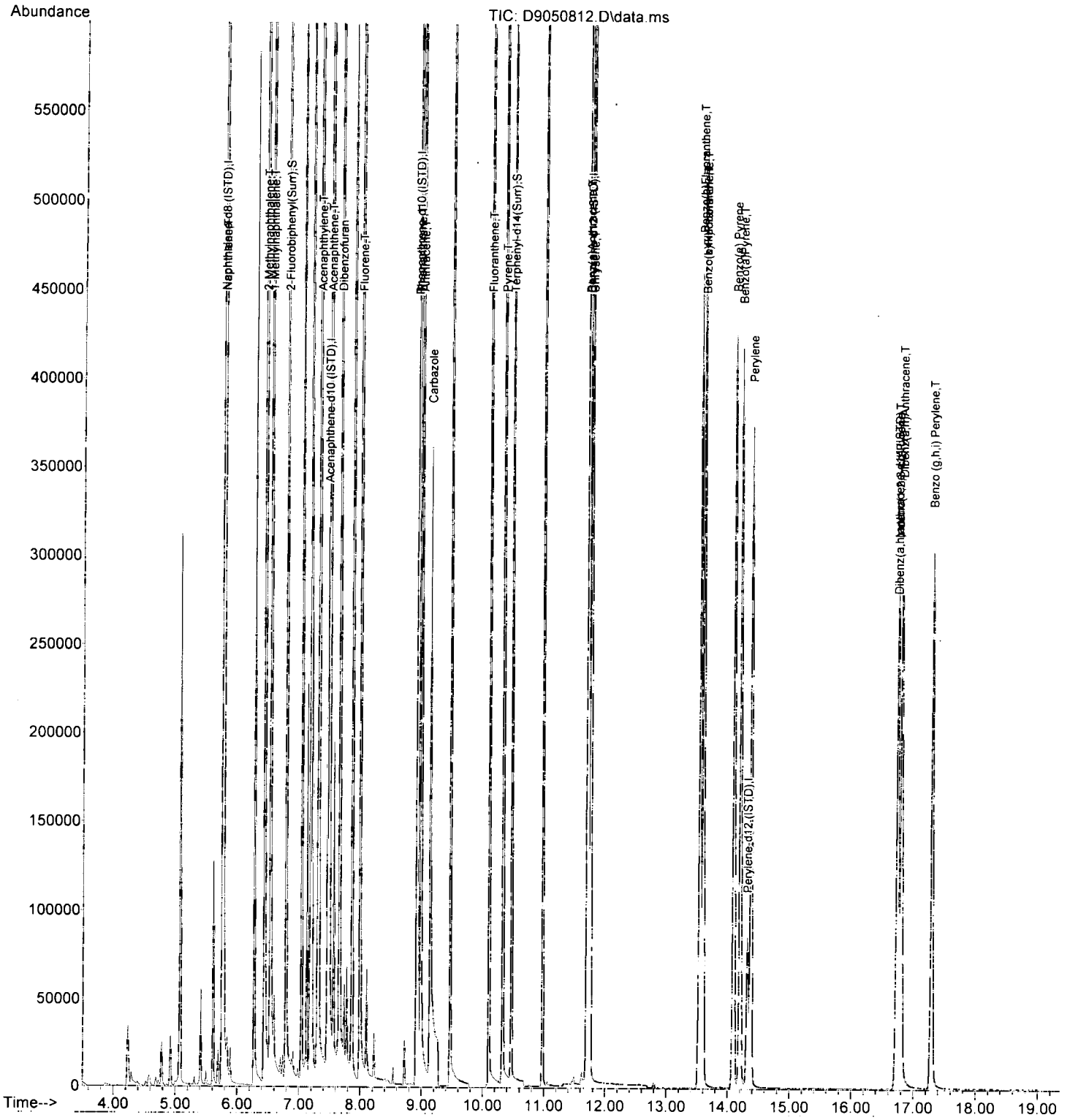
(#) = qualifier out of range (m) = manual integration (+) = signals summed

5-29-19
BSJ

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050812.D
Acq On : 8 May 2019 7:07 pm
Operator : bsj
Sample : 9E08049-CALA
Misc : 1x A19D062@8000
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 09 08:46:12 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050813.D
Acq On : 8 May 2019 7:34 pm
Operator : bsj
Sample : 9E08049-IBL1
Misc : 1x DCM + ISTD
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 09 08:46:15 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8 (ISTD)	5.749	136	521171	2000.00	ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.451	164	259821	2000.00	ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.904	188	358888	2000.00	ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.712	240	186260	2000.00	ng/ml	0.00
21) Perylene-d12 (ISTD)	14.308	264	143394	2000.00	ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.715	292	94804	2000.00	ng/mL	0.00
System Monitoring Compounds						
6) 2-Fluorobiphenyl(Surr)	0.000	172	0	0.00	ng/ml	
18) Terphenyl-d14(Surr)	0.000	244	0	0.00	ng/ml	
Target Compounds						Qvalue
2) Naphthlene	0.000		0	N.D.		
3) 2-Methylnaphthalene	0.000		0	N.D.		
4) 1-Methylnaphthalene	0.000		0	N.D.		
7) Acenaphthylene	0.000		0	N.D.		
8) Acenaphthene	0.000		0	N.D.		
9) Dibenzofuran	0.000		0	N.D.		
10) Fluorene	0.000		0	N.D.		
12) Phenanthrene	0.000		0	N.D.		
13) Anthracene	0.000		0	N.D.		
14) Carbazole	0.000		0	N.D.		
15) Fluoranthene	0.000		0	N.D.		
16) Pyrene	0.000		0	N.D.		
19) Benz(a)Anthracene	11.712	228	462	3.79	ng/ml#	55
20) Chrysene	11.712	228	462	3.91	ng/ml#	55
22) Benzo(b)Fluoranthene	0.000		0	N.D.		
23) Benzo(k)Fluoranthene	0.000		0	N.D.		
24) Benzo(b+k)Fluoranthene	0.000		0	N.D.		
25) Benzo(e) Pyrene	0.000		0	N.D.		
26) Benzo(a)Pyrene	0.000		0	N.D.		
27) Perylene	14.302	252	475	5.94	ng/mL#	1
29) Indeno(1,2,3-cd)Pyrene	16.720	276	594	9.07	ng/ml#	1
30) Dibenz(a,h)Anthracene	16.787	278	358	5.90	ng/ml#	53
31) Benzo (g,h,i) Perylene	17.277	276	451	6.56	ng/ml	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

NP

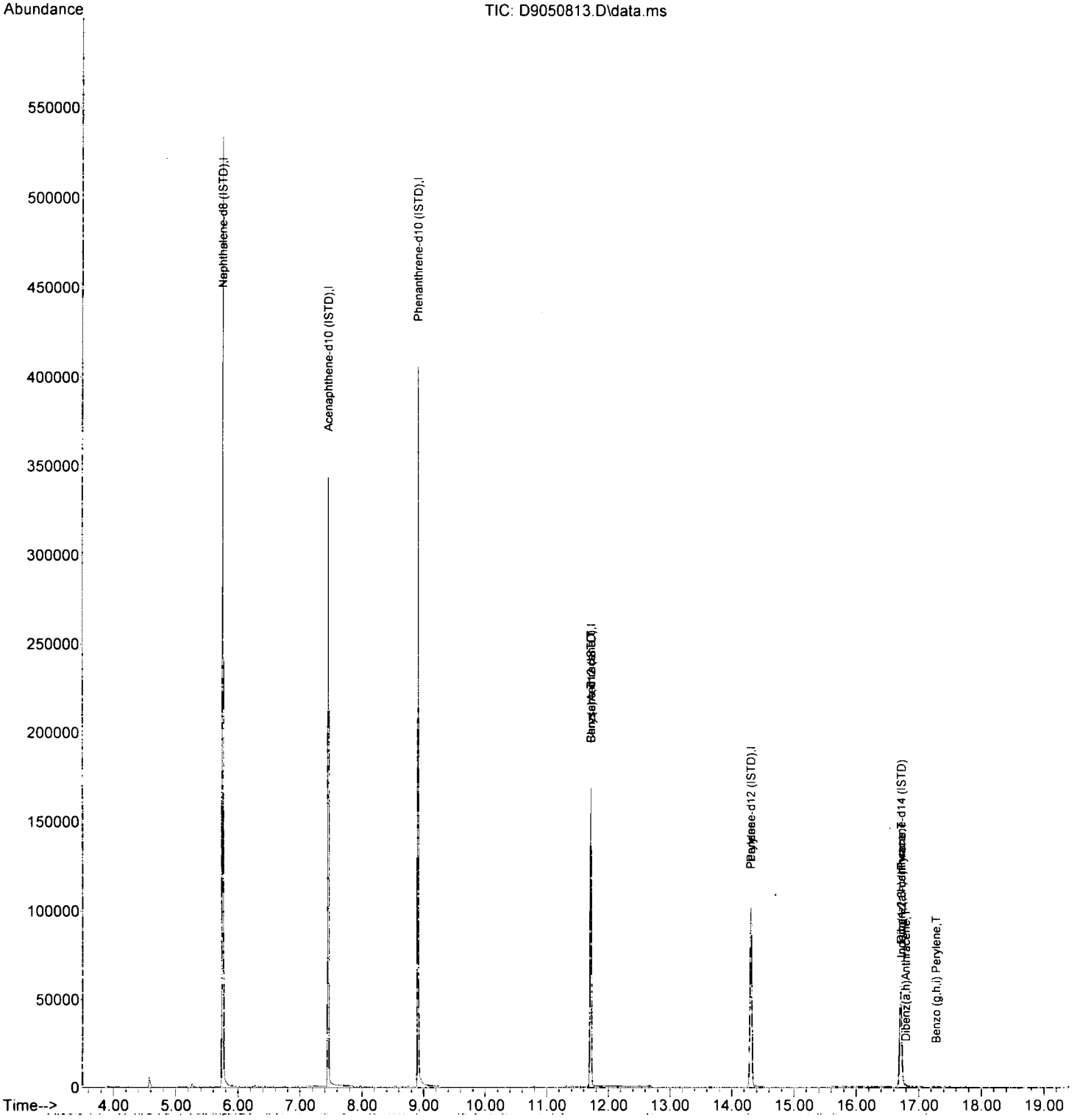
5-09-19

BSJ

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050813.D
Acq On : 8 May 2019 7:34 pm
Operator : bsj
Sample : 9E08049-IBL1
Misc : 1x DCM + ISTD
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 09 08:46:15 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050814.D
Acq On : 8 May 2019 8:01 pm
Operator : bsj
Sample : 9E08049-ICV1
Misc : 1x A19C239@1000
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 09 08:46:18 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Naphthalene-d8 (ISTD)	5.749	136	498686	2000.00 ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.452	164	245258	2000.00 ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.904	188	345376	2000.00 ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.713	240	179105	2000.00 ng/ml	0.00
21) Perylene-d12 (ISTD)	14.307	264	121338	2000.00 ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.715	292	76066	2000.00 ng/mL	0.00
System Monitoring Compounds					
6) 2-Fluorobiphenyl(Surr)	6.786	172	182451	989.05 ng/ml	0.00
18) Terphenyl-d14(Surr)	10.464	244	93240	1168.51 ng/ml	0.00
Target Compounds					Qvalue
2) Naphthlene	5.769	128	254732	986.35 ng/ml	99
3) 2-Methylnaphthalene	6.434	142	165246	954.27 ng/ml	99
4) 1-Methylnaphthalene	6.532	142	158374	944.01 ng/ml	98
7) Acenaphthylene	7.311	152	225724	1001.58 ng/ml	98
8) Acenaphthene	7.482	153	148299	1012.18 ng/ml	97
9) Dibenzofuran	7.648	168	199759	968.34 ng/mL	89
10) Fluorene	7.983	166	156263	968.24 ng/ml	99
12) Phenanthrene	8.931	178	196498	973.61 ng/ml	98
13) Anthracene	8.979	178	200051	951.83 ng/ml	98
14) Carbazole	9.127	167	161933	896.28 ng/mL	99
15) Fluoranthene	10.097	202	169427	870.13 ng/ml	99
16) Pyrene	10.319	202	169126	862.01 ng/ml	98
19) Benz(a)Anthracene	11.692	228	105367	898.05 ng/ml	96
20) Chrysene	11.748	228	104873	923.04 ng/ml	96
22) Benzo(b)Fluoranthene	13.525	252	78878	1018.47 ng/ml	67
23) Benzo(k)Fluoranthene	13.577	252	78445	1021.88 ng/ml	70
24) Benzo(b+k)Fluoranthene	13.525	252	157602	2032.43 ng/ml#	58
25) Benzo(e) Pyrene	14.077	252	77309	1003.48 ng/mL	95
26) Benzo(a)Pyrene	14.186	252	67770	933.89 ng/ml	69
27) Perylene	14.358	252	74623	1102.00 ng/mL	94
29) Indeno(1,2,3-cd)Pyrene	16.726	276	47325	900.65 ng/ml	69
30) Dibenz(a,h)Anthracene	16.788	278	43038	883.34 ng/ml	69
31) Benzo (g,h,i) Perylene	17.278	276	50844	922.36 ng/ml	87

(#) = qualifier out of range (m) = manual integration (+) = signals summed

✓

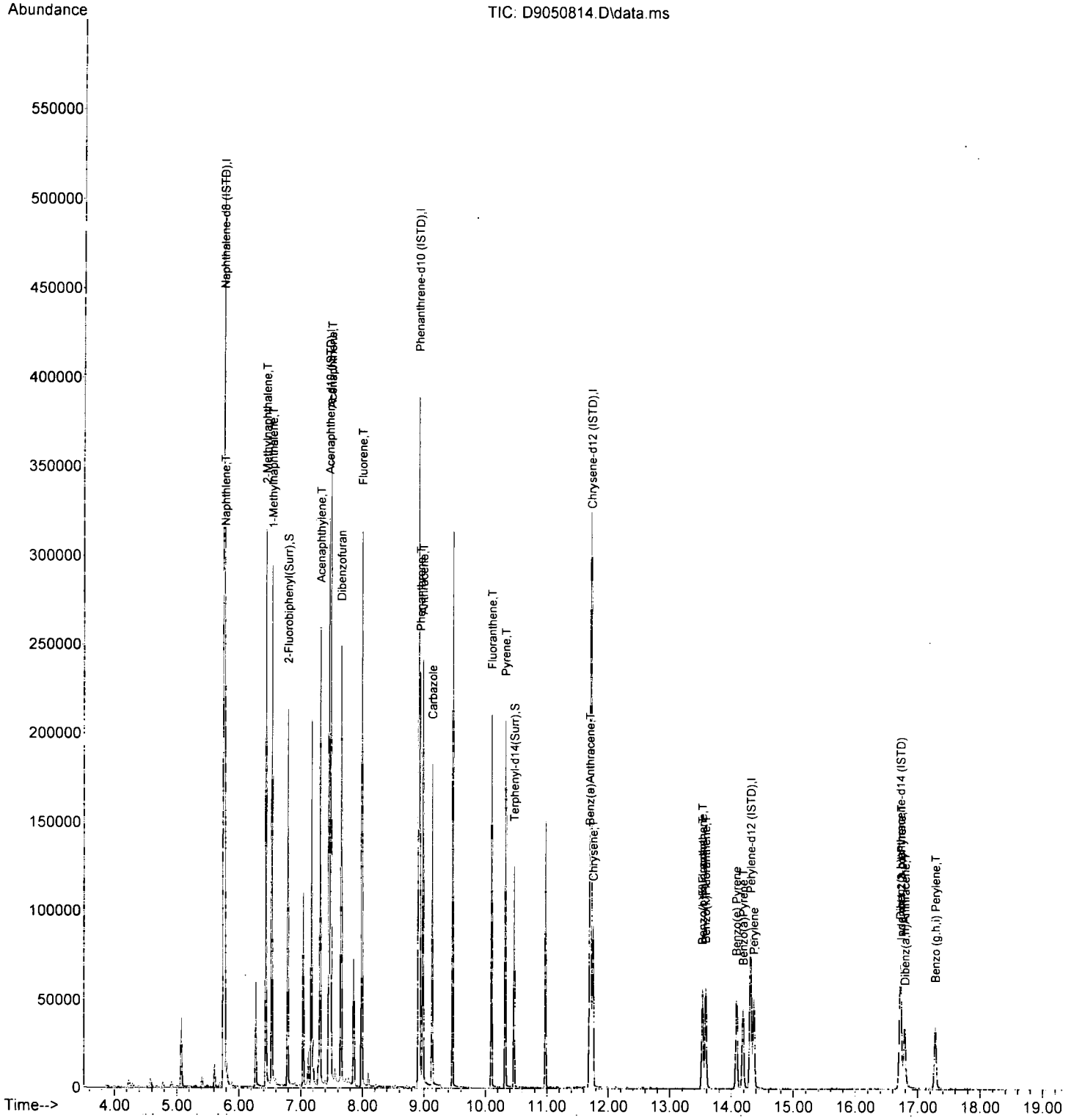
5-09-19

BS

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050814.D
Acq On : 8 May 2019 8:01 pm
Operator : bsj
Sample : 9E08049-ICV1
Misc : 1x A19C239@1000
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 09 08:46:18 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4



Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050815.D
Acq On : 8 May 2019 8:28 pm
Operator : bsj
Sample : 9E08049-IBL2
Misc : 1x DCM + ISTD
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 09 08:46:21 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8 (ISTD)	5.749	136	564348	2000.00	ng/ml	0.00
5) Acenaphthene-d10 (ISTD)	7.450	164	279660	2000.00	ng/ml	0.00
11) Phenanthrene-d10 (ISTD)	8.903	188	376741	2000.00	ng/ml	0.00
17) Chrysene-d12 (ISTD)	11.712	240	181672	2000.00	ng/ml	0.00
21) Perylene-d12 (ISTD)	14.307	264	131800	2000.00	ng/ml	0.00
28) Dibenz(a,h)anthracene-...	16.709	292	84383	2000.00	ng/mL	-0.01
System Monitoring Compounds						
6) 2-Fluorobiphenyl(Surr)	0.000	172	0	0.00	ng/ml	
18) Terphenyl-d14(Surr)	0.000	244	0	0.00	ng/ml	
Target Compounds						Qvalue
2) Naphthlene	0.000		0	N.D.		
3) 2-Methylnaphthalene	0.000		0	N.D.		
4) 1-Methylnaphthalene	0.000		0	N.D.		
7) Acenaphthylene	0.000		0	N.D.		
8) Acenaphthene	0.000		0	N.D.		
9) Dibenzofuran	0.000		0	N.D.		
10) Fluorene	0.000		0	N.D.		
12) Phenanthrene	0.000		0	N.D.		
13) Anthracene	0.000		0	N.D.		
14) Carbazole	0.000		0	N.D.		
15) Fluoranthene	0.000		0	N.D.		
16) Pyrene	0.000		0	N.D.		
19) Benz(a)Anthracene	11.705	228	465	3.91	ng/ml#	55
20) Chrysene	11.705	228	465	4.03	ng/ml#	55
22) Benzo(b)Fluoranthene	0.000		0	N.D.		
23) Benzo(k)Fluoranthene	0.000		0	N.D.		
24) Benzo(b+k)Fluoranthene	0.000		0	N.D.		
25) Benzo(e) Pyrene	0.000		0	N.D.		
26) Benzo(a)Pyrene	0.000		0	N.D.		
27) Perylene	14.301	252	425	5.78	ng/mL#	1
29) Indeno(1,2,3-cd)Pyrene	0.000		0	N.D.		
30) Dibenz(a,h)Anthracene	0.000		0	N.D.		
31) Benzo (g,h,i) Perylene	0.000		0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

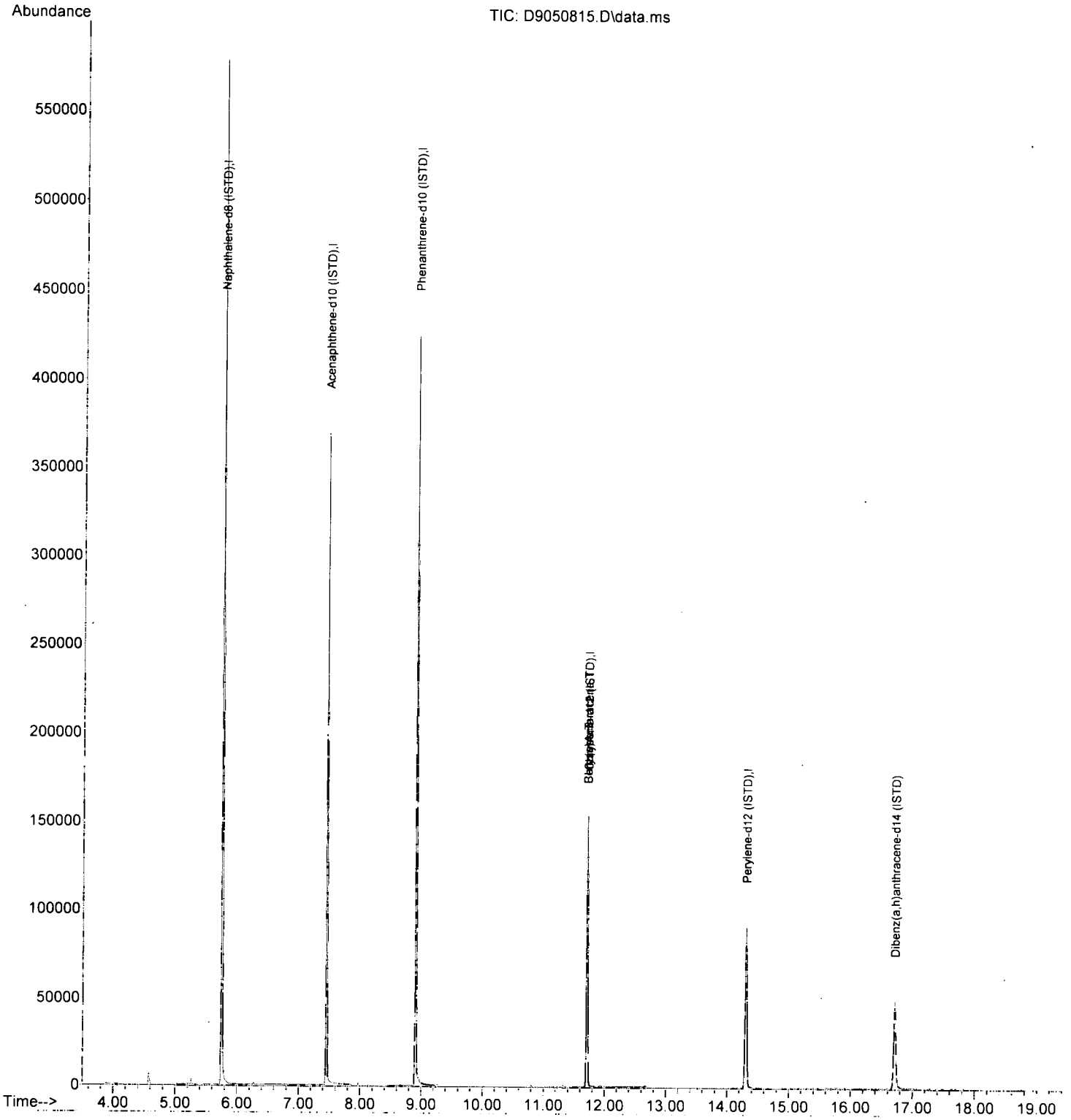
NR

5-09-19 BS

Quantitation Report (Not Reviewed)

Data Path : P:\DATA\2019-05\9E08049\
Data File : D9050815.D
Acq On : 8 May 2019 8:28 pm
Operator : bsj
Sample : 9E08049-IBL2
Misc : 1x DCM + ISTD
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 09 08:46:21 2019
Quant Method : C:\msdchem\1\methods\SV4_041819R4.M
Quant Title : EPA 8270 SIM PAH/PCP/PTH
QLast Update : Thu Apr 18 11:03:03 2019
Response via : Initial Calibration
InstName : SV-GCMS4



ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence:	9E08049	Instrument:	SV-GCMS4
Date:	05/08/19 14:06	Calibration:	A9E0902

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9E08049-TUN1	Solid	QC	QC			A19D031	A19D323
2	9E08049-ICB1	Solid	QC	QC			A19D031	
3	9E08049-CAL1	Solid	QC	QC			A19D031	A19D053
4	9E08049-CAL2	Solid	QC	QC			A19D031	A19D054
5	9E08049-CAL3	Solid	QC	QC			A19D031	A19D055
6	9E08049-CAL4	Solid	QC	QC			A19D031	A19D056
7	9E08049-CAL5	Solid	QC	QC			A19D031	A19D057
8	9E08049-CAL6	Solid	QC	QC			A19D031	A19D058
9	9E08049-CAL7	Solid	QC	QC			A19D031	A19D059
10	9E08049-CAL8	Solid	QC	QC			A19D031	A19D060
11	9E08049-CAL9	Solid	QC	QC			A19D031	A19D061
12	9E08049-CALA	Solid	QC	QC			A19D031	A19D062
13	9E08049-IBL1	Solid	QC	QC			A19B027	
14	9E08049-ICV1	Solid	QC	QC			A19B027	A19C239
15	9E08049-IBL2	Solid	QC	QC			A19B027	

Data Entered By: [signature] 10/1/19

Data Reviewed By: [signature] 10/2/19

Comments: Calibration re-entered for 1312 /8270 SIM PAH (SPLP) Test Code

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9E08049

Analysis Included
1312/8270 SIM PAH (SPLP)

INSTRUMENT SEQUENCE LOG

SampleID	SampleName	Matrix	STDID	ISTD ID	Analyzed
9E08049-TUN1	MS Tune	Solid	A19D323	A19D031	5/8/2019 2:14:00PM
9E08049-ICB1	Initial Cal Blank	Solid		A19D031	5/8/2019 2:39:00PM
9E08049-CAL1	Cal Standard	Solid	A19D053	"	5/8/2019 3:06:00PM
9E08049-CAL2	Cal Standard	Solid	A19D054	"	5/8/2019 3:33:00PM
9E08049-CAL3	Cal Standard	Solid	A19D055	"	5/8/2019 4:00:00PM
9E08049-CAL4	Cal Standard	Solid	A19D056	"	5/8/2019 4:27:00PM
9E08049-CAL5	Cal Standard	Solid	A19D057	"	5/8/2019 4:53:00PM
9E08049-CAL6	Cal Standard	Solid	A19D058	"	5/8/2019 5:20:00PM
9E08049-CAL7	Cal Standard	Solid	A19D059	"	5/8/2019 5:47:00PM
9E08049-CAL8	Cal Standard	Solid	A19D060	"	5/8/2019 6:14:00PM
9E08049-CAL9	Cal Standard	Solid	A19D061	"	5/8/2019 6:40:00PM
9E08049-CALA	Cal Standard	Solid	A19D062	"	5/8/2019 7:07:00PM
9E08049-ICV1	Initial Cal Check	Solid	A19C239	"	5/8/2019 8:01:00PM

CALIBRATION STANDARD RECOVERIES

Calibration: **A9E0902** Instrument: **SV-GCMS4**

1312/8270 SIM PAH (SPLP) Sequence: **9E08049** Matrix: **Solid**

9E08049-CAL1	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08049-CAL2	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08049-CAL3	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08049-CAL4	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08049-CAL5	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08049-CAL6	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08049-CAL7	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08049-CAL8	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08049-CAL9	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual
9E08049-CALA	Inst. MRL	Recalc Res.	Cal Level	%Rec.	Qual

Compounds listed above have recalculated recoveries outside 70-130% of the true values, and the calibration levels are above the reporting level. If no compounds are listed, all are OK. Please see the next section for quadatic fit compounds.

CALIBRATION SEQUENCE REVIEW SHEET

SEQUENCE: 9E08049

Analytes With Quadratic Curve Fits

Qualifier	iMDL	iMRL	Spike Amt	%Difference	OK?	Raise MRL to ?
				———	☐	☐ ———

Analytes listed above have quadratic curve fits. If they are using a weighting otpion, they must be checked against the requanted curve points to determine if the recalculated results are within limits (70-130 or as specified).

ICV RECOVERIES

Calibration: **A9E0902** Instrument: **SV-GCMS4**

1312/8270 SIM PAH (SPLP) Sequence: **9E08049** Matrix: **Solid**

9E08049-ICV1	Inst. MRL	ICV Level	Result	%Rec.	Qual

Compounds listed above have Initial Calibration Verification standard recoveries outside 70-130% of the true values. If no compounds are listed, all have passing recoveries.

Response Factor Report SV-GCMS4

Method Path : C:\msdchem\1\methods\
Method File : SV4_050919.M
Title : EPA 8270 SIM PAH/PCP/PTH
Last Update : Thu May 09 08:52:03 2019
Response Via : Initial Calibration

Calibration Files
20 =D9050803.D 50 =D9050804.D 100 =D9050805.D 200 =D9050806.D 500 =D9050807.D 1000=D9050808.D 2000=D9050809.D
4000=D9050810.D 6000=D9050811.D 8000=D9050812.D

		Compound	20	50	100	200	500	1000	2000	4000	6000	8000	Avg	%RSD
1)	I	Naphthalene-d8 (ISTD)	----------ISTD----------											
2)	T	Naphthlene	1.006	1.024	1.060	1.059	1.048	1.022	1.036	1.041	1.033	1.037	1.037	1.61
3)	T	2-Methylnaphth...	0.629	0.660	0.668	0.675	0.674	0.669	0.673	0.687	0.674	0.693	0.670	2.56
4)	T	1-Methylnaphth...	0.601	0.632	0.652	0.663	0.659	0.650	0.657	0.671	0.651	0.664	0.650	3.08
5)	I	Acenaphthene-d10 (...	----------ISTD----------											
6)	S	2-Fluorobiphen...	1.387	1.446	1.535	1.459	1.520	1.478	1.492	1.549	1.439	1.518	1.482	3.39
7)	T	Acenaphthylene	1.721	1.762	1.799	1.766	1.858	1.799	1.837	1.847	1.814	1.858	1.806	2.55
8)	T	Acenaphthene	1.150	1.177	1.225	1.217	1.234	1.219	1.216	1.211	1.222	1.224	1.209	2.13
9)		Dibenzofuran	1.483	1.572	1.632	1.622	1.668	1.611	1.634	1.646	1.622	1.638	1.613	3.21
10)	T	Fluorene	1.155	1.207	1.255	1.262	1.295	1.246	1.245	1.290	1.298	1.297	1.255	3.65
11)	I	Phenanthrene-d10 (...	----------ISTD----------											
12)	T	Phenanthrene	1.178	1.159	1.153	1.150	1.167	1.133	1.132	1.155	1.142	1.148	1.152	1.25
13)	T	Anthracene	1.127	1.118	1.144	1.142	1.184	1.136	1.163	1.212	1.193	1.208	1.163	2.96
14)		Carbazole	0.907	0.905	0.924	0.944	0.971	0.917	0.887	0.739			0.899	7.75
15)	T	Fluoranthene	0.945	0.948	0.984	0.977	1.007	0.954	0.977	1.006	0.992	1.022	0.981	2.69
16)	T	Pyrene	0.944	0.959	0.972	0.980	0.991	0.938	0.961	1.006	1.000	1.014	0.977	2.69
17)	I	Chrysene-d12 (ISTD)	----------ISTD----------											
18)	S	Terphenyl-d14(...	1.035	1.077	1.070	1.027	1.081	1.062	1.055	1.095	1.045	1.037	1.058	2.11
19)	T	Benz(a)Anthracene	1.402	1.228	1.212	1.181	1.205	1.160	1.163	1.172	1.168	1.178	1.207	5.97
20)	T	Chrysene	1.154	1.160	1.204	1.192	1.211	1.171	1.166	1.191	1.145	1.174	1.177	1.87
21)	I	Perylene-d12 (ISTD)	----------ISTD----------											
22)	T	Benzo(b)Fluora...	1.192	1.210	1.240	1.283	1.301	1.291	1.274	1.381	1.356	1.385	1.291	5.19
23)	T	Benzo(k)Fluora...	1.171	1.200	1.221	1.234	1.285	1.288	1.289	1.356	1.370	1.382	1.280	5.73
24)	T	Benzo(b+k)Fluo...	1.204	1.214	1.234	1.264	1.296	1.292	1.283	1.370	1.365	1.385	1.291	5.02
25)		Benzo(e) Pyrene	1.231	1.234	1.262	1.279	1.302	1.298	1.272	1.326	1.328	1.317	1.285	2.76
26)	T	Benzo(a)Pyrene	0.990	1.000	1.036	1.066	1.096	1.134	1.150	1.202	1.196	1.228	1.110	7.71
27)		Perylene	1.038	1.017	1.060	1.080	1.086	1.084	1.078	1.103	1.090	1.097	1.073	2.54
28)		Dibenz(a,h)anthrac...	----------ISTD----------											
29)	T	Indeno(1,2,3-c...	1.268	1.236	1.271	1.259	1.303	1.265	1.238	1.255	1.241	1.238	1.257	1.65
30)	T	Dibenz(a,h)Ant...	1.014	1.058	1.119	1.132	1.166	1.154	1.158	1.195	1.236	1.249	1.148	6.34
31)	T	Benzo (g,h,i) ...	1.308	1.317	1.353	1.334	1.411	1.372	1.356	1.369	1.383	1.322	1.352	2.40

(#) = Out of Range

Compound List Report SV-GCMS4

Method Path : C:\msdchem\1\methods\
Method File : SV4_050919.M
Title : EPA 8270 SIM PAH/PCP/PTH
Last Update : Thu May 09 08:52:03 2019
Response Via : Initial Calibration

Total Cpnds : 31

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	Naphthalene-d8 (ISTD)	136	5.756	1.000	A	1	A	R
2	T	Naphthlene	128	5.769	1.002	A	1	A	R
3	T	2-Methylnaphthalene	142	6.434	1.118	A	1	A	R
4	T	1-Methylnaphthalene	142	6.532	1.135	A	1	A	R
5	I	Acenaphthene-d10 (ISTD)	164	7.452	1.000	A	1	A	R
6	S	2-Fluorobiphenyl(Surr)	172	6.791	0.911	A	1	A	R
7	T	Acenaphthylene	152	7.317	0.982	A	1	A	R
8	T	Acenaphthene	153	7.483	1.004	A	1	A	R
9		Dibenzofuran	168	7.654	1.027	A	1	A	R
10	T	Fluorene	166	7.989	1.072	A	1	A	R
11	I	Phenanthrene-d10 (ISTD)	188	8.910	1.000	A	1	A	R
12	T	Phenanthrene	178	8.931	1.002	A	1	A	R
13	T	Anthracene	178	8.985	1.008	A	1	A	R
14		Carbazole	167	9.133	1.025	A	1	A	R
15	T	Fluoranthene	202	10.103	1.134	A	1	A	R
16	T	Pyrene	202	10.326	1.159	A	1	A	R
17	I	Chrysene-d12 (ISTD)	240	11.720	1.000	A	1	A	R
18	S	Terphenyl-d14(Surr)	244	10.465	0.893	A	1	A	R
19	T	Benz(a)Anthracene	228	11.699	0.998	A	1	A	R
20	T	Chrysene	228	11.756	1.003	A	1	A	R
21	I	Perylene-d12 (ISTD)	264	14.313	1.000	A	1	A	R
22	T	Benzo(b)Fluoranthene	252	13.543	0.946	A	1	A	R
23	T	Benzo(k)Fluoranthene	252	13.595	0.950	A	1	A	R
24	T	Benzo(b+k)Fluoranthene	252	13.595	0.950	A	1	A	R
25		Benzo(e) Pyrene	252	14.095	0.985	A	1	A	R
26	T	Benzo(a)Pyrene	252	14.198	0.992	A	1	A	R
27		Perylene	252	14.370	1.004	A	1	A	R
28	I	Dibenz(a,h)anthracene-d14 (...	292	16.727	1.000	A	1	A	R
29	T	Indeno(1,2,3-cd)Pyrene	276	16.738	1.001	A	1	A	R
30	T	Dibenz(a,h)Anthracene	278	16.800	1.004	A	1	A	R
31	T	Benzo (g,h,i) Perylene	276	17.290	1.034	A	1	A	R

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

SV4_050919.M Tue Oct 01 17:38:14 2019

APEX LABORATORIES, LLC
6700 SW Sandburg St. Tigard OR 97223 phone 503-718-2323

Total Metals by EPA 6020 A (ICPMS)

Benchsheet & Analysis Sequence Data (including calibration)

Batch 9051429

Sequence 9E31026

APEX LABORATORIES

Ag (Silver) - 6020 - Total
Al (Aluminum) - 6020 - Total
As (Arsenic) - 6020 - Total
Ba (Barium) - 6020 - Total
Be (Beryllium) - 6020 - Total
Ca (Calcium) - 6020 - Total
Cd (Cadmium) - 6020 - Total
Cr (Chromium) - 6020 - Total

PREPARATION BENCH SHEET

9051429

Apex Laboratories

BATCH #: 9051429 (Solid)

Prep Method: EPA 3051A

Lab Number	Due	Prepared	Initial (g)	Final (mL)	Client	ClientID / Sample	Extraction Comments
9051429-BLK1	---	**05/30/19 14:33**	**0.52**	**50**	*QC Sample*		
9051429-BS1	---	**05/30/19 14:33**	**0.5**	**50**	*QC Sample*		
Spike 1: **5000 uL of A19E302** Spike 2: **500 uL of A19E299**							
A9E0902-01	*06/03/19*	**05/30/19 14:33**	**0.507**	**50**	**Hahn and Associates**	**2708-190524-014**	Ag, Al, As, Ba, Be, Cd, Cr, Cu, Fe, Hg, Mn, Ni, Pb, Sb, Se, Tl, V, Z, Ca, Mg, K, Na
☐ Ag (Silver) - 6020 - Total ☐ Al (Aluminum) - 6020 - Total ☐ As (Arsenic) - 6020 - Total ☐ Ba (Barium) - 6020 - Total ☐ Be (Beryllium) - 6020 - Total ☐ Ca (Calcium) - 6020 - Total ☐ Cd (Cadmium) - 6020 - Total ☐ Cr (Chromium) - 6020 - Total ☐ Cu (Copper) - 6020 - Total ☐ Fe (Iron) - 6020 - Total ☐ Hg (Mercury) - 6020 - Total ☐ K (Potassium) - 6020 - Total ☐ Mg (Magnesium) - 6020 - Total ☐ Mn (Manganese) - 6020 - Total ☐ Na (Sodium) - 6020 - Total ☐ Ni (Nickel) - 6020 - Total ☐ Pb (Lead) - 6020 - Total ☐ Sb (Antimony) - 6020 - Total ☐ Se (Selenium) - 6020 - Total ☐ Tl (Thallium) - 6020 - Total ☐ V (Vanadium) - 6020 - Total ☐ Zn (Zinc) - 6020 - Total							
9051429-DUP1	---	**05/30/19 14:33**	**0.489**	**50**	*QC Sample*		
Source: **A9E0902-01**							
9051429-MS1	---	**05/30/19 14:33**	**0.479**	**50**	*QC Sample*		
Source: **A9E0902-01** Spike 1: **5000 uL of A19E302** Spike 2: **500 uL of A19E299**							
A9E0933-01	*06/03/19*	**05/30/19 14:33**	**0.512**	**50**	**Calbag Metals**	**Water Sep Test 01**	
☐ Al (Aluminum) - 6020 - Total ☐ Pb (Lead) - 6020 - Total							

Standards/Reagents

Reagent(s)

Std ID	Exp. Date	Description
A13L213	11/30/23	Metals Prep Balance 2
A15E001	05/01/20	Mars-1 Microwave
A18K281	08/31/19	30% hydrogen peroxide
A19C191	03/04/22	Conc. HCl - Omnitrace
A19D287	04/22/20	Conc. HNO3 - Omnitrace

Analyte Spike(s)

Std ID	Exp. Date	Description
A19E299	11/20/19	Hg Spiking Standard
A19E302	08/02/19	**Combo Spike** A+B+C

CRL 5/30/19

A) A19E301 - 2500µL CRL 5/30/19

B) A19D335 - 1250µL

C) A19D334 - 1250µL

Digestion time and temperature achieved? Yes, I witnessed for 4.5min.

Initials: CRL

CRL 5/30/19

Prepared By: Date

06/03/19

Reviewed By: Date

Batch #: 9051429

If observed weight loss < 0.2g Digestion is within control limits

If observed weight loss > 0.2g Enter data in to electronic VWW. Acceptance limit 1.0% sample loss.

Date: 05/30/19 Prepared by: CRL

#	Mars Tube ID	Sample ID	Pre-digestion Vessel + Sample Wt. (g)	Post-digestion Vessel + Sample Wt. (g)	Sample Wt. Loss (%)* *Formula only used if sample loss >0.2g*
1	562	9051429-BLK1	183.65	183.64	n/a
2	578	9051429-BS1	186.18	186.16	n/a
3	597	A9E0902-01	189.22	189.20	n/a
4	575	9051429-DUP1	184.58	~~186~~ CRL 184.56	n/a
5	533	9051429-MS1	187.32	187.31	n/a
6	525	A9E0933-01	184.32	184.31	n/a
7					n/a
8					n/a
9					n/a
10					n/a
11					n/a
12					n/a
13					n/a
14					n/a
15					n/a
16					n/a
17					n/a
18					n/a
19					n/a
20					n/a
21					n/a
22					n/a
23					n/a
24					n/a
25					n/a

*Example Calculation: (Pre(g) – Post(g))/(Post(g) – 159.32g) This represents the mean weight of the empty digestion vessels. By factoring in the mean digestion vessel weight, we observe weight loss from only the sample, rather than as a percentage of the sample+vessel weight.

ELEMENT SEQUENCE LOG

Apex Laboratories

Sequence: **9E31026** Instrument: **ICPMS5**

Date: **05/31/19 11:43** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9E31026-CAL1	Water	QC	QC			A19C136	A19E285
2	9E31026-CAL2	Water	QC	QC			A19C136	A19E286
3	9E31026-CAL3	Water	QC	QC			A19C136	A19E287
4	9E31026-CAL4	Water	QC	QC			A19C136	A19E288
5	9E31026-CAL5	Water	QC	QC			A19C136	A19E083
6	9E31026-CAL6	Water	QC	QC			A19C136	A19E289
7	9E31026-CAL7	Water	QC	QC			A19C136	A19E082
8	9E31026-CAL8	Water	QC	QC			A19C136	A19E307
9	9E31026-CAL9	Water	QC	QC			A19C136	A19E164
10	9E31026-ICV1	Water	QC	QC			A19C136	A19E109
11	9E31026-ICB1	Water	QC	QC			A19C136	
12	9E31026-CRL1	Water	QC	QC			A19C136	A19E285
13	9E31026-CRL2	Water	QC	QC			A19C136	A19E286
14	9E31026-CRL3	Water	QC	QC			A19C136	A19E287
15	9E31026-IFA1	Water	QC	QC			A19C136	A19E234
16	9E31026-IFB1	Water	QC	QC			A19C136	A19E235
17	9051429-BLK1	Solid	QC	QC		9051429	A19C136	
18	9051429-BS1	Solid	QC	QC		9051429	A19C136	
19	A9E0902-01	Solid	Cd (Cadmium) - 6020 - Total	Hahn and Associates	06/03/19	9051429	A19C136	
20	"	Solid	Fe (Iron) - 6020 - Total	"	06/03/19	9051429	A19C136	
21	"	Solid	Mn (Manganese) - 6020 - Total	"	06/03/19	9051429	A19C136	
22	"	Solid	Ag (Silver) - 6020 - Total	"	06/03/19	9051429	A19C136	
23	"	Solid	Al (Aluminum) - 6020 - Total	"	06/03/19	9051429	A19C136	
24	"	Solid	As (Arsenic) - 6020 - Total	"	06/03/19	9051429	A19C136	
25	"	Solid	Ba (Barium) - 6020 - Total	"	06/03/19	9051429	A19C136	
26	"	Solid	Be (Beryllium) - 6020 - Total	"	06/03/19	9051429	A19C136	
27	"	Solid	Ca (Calcium) - 6020 - Total	"	06/03/19	9051429	A19C136	
28	"	Solid	Cr (Chromium) - 6020 - Total	"	06/03/19	9051429	A19C136	
29	"	Solid	Cu (Copper) - 6020 - Total	"	06/03/19	9051429	A19C136	
30	"	Solid	Mg (Magnesium) - 6020 - Total	"	06/03/19	9051429	A19C136	
31	"	Solid	Hg (Mercury) - 6020 - Total	"	06/03/19	9051429	A19C136	
32	"	Solid	K (Potassium) - 6020 - Total	"	06/03/19	9051429	A19C136	
33	"	Solid	Na (Sodium) - 6020 - Total	"	06/03/19	9051429	A19C136	
34	"	Solid	Ni (Nickel) - 6020 - Total	"	06/03/19	9051429	A19C136	
35	"	Solid	Pb (Lead) - 6020 - Total	"	06/03/19	9051429	A19C136	
36	"	Solid	Sb (Antimony) - 6020 - Total	"	06/03/19	9051429	A19C136	
37	"	Solid	Se (Selenium) - 6020 - Total	"	06/03/19	9051429	A19C136	
38	"	Solid	Tl (Thallium) - 6020 - Total	"	06/03/19	9051429	A19C136	
39	"	Solid	V (Vanadium) - 6020 - Total	"	06/03/19	9051429	A19C136	
40	"	Solid	Zn (Zinc) - 6020 - Total	"	06/03/19	9051429	A19C136	
41	9051429-DUP1	Solid	QC	QC		9051429	A19C136	
42	9051429-MS1	Solid	QC	QC		9051429	A19C136	
43	A9E0933-01	Solid	Al (Aluminum) - 6020 - Total		06/03/19	9051429	A19C136	
44	"	Solid	Pb (Lead) - 6020 - Total	"	06/03/19	9051429	A19C136	
45	9051429-MSD1	Solid	QC	QC		9051429	A19C136	
46	9051472-BLK1	Water	QC	QC		9051472	A19C136	
47	9051472-BS1	Water	QC	QC		9051472	A19C136	
52	A9E0550-02RE1	Water	Ni (Nickel) - 200.8 - Total		05/30/19	9051472	A19C136	
58	9E31026-CCV1	Water	QC	QC			A19C136	A19E109
59	9E31026-CCB1	Water	QC	QC			A19C136	
63	A9E0550-04RE1	Water	Mo (Molybdenum) - 200.8 - Total	(QC Source)		9051472	A19C136	

Sequence: **9E31026** Instrument: **ICPMS5**

Date: **05/31/19 11:43** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
64	"	Water	Ni (Nickel) - 200.8 - Total	"	05/30/19	9051472	A19C136	
70	9051472-DUP1	Water	QC	QC		9051472	A19C136	
71	9051472-MS1	Water	QC	QC		9051472	A19C136	
79	A9E0768-03RE1	Water	Ni (Nickel) - 200.8 - Total		05/30/19	9051472	A19C136	
88	A9E0890-02	Water	Mo (Molybdenum) - 200.8 - Total		06/10/19	9051472	A19C136	
89	A9E0890-03	Water	Mo (Molybdenum) - 200.8 - Total		06/10/19	9051472	A19C136	
90	9051405-BLK1	Water	QC	QC		9051405	A19C136	
91	9051405-BS1	Water	QC	QC		9051405	A19C136	
92	A9E0667-01	Water	Ag (Silver) - 200.8 - Total		06/04/19	9051405	A19C136	
93	"	Water	Al (Aluminum) - 200.8 - Total	"	06/04/19	9051405	A19C136	
94	"	Water	Cd (Cadmium) - 200.8 - Total	"	06/04/19	9051405	A19C136	
95	"	Water	Cr (Chromium) - 200.8 - Total	"	06/04/19	9051405	A19C136	
96	"	Water	Cu (Copper) - 200.8 - Total	"	06/04/19	9051405	A19C136	
97	"	Water	Fe (Iron) - 200.8 - Total	"	06/04/19	9051405	A19C136	
98	"	Water	Ni (Nickel) - 200.8 - Total	"	06/04/19	9051405	A19C136	
99	"	Water	Pb (Lead) - 200.8 - Total	"	06/04/19	9051405	A19C136	
100	"	Water	Zn (Zinc) - 200.8 - Total	"	06/04/19	9051405	A19C136	
101	"	Water	As (Arsenic) - 200.8 - Total	"	06/04/19	9051405	A19C136	
102	"	Water	Ba (Barium) - 200.8 - Total	"	06/04/19	9051405	A19C136	
103	"	Water	Be (Beryllium) - 200.8 - Total	"	06/04/19	9051405	A19C136	
104	"	Water	Ca (Calcium) - 200.8 - Total	"	06/04/19	9051405	A19C136	
105	"	Water	Hg (Mercury) - 200.8 - Total	"	06/04/19	9051405	A19C136	
106	"	Water	K (Potassium) - 200.8 - Total	"	06/04/19	9051405	A19C136	
107	"	Water	Mg (Magnesium) - 200.8 - Total	"	06/04/19	9051405	A19C136	
108	"	Water	Mn (Manganese) - 200.8 - Total	"	06/04/19	9051405	A19C136	
109	"	Water	Na (Sodium) - 200.8 - Total	"	06/04/19	9051405	A19C136	
110	"	Water	Sb (Antimony) - 200.8 - Total	"	06/04/19	9051405	A19C136	
111	"	Water	Se (Selenium) - 200.8 - Total	"	06/04/19	9051405	A19C136	
112	"	Water	V (Vanadium) - 200.8 - Total	"	06/04/19	9051405	A19C136	
113	"	Water	Tl (Thallium) - 200.8 - Total	"	06/04/19	9051405	A19C136	
114	A9E0668-01	Water	Al (Aluminum) - 200.8 - Total		06/04/19	9051405	A19C136	
115	"	Water	Cu (Copper) - 200.8 - Total	"	06/04/19	9051405	A19C136	
116	"	Water	Fe (Iron) - 200.8 - Total	"	06/04/19	9051405	A19C136	
117	"	Water	Pb (Lead) - 200.8 - Total	"	06/04/19	9051405	A19C136	
118	"	Water	Zn (Zinc) - 200.8 - Total	"	06/04/19	9051405	A19C136	
119	9E31026-CCV2	Water	QC	QC			A19C136	A19E109
120	9E31026-CCB2	Water	QC	QC			A19C136	
121	A9E0685-01	Water	Cu (Copper) - 200.8 - Total		06/04/19	9051405	A19C136	
122	"	Water	Fe (Iron) - 200.8 - Total	"	06/04/19	9051405	A19C136	
123	"	Water	Pb (Lead) - 200.8 - Total	"	06/04/19	9051405	A19C136	
124	"	Water	Zn (Zinc) - 200.8 - Total	"	06/04/19	9051405	A19C136	
125	"	Water	As (Arsenic) - 200.8 - Total	"	06/04/19	9051405	A19C136	
126	A9E0688-01	Water	Ag (Silver) - 200.8 - Total		06/04/19	9051405	A19C136	
127	"	Water	Cd (Cadmium) - 200.8 - Total	"	06/04/19	9051405	A19C136	
128	"	Water	Cr (Chromium) - 200.8 - Total	"	06/04/19	9051405	A19C136	
129	"	Water	Cu (Copper) - 200.8 - Total	"	06/04/19	9051405	A19C136	
130	"	Water	Mo (Molybdenum) - 200.8 - Total	"	06/04/19	9051405	A19C136	
131	"	Water	Ni (Nickel) - 200.8 - Total	"	06/04/19	9051405	A19C136	
132	"	Water	Pb (Lead) - 200.8 - Total	"	06/04/19	9051405	A19C136	
133	"	Water	Zn (Zinc) - 200.8 - Total	"	06/04/19	9051405	A19C136	
134	"	Water	As (Arsenic) - 200.8 - Total	"	06/04/19	9051405	A19C136	
135	"	Water	Se (Selenium) - 200.8 - Total	"	06/04/19	9051405	A19C136	
136	A9E0690-01	Water	Ag (Silver) - 200.8 - Total		06/04/19	9051405	A19C136	
137	"	Water	Cd (Cadmium) - 200.8 - Total	"	06/04/19	9051405	A19C136	
138	"	Water	Cr (Chromium) - 200.8 - Total	"	06/04/19	9051405	A19C136	

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#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
139	"	Water	Cu (Copper) - 200.8 - Total	"	06/04/19	9051405	A19C136	
140	"	Water	Mo (Molybdenum) - 200.8 - Total	"	06/04/19	9051405	A19C136	
141	"	Water	Ni (Nickel) - 200.8 - Total	"	06/04/19	9051405	A19C136	
142	"	Water	Pb (Lead) - 200.8 - Total	"	06/04/19	9051405	A19C136	
143	"	Water	Zn (Zinc) - 200.8 - Total	"	06/04/19	9051405	A19C136	
144	"	Water	As (Arsenic) - 200.8 - Total	"	06/04/19	9051405	A19C136	
145	"	Water	Se (Selenium) - 200.8 - Total	"	06/04/19	9051405	A19C136	
146	A9E0691-01	Water	Ni (Nickel) - 200.8 - Total		06/04/19	9051405	A19C136	
147	A9E0707-03	Water	Ag (Silver) - 200.8 - Total	(QC Source)		9051405	A19C136	
148	"	Water	Al (Aluminum) - 200.8 - Total	(QC Source)		9051405	A19C136	
149	"	Water	Cd (Cadmium) - 200.8 - Total	(QC Source)		9051405	A19C136	
150	"	Water	Cr (Chromium) - 200.8 - Total	(QC Source)		9051405	A19C136	
151	"	Water	Cu (Copper) - 200.8 - Total	"	06/04/19	9051405	A19C136	
152	"	Water	Fe (Iron) - 200.8 - Total	(QC Source)		9051405	A19C136	
153	"	Water	Mo (Molybdenum) - 200.8 - Total	(QC Source)		9051405	A19C136	
154	"	Water	Ni (Nickel) - 200.8 - Total	(QC Source)		9051405	A19C136	
155	"	Water	Pb (Lead) - 200.8 - Total	(QC Source)		9051405	A19C136	
156	"	Water	Zn (Zinc) - 200.8 - Total	"	06/04/19	9051405	A19C136	
157	"	Water	As (Arsenic) - 200.8 - Total	(QC Source)		9051405	A19C136	
158	"	Water	Ba (Barium) - 200.8 - Total	(QC Source)		9051405	A19C136	
159	"	Water	Be (Beryllium) - 200.8 - Total	(QC Source)		9051405	A19C136	
160	"	Water	Ca (Calcium) - 200.8 - Total	"	06/04/19	9051405	A19C136	
161	"	Water	Hg (Mercury) - 200.8 - Total	(QC Source)		9051405	A19C136	
162	"	Water	K (Potassium) - 200.8 - Total	(QC Source)		9051405	A19C136	
163	"	Water	Mg (Magnesium) - 200.8 - Total	"	06/04/19	9051405	A19C136	
164	"	Water	Mn (Manganese) - 200.8 - Total	(QC Source)		9051405	A19C136	
165	"	Water	Na (Sodium) - 200.8 - Total	(QC Source)		9051405	A19C136	
166	"	Water	Sb (Antimony) - 200.8 - Total	(QC Source)		9051405	A19C136	
167	"	Water	Se (Selenium) - 200.8 - Total	(QC Source)		9051405	A19C136	
168	"	Water	V (Vanadium) - 200.8 - Total	(QC Source)		9051405	A19C136	
169	"	Water	Tl (Thallium) - 200.8 - Total	(QC Source)		9051405	A19C136	
170	9051405-MS1	Water	QC	QC		9051405	A19C136	
171	9051405-MSD1	Water	QC	QC		9051405	A19C136	
172	A9E0707-08	Water	Cu (Copper) - 200.8 - Total		06/04/19	9051405	A19C136	
173	"	Water	Zn (Zinc) - 200.8 - Total	"	06/04/19	9051405	A19C136	
174	"	Water	Ca (Calcium) - 200.8 - Total	"	06/04/19	9051405	A19C136	
175	"	Water	Mg (Magnesium) - 200.8 - Total	"	06/04/19	9051405	A19C136	
176	A9E0714-02	Water	Cr (Chromium) - 200.8 - Total		06/05/19	9051405	A19C136	
177	"	Water	Cu (Copper) - 200.8 - Total	"	06/05/19	9051405	A19C136	
178	"	Water	Fe (Iron) - 200.8 - Total	"	06/05/19	9051405	A19C136	
179	"	Water	Ni (Nickel) - 200.8 - Total	"	06/05/19	9051405	A19C136	
180	"	Water	Pb (Lead) - 200.8 - Total	"	06/05/19	9051405	A19C136	
181	"	Water	Zn (Zinc) - 200.8 - Total	"	06/05/19	9051405	A19C136	
182	"	Water	As (Arsenic) - 200.8 - Total	"	06/05/19	9051405	A19C136	
183	A9E0726-01	Water	Cu (Copper) - 200.8 - Total		06/05/19	9051405	A19C136	
184	"	Water	Fe (Iron) - 200.8 - Total	"	06/05/19	9051405	A19C136	
185	9E31026-CCV3	Water	QC	QC			A19C136	A19E109
186	9E31026-CCB3	Water	QC	QC			A19C136	
187	9E31026-CCB4	Water	QC	QC			A19C136	
188	A9E0726-02	Water	Cu (Copper) - 200.8 - Total		06/05/19	9051405	A19C136	
189	"	Water	Fe (Iron) - 200.8 - Total	"	06/05/19	9051405	A19C136	
190	A9E0726-03	Water	Cu (Copper) - 200.8 - Total		06/05/19	9051405	A19C136	
191	"	Water	Fe (Iron) - 200.8 - Total	"	06/05/19	9051405	A19C136	
192	A9E0726-04	Water	Cu (Copper) - 200.8 - Total		06/05/19	9051405	A19C136	
193	"	Water	Fe (Iron) - 200.8 - Total	"	06/05/19	9051405	A19C136	

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#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
194	A9E0726-05	Water	Cu (Copper) - 200.8 - Total		06/05/19	9051405	A19C136	
195	"	Water	Fe (Iron) - 200.8 - Total	"	06/05/19	9051405	A19C136	
196	A9E0760-01	Water	Cu (Copper) - 200.8 - Total		06/05/19	9051405	A19C136	
197	"	Water	Pb (Lead) - 200.8 - Total	"	06/05/19	9051405	A19C136	
198	"	Water	Zn (Zinc) - 200.8 - Total	"	06/05/19	9051405	A19C136	
199	A9E0760-02	Water	Cu (Copper) - 200.8 - Total		06/05/19	9051405	A19C136	
200	"	Water	Pb (Lead) - 200.8 - Total	"	06/05/19	9051405	A19C136	
201	"	Water	Zn (Zinc) - 200.8 - Total	"	06/05/19	9051405	A19C136	
202	A9E0769-01	Water	Cu (Copper) - 200.8 - Total		06/06/19	9051405	A19C136	
203	"	Water	Fe (Iron) - 200.8 - Total	"	06/06/19	9051405	A19C136	
204	"	Water	Zn (Zinc) - 200.8 - Total	"	06/06/19	9051405	A19C136	
205	A9E0779-01	Water	Ag (Silver) - 200.8 - Total		06/06/19	9051405	A19C136	
206	"	Water	Cd (Cadmium) - 200.8 - Total	"	06/06/19	9051405	A19C136	
207	"	Water	Cr (Chromium) - 200.8 - Total	"	06/06/19	9051405	A19C136	
208	"	Water	Cu (Copper) - 200.8 - Total	"	06/06/19	9051405	A19C136	
209	"	Water	Ni (Nickel) - 200.8 - Total	"	06/06/19	9051405	A19C136	
210	"	Water	Pb (Lead) - 200.8 - Total	"	06/06/19	9051405	A19C136	
211	"	Water	Zn (Zinc) - 200.8 - Total	"	06/06/19	9051405	A19C136	
212	"	Water	As (Arsenic) - 200.8 - Total	"	06/06/19	9051405	A19C136	
213	A9E0780-01	Water	Ag (Silver) - 200.8 - Total	(QC Source)		9051405	A19C136	
214	"	Water	Al (Aluminum) - 200.8 - Total	(QC Source)		9051405	A19C136	
215	"	Water	Cd (Cadmium) - 200.8 - Total	(QC Source)		9051405	A19C136	
216	"	Water	Cr (Chromium) - 200.8 - Total	(QC Source)		9051405	A19C136	
217	"	Water	Cu (Copper) - 200.8 - Total	(QC Source)		9051405	A19C136	
218	"	Water	Fe (Iron) - 200.8 - Total	(QC Source)		9051405	A19C136	
219	"	Water	Mo (Molybdenum) - 200.8 - Total	(QC Source)		9051405	A19C136	
220	"	Water	Ni (Nickel) - 200.8 - Total	(QC Source)		9051405	A19C136	
221	"	Water	Pb (Lead) - 200.8 - Total	(QC Source)		9051405	A19C136	
222	"	Water	Zn (Zinc) - 200.8 - Total	"	06/06/19	9051405	A19C136	
223	"	Water	As (Arsenic) - 200.8 - Total	(QC Source)		9051405	A19C136	
224	"	Water	Ba (Barium) - 200.8 - Total	(QC Source)		9051405	A19C136	
225	"	Water	Be (Beryllium) - 200.8 - Total	(QC Source)		9051405	A19C136	
226	"	Water	Ca (Calcium) - 200.8 - Total	(QC Source)		9051405	A19C136	
227	"	Water	Hg (Mercury) - 200.8 - Total	(QC Source)		9051405	A19C136	
228	"	Water	K (Potassium) - 200.8 - Total	(QC Source)		9051405	A19C136	
229	"	Water	Mg (Magnesium) - 200.8 - Total	(QC Source)		9051405	A19C136	
230	"	Water	Mn (Manganese) - 200.8 - Total	(QC Source)		9051405	A19C136	
231	"	Water	Na (Sodium) - 200.8 - Total	(QC Source)		9051405	A19C136	
232	"	Water	Sb (Antimony) - 200.8 - Total	(QC Source)		9051405	A19C136	
233	"	Water	Se (Selenium) - 200.8 - Total	(QC Source)		9051405	A19C136	
234	"	Water	V (Vanadium) - 200.8 - Total	(QC Source)		9051405	A19C136	
235	"	Water	Tl (Thallium) - 200.8 - Total	(QC Source)		9051405	A19C136	
236	9051405-MS2	Water	QC	QC		9051405	A19C136	
237	9E31026-CCV4	Water	QC	QC			A19C136	A19E109
238	9E31026-CCV5	Water	QC	QC			A19C136	A19E109
239	9E31026-CCB5	Water	QC	QC			A19C136	
240	9E31026-CCB6	Water	QC	QC			A19C136	
241	9051440-BLK1	Soil	QC	QC		9051440	A19C136	
242	9051440-BS1	Soil	QC	QC		9051440	A19C136	
243	A9E0919-01	Soil	Cd (Cadmium) - 6020 - Total		06/11/19	9051440	A19C136	
244	"	Soil	Ag (Silver) - 6020 - Total	"	06/11/19	9051440	A19C136	
245	"	Soil	As (Arsenic) - 6020 - Total	"	06/11/19	9051440	A19C136	
246	"	Soil	Ba (Barium) - 6020 - Total	"	06/11/19	9051440	A19C136	
247	"	Soil	Be (Beryllium) - 6020 - Total	"	06/11/19	9051440	A19C136	
248	"	Soil	Cr (Chromium) - 6020 - Total	"	06/11/19	9051440	A19C136	

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#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
249	"	Soil	Cu (Copper) - 6020 - Total	"	06/11/19	9051440	A19C136	
250	"	Soil	Hg (Mercury) - 6020 - Total	"	06/11/19	9051440	A19C136	
251	"	Soil	Ni (Nickel) - 6020 - Total	"	06/11/19	9051440	A19C136	
252	"	Soil	Pb (Lead) - 6020 - Total	"	06/11/19	9051440	A19C136	
253	"	Soil	Sb (Antimony) - 6020 - Total	"	06/11/19	9051440	A19C136	
254	"	Soil	Se (Selenium) - 6020 - Total	"	06/11/19	9051440	A19C136	
255	"	Soil	Tl (Thallium) - 6020 - Total	"	06/11/19	9051440	A19C136	
256	"	Soil	V (Vanadium) - 6020 - Total	"	06/11/19	9051440	A19C136	
257	"	Soil	Zn (Zinc) - 6020 - Total	"	06/11/19	9051440	A19C136	
258	"	Soil	Co (Cobalt) - 6020 - Total	"	06/11/19	9051440	A19C136	
259	"	Soil	Mo (Molybdenum) - 6020 - Total	"	06/11/19	9051440	A19C136	
260	A9E0919-02	Soil	Cd (Cadmium) - 6020 - Total		06/11/19	9051440	A19C136	
261	"	Soil	Ag (Silver) - 6020 - Total	"	06/11/19	9051440	A19C136	
262	"	Soil	As (Arsenic) - 6020 - Total	"	06/11/19	9051440	A19C136	
263	"	Soil	Ba (Barium) - 6020 - Total	"	06/11/19	9051440	A19C136	
264	"	Soil	Be (Beryllium) - 6020 - Total	"	06/11/19	9051440	A19C136	
265	"	Soil	Cr (Chromium) - 6020 - Total	"	06/11/19	9051440	A19C136	
266	"	Soil	Cu (Copper) - 6020 - Total	"	06/11/19	9051440	A19C136	
267	"	Soil	Hg (Mercury) - 6020 - Total	"	06/11/19	9051440	A19C136	
268	"	Soil	Ni (Nickel) - 6020 - Total	"	06/11/19	9051440	A19C136	
269	"	Soil	Pb (Lead) - 6020 - Total	"	06/11/19	9051440	A19C136	
270	"	Soil	Sb (Antimony) - 6020 - Total	"	06/11/19	9051440	A19C136	
271	"	Soil	Se (Selenium) - 6020 - Total	"	06/11/19	9051440	A19C136	
272	"	Soil	Tl (Thallium) - 6020 - Total	"	06/11/19	9051440	A19C136	
273	"	Soil	V (Vanadium) - 6020 - Total	"	06/11/19	9051440	A19C136	
274	"	Soil	Zn (Zinc) - 6020 - Total	"	06/11/19	9051440	A19C136	
275	"	Soil	Co (Cobalt) - 6020 - Total	"	06/11/19	9051440	A19C136	
276	"	Soil	Mo (Molybdenum) - 6020 - Total	"	06/11/19	9051440	A19C136	
277	A9E0919-03	Soil	Cd (Cadmium) - 6020 - Total		06/11/19	9051440	A19C136	
278	"	Soil	Ag (Silver) - 6020 - Total	"	06/11/19	9051440	A19C136	
279	"	Soil	As (Arsenic) - 6020 - Total	"	06/11/19	9051440	A19C136	
280	"	Soil	Ba (Barium) - 6020 - Total	"	06/11/19	9051440	A19C136	
281	"	Soil	Be (Beryllium) - 6020 - Total	"	06/11/19	9051440	A19C136	
282	"	Soil	Cr (Chromium) - 6020 - Total	"	06/11/19	9051440	A19C136	
283	"	Soil	Cu (Copper) - 6020 - Total	"	06/11/19	9051440	A19C136	
284	"	Soil	Hg (Mercury) - 6020 - Total	"	06/11/19	9051440	A19C136	
285	"	Soil	Ni (Nickel) - 6020 - Total	"	06/11/19	9051440	A19C136	
286	"	Soil	Pb (Lead) - 6020 - Total	"	06/11/19	9051440	A19C136	
287	"	Soil	Sb (Antimony) - 6020 - Total	"	06/11/19	9051440	A19C136	
288	"	Soil	Se (Selenium) - 6020 - Total	"	06/11/19	9051440	A19C136	
289	"	Soil	Tl (Thallium) - 6020 - Total	"	06/11/19	9051440	A19C136	
290	"	Soil	V (Vanadium) - 6020 - Total	"	06/11/19	9051440	A19C136	
291	"	Soil	Zn (Zinc) - 6020 - Total	"	06/11/19	9051440	A19C136	
292	"	Soil	Co (Cobalt) - 6020 - Total	"	06/11/19	9051440	A19C136	
293	"	Soil	Mo (Molybdenum) - 6020 - Total	"	06/11/19	9051440	A19C136	
294	A9E0919-04	Soil	Cd (Cadmium) - 6020 - Total		06/11/19	9051440	A19C136	
295	"	Soil	Ag (Silver) - 6020 - Total	"	06/11/19	9051440	A19C136	
296	"	Soil	As (Arsenic) - 6020 - Total	"	06/11/19	9051440	A19C136	
297	"	Soil	Ba (Barium) - 6020 - Total	"	06/11/19	9051440	A19C136	
298	"	Soil	Be (Beryllium) - 6020 - Total	"	06/11/19	9051440	A19C136	
299	"	Soil	Cr (Chromium) - 6020 - Total	"	06/11/19	9051440	A19C136	
300	"	Soil	Cu (Copper) - 6020 - Total	"	06/11/19	9051440	A19C136	
301	"	Soil	Hg (Mercury) - 6020 - Total	"	06/11/19	9051440	A19C136	
302	"	Soil	Ni (Nickel) - 6020 - Total	"	06/11/19	9051440	A19C136	
303	"	Soil	Pb (Lead) - 6020 - Total	"	06/11/19	9051440	A19C136	

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#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
304	"	Soil	Sb (Antimony) - 6020 - Total	"	06/11/19	9051440	A19C136	
305	"	Soil	Se (Selenium) - 6020 - Total	"	06/11/19	9051440	A19C136	
306	"	Soil	Tl (Thallium) - 6020 - Total	"	06/11/19	9051440	A19C136	
307	"	Soil	V (Vanadium) - 6020 - Total	"	06/11/19	9051440	A19C136	
308	"	Soil	Zn (Zinc) - 6020 - Total	"	06/11/19	9051440	A19C136	
309	"	Soil	Co (Cobalt) - 6020 - Total	"	06/11/19	9051440	A19C136	
310	"	Soil	Mo (Molybdenum) - 6020 - Total	"	06/11/19	9051440	A19C136	
311	9051440-DUP1	Soil	QC	QC		9051440	A19C136	
312	9051440-MS1	Soil	QC	QC		9051440	A19C136	
313	A9E0919-05	Soil	Cd (Cadmium) - 6020 - Total		06/11/19	9051440	A19C136	
314	"	Soil	Ag (Silver) - 6020 - Total	"	06/11/19	9051440	A19C136	
315	"	Soil	As (Arsenic) - 6020 - Total	"	06/11/19	9051440	A19C136	
316	"	Soil	Ba (Barium) - 6020 - Total	"	06/11/19	9051440	A19C136	
317	"	Soil	Be (Beryllium) - 6020 - Total	"	06/11/19	9051440	A19C136	
318	"	Soil	Cr (Chromium) - 6020 - Total	"	06/11/19	9051440	A19C136	
319	"	Soil	Cu (Copper) - 6020 - Total	"	06/11/19	9051440	A19C136	
320	"	Soil	Hg (Mercury) - 6020 - Total	"	06/11/19	9051440	A19C136	
321	"	Soil	Ni (Nickel) - 6020 - Total	"	06/11/19	9051440	A19C136	
322	"	Soil	Pb (Lead) - 6020 - Total	"	06/11/19	9051440	A19C136	
323	"	Soil	Sb (Antimony) - 6020 - Total	"	06/11/19	9051440	A19C136	
324	"	Soil	Se (Selenium) - 6020 - Total	"	06/11/19	9051440	A19C136	
325	"	Soil	Tl (Thallium) - 6020 - Total	"	06/11/19	9051440	A19C136	
326	"	Soil	V (Vanadium) - 6020 - Total	"	06/11/19	9051440	A19C136	
327	"	Soil	Zn (Zinc) - 6020 - Total	"	06/11/19	9051440	A19C136	
328	"	Soil	Co (Cobalt) - 6020 - Total	"	06/11/19	9051440	A19C136	
329	"	Soil	Mo (Molybdenum) - 6020 - Total	"	06/11/19	9051440	A19C136	
330	A9E0919-06	Soil	Cd (Cadmium) - 6020 - Total		06/11/19	9051440	A19C136	
331	"	Soil	Ag (Silver) - 6020 - Total	"	06/11/19	9051440	A19C136	
332	"	Soil	As (Arsenic) - 6020 - Total	"	06/11/19	9051440	A19C136	
333	"	Soil	Ba (Barium) - 6020 - Total	"	06/11/19	9051440	A19C136	
334	"	Soil	Be (Beryllium) - 6020 - Total	"	06/11/19	9051440	A19C136	
335	"	Soil	Cr (Chromium) - 6020 - Total	"	06/11/19	9051440	A19C136	
336	"	Soil	Cu (Copper) - 6020 - Total	"	06/11/19	9051440	A19C136	
337	"	Soil	Hg (Mercury) - 6020 - Total	"	06/11/19	9051440	A19C136	
338	"	Soil	Ni (Nickel) - 6020 - Total	"	06/11/19	9051440	A19C136	
339	"	Soil	Pb (Lead) - 6020 - Total	"	06/11/19	9051440	A19C136	
340	"	Soil	Sb (Antimony) - 6020 - Total	"	06/11/19	9051440	A19C136	
341	"	Soil	Se (Selenium) - 6020 - Total	"	06/11/19	9051440	A19C136	
342	"	Soil	Tl (Thallium) - 6020 - Total	"	06/11/19	9051440	A19C136	
343	"	Soil	V (Vanadium) - 6020 - Total	"	06/11/19	9051440	A19C136	
344	"	Soil	Zn (Zinc) - 6020 - Total	"	06/11/19	9051440	A19C136	
345	"	Soil	Co (Cobalt) - 6020 - Total	"	06/11/19	9051440	A19C136	
346	"	Soil	Mo (Molybdenum) - 6020 - Total	"	06/11/19	9051440	A19C136	
347	9E31026-CCV6	Water	QC	QC			A19C136	A19E109
348	9E31026-CCB7	Water	QC	QC			A19C136	
349	A9E0919-07	Soil	Cd (Cadmium) - 6020 - Total		06/11/19	9051440	A19C136	
350	"	Soil	Ag (Silver) - 6020 - Total	"	06/11/19	9051440	A19C136	
351	"	Soil	As (Arsenic) - 6020 - Total	"	06/11/19	9051440	A19C136	
352	"	Soil	Ba (Barium) - 6020 - Total	"	06/11/19	9051440	A19C136	
353	"	Soil	Be (Beryllium) - 6020 - Total	"	06/11/19	9051440	A19C136	
354	"	Soil	Cr (Chromium) - 6020 - Total	"	06/11/19	9051440	A19C136	
355	"	Soil	Cu (Copper) - 6020 - Total	"	06/11/19	9051440	A19C136	
356	"	Soil	Hg (Mercury) - 6020 - Total	"	06/11/19	9051440	A19C136	
357	"	Soil	Ni (Nickel) - 6020 - Total	"	06/11/19	9051440	A19C136	
358	"	Soil	Pb (Lead) - 6020 - Total	"	06/11/19	9051440	A19C136	

Sequence: **9E31026** Instrument: **ICPMS5**

Date: **05/31/19 11:43** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
359	"	Soil	Sb (Antimony) - 6020 - Total	"	06/11/19	9051440	A19C136	
360	"	Soil	Se (Selenium) - 6020 - Total	"	06/11/19	9051440	A19C136	
361	"	Soil	Tl (Thallium) - 6020 - Total	"	06/11/19	9051440	A19C136	
362	"	Soil	V (Vanadium) - 6020 - Total	"	06/11/19	9051440	A19C136	
363	"	Soil	Zn (Zinc) - 6020 - Total	"	06/11/19	9051440	A19C136	
364	"	Soil	Co (Cobalt) - 6020 - Total	"	06/11/19	9051440	A19C136	
365	"	Soil	Mo (Molybdenum) - 6020 - Total	"	06/11/19	9051440	A19C136	
366	A9E0919-08	Soil	Cd (Cadmium) - 6020 - Total		06/11/19	9051440	A19C136	
367	"	Soil	Ag (Silver) - 6020 - Total	"	06/11/19	9051440	A19C136	
368	"	Soil	As (Arsenic) - 6020 - Total	"	06/11/19	9051440	A19C136	
369	"	Soil	Ba (Barium) - 6020 - Total	"	06/11/19	9051440	A19C136	
370	"	Soil	Be (Beryllium) - 6020 - Total	"	06/11/19	9051440	A19C136	
371	"	Soil	Cr (Chromium) - 6020 - Total	"	06/11/19	9051440	A19C136	
372	"	Soil	Cu (Copper) - 6020 - Total	"	06/11/19	9051440	A19C136	
373	"	Soil	Hg (Mercury) - 6020 - Total	"	06/11/19	9051440	A19C136	
374	"	Soil	Ni (Nickel) - 6020 - Total	"	06/11/19	9051440	A19C136	
375	"	Soil	Pb (Lead) - 6020 - Total	"	06/11/19	9051440	A19C136	
376	"	Soil	Sb (Antimony) - 6020 - Total	"	06/11/19	9051440	A19C136	
377	"	Soil	Se (Selenium) - 6020 - Total	"	06/11/19	9051440	A19C136	
378	"	Soil	Tl (Thallium) - 6020 - Total	"	06/11/19	9051440	A19C136	
379	"	Soil	V (Vanadium) - 6020 - Total	"	06/11/19	9051440	A19C136	
380	"	Soil	Zn (Zinc) - 6020 - Total	"	06/11/19	9051440	A19C136	
381	"	Soil	Co (Cobalt) - 6020 - Total	"	06/11/19	9051440	A19C136	
382	"	Soil	Mo (Molybdenum) - 6020 - Total	"	06/11/19	9051440	A19C136	
383	A9E0919-09	Soil	Cd (Cadmium) - 6020 - Total		06/11/19	9051440	A19C136	
384	"	Soil	Ag (Silver) - 6020 - Total	"	06/11/19	9051440	A19C136	
385	"	Soil	As (Arsenic) - 6020 - Total	"	06/11/19	9051440	A19C136	
386	"	Soil	Ba (Barium) - 6020 - Total	"	06/11/19	9051440	A19C136	
387	"	Soil	Be (Beryllium) - 6020 - Total	"	06/11/19	9051440	A19C136	
388	"	Soil	Cr (Chromium) - 6020 - Total	"	06/11/19	9051440	A19C136	
389	"	Soil	Cu (Copper) - 6020 - Total	"	06/11/19	9051440	A19C136	
390	"	Soil	Hg (Mercury) - 6020 - Total	"	06/11/19	9051440	A19C136	
391	"	Soil	Ni (Nickel) - 6020 - Total	"	06/11/19	9051440	A19C136	
392	"	Soil	Pb (Lead) - 6020 - Total	"	06/11/19	9051440	A19C136	
393	"	Soil	Sb (Antimony) - 6020 - Total	"	06/11/19	9051440	A19C136	
394	"	Soil	Se (Selenium) - 6020 - Total	"	06/11/19	9051440	A19C136	
395	"	Soil	Tl (Thallium) - 6020 - Total	"	06/11/19	9051440	A19C136	
396	"	Soil	V (Vanadium) - 6020 - Total	"	06/11/19	9051440	A19C136	
397	"	Soil	Zn (Zinc) - 6020 - Total	"	06/11/19	9051440	A19C136	
398	"	Soil	Co (Cobalt) - 6020 - Total	"	06/11/19	9051440	A19C136	
399	"	Soil	Mo (Molybdenum) - 6020 - Total	"	06/11/19	9051440	A19C136	
400	A9E0919-10	Soil	Cd (Cadmium) - 6020 - Total		06/11/19	9051440	A19C136	
401	"	Soil	Ag (Silver) - 6020 - Total	"	06/11/19	9051440	A19C136	
402	"	Soil	As (Arsenic) - 6020 - Total	"	06/11/19	9051440	A19C136	
403	"	Soil	Ba (Barium) - 6020 - Total	"	06/11/19	9051440	A19C136	
404	"	Soil	Be (Beryllium) - 6020 - Total	"	06/11/19	9051440	A19C136	
405	"	Soil	Cr (Chromium) - 6020 - Total	"	06/11/19	9051440	A19C136	
406	"	Soil	Cu (Copper) - 6020 - Total	"	06/11/19	9051440	A19C136	
407	"	Soil	Hg (Mercury) - 6020 - Total	"	06/11/19	9051440	A19C136	
408	"	Soil	Ni (Nickel) - 6020 - Total	"	06/11/19	9051440	A19C136	
409	"	Soil	Pb (Lead) - 6020 - Total	"	06/11/19	9051440	A19C136	
410	"	Soil	Sb (Antimony) - 6020 - Total	"	06/11/19	9051440	A19C136	
411	"	Soil	Se (Selenium) - 6020 - Total	"	06/11/19	9051440	A19C136	
412	"	Soil	Tl (Thallium) - 6020 - Total	"	06/11/19	9051440	A19C136	
413	"	Soil	V (Vanadium) - 6020 - Total	"	06/11/19	9051440	A19C136	

Sequence: **9E31026** Instrument: **ICPMS5**

Date: **05/31/19 11:43** Calibration: **UNASSIGNED**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
414	"	Soil	Zn (Zinc) - 6020 - Total	"	06/11/19	9051440	A19C136	
415	"	Soil	Co (Cobalt) - 6020 - Total	"	06/11/19	9051440	A19C136	
416	"	Soil	Mo (Molybdenum) - 6020 - Total	"	06/11/19	9051440	A19C136	
417	A9E0929-01	Soil	Cd (Cadmium) - 6020 - Total		06/11/19	9051440	A19C136	
418	"	Soil	Ag (Silver) - 6020 - Total	"	06/11/19	9051440	A19C136	
419	"	Soil	As (Arsenic) - 6020 - Total	"	06/11/19	9051440	A19C136	
420	"	Soil	Ba (Barium) - 6020 - Total	"	06/11/19	9051440	A19C136	
421	"	Soil	Cr (Chromium) - 6020 - Total	"	06/11/19	9051440	A19C136	
422	"	Soil	Hg (Mercury) - 6020 - Total	"	06/11/19	9051440	A19C136	
423	"	Soil	Pb (Lead) - 6020 - Total	"	06/11/19	9051440	A19C136	
424	"	Soil	Se (Selenium) - 6020 - Total	"	06/11/19	9051440	A19C136	
425	A9E0929-02	Soil	Cd (Cadmium) - 6020 - Total		06/11/19	9051440	A19C136	
426	"	Soil	Ag (Silver) - 6020 - Total	"	06/11/19	9051440	A19C136	
427	"	Soil	As (Arsenic) - 6020 - Total	"	06/11/19	9051440	A19C136	
428	"	Soil	Ba (Barium) - 6020 - Total	"	06/11/19	9051440	A19C136	
429	"	Soil	Cr (Chromium) - 6020 - Total	"	06/11/19	9051440	A19C136	
430	"	Soil	Hg (Mercury) - 6020 - Total	"	06/11/19	9051440	A19C136	
431	"	Soil	Pb (Lead) - 6020 - Total	"	06/11/19	9051440	A19C136	
432	"	Soil	Se (Selenium) - 6020 - Total	"	06/11/19	9051440	A19C136	
433	A9E0929-03	Soil	Cd (Cadmium) - 6020 - Total		06/11/19	9051440	A19C136	
434	"	Soil	Ag (Silver) - 6020 - Total	"	06/11/19	9051440	A19C136	
435	"	Soil	As (Arsenic) - 6020 - Total	"	06/11/19	9051440	A19C136	
436	"	Soil	Ba (Barium) - 6020 - Total	"	06/11/19	9051440	A19C136	
437	"	Soil	Cr (Chromium) - 6020 - Total	"	06/11/19	9051440	A19C136	
438	"	Soil	Hg (Mercury) - 6020 - Total	"	06/11/19	9051440	A19C136	
439	"	Soil	Pb (Lead) - 6020 - Total	"	06/11/19	9051440	A19C136	
440	"	Soil	Se (Selenium) - 6020 - Total	"	06/11/19	9051440	A19C136	
441	A9E0932-01	Soil	Cd (Cadmium) - 6020 - Total		06/11/19	9051440	A19C136	
442	"	Soil	Ag (Silver) - 6020 - Total	"	06/11/19	9051440	A19C136	
443	"	Soil	As (Arsenic) - 6020 - Total	"	06/11/19	9051440	A19C136	
444	"	Soil	Ba (Barium) - 6020 - Total	"	06/11/19	9051440	A19C136	
445	"	Soil	Cr (Chromium) - 6020 - Total	"	06/11/19	9051440	A19C136	
446	"	Soil	Hg (Mercury) - 6020 - Total	"	06/11/19	9051440	A19C136	
447	"	Soil	Pb (Lead) - 6020 - Total	"	06/11/19	9051440	A19C136	
448	"	Soil	Se (Selenium) - 6020 - Total	"	06/11/19	9051440	A19C136	
449	A9E0952-01	Soil	Pb (Lead) - 6020 - Total		06/04/19	9051440	A19C136	
450	9E31026-CCV7	Water	QC	QC			A19C136	A19E109
451	9E31026-CCB8	Water	QC	QC			A19C136	
452	9E31026-CCV8	Water	QC	QC			A19C136	A19E109
453	9E31026-CCB9	Water	QC	QC			A19C136	
454	9E31026-CRL4	Water	QC	QC			A19C136	A19E285
455	9E31026-CRL5	Water	QC	QC			A19C136	A19E286
456	9E31026-CRL6	Water	QC	QC			A19C136	A19E287
457	9E31026-CRL7	Water	QC	QC			A19C136	A19E288

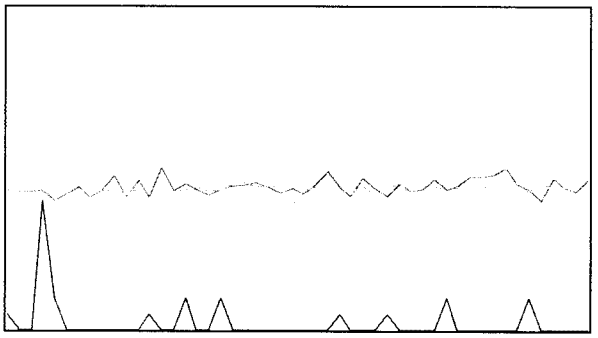
Data Entered By: 06/03/19 Comments:

Data Reviewed By: 06/04/19

Tune Report

Batch Folder	C:\Agilent\ICPMH\1\DATA\9E31026.b
Acq. Date-Time	5/31/2019 13:54
Report Comment	9E31026 General Multi-mode Tune Report A19E047
Instrument Name	7700x JP09240003

[H2]



Mass	Range	Count (Actual)	Response (Actual) [cps/ug/l]	Response (Required) [cps/ug/l]	Response (Flag)
59	1000	443	4426.25	1000.00	
89	5000	2178	21782.64	1000.00	
78	20	0			

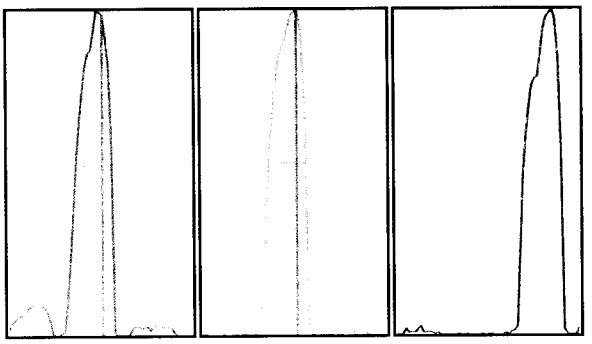
Mass	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
59		-	
89		-	
78		-	

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
59	5.60	5.00	~~[F]~~ See EPA tune for RSD
89	3.04	5.00	VJ 5/31/19
78	287.33		

Mass	Background (Actual)	Background (Required)	Background (Flag)
59			
89			
78			

Integration Time [sec]	0.1	**Sampling Period [sec]**	0.306

Tune Report



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	W-50%	W-10% (Actual)	W-10% (Required)	W-10% (Flag)
59	471.08	59.05	58.9 - 59.1		0.56	0.723	0.900	
89	2270.34	89.05	88.9 - 89.1		0.58	0.726	0.900	
78			-					

Integration Time [sec] 0.1 **Acquisition Time [sec]** 22.14 **Y Axis** Linear

Tune Parameters
Plasma Paramters

RF Power	1550 W	Nebulizer Pump	0.10 rps
RF Matching	1.80 V	S/C Temp	2 ℃
Smpl Depth	8.0 mm	Gas Switch	Makeup Gas
Carrier Gas	1.00 L/min	Makeup/Dilution Gas	0.10 L/min
Option Gas	0.0 %		

Lenses Parameters

Extract 1	0.0 V	Cell Entrance	-40 V
Extract 2	-175.0 V	Cell Exit	-60 V
Omega Bias	-110 V	Deflect	1.5 V
Omega Lens	6.0 V	Plate Bias	-70 V

Cell Parameters

Use Gas	true	OctP Bias	-18.0 V
He Flow	0.0 mL/min	OctP RF	160 V
H2 Flow	3.0 mL/min	Energy Discrimination	5.0 V
3rd Gas Flow	0 %		

[He]

Mass	Range	Count (Actual)	Response (Actual) [cps/ug/l]	Response (Required) [cps/ug/l]	Response (Flag)
59	500	418	4177.49	1000.00	
89	500	359	3586.97	1000.00	
205	1000	693	6929.51	1000.00	
75	20	2			

Mass	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
59		-	

Tune Report

89		-
205		-
75		-

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
59	5.90	5.00	~~[F]~~
89	7.40	5.00	~~[F]~~
205	4.29	5.00	
75	89.18		

See CPA Tune for RSD
06/03/19

Mass	Background (Actual)	Background (Required)	Background (Flag)
59			
89			
205			
75			

Integration Time [sec] 0.1 **Sampling Period [sec]** 0.412

Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	W-50%	W-10% (Actual)	W-10% (Required)	W-10% (Flag)
59	417.32	59.00	58.9 - 59.1		0.58	0.731	0.900	
89	372.06	89.05	88.9 - 89.1		0.57	0.714	0.900	
205	698.43	205.05	204.9 - 205.1		0.55	0.739	0.900	
75	2.25	74.85	-		0.13	0.186		

Integration Time [sec] 0.1 **Acquisition Time [sec]** 29.92 **Y Axis** Linear

Tune Parameters
Plasma Paramters

RF Power	1550 W	Nebulizer Pump	0.10 rps
RF Matching	1.80 V	S/C Temp	2 °C
Smpl Depth	8.0 mm	Gas Switch	Makeup Gas
Carrier Gas	1.00 L/min	Makeup/Dilution Gas	0.10 L/min
Option Gas	0.0 %		

Lenses Parameters

Extract 1	0.0 V	Cell Entrance	-40 V
Extract 2	-175.0 V	Cell Exit	-60 V
Omega Bias	-110 V	Deflect	2.5 V
Omega Lens	6.0 V	Plate Bias	-70 V

Cell Parameters

Use Gas	true	OctP Bias	-18.0 V
He Flow	3.4 mL/min	OctP RF	160 V
H2 Flow	0.0 mL/min	Energy Discrimination	5.0 V
3rd Gas Flow	0 %		

[NoGas]

Tune Report

Mass	Range	Count (Actual)	Response (Actual) [cps/ug/l]	Response (Required) [cps/ug/l]	Response (Flag)
7	1000	762	7620.96	1000.00	
89	2000	1699	16988.70	1000.00	
205	2000	1038	10380.19	1000.00	
102	20	0			

Mass	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
7		-	
89		-	
205		-	
102		-	

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
7	4.48	5.00	
89	3.16	5.00	
205	3.75	5.00	
102	247.44		

Mass	Background (Actual)	Background (Required)	Background (Flag)
7	0.90	10	
89	2.40	10	
205	5.20	30	
102	3.60		

Ratio (oxide)	156/140	1.387 %	✓
Ratio (2+)	69/138	2.439 %	✓

Integration Time [sec] 0.1 **Sampling Period [sec]** 0.413

Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	W-50%	W-10% (Actual)	W-10% (Required)	W-10% (Flag)
7	762.44	6.95	6.9 - 7.1		0.64	0.768	0.900	
89	1696.91	89.05	88.9 - 89.1		0.58	0.721	0.900	
205	1018.37	205.00	204.9 - 205.1		0.55	0.750	0.900	
102			-					

Integration Time [sec] 0.1 **Acquisition Time [sec]** 30.12 **Y Axis** Linear

Tune Parameters
Plasma Paramters

RF Power	1550 W	Nebulizer Pump	0.10 rps
RF Matching	1.80 V	S/C Temp	2 °C
Smpl Depth	8.0 mm	Gas Switch	Makeup Gas
Carrier Gas	1.00 L/min	Makeup/Dilution Gas	0.10 L/min
Option Gas	0.0 %		

Lenses Parameters

Extract 1	0.0 V	Cell Entrance	-40 V

Tune Report

Extract 2	-175.0 V	Cell Exit	-60 V
Omega Bias	-110 V	Deflect	10.5 V
Omega Lens	6.0 V	Plate Bias	-70 V

Cell Parameters

Use Gas	false	OctP Bias	-8.0 V
He Flow	0.0 mL/min	OctP RF	160 V
H2 Flow	0.0 mL/min	Energy Discrimination	5.0 V
3rd Gas Flow	0 %		

Tune Report

Batch Folder C:\Agilent\ICPMH\1\DATA\9E31026.b
Acq. Date-Time 5/31/2019 14:09
Report Comment 9E31026 EPA Multi-mode Tune Report A19E047
Instrument Name 7700x JP09240003

[H2]

Mass	Range	Count (Actual)	Response (Actual) [cps/ug/l]	Response (Required) [cps/ug/l]	Response (Flag)
59		2635	26348.56	1000.00	
89		12452	124520.64	1000.00	
78		12			

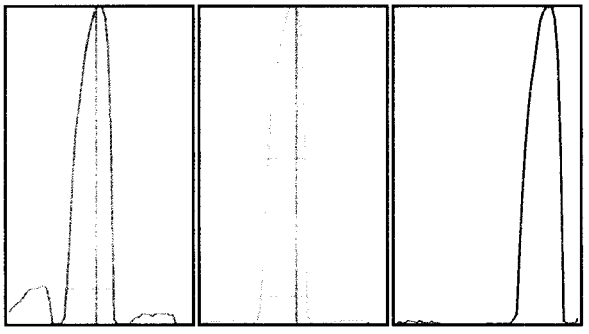
Mass	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
59		-	
89		-	
78		-	

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
59	2.24	5.00	
89	1.83	5.00	
78	11.91		

Mass	Background (Actual)	Background (Required)	Background (Flag)
59			
89			
78			

Mass	Rep. 1 Count	Rep. 2 Count	Rep. 3 Count	Rep. 4 Count	Rep. 5 Count
59	2630	2607	2554	2704	2679
89	12047	12517	12555	12559	12583
78	11	10	14	12	12

Integration Time [sec] 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	W-50%	W-5% (Actual)	W-5% (Required)	W-5% (Flag)
59	475.67	59.00	58.9 - 59.1		0.58	0.751	0.900	

Tune Report

89	2238.84	89.05	88.9 - 89.1	0.58	0.744	0.900
78			-			

Integration Time [sec] 0.1 **Acquisition Time [sec]** 100.35 **Y Axis** Linear

Tune Parameters
Plasma Paramters

RF Power	1550 W	Nebulizer Pump	0.10 rps
RF Matching	1.80 V	S/C Temp	2 °C
Smpl Depth	8.0 mm	Gas Switch	Makeup Gas
Carrier Gas	1.00 L/min	Makeup/Dilution Gas	0.10 L/min
Option Gas	0.0 %		

Lenses Parameters

Extract 1	0.0 V	Cell Entrance	-40 V
Extract 2	-175.0 V	Cell Exit	-60 V
Omega Bias	-110 V	Deflect	1.5 V
Omega Lens	6.0 V	Plate Bias	-70 V

Cell Parameters

Use Gas	true	OctP Bias	-18.0 V
He Flow	0.0 mL/min	OctP RF	160 V
H2 Flow	3.0 mL/min	Energy Discrimination	5.0 V
3rd Gas Flow	0 %		

[He]

Mass	Range	Count (Actual)	Response (Actual) [cps/ug/l]	Response (Required) [cps/ug/l]	Response (Flag)
59		2267	22665.70	1000.00	
89		1969	19690.20	1000.00	
205		3619	36188.46	1000.00	
75		9			

Mass	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
59		-	
89		-	
205		-	
75		-	

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
59	2.26	5.00	
89	3.63	5.00	
205	1.47	5.00	
75	25.48		

Mass	Background (Actual)	Background (Required)	Background (Flag)
59			
89			

Tune Report

205
75

Mass	Rep. 1 Count	Rep. 2 Count	Rep. 3 Count	Rep. 4 Count	Rep. 5 Count
59	2313	2251	2185	2303	2281
89	1939	2093	1944	1911	1958
205	3615	3672	3656	3535	3617
75	10	6	11	11	7

Integration Time [sec] 0.1

Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	W-50%	W-5% (Actual)	W-5% (Required)	W-5% (Flag)
59	411.86	59.00	58.9 - 59.1		0.57	0.750	0.900	
89	362.90	89.05	88.9 - 89.1		0.57	0.739	0.900	
205	692.17	205.00	204.9 - 205.1		0.53	0.741	0.900	
75	1.80	75.05	-		0.35	0.735		

Integration Time [sec] 0.1 **Acquisition Time [sec]** 134.8 **Y Axis** Linear

Tune Parameters
Plasma Paramters

RF Power	1550 W	Nebulizer Pump	0.10 rps
RF Matching	1.80 V	S/C Temp	2 °C
Smpl Depth	8.0 mm	Gas Switch	Makeup Gas
Carrier Gas	1.00 L/min	Makeup/Dilution Gas	0.10 L/min
Option Gas	0.0 %		

Lenses Parameters

Extract 1	0.0 V	Cell Entrance	-40 V
Extract 2	-175.0 V	Cell Exit	-60 V
Omega Bias	-110 V	Deflect	2.5 V
Omega Lens	6.0 V	Plate Bias	-70 V

Cell Parameters

Use Gas	true	OctP Bias	-18.0 V
He Flow	3.4 mL/min	OctP RF	160 V
H2 Flow	0.0 mL/min	Energy Discrimination	5.0 V
3rd Gas Flow	0 %		

[NoGas]

Mass	Range	Count (Actual)	Response (Actual) [cps/ug/l]	Response (Required) [cps/ug/l]	Response (Flag)
7		4711	47112.66	1000.00	
89		9199	91990.97	1000.00	
205		5580	55804.83	1000.00	
102		4			

Mass	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
7		-	

Tune Report

89	-
205	-
102	-

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
7	1.83	5.00	
89	2.10	5.00	
205	1.67	5.00	
102	34.47		

Mass	Background (Actual)	Background (Required)	Background (Flag)
7			
89			
205			
102			

Mass	Rep. 1 Count	Rep. 2 Count	Rep. 3 Count	Rep. 4 Count	Rep. 5 Count
7	4852	4625	4668	4688	4723
89	9050	9018	9124	9341	9462
205	5445	5536	5688	5623	5611
102	5	5	4	6	2

Integration Time [sec] 0.1

Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	W-50%	W-5% (Actual)	W-5% (Required)	W-5% (Flag)
7	785.63	6.90	6.9 - 7.1		0.62	0.813	0.900	
89	1650.32	89.00	88.9 - 89.1		0.57	0.744	0.900	
205	1049.02	205.00	204.9 - 205.1		0.54	0.778	0.900	
102			-					

Integration Time [sec] 0.1 **Acquisition Time [sec]** 135.3 **Y Axis** Linear

Tune Parameters
Plasma Paramters

RF Power	1550 W	Nebulizer Pump	0.10 rps
RF Matching	1.80 V	S/C Temp	2 °C
Smpl Depth	8.0 mm	Gas Switch	Makeup Gas
Carrier Gas	1.00 L/min	Makeup/Dilution Gas	0.10 L/min
Option Gas	0.0 %		

Lenses Parameters

Extract 1	0.0 V	Cell Entrance	-40 V
Extract 2	-175.0 V	Cell Exit	-60 V
Omega Bias	-110 V	Deflect	10.5 V
Omega Lens	6.0 V	Plate Bias	-70 V

Cell Parameters

Use Gas	false	OctP Bias	-8.0 V

Tune Report

He Flow	0.0 mL/min	OctP RF	160 V
H2 Flow	0.0 mL/min	Energy Discrimination	5.0 V
3rd Gas Flow	0 %		

Quantitation Report ICPMS5

File Name	001RINS.d		
File Path	C:\Agilent\ICPMH\1\DATA\9E31026.b		
Acq Time	5/31/2019 14:11:47	Sample Type	
Sample Name	**rinse**		Rinse
Comment	**rinse blank**	Last Calib	N/A
Prep Dilution	1.0000	Vial:	3
Total Dilution	**1.0000**	Operator Name	ICPMS Analyst

FullQuant Table

Element	Mass	ISTD	Tune Mode	Raw Conc	Corrected Conc.	Units	RSD(%)	ExpectedValue	QC Flag
Be	9	6	NoGas			ppb			
Na	23	45	H2			ppb			
Mg	24	45	He			ppb		22.5	
Al	27	45	He			ppb		22.5	
K	39	45	He			ppb			
Ca	44	45	H2			ppb			
Ti	47	45	NoGas			ppb			
V	51	74	He			ppb			
Cr	52	74	He			ppb			
Mn	55	74	He			ppb		1	
Fe	56	74	H2			ppb			
Fe	57	74	H2			ppb			
Co	59	74	NoGas			ppb			
Ni	60	74	He			ppb			
Cu	65	74	He			ppb		1	
Cu	65	74	NoGas			ppb			
Zn	66	74	He			ppb			
As	75	74	He			ppb			
Se	78	74	H2			ppb			
Mo	95	103	He			ppb			
Ag	107	103	He			ppb			
Cd	111	103	NoGas			ppb			
Sb	121	103	He			ppb			
Ba	138	159	He			ppb			
W	182	159	NoGas			ppb			
Hg	201	159	NoGas			ppt			
Tl	205	159	He			ppb		1	
Pb	208	159	NoGas			ppb			

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD Recovery %	QC Flag
Li	6	NoGas	2653	2.3	0	Pulse		
Sc	45	H2	1731	9.4	0	Pulse		
Sc	45	He	48	11.9	0	Pulse		
Sc	45	NoGas	2166	7.1	0	Pulse		
Ge	74	H2	737	6.1	0	Pulse		
Ge	74	He	136	4.3	0	Pulse		
Ge	74	NoGas	683	18.0	0	Pulse		Note RSD; OK < 20%
Rh	103	He	294	6.8	0	Pulse		
Rh	103	NoGas	521	12.1	0	Pulse		
Tb	159	He	53	28.6	0	Pulse		Note RSD; OK < 20%
Tb	159	NoGas	79	24.8	0	Pulse		Note RSD; OK < 20%
Bi	209	He	2611	5.7	0	Pulse		
Bi	209	NoGas	4515	2.3	0	Pulse		

Quantitation Report ICPMS5

File Name	002RINS.d		
File Path	C:\Agilent\ICPMH\1\DATA\9E31026.b		
Acq Time	5/31/2019 14:16:02	Sample Type	
Sample Name	**rinse**		
Comment	**rinse blank**	Rinse Last Calib	N/A
Prep Dilution	1.0000	Vial: 3	
Total Dilution	**1.0000**	Operator Name	ICPMS Analyst

FullQuant Table

Element	Mass	ISTD	Tune Mode	Raw Conc	Corrected Conc.	Units	RSD(%)	ExpectedValue	QC Flag
Be	9	6	NoGas			ppb			
Na	23	45	H2			ppb			
Mg	24	45	He			ppb		22.5	
Al	27	45	He			ppb		22.5	
K	39	45	He			ppb			
Ca	44	45	H2			ppb			
Ti	47	45	NoGas			ppb			
V	51	74	He			ppb			
Cr	52	74	He			ppb			
Mn	55	74	He			ppb		1	
Fe	56	74	H2			ppb			
Fe	57	74	H2			ppb			
Co	59	74	NoGas			ppb			
Ni	60	74	He			ppb			
Cu	65	74	He			ppb		1	
Cu	65	74	NoGas			ppb			
Zn	66	74	He			ppb			
As	75	74	He			ppb			
Se	78	74	H2			ppb			
Mo	95	103	He			ppb			
Ag	107	103	He			ppb			
Cd	111	103	NoGas			ppb			
Sb	121	103	He			ppb			
Ba	138	159	He			ppb			
W	182	159	NoGas			ppb			
Hg	201	159	NoGas			ppt			
Tl	205	159	He			ppb		1	
Pb	208	159	NoGas			ppb			

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD Recovery %	QC Flag
Li	6	NoGas	574233	1.9	0	Pulse		
Sc	45	H2	1511602	0.5	0	Analog		
Sc	45	He	168841	1.2	0	Pulse		
Sc	45	NoGas	1658169	1.1	0	Analog		
Ge	74	H2	506228	0.3	0	Pulse		
Ge	74	He	102331	0.4	0	Pulse		
Ge	74	NoGas	440713	0.9	0	Pulse		
Rh	103	He	290674	1.0	0	Pulse		
Rh	103	NoGas	469061	0.4	0	Pulse		
Tb	159	He	396572	1.2	0	Pulse		
Tb	159	NoGas	792637	0.1	0	Pulse		
Bi	209	He	254878	1.3	0	Pulse		
Bi	209	NoGas	435798	0.3	0	Pulse		

Quantitation Report ICPMS5

File Name	003RINS.d		
File Path	C:\Agilent\ICPMH\1\DATA\9E31026.b		
Acq Time	5/31/2019 14:20:16	Sample Type	
Sample Name	**cal blk**		
Comment	**cal blk check**	Rinse Last Calib	N/A
Prep Dilution	1.0000	Vial:	1
Total Dilution	**1.0000**	Operator Name	ICPMS Analyst

FullQuant Table

Element	Mass	ISTD	Tune Mode	Raw Conc	Corrected Conc.	Units	RSD(%)	ExpectedValue	QC Flag
Be	9	6	NoGas			ppb			
Na	23	45	H2			ppb			
Mg	24	45	He			ppb		22.5	
Al	27	45	He			ppb		22.5	
K	39	45	He			ppb			
Ca	44	45	H2			ppb			
Ti	47	45	NoGas			ppb			
V	51	74	He			ppb			
Cr	52	74	He			ppb			
Mn	55	74	He			ppb		1	
Fe	56	74	H2			ppb			
Fe	57	74	H2			ppb			
Co	59	74	NoGas			ppb			
Ni	60	74	He			ppb			
Cu	65	74	He			ppb		1	
Cu	65	74	NoGas			ppb			
Zn	66	74	He			ppb			
As	75	74	He			ppb			
Se	78	74	H2			ppb			
Mo	95	103	He			ppb			
Ag	107	103	He			ppb			
Cd	111	103	NoGas			ppb			
Sb	121	103	He			ppb			
Ba	138	159	He			ppb			
W	182	159	NoGas			ppb			
Hg	201	159	NoGas			ppt			
Tl	205	159	He			ppb		1	
Pb	208	159	NoGas			ppb			

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD Recovery %	QC Flag
Li	6	NoGas	574766	1.9	0	Pulse		
Sc	45	H2	1534014	0.6	0	Analog		
Sc	45	He	169910	1.0	0	Pulse		
Sc	45	NoGas	1658707	2.4	0	Analog		
Ge	74	H2	506568	0.3	0	Pulse		
Ge	74	He	103054	1.0	0	Pulse		
Ge	74	NoGas	440952	1.0	0	Pulse		
Rh	103	He	290449	1.5	0	Pulse		
Rh	103	NoGas	467349	0.7	0	Pulse		
Tb	159	He	399249	0.6	0	Pulse		
Tb	159	NoGas	789599	0.2	0	Pulse		
Bi	209	He	256061	1.1	0	Pulse		
Bi	209	NoGas	429000	0.4	0	Pulse		

Sample Name	9E31026-CAL0	Vial	1
File Name	004CALB.d		
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b		
Acq Time	5/31/2019 14:24:31		
Sample Type	CalBlk		
Total Dilution	1.0000		
Comment	3.5%HNO3+0.4%HCl		
ISTD Ref FileName	004CALB.d		
Sample QC Pass/Fial	Pass		
ISTD QC Pass/Fail	Pass		
Operator	**ICPMS Analyst**		

QC Analyte Table

Name	Mass	ISTD	T #	Tune	Conc.	Units	Det.	CPS	CPS RSD	Ratio	Integ Time	Reps
Na	23	45	1	H2		ppb	Pulse	24195	2.2	0.016	0.2001	3
Ca	44	45	1	H2		ppb	Pulse	1691	7.1	0.001	0.2001	3
Fe	56	74	1	H2		ppb	Pulse	17828	2.1	0.035	0.3000	3
Fe	57	74	1	H2		ppb	Pulse	1076	11.9	0.002	0.3000	3
Se	78	74	1	H2		ppb	Pulse	4	25.0	0.000	0.9999	3
Mg	24	45	2	He		ppb	Pulse	591	22.2	0.004	0.0999	3
Al	27	45	2	He		ppb	Pulse	103	14.8	0.001	0.0999	3
K	39	45	2	He		ppb	Pulse	17440	2.0	0.104	0.0999	3
V	51	74	2	He		ppb	Pulse	1060	6.6	0.010	0.3000	3
Cr	52	74	2	He		ppb	Pulse	218	15.0	0.002	0.3000	3
Mn	55	74	2	He		ppb	Pulse	100	12.0	0.001	0.3000	3
Ni	60	74	2	He		ppb	Pulse	246	11.7	0.002	0.3000	3
Cu	65	74	2	He		ppb	Pulse	391	11.6	0.004	0.3000	3
Zn	66	74	2	He		ppb	Pulse	139	16.0	0.001	0.3000	3
As	75	74	2	He		ppb	Pulse	11	58.7	0.000	0.9999	3
Mo	95	103	2	He		ppb	Pulse	13	90.2	0.000	0.3000	3
Ag	107	103	2	He		ppb	Pulse	0	N/A		0.3000	3
Sb	121	103	2	He		ppb	Pulse	11	121.3	0.000	0.3000	3
Ba	138	159	2	He		ppb	Pulse	124	21.8	0.000	0.3000	3
Tl	205	159	2	He		ppb	Pulse	74	15.7	0.000	0.3000	3
Be	9	6	3	NoGas		ppb	Pulse	18	84.6	0.000	0.3000	3
Ti	47	45	3	NoGas		ppb	Pulse	58	63.2	0.000	0.2001	3
Co	59	74	3	NoGas		ppb	Pulse	315	15.1	0.001	0.2001	3
Cu	65	74	3	NoGas		ppb	Pulse	630	8.7	0.001	0.2001	3
Cd	111	103	3	NoGas		ppb	Pulse	7	57.2	0.000	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	38	44.4	0.000	0.3000	3
Hg	201	159	3	NoGas		ppt	Pulse	7	27.6	0.000	2.0001	3
Pb	208	159	3	NoGas		ppb	Pulse	661	5.7	0.001	0.2001	3

QC ISTD Table

Name	Mass	Det.	Tune Mode	CPS	CPS RSD
Sc	45	Analog	H2	1520020	1.0
Ge	74	Pulse	H2	506714	0.4
Sc	45	Pulse	He	167054	0.5
Ge	74	Pulse	He	102245	0.2
Rh	103	Pulse	He	288468	0.0
Tb	159	Pulse	He	394255	0.5
Bi	209	Pulse	He	253637	0.2
Li	6	Pulse	NoGas	580078	1.3
Sc	45	Analog	NoGas	1673960	2.7
Ge	74	Pulse	NoGas	442850	0.6
Rh	103	Pulse	NoGas	471098	0.4
Tb	159	Pulse	NoGas	795434	0.5
Bi	209	Pulse	NoGas	432308	0.4

Calibration Standard Report ICPMS5

Sample Name	9E31026-CAL1	1102
File Name	005CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b	
Acq Time	5/31/2019 14:28:45	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19E285 JPB 05/30	
ISTD Ref FileName	004CALB.d	
Sample QC Pass/Fial	Pass	
ISTD QC Pass/Fail	Pass	
Operator	**ICPMS Analyst**	

QC Analyte Table

Name	Mass	ISTD	T #	Tune	Conc.	Units	Det.	CPS	CPS RSD	Ratio	Integ Time	Reps
Na	23	45	1	H2	9.000	ppb	Pulse	53067	1.5	0.034	0.2001	3
Ca	44	45	1	H2	9.000	ppb	Pulse	2907	3.6	0.002	0.2001	3
Fe	56	74	1	H2	9.000	ppb	Pulse	86619	0.6	0.170	0.3000	3
Fe	57	74	1	H2	9.000	ppb	Pulse	2803	2.2	0.005	0.3000	3
Se	78	74	1	H2	0.180	ppb	Pulse	35	18.8	0.000	0.9999	3
Mg	24	45	2	He	9.000	ppb	Pulse	3084	5.5	0.018	0.0999	3
Al	27	45	2	He	9.000	ppb	Pulse	1388	10.8	0.008	0.0999	3
K	39	45	2	He	9.000	ppb	Pulse	19758	1.0	0.118	0.0999	3
V	51	74	2	He	0.180	ppb	Pulse	1388	4.8	0.014	0.3000	3
Cr	52	74	2	He	0.180	ppb	Pulse	562	14.3	0.006	0.3000	3
Mn	55	74	2	He	0.180	ppb	Pulse	329	14.8	0.003	0.3000	3
Ni	60	74	2	He	0.180	ppb	Pulse	480	14.6	0.005	0.3000	3
Cu	65	74	2	He	0.180	ppb	Pulse	506	10.7	0.005	0.3000	3
Zn	66	74	2	He	0.180	ppb	Pulse	201	22.1	0.002	0.3000	3
As	75	74	2	He	0.180	ppb	Pulse	47	24.8	0.000	0.9999	3
Mo	95	103	2	He	0.180	ppb	Pulse	170	9.0	0.001	0.3000	3
Ag	107	103	2	He	0.180	ppb	Pulse	609	11.6	0.002	0.3000	3
Sb	121	103	2	He	0.180	ppb	Pulse	247	12.9	0.001	0.3000	3
Ba	138	159	2	He	0.180	ppb	Pulse	529	15.4	0.001	0.3000	3
Tl	205	159	2	He	0.180	ppb	Pulse	1075	6.8	0.003	0.3000	3
Be	9	6	3	NoGas	0.180	ppb	Pulse	302	5.6	0.001	0.3000	3
Ti	47	45	3	NoGas	0.180	ppb	Pulse	170	5.1	0.000	0.2001	3
Co	59	74	3	NoGas	0.180	ppb	Pulse	1819	8.8	0.004	0.2001	3
Cu	65	74	3	NoGas	0.180	ppb	Pulse	863	9.9	0.002	0.2001	3
Cd	111	103	3	NoGas	0.180	ppb	Pulse	214	15.8	0.000	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	24	41.7	0.000	0.3000	3
Hg	201	159	3	NoGas		ppt	Pulse	10	32.7	0.000	2.0001	3
Pb	208	159	3	NoGas	0.180	ppb	Pulse	2534	3.6	0.003	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	1520020.26333333	1559076	2.3	Analog	102.6	
Ge	74	H2	506714.153333333	510995	1.6	Pulse	100.8	
Sc	45	He	167054.08	167584	0.6	Pulse	100.3	
Ge	74	He	102244.75	101442	0.6	Pulse	99.2	
Rh	103	He	288468.213333333	288511	0.2	Pulse	100.0	
Tb	159	He	394255.233333333	391178	0.9	Pulse	99.2	
Bi	209	He	253636.603333333	251340	0.1	Pulse	99.1	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	580078.48	574881	1.6	Pulse	99.1	
Sc	45	NoGas	1673960.24	1694558	1.4	Analog	101.2	
Ge	74	NoGas	442849.693333333	437684	0.3	Pulse	98.8	
Rh	103	NoGas	471098.29	468231	0.5	Pulse	99.4	
Tb	159	NoGas	795434.166666667	786851	0.4	Pulse	98.9	
Bi	209	NoGas	432307.666666667	428779	0.8	Pulse	99.2	

Calibration Standard Report ICPMS5

Sample Name	9E31026-CAL2	1103
File Name	006CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b	
Acq Time	5/31/2019 14:33:18	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19E286 JPB 05/30	
ISTD Ref FileName	004CALB.d	
Sample QC Pass/Fial	Pass	
ISTD QC Pass/Fail	Pass	
Operator	**ICPMS Analyst**	

QC Analyte Table

Name	Mass	ISTD	T #	Tune	Conc.	Units	Det.	CPS	CPS RSD	Ratio	Integ Time	Reps
Na	23	45	1	H2	45.039	ppb	Pulse	166696	0.6	0.109	0.2001	3
Ca	44	45	1	H2	45.270	ppb	Pulse	8525	1.2	0.006	0.2001	3
Fe	56	74	1	H2	45.061	ppb	Pulse	366491	0.6	0.731	0.3000	3
Fe	57	74	1	H2	45.069	ppb	Pulse	9844	3.2	0.020	0.3000	3
Se	78	74	1	H2	0.907	ppb	Pulse	193	10.5	0.000	0.9999	3
Mg	24	45	2	He	45.014	ppb	Pulse	13122	3.2	0.078	0.0999	3
Al	27	45	2	He	44.960	ppb	Pulse	6365	1.8	0.038	0.0999	3
K	39	45	2	He	44.979	ppb	Pulse	28620	0.5	0.171	0.0999	3
V	51	74	2	He	0.903	ppb	Pulse	2887	4.7	0.028	0.3000	3
Cr	52	74	2	He	0.904	ppb	Pulse	2202	4.4	0.022	0.3000	3
Mn	55	74	2	He	0.909	ppb	Pulse	1675	3.6	0.016	0.3000	3
Ni	60	74	2	He	0.890	ppb	Pulse	1173	7.1	0.012	0.3000	3
Cu	65	74	2	He	0.913	ppb	Pulse	1325	3.6	0.013	0.3000	3
Zn	66	74	2	He	0.899	ppb	Pulse	442	5.0	0.004	0.3000	3
As	75	74	2	He	0.902	ppb	Pulse	199	16.0	0.002	0.9999	3
Mo	95	103	2	He	0.908	ppb	Pulse	1007	7.9	0.004	0.3000	3
Ag	107	103	2	He	0.899	ppb	Pulse	2924	4.4	0.010	0.3000	3
Sb	121	103	2	He	0.896	ppb	Pulse	1047	6.5	0.004	0.3000	3
Ba	138	159	2	He	0.902	ppb	Pulse	2301	3.7	0.006	0.3000	3
Tl	205	159	2	He	0.901	ppb	Pulse	5299	6.4	0.014	0.3000	3
Be	9	6	3	NoGas	0.902	ppb	Pulse	1507	4.1	0.003	0.3000	3
Ti	47	45	3	NoGas	0.901	ppb	Pulse	633	0.9	0.000	0.2001	3
Co	59	74	3	NoGas	0.898	ppb	Pulse	7418	3.6	0.017	0.2001	3
Cu	65	74	3	NoGas	0.910	ppb	Pulse	2304	8.5	0.005	0.2001	3
Cd	111	103	3	NoGas	0.894	ppb	Pulse	885	13.0	0.002	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	27	21.7	0.000	0.3000	3
Hg	201	159	3	NoGas	36.000	ppt	Pulse	26	12.9	0.000	2.0001	3
Pb	208	159	3	NoGas	0.903	ppb	Pulse	10858	4.0	0.014	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	1520020.26333333	1533449	0.4	Analog	100.9	
Ge	74	H2	506714.153333333	501122	0.2	Pulse	98.9	
Sc	45	He	167054.08	167251	0.1	Pulse	100.1	
Ge	74	He	102244.75	101824	0.9	Pulse	99.6	
Rh	103	He	288468.213333333	286638	0.5	Pulse	99.4	
Tb	159	He	394255.233333333	391228	0.6	Pulse	99.2	
Bi	209	He	253636.603333333	251393	0.3	Pulse	99.1	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	580078.48	572890	0.8	Pulse	98.8	
Sc	45	NoGas	1673960.24	1685240	2.6	Analog	100.7	
Ge	74	NoGas	442849.693333333	437988	1.0	Pulse	98.9	
Rh	103	NoGas	471098.29	464769	0.7	Pulse	98.7	
Tb	159	NoGas	795434.166666667	785012	1.1	Pulse	98.7	
Bi	209	NoGas	432307.666666667	427863	1.4	Pulse	99.0	

Calibration Standard Report ICPMS5

Sample Name	9E31026-CAL3	1104
File Name	007CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b	
Acq Time	5/31/2019 14:37:50	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19E287 JPB 05/30	
ISTD Ref FileName	004CALB.d	
Sample QC Pass/Fial	Pass	
ISTD QC Pass/Fail	Pass	
Operator	**ICPMS Analyst**	

QC Analyte Table

Name	Mass	ISTD	T #	Tune	Conc.	Units	Det.	CPS	CPS RSD	Ratio	Integ Time	Reps
Na	23	45	1	H2	89.957	ppb	Pulse	306820	0.6	0.201	0.2001	3
Ca	44	45	1	H2	89.632	ppb	Pulse	14936	1.0	0.010	0.2001	3
Fe	56	74	1	H2	90.203	ppb	Pulse	723031	0.1	1.441	0.3000	3
Fe	57	74	1	H2	89.675	ppb	Pulse	18319	0.8	0.037	0.3000	3
Se	78	74	1	H2	1.825	ppb	Pulse	406	10.4	0.001	0.9999	3
Mg	24	45	2	He	89.613	ppb	Pulse	25040	1.8	0.150	0.0999	3
Al	27	45	2	He	89.049	ppb	Pulse	11977	4.7	0.072	0.0999	3
K	39	45	2	He	90.701	ppb	Pulse	40511	2.2	0.243	0.0999	3
V	51	74	2	He	1.755	ppb	Pulse	4304	1.5	0.042	0.3000	3
Cr	52	74	2	He	1.780	ppb	Pulse	3963	0.8	0.039	0.3000	3
Mn	55	74	2	He	1.764	ppb	Pulse	2939	4.9	0.029	0.3000	3
Ni	60	74	2	He	1.748	ppb	Pulse	1887	4.0	0.019	0.3000	3
Cu	65	74	2	He	1.807	ppb	Pulse	2269	4.4	0.022	0.3000	3
Zn	66	74	2	He	1.794	ppb	Pulse	738	10.7	0.007	0.3000	3
As	75	74	2	He	1.796	ppb	Pulse	382	5.6	0.004	0.9999	3
Mo	95	103	2	He	1.764	ppb	Pulse	1798	3.9	0.006	0.3000	3
Ag	107	103	2	He	1.797	ppb	Pulse	5774	1.2	0.020	0.3000	3
Sb	121	103	2	He	1.778	ppb	Pulse	1962	3.5	0.007	0.3000	3
Ba	138	159	2	He	1.816	ppb	Pulse	4659	2.8	0.012	0.3000	3
Tl	205	159	2	He	1.789	ppb	Pulse	10190	1.9	0.026	0.3000	3
Be	9	6	3	NoGas	1.790	ppb	Pulse	2928	1.8	0.005	0.3000	3
Ti	47	45	3	NoGas	1.775	ppb	Pulse	1140	1.6	0.001	0.2001	3
Co	59	74	3	NoGas	1.814	ppb	Pulse	15103	1.8	0.034	0.2001	3
Cu	65	74	3	NoGas	1.798	ppb	Pulse	3932	2.8	0.009	0.2001	3
Cd	111	103	3	NoGas	1.836	ppb	Pulse	1954	1.4	0.004	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	34	24.3	0.000	0.3000	3
Hg	201	159	3	NoGas	70.386	ppt	Pulse	39	21.6	0.000	2.0001	3
Pb	208	159	3	NoGas	1.797	ppb	Pulse	20789	2.6	0.027	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	1520020.26333333	1527339	0.8	Analog	100.5	
Ge	74	H2	506714.153333333	501786	0.4	Pulse	99.0	
Sc	45	He	167054.08	166655	0.5	Pulse	99.8	
Ge	74	He	102244.75	101834	0.3	Pulse	99.6	
Rh	103	He	288468.213333333	285148	0.8	Pulse	98.8	
Tb	159	He	394255.233333333	390529	0.7	Pulse	99.1	
Bi	209	He	253636.603333333	251205	1.2	Pulse	99.0	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	580078.48	576251	1.3	Pulse	99.3	
Sc	45	NoGas	1673960.24	1696201	1.0	Analog	101.3	
Ge	74	NoGas	442849.693333333	437901	0.2	Pulse	98.9	
Rh	103	NoGas	471098.29	463678	0.8	Pulse	98.4	
Tb	159	NoGas	795434.166666667	782404	0.8	Pulse	98.4	
Bi	209	NoGas	432307.666666667	430761	0.5	Pulse	99.6	

Calibration Standard Report ICPMS5

Sample Name	9E31026-CAL4	1105
File Name	008CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b	
Acq Time	5/31/2019 14:42:22	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19E288 JPB 05/30	
ISTD Ref FileName	004CALB.d	
Sample QC Pass/Fial	Pass	
ISTD QC Pass/Fail	Pass	
Operator	**ICPMS Analyst**	

QC Analyte Table

Name	Mass	ISTD	T #	Tune	Conc.	Units	Det.	CPS	CPS RSD	Ratio	Integ Time	Reps
Na	23	45	1	H2	179.873	ppb	Pulse	593078	0.5	0.385	0.2001	3
Ca	44	45	1	H2	179.556	ppb	Pulse	28256	2.2	0.018	0.2001	3
Fe	56	74	1	H2	180.882	ppb	Analog	1457711	1.0	2.899	0.3000	3
Fe	57	74	1	H2	179.289	ppb	Pulse	35214	1.5	0.070	0.3000	3
Se	78	74	1	H2	3.598	ppb	Pulse	797	3.4	0.002	0.9999	3
Mg	24	45	2	He	179.721	ppb	Pulse	49301	2.3	0.296	0.0999	3
Al	27	45	2	He	180.098	ppb	Pulse	24128	2.0	0.145	0.0999	3
K	39	45	2	He	179.407	ppb	Pulse	62477	3.7	0.376	0.0999	3
V	51	74	2	He	3.613	ppb	Pulse	7776	2.4	0.077	0.3000	3
Cr	52	74	2	He	3.629	ppb	Pulse	8006	0.2	0.079	0.3000	3
Mn	55	74	2	He	3.497	ppb	Pulse	5225	4.8	0.052	0.3000	3
Ni	60	74	2	He	3.549	ppb	Pulse	3413	4.2	0.034	0.3000	3
Cu	65	74	2	He	3.611	ppb	Pulse	4156	1.4	0.041	0.3000	3
Zn	66	74	2	He	3.573	ppb	Pulse	1297	4.0	0.013	0.3000	3
As	75	74	2	He	3.629	ppb	Pulse	774	4.9	0.008	0.9999	3
Mo	95	103	2	He	3.577	ppb	Pulse	3554	5.5	0.012	0.3000	3
Ag	107	103	2	He	3.621	ppb	Pulse	11832	1.6	0.042	0.3000	3
Sb	121	103	2	He	3.564	ppb	Pulse	3796	2.6	0.013	0.3000	3
Ba	138	159	2	He	3.625	ppb	Pulse	9274	1.4	0.024	0.3000	3
Tl	205	159	2	He	3.614	ppb	Pulse	20550	1.2	0.053	0.3000	3
Be	9	6	3	NoGas	3.566	ppb	Pulse	5687	2.8	0.010	0.3000	3
Ti	47	45	3	NoGas	3.585	ppb	Pulse	2227	4.3	0.001	0.2001	3
Co	59	74	3	NoGas	3.580	ppb	Pulse	29195	2.7	0.066	0.2001	3
Cu	65	74	3	NoGas	3.596	ppb	Pulse	7266	3.4	0.016	0.2001	3
Cd	111	103	3	NoGas	3.607	ppb	Pulse	3872	3.9	0.008	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	37	47.2	0.000	0.3000	3
Hg	201	159	3	NoGas	147.371	ppt	Pulse	83	6.3	0.000	2.0001	3
Pb	208	159	3	NoGas	3.600	ppb	Pulse	41327	1.2	0.052	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	1520020.26333333	1540682	0.7	Analog	101.4	
Ge	74	H2	506714.153333333	502916	0.7	Pulse	99.3	
Sc	45	He	167054.08	166546	4.1	Pulse	99.7	
Ge	74	He	102244.75	101298	2.3	Pulse	99.1	
Rh	103	He	288468.213333333	284700	3.6	Pulse	98.7	
Tb	159	He	394255.233333333	386721	4.0	Pulse	98.1	
Bi	209	He	253636.603333333	250473	3.8	Pulse	98.8	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	580078.48	580130	2.0	Pulse	100.0	
Sc	45	NoGas	1673960.24	1707025	1.3	Analog	102.0	
Ge	74	NoGas	442849.693333333	440668	0.4	Pulse	99.5	
Rh	103	NoGas	471098.29	465716	1.4	Pulse	98.9	
Tb	159	NoGas	795434.166666667	789222	0.6	Pulse	99.2	
Bi	209	NoGas	432307.666666667	431606	0.5	Pulse	99.8	

Calibration Standard Report ICPMS5

Sample Name	9E31026-CAL5	1106
File Name	009CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b	
Acq Time	5/31/2019 14:46:53	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19E083 JPB 05/30	
ISTD Ref FileName	004CALB.d	
Sample QC Pass/Fial	Pass	
ISTD QC Pass/Fail	Pass	
Operator	**ICPMS Analyst**	

QC Analyte Table

Name	Mass	ISTD	T #	Tune	Conc.	Units	Det.	CPS	CPS RSD	Ratio	Integ Time	Reps
Na	23	45	1	H2	404.251	ppb	Analog	1339275	0.9	0.880	0.2001	3
Ca	44	45	1	H2	399.201	ppb	Pulse	59564	1.7	0.039	0.2001	3
Fe	56	74	1	H2	401.131	ppb	Analog	3206697	1.2	6.454	0.3000	3
Fe	57	74	1	H2	401.566	ppb	Pulse	77746	0.3	0.156	0.3000	3
Se	78	74	1	H2	9.994	ppb	Pulse	2173	3.1	0.004	0.9999	3
Mg	24	45	2	He	401.305	ppb	Pulse	109816	2.5	0.666	0.0999	3
Al	27	45	2	He	400.943	ppb	Pulse	53599	1.9	0.325	0.0999	3
K	39	45	2	He	401.308	ppb	Pulse	118691	1.4	0.719	0.0999	3
V	51	74	2	He	19.998	ppb	Pulse	37844	1.1	0.377	0.3000	3
Cr	52	74	2	He	20.018	ppb	Pulse	43729	1.8	0.436	0.3000	3
Mn	55	74	2	He	19.981	ppb	Pulse	28519	1.4	0.284	0.3000	3
Ni	60	74	2	He	19.948	ppb	Pulse	16885	1.2	0.168	0.3000	3
Cu	65	74	2	He	20.036	ppb	Pulse	22025	1.3	0.220	0.3000	3
Zn	66	74	2	He	20.029	ppb	Pulse	6801	0.7	0.068	0.3000	3
As	75	74	2	He	19.972	ppb	Pulse	4045	1.8	0.040	0.9999	3
Mo	95	103	2	He	10.031	ppb	Pulse	10048	0.6	0.036	0.3000	3
Ag	107	103	2	He	10.004	ppb	Pulse	32528	0.8	0.115	0.3000	3
Sb	121	103	2	He	10.043	ppb	Pulse	10875	0.4	0.038	0.3000	3
Ba	138	159	2	He	19.979	ppb	Pulse	49485	2.4	0.128	0.3000	3
Tl	205	159	2	He	9.982	ppb	Pulse	56167	0.5	0.145	0.3000	3
Be	9	6	3	NoGas	10.009	ppb	Pulse	15826	3.3	0.028	0.3000	3
Ti	47	45	3	NoGas	19.977	ppb	Pulse	11735	3.6	0.007	0.2001	3
Co	59	74	3	NoGas	19.993	ppb	Pulse	157331	1.7	0.364	0.2001	3
Cu	65	74	3	NoGas	20.027	ppb	Pulse	38118	0.9	0.088	0.2001	3
Cd	111	103	3	NoGas	20.008	ppb	Pulse	21332	0.8	0.046	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	37	41.7	0.000	0.3000	3
Hg	201	159	3	NoGas	398.408	ppt	Pulse	204	6.3	0.000	2.0001	3
Pb	208	159	3	NoGas	20.050	ppb	Pulse	238480	0.8	0.306	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	1520020.26333333	1522291	0.4	Analog	100.1	
Ge	74	H2	506714.153333333	496907	0.6	Pulse	98.1	
Sc	45	He	167054.08	165017	0.8	Pulse	98.8	
Ge	74	He	102244.75	100320	0.3	Pulse	98.1	
Rh	103	He	288468.213333333	282577	1.0	Pulse	98.0	
Tb	159	He	394255.233333333	387257	1.0	Pulse	98.2	
Bi	209	He	253636.603333333	250235	0.7	Pulse	98.7	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	580078.48	573316	1.0	Pulse	98.8	
Sc	45	NoGas	1673960.24	1694859	2.0	Analog	101.2	
Ge	74	NoGas	442849.693333333	432614	1.2	Pulse	97.7	
Rh	103	NoGas	471098.29	458763	0.5	Pulse	97.4	
Tb	159	NoGas	795434.166666667	779991	1.0	Pulse	98.1	
Bi	209	NoGas	432307.666666667	432269	1.4	Pulse	100.0	

Calibration Standard Report ICPMS5

1107

Sample Name	9E31026-CAL6
File Name	010CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b
Acq Time	5/31/2019 14:51:23
Sample Type	CalStd
Total Dilution	1.0000
Comment	A19E289
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**ICPMS Analyst**

QC Analyte Table

Name	Mass	ISTD	T #	Tune	Conc.	Units	Det.	CPS	CPS RSD	Ratio	Integ Time	Reps
Na	23	45	1	H2	2499.142	ppb	Analog	7786418	1.9	5.301	0.2001	3
Ca	44	45	1	H2	2499.424	ppb	Pulse	348771	0.4	0.237	0.2001	3
Fe	56	74	1	H2	2499.581	ppb	Analog	19106324	1.0	39.824	0.3000	3
Fe	57	74	1	H2	2498.456	ppb	Pulse	453119	1.2	0.944	0.3000	3
Se	78	74	1	H2	50.092	ppb	Pulse	10931	1.1	0.023	0.9999	3
Mg	24	45	2	He	2497.292	ppb	Pulse	648581	0.4	3.990	0.0999	3
Al	27	45	2	He	2498.199	ppb	Pulse	321362	0.8	1.977	0.0999	3
K	39	45	2	He	2497.519	ppb	Pulse	620601	0.7	3.818	0.0999	3
V	51	74	2	He	49.977	ppb	Pulse	90845	1.5	0.925	0.3000	3
Cr	52	74	2	He	49.918	ppb	Pulse	105451	0.5	1.073	0.3000	3
Mn	55	74	2	He	49.807	ppb	Pulse	67910	0.5	0.691	0.3000	3
Ni	60	74	2	He	49.830	ppb	Pulse	40139	0.8	0.409	0.3000	3
Cu	65	74	2	He	49.753	ppb	Pulse	51484	2.6	0.524	0.3000	3
Zn	66	74	2	He	49.764	ppb	Pulse	15903	3.3	0.162	0.3000	3
As	75	74	2	He	50.028	ppb	Pulse	9939	0.6	0.101	0.9999	3
Mo	95	103	2	He	49.994	ppb	Pulse	48566	0.8	0.177	0.3000	3
Ag	107	103	2	He	49.957	ppb	Pulse	155251	1.0	0.565	0.3000	3
Sb	121	103	2	He	49.976	ppb	Pulse	52097	0.4	0.189	0.3000	3
Ba	138	159	2	He	49.868	ppb	Pulse	119901	0.7	0.314	0.3000	3
Tl	205	159	2	He	49.975	ppb	Pulse	274422	1.0	0.718	0.3000	3
Be	9	6	3	NoGas	50.048	ppb	Pulse	79208	1.5	0.141	0.3000	3
Ti	47	45	3	NoGas	50.263	ppb	Pulse	29067	2.1	0.018	0.2001	3
Co	59	74	3	NoGas	50.012	ppb	Pulse	383063	1.0	0.910	0.2001	3
Cu	65	74	3	NoGas	49.584	ppb	Pulse	86660	0.9	0.206	0.2001	3
Cd	111	103	3	NoGas	49.869	ppb	Pulse	50511	1.9	0.114	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	42	27.7	0.000	0.3000	3
Hg	201	159	3	NoGas	1998.074	ppt	Pulse	942	2.2	0.001	2.0001	3
Pb	208	159	3	NoGas	49.585	ppb	Pulse	549584	0.6	0.719	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	1520020.26333333	1469018	1.6	Analog	96.6	
Ge	74	H2	506714.153333333	479762	0.8	Pulse	94.7	
Sc	45	He	167054.08	162563	0.4	Pulse	97.3	
Ge	74	He	102244.75	98254	1.0	Pulse	96.1	
Rh	103	He	288468.213333333	274991	1.2	Pulse	95.3	
Tb	159	He	394255.233333333	382424	0.2	Pulse	97.0	
Bi	209	He	253636.603333333	243904	0.6	Pulse	96.2	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	580078.48	562646	0.9	Pulse	97.0	
Sc	45	NoGas	1673960.24	1620361	2.5	Analog	96.8	
Ge	74	NoGas	442849.693333333	420930	0.8	Pulse	95.1	
Rh	103	NoGas	471098.29	442762	0.4	Pulse	94.0	
Tb	159	NoGas	795434.166666667	764186	0.6	Pulse	96.1	
Bi	209	NoGas	432307.666666667	420007	0.5	Pulse	97.2	

Calibration Standard Report ICPMS5

Sample Name	9E31026-CAL7	1108
File Name	011CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b	
Acq Time	5/31/2019 14:55:53	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19E082	
ISTD Ref FileName	004CALB.d	
Sample QC Pass/Fial	Pass	
ISTD QC Pass/Fail	Pass	
Operator	**ICPMS Analyst**	

QC Analyte Table

Name	Mass	ISTD	T #	Tune	Conc.	Units	Det.	CPS	CPS RSD	Ratio	Integ Time	Reps
Na	23	45	1	H2	4012.454	ppb	Analog	12094280	1.2	8.567	0.2001	3
Ca	44	45	1	H2	4014.521	ppb	Pulse	542331	0.3	0.384	0.2001	3
Fe	56	74	1	H2	4002.870	ppb	Analog	29482601	0.5	63.868	0.3000	3
Fe	57	74	1	H2	4011.698	ppb	Pulse	704555	0.2	1.526	0.3000	3
Se	78	74	1	H2	99.183	ppb	Pulse	20193	0.3	0.044	0.9999	3
Mg	24	45	2	He	4038.257	ppb	Pulse	1023299	0.6	6.606	0.0999	3
Al	27	45	2	He	4034.865	ppb	Pulse	505458	0.4	3.263	0.0999	3
K	39	45	2	He	4013.910	ppb	Pulse	948665	0.6	6.124	0.0999	3
V	51	74	2	He	200.083	ppb	Pulse	344697	0.1	3.692	0.3000	3
Cr	52	74	2	He	200.170	ppb	Pulse	405987	0.7	4.348	0.3000	3
Mn	55	74	2	He	200.354	ppb	Pulse	265776	0.8	2.847	0.3000	3
Ni	60	74	2	He	200.098	ppb	Pulse	153537	0.9	1.644	0.3000	3
Cu	65	74	2	He	200.243	ppb	Pulse	199177	0.6	2.133	0.3000	3
Zn	66	74	2	He	200.381	ppb	Pulse	62096	0.7	0.665	0.3000	3
As	75	74	2	He	200.009	ppb	Pulse	37755	1.3	0.404	0.9999	3
Mo	95	103	2	He	100.220	ppb	Pulse	93685	0.8	0.357	0.3000	3
Ag	107	103	2	He	100.074	ppb	Pulse	297643	0.1	1.134	0.3000	3
Sb	121	103	2	He	100.552	ppb	Pulse	102180	0.6	0.389	0.3000	3
Ba	138	159	2	He	199.826	ppb	Pulse	459659	0.8	1.241	0.3000	3
Tl	205	159	2	He	100.177	ppb	Pulse	536554	0.9	1.448	0.3000	3
Be	9	6	3	NoGas	98.752	ppb	Pulse	147990	3.0	0.265	0.3000	3
Ti	47	45	3	NoGas	199.278	ppb	Pulse	109110	0.6	0.068	0.2001	3
Co	59	74	3	NoGas	199.598	ppb	Analog	1456174	3.1	3.533	0.2001	3
Cu	65	74	3	NoGas	199.460	ppb	Pulse	327523	2.3	0.795	0.2001	3
Cd	111	103	3	NoGas	199.927	ppb	Pulse	197840	2.4	0.455	0.3000	3
W	182	159	3	NoGas		ppb	Pulse	90	18.5	0.000	0.3000	3
Hg	201	159	3	NoGas	3995.897	ppt	Pulse	1879	0.7	0.002	2.0001	3
Pb	208	159	3	NoGas	200.076	ppb	Pulse	2241631	2.0	2.915	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	1520020.26333333	1411780	0.8	Analog	92.9	
Ge	74	H2	506714.153333333	461634	0.5	Pulse	91.1	
Sc	45	He	167054.08	154906	0.4	Pulse	92.7	
Ge	74	He	102244.75	93368	0.2	Pulse	91.3	
Rh	103	He	288468.213333333	262431	0.8	Pulse	91.0	
Tb	159	He	394255.233333333	370526	0.5	Pulse	94.0	
Bi	209	He	253636.603333333	237908	0.6	Pulse	93.8	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	580078.48	558267	0.3	Pulse	96.2	
Sc	45	NoGas	1673960.24	1612454	1.6	Analog	96.3	
Ge	74	NoGas	442849.693333333	412378	1.6	Pulse	93.1	
Rh	103	NoGas	471098.29	434934	1.7	Pulse	92.3	
Tb	159	NoGas	795434.166666667	769356	1.6	Pulse	96.7	
Bi	209	NoGas	432307.666666667	422357	1.9	Pulse	97.7	

Calibration Standard Report ICPMS5

Sample Name	9E31026-CAL8	1109
File Name	012CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b	
Acq Time	5/31/2019 15:00:21	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19E307	
ISTD Ref FileName	004CALB.d	
Sample QC Pass/Fial	Pass	
ISTD QC Pass/Fail	Pass	
Operator	**ICPMS Analyst**	

QC Analyte Table

Name	Mass	ISTD	T #	Tune	Conc.	Units	Det.	CPS	CPS RSD	Ratio	Integ Time	Reps
Na	23	45	1	H2	10065.323	ppb	Analog	29002871	0.6	22.109	0.2001	3
Ca	44	45	1	H2	10120.961	ppb	Analog	1340279	2.0	1.022	0.2001	3
Fe	56	74	1	H2	10057.314	ppb	Analog	70394024	0.5	164.617	0.3000	3
Fe	57	74	1	H2	10138.782	ppb	Analog	1756552	1.1	4.108	0.3000	3
Se	78	74	1	H2	0.214	ppb	Pulse	44	17.2	0.000	0.9999	3
Mg	24	45	2	He	10084.010	ppb	Analog	2500322	0.5	17.132	0.0999	3
Al	27	45	2	He	10077.308	ppb	Analog	1231680	2.2	8.439	0.0999	3
K	39	45	2	He	10104.982	ppb	Analog	2335487	0.9	16.002	0.0999	3
V	51	74	2	He	499.098	ppb	Pulse	821078	0.4	9.098	0.3000	3
Cr	52	74	2	He	498.331	ppb	Pulse	958030	0.5	10.616	0.3000	3
Mn	55	74	2	He	497.574	ppb	Pulse	620336	0.5	6.874	0.3000	3
Ni	60	74	2	He	496.711	ppb	Pulse	354502	0.5	3.928	0.3000	3
Cu	65	74	2	He	494.965	ppb	Pulse	449048	0.8	4.976	0.3000	3
Zn	66	74	2	He	497.758	ppb	Pulse	145124	0.5	1.608	0.3000	3
As	75	74	2	He	499.107	ppb	Pulse	90114	0.7	0.999	0.9999	3
Mo	95	103	2	He	0.119	ppb	Pulse	118	3.3	0.000	0.3000	3
Ag	107	103	2	He	0.037	ppb	Pulse	103	19.6	0.000	0.3000	3
Sb	121	103	2	He	0.059	ppb	Pulse	67	5.0	0.000	0.3000	3
Ba	138	159	2	He	498.320	ppb	Pulse	1097769	0.5	3.034	0.3000	3
Tl	205	159	2	He	0.054	ppb	Pulse	350	19.3	0.001	0.3000	3
Be	9	6	3	NoGas	0.031	ppb	Pulse	61	24.6	0.000	0.3000	3
Ti	47	45	3	NoGas	502.066	ppb	Pulse	266913	0.5	0.175	0.2001	3
Co	59	74	3	NoGas	500.794	ppb	Analog	3475827	0.4	8.946	0.2001	3
Cu	65	74	3	NoGas	497.829	ppb	Pulse	750753	0.7	1.932	0.2001	3
Cd	111	103	3	NoGas	501.174	ppb	Pulse	470515	0.7	1.157	0.3000	3
W	182	159	3	NoGas	100.000	ppb	Pulse	375378	0.5	0.509	0.3000	3
Hg	201	159	3	NoGas	97.715	ppt	Pulse	53	9.6	0.000	2.0001	3
Pb	208	159	3	NoGas	498.155	ppb	Analog	5240036	0.5	7.103	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	1520020.26333333	1312014	1.2	Analog	86.3	
Ge	74	H2	506714.153333333	427635	0.5	Pulse	84.4	
Sc	45	He	167054.08	145946	0.0	Pulse	87.4	
Ge	74	He	102244.75	90247	0.3	Pulse	88.3	
Rh	103	He	288468.213333333	249841	0.7	Pulse	86.6	
Tb	159	He	394255.233333333	361845	0.7	Pulse	91.8	
Bi	209	He	253636.603333333	231078	0.5	Pulse	91.1	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	580078.48	537087	1.5	Pulse	92.6	
Sc	45	NoGas	1673960.24	1529733	4.0	Analog	91.4	
Ge	74	NoGas	442849.693333333	388552	0.3	Pulse	87.7	
Rh	103	NoGas	471098.29	406830	0.2	Pulse	86.4	
Tb	159	NoGas	795434.166666667	737743	0.4	Pulse	92.7	
Bi	209	NoGas	432307.666666667	398170	0.9	Pulse	92.1	

Calibration Standard Report ICPMS5

Sample Name	9E31026-CAL9	1110
File Name	013CALS.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b	
Acq Time	5/31/2019 15:04:46	
Sample Type	CalStd	
Total Dilution	1.0000	
Comment	A19E164	
ISTD Ref FileName	004CALB.d	
Sample QC Pass/Fial	Pass	
ISTD QC Pass/Fail	Pass	
Operator	**ICPMS Analyst**	

QC Analyte Table

Name	Mass	ISTD	T #	Tune	Conc.	Units	Det.	CPS	CPS RSD	Ratio	Integ Time	Reps
Na	23	45	1	H2	49949.545	ppb	Analog	134265882	1.1	107.438	0.2001	3
Ca	44	45	1	H2	49914.683	ppb	Analog	6080322	0.8	4.866	0.2001	3
Fe	56	74	1	H2	49972.150	ppb	Analog	315909295	0.4	808.603	0.3000	3
Fe	57	74	1	H2	49986.845	ppb	Analog	7866874	0.7	20.136	0.3000	3
Se	78	74	1	H2	0.108	ppb	Pulse	22	43.9	0.000	0.9999	3
Mg	24	45	2	He	49973.410	ppb	Analog	11883308	0.3	83.975	0.0999	3
Al	27	45	2	He	49994.731	ppb	Analog	5911709	0.9	41.776	0.0999	3
K	39	45	2	He	49929.490	ppb	Analog	10819810	0.5	76.459	0.0999	3
V	51	74	2	He	-0.072	ppb	Pulse	759	11.7	0.009	0.3000	3
Cr	52	74	2	He	1018.916	ppb	Analog	1944149	0.2	23.201	0.3000	3
Mn	55	74	2	He	2505.698	ppb	Analog	3048360	0.5	36.380	0.3000	3
Ni	60	74	2	He	995.102	ppb	Pulse	648369	0.5	7.738	0.3000	3
Cu	65	74	2	He	993.584	ppb	Pulse	818712	0.1	9.770	0.3000	3
Zn	66	74	2	He	2496.200	ppb	Pulse	654093	0.6	7.806	0.3000	3
As	75	74	2	He	0.159	ppb	Pulse	36	7.3	0.000	0.9999	3
Mo	95	103	2	He	0.171	ppb	Pulse	148	11.6	0.001	0.3000	3
Ag	107	103	2	He	0.097	ppb	Pulse	249	15.4	0.001	0.3000	3
Sb	121	103	2	He	0.038	ppb	Pulse	42	31.9	0.000	0.3000	3
Ba	138	159	2	He	2498.748	ppb	Analog	5134258	0.2	15.051	0.3000	3
Tl	205	159	2	He	0.023	ppb	Pulse	176	19.5	0.001	0.3000	3
Be	9	6	3	NoGas	0.024	ppb	Pulse	52	52.0	0.000	0.3000	3
Ti	47	45	3	NoGas	2502.953	ppb	Analog	1392875	1.5	0.893	0.2001	3
Co	59	74	3	NoGas	0.328	ppb	Pulse	2491	9.0	0.007	0.2001	3
Cu	65	74	3	NoGas	1000.527	ppb	Analog	1476510	1.8	3.889	0.2001	3
Cd	111	103	3	NoGas	1005.679	ppb	Pulse	907638	0.3	2.367	0.3000	3
W	182	159	3	NoGas	0.213	ppb	Pulse	833	14.9	0.001	0.3000	3
Hg	201	159	3	NoGas	37.740	ppt	Pulse	26	5.5	0.000	2.0001	3
Pb	208	159	3	NoGas	0.206	ppb	Pulse	2769	2.9	0.004	0.2001	3

QC ISTD Table

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Sc	45	H2	1520020.26333333	1249693	0.3	Analog	82.2	
Ge	74	H2	506714.153333333	390684	0.3	Pulse	77.1	
Sc	45	He	167054.08	141511	0.1	Pulse	84.7	
Ge	74	He	102244.75	83798	0.8	Pulse	82.0	
Rh	103	He	288468.213333333	225979	0.1	Pulse	78.3	
Tb	159	He	394255.233333333	341137	0.4	Pulse	86.5	
Bi	209	He	253636.603333333	206259	0.5	Pulse	81.3	

Calibration Standard Report ICPMS5

Name	Mass	Tune Mode	ISTD Ref CPS	CPS	CPS RSD	Det.	ISTD Recovery %	QC flag
Li	6	NoGas	580078.48	551820	1.5	Pulse	95.1	
Sc	45	NoGas	1673960.24	1559617	2.1	Analog	93.2	
Ge	74	NoGas	442849.693333333	379703	0.8	Pulse	85.7	
Rh	103	NoGas	471098.29	383536	0.8	Pulse	81.4	
Tb	159	NoGas	795434.166666667	735515	0.6	Pulse	92.5	
Bi	209	NoGas	432307.666666667	376850	0.2	Pulse	87.2	

P/A Factor Tuning Report

Current Sample

Sample Name: 9E31026-ICV1
Data File: 014_ICV.d
Acquired: 5/31/2019 15:19:29

Detector Parameters and P/A Factors

Discriminator: 4.5 mV
AnalogHV: 1884 V
PulseHV: 1575 V

Acquired: 5/30/2019 19:46:52

Mass[u]	Element	P/A Factor
23	Na	0.110904
24	Mg	0.114050
27	Al	0.116753
39	K	0.120535
44	Ca	0.120448
47	Ti	0.122355
51	V	0.122700
52	Cr	0.123947
55	Mn	0.124102
57	Fe	0.125484
59	Co	0.126477
60	Ni	0.130468
65	Cu	0.131455
66	Zn	0.131324
111	Cd	0.135577
138	Ba	0.130953
205	Tl	0.134432
206	[Pb]	0.134995
207	[Pb]	0.135344
208	Pb	0.135364
6	Li	Signal too low
7	Li	Signal too low
9	Be	Signal too low
45	Sc	Signal too low
74	Ge	Signal too low
75	As	Signal too low
78	Se	Signal too low
95	Mo	Signal too low
103	Rh	Signal too low
106	[Cd]	Signal too low
107	Ag	Signal too low
108	[Cd]	Signal too low
121	Sb	Signal too low
159	Tb	Signal too low
182	W	Signal too low
201	Hg	Signal too low

Independent Detector Parameters and P/A Factors

Tune Mode Name: H2
Discriminator: 4.5 mV
AnalogHV: 1884 V
PulseHV: 1575 V

Acquired: 5/31/2019 15:00:23

Mass[u]	Element	P/A Factor
23	Na	0.111954
44	Ca	0.122284
45	Sc	0.121594
56	Fe	0.126068
57	Fe	0.126424
74	Ge	Signal too low
78	Se	Signal too low

Tune Mode Name: He
Discriminator: 4.5 mV
AnalogHV: 1884 V
PulseHV: 1575 V

Acquired: 5/31/2019 15:05:39

Mass[u]	Element	P/A Factor
24	Mg	0.115751
27	Al	0.117416
39	K	0.122313
51	V	0.123317
52	Cr	0.124328
55	Mn	0.125815
60	Ni	0.127788
65	Cu	0.128785
66	Zn	0.128229
138	Ba	0.131750
45	Sc	Signal too low
74	Ge	Signal too low
75	As	Signal too low
95	Mo	Signal too low
103	Rh	Signal too low
107	Ag	Signal too low
121	Sb	Signal too low
159	Tb	Signal too low
205	Tl	Signal too low
209	Bi	Signal too low

Tune Mode Name: NoGas
Discriminator: 4.5 mV
AnalogHV: 1884 V
PulseHV: 1575 V

Acquired: 5/31/2019 15:06:46

Mass[u]	Element	P/A Factor
6	Li	0.089878
45	Sc	0.122113
47	Ti	0.120461
59	Co	0.127457
65	Cu	0.128785
111	Cd	0.131103
159	Tb	0.135838
206	Pb	0.134446
207	Pb	0.132880
208	Pb	0.134395
7	Li	Signal too low
9	Be	Signal too low
74	Ge	Signal too low
103	Rh	Signal too low
106	[Cd]	Signal too low
108	[Cd]	Signal too low
182	W	Signal too low
201	Hg	Signal too low
209	Bi	Signal too low

Created: 6/3/2019 12:35:22

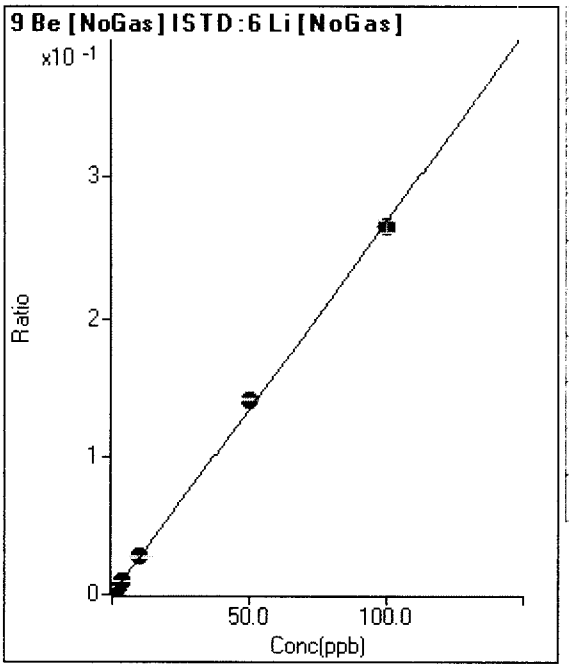
Calibration for 014_ICV.d

Batch Folder: C:\Agilent\ICPMH\1\DATA\9E31026.b\
Analysis File: 9E31026.batch.bin
DA Date-Time: 5/31/2019 15:21:51
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	004CALB.d	9E31026-CAL0	5/31/2019 14:24:31
2	005CALS.d	9E31026-CAL1	5/31/2019 14:28:45
3	006CALS.d	9E31026-CAL2	5/31/2019 14:33:18
4	007CALS.d	9E31026-CAL3	5/31/2019 14:37:50
5	008CALS.d	9E31026-CAL4	5/31/2019 14:42:22
6	009CALS.d	9E31026-CAL5	5/31/2019 14:46:53
7	010CALS.d	9E31026-CAL6	5/31/2019 14:51:23
8	011CALS.d	9E31026-CAL7	5/31/2019 14:55:53
9	012CALS.d	9E31026-CAL8	5/31/2019 15:00:21
10	013CALS.d	9E31026-CAL9	5/31/2019 15:04:46

Ni LDR = 500 ppb
06/03/19

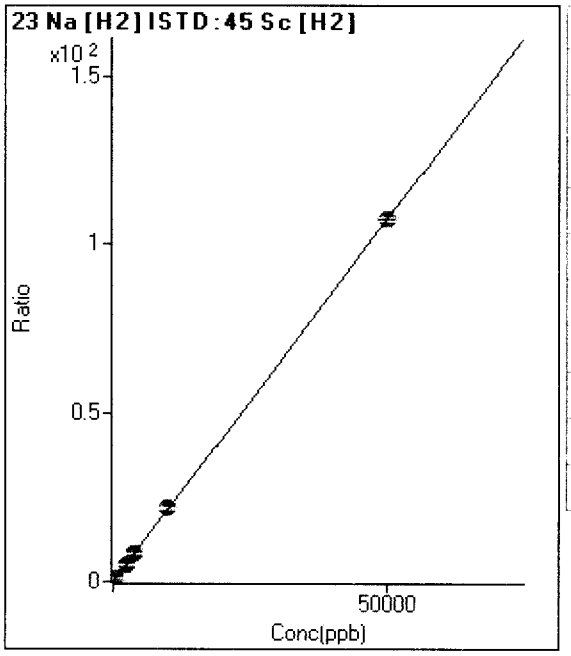
Calibration for 014_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	18	0.000	P	84.7
2	☐	0.180	0.184	302	0.001	P	4.1
3	☐	0.900	0.969	1507	0.003	P	4.9
4	☐	1.800	1.882	2928	0.005	P	1.4
5	☐	3.600	3.641	5687	0.010	P	3.0
6	☐	10.000	10.272	15826	0.028	P	2.5
7	☐	50.000	52.435	79208	0.141	P	0.7
8	☐	100.000	98.752	147990	0.265	P	3.0
9	☐			61	0.000	P	25.7
10	☐			52	0.000	P	52.4

y = 0.0027 * x + 3.0807E-005
R = 0.9996
DL = 0.02915
BEC = 0.01148

Weight: <None>
Min Conc: <None>

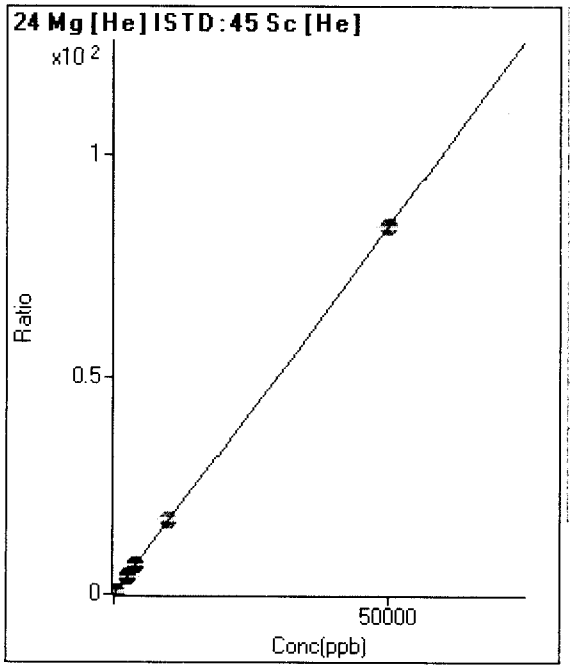


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	24195	0.016	P	2.8
2	☐	9.000	8.433	53067	0.034	P	3.8
3	☐	45.000	43.144	166696	0.109	P	0.3
4	☐	90.000	86.012	306820	0.201	P	1.2
5	☐	180.000	171.600	593078	0.385	P	1.2
6	☐	400.000	401.692	1339275	0.880	A	1.3
7	☐	2500.000	2457.303	7786418	5.301	A	1.4
8	☐	4000.000	3975.976	12094280	8.567	A	1.0
9	☐	10000.000	10272.689	29002871	22.109	A	1.7
10	☐	50000.000	49949.545	134265882	107.438	A	0.9

y = 0.0022 * x + 0.0159
R = 1.0000
DL = 0.6255
BEC = 7.402

Weight: <None>
Min Conc: <None>

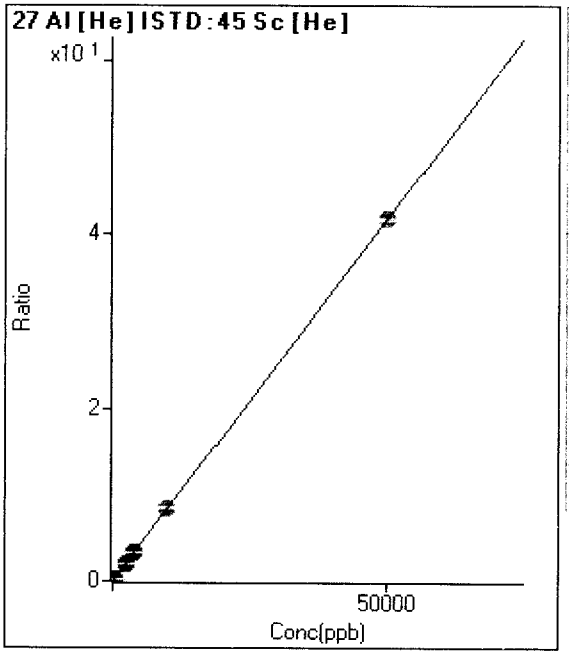
Calibration for 014_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	591	0.004	P	21.9
2	☐	9.000	8.845	3084	0.018	P	5.0
3	☐	45.000	44.590	13122	0.078	P	3.3
4	☐	90.000	87.323	25040	0.150	P	2.3
5	☐	180.000	174.271	49301	0.296	P	4.8
6	☐	400.000	393.962	109816	0.666	P	2.6
7	☐	2500.000	2372.324	648581	3.990	P	0.6
8	☐	4000.000	3929.363	1023299	6.606	P	1.0
9	☐	10000.000	10193.493	2500322	17.132	A	0.5
10	☐	50000.000	49973.410	11883308	83.975	A	0.2

y = 0.0017 * x + 0.0035
R = 1.0000
DL = 1.382
BEC = 2.103

Weight: <None>
Min Conc: <None>

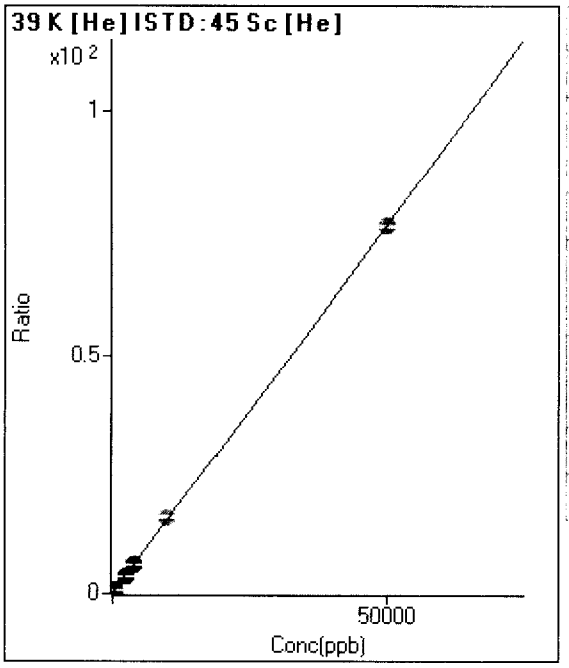


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	103	0.001	P	15.3
2	☐	9.000	9.168	1388	0.008	P	10.3
3	☐	45.000	44.800	6365	0.038	P	1.8
4	☐	90.000	85.270	11977	0.072	P	4.9
5	☐	180.000	172.751	24128	0.145	P	2.5
6	☐	400.000	388.022	53599	0.325	P	2.6
7	☐	2500.000	2365.124	321362	1.977	P	1.1
8	☐	4000.000	3904.320	505458	3.263	P	0.5
9	☐	10000.000	10098.988	1231680	8.439	A	2.2
10	☐	50000.000	49994.731	5911709	41.776	A	0.9

y = 8.3559E-004 * x + 6.1953E-004
R = 1.0000
DL = 0.3396
BEC = 0.7414

Weight: <None>
Min Conc: <None>

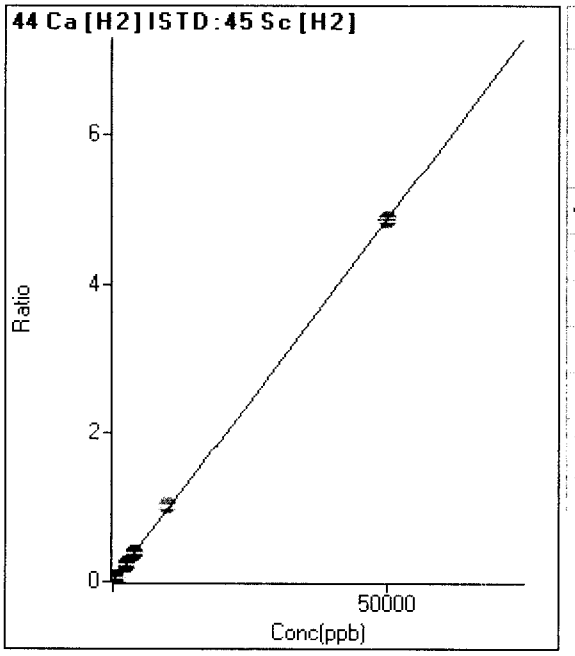
Calibration for 014_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	17440	0.104	P	1.7
2	☐	9.000	8.835	19758	0.118	P	1.4
3	☐	45.000	43.632	28620	0.171	P	0.4
4	☐	90.000	90.705	40511	0.243	P	2.7
5	☐	180.000	177.557	62477	0.376	P	7.7
6	☐	400.000	402.107	118691	0.719	P	1.9
7	☐	2500.000	2428.165	620601	3.818	P	0.9
8	☐	4000.000	3936.391	948665	6.124	P	0.4
9	☐	10000.000	10395.912	2335487	16.002	A	0.9
10	☐	50000.000	49929.490	10819810	76.459	A	0.4

y = 0.0015 * x + 0.1044
R = 1.0000
DL = 3.566
BEC = 68.27

Weight: <None>
Min Conc: <None>

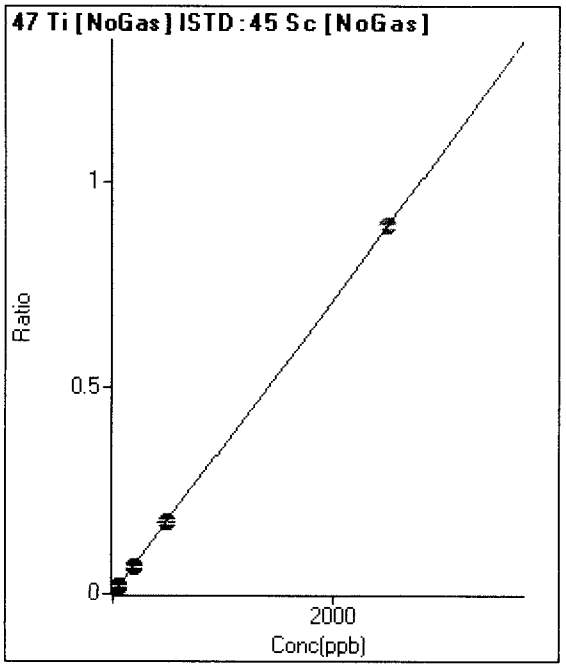


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1691	0.001	P	7.9
2	☐	9.000	7.712	2907	0.002	P	2.1
3	☐	45.000	45.624	8525	0.006	P	1.2
4	☐	90.000	88.934	14936	0.010	P	1.7
5	☐	180.000	176.773	28256	0.018	P	2.3
6	☐	400.000	390.086	59564	0.039	P	1.8
7	☐	2500.000	2425.123	348771	0.237	P	1.3
8	☐	4000.000	3930.562	542331	0.384	P	0.9
9	☐	10000.000	10473.543	1340279	1.022	A	3.2
10	☐	50000.000	49914.683	6080322	4.866	A	1.0

y = 9.7454E-005 * x + 0.0011
R = 0.9999
DL = 2.713
BEC = 11.42

Weight: <None>
Min Conc: <None>

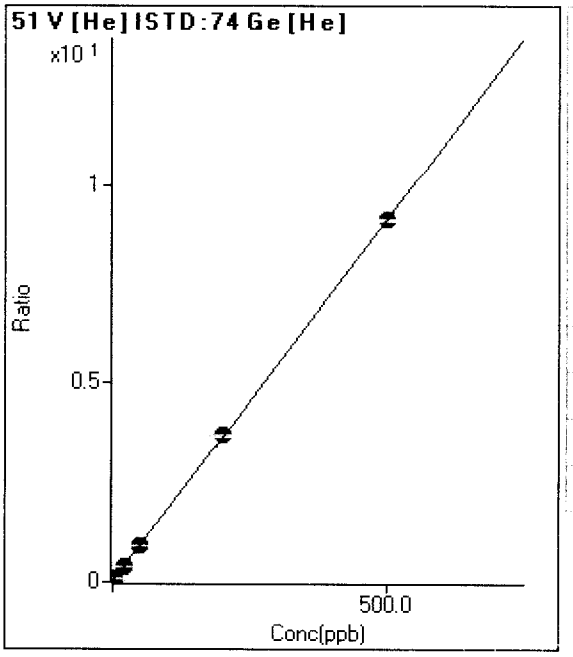
Calibration for 014_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	58	0.000	P	62.2
2	☐	0.180	0.184	170	0.000	P	6.2
3	☐	0.900	0.956	633	0.000	P	2.2
4	☐	1.800	1.786	1140	0.001	P	2.5
5	☐	3.600	3.561	2227	0.001	P	5.0
6	☐	20.000	19.316	11735	0.007	P	4.9
7	☐	50.000	50.183	29067	0.018	P	2.0
8	☐	200.000	189.580	109110	0.068	P	2.2
9	☐	500.000	489.412	266913	0.175	P	4.1
10	☐	2500.000	2502.953	1392875	0.893	A	0.7

y = 3.5683E-004 * x + 3.4637E-005
R = 1.0000
DL = 0.1811
BEC = 0.09707

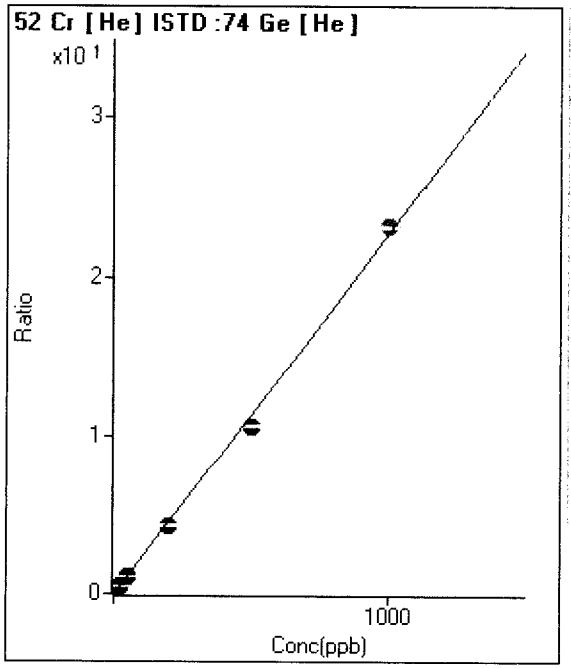
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1060	0.010	P	6.5
2	☐	0.180	0.182	1388	0.014	P	4.5
3	☐	0.900	0.987	2887	0.028	P	4.1
4	☐	1.800	1.752	4304	0.042	P	1.8
5	☐	3.600	3.650	7776	0.077	P	4.7
6	☐	20.000	20.149	37844	0.377	P	1.3
7	☐	50.000	50.213	90845	0.925	P	1.7
8	☐	200.000	202.186	344697	3.692	P	0.3
9	☐	500.000	499.098	821078	9.098	P	0.2
10	☐			759	0.009	P	11.2

y = 0.0182 * x + 0.0104
R = 1.0000
DL = 0.1118
BEC = 0.5694

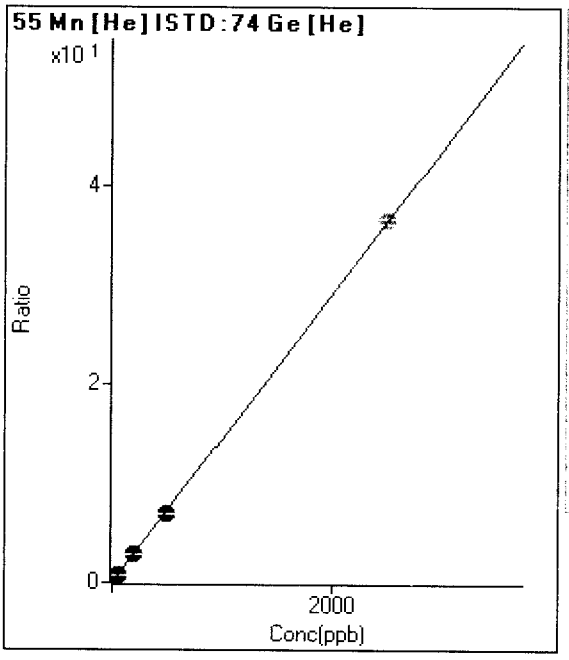
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	218	0.002	P	14.9
2	☐	0.180	0.150	562	0.006	P	13.8
3	☐	0.900	0.856	2202	0.022	P	3.6
4	☐	1.800	1.616	3963	0.039	P	0.7
5	☐	3.600	3.379	8006	0.079	P	2.5
6	☐	20.000	19.051	43729	0.436	P	1.8
7	☐	50.000	47.046	105451	1.073	P	0.8
8	☐	200.000	190.885	405987	4.348	P	0.9
9	☐	500.000	466.149	958030	10.616	P	0.5
10	☐	1000.000	1018.916	1944149	23.201	A	0.7

y = 0.0228 * x + 0.0021
R = 0.9992
DL = 0.04188
BEC = 0.09354

Weight: <None>
Min Conc: <None>

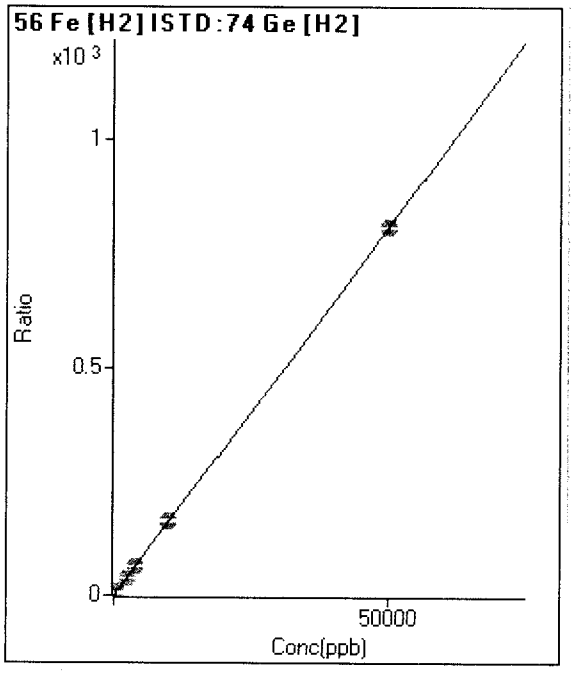


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	100	0.001	P	11.9
2	☐	0.180	0.156	329	0.003	P	14.9
3	☐	0.900	1.066	1675	0.016	P	4.0
4	☐	1.800	1.921	2939	0.029	P	4.9
5	☐	3.600	3.490	5225	0.052	P	7.2
6	☐	20.000	19.513	28519	0.284	P	1.1
7	☐	50.000	47.542	67910	0.691	P	0.9
8	☐	200.000	195.998	265776	2.847	P	0.9
9	☐	500.000	473.377	620336	6.874	P	0.3
10	☐	2500.000	2505.698	3048360	36.380	A	1.2

y = 0.0145 * x + 9.7798E-004
R = 0.9999
DL = 0.02401
BEC = 0.06736

Weight: <None>
Min Conc: <None>

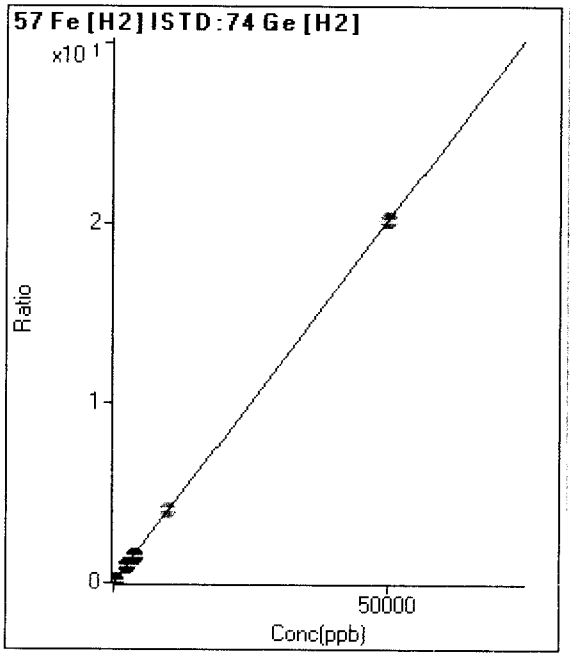
Calibration for 014_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	17828	0.035	P	2.0
2	☐	9.000	8.303	86619	0.170	P	1.5
3	☐	45.000	43.025	366491	0.731	P	0.4
4	☐	90.000	86.880	723031	1.441	P	0.4
5	☐	180.000	176.972	1457711	2.899	A	1.4
6	☐	400.000	396.675	3206697	6.454	A	1.5
7	☐	2500.000	2459.092	19106324	39.824	A	0.2
8	☐	4000.000	3945.049	29482601	63.868	A	0.9
9	☐	10000.000	10171.683	70394024	164.617	A	0.9
10	☐	50000.000	49972.150	315909295	808.603	A	0.1

y = 0.0162 * x + 0.0352
R = 1.0000
DL = 0.133
BEC = 2.174

Weight: <None>
Min Conc: <None>

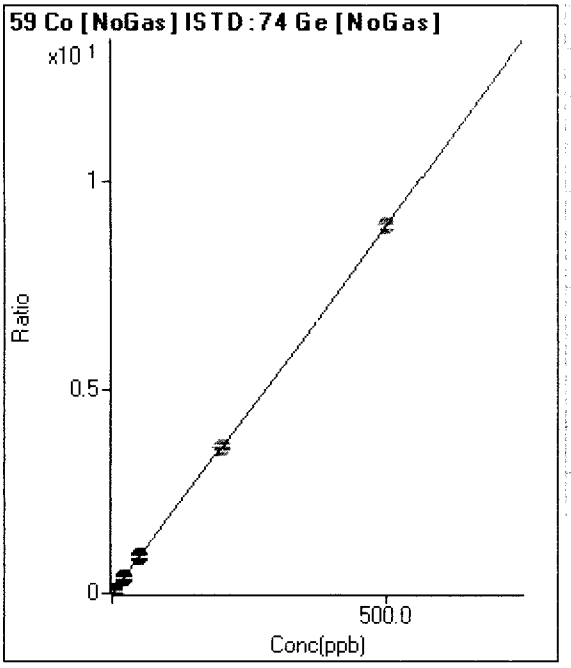


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1076	0.002	P	11.6
2	☐	9.000	8.352	2803	0.005	P	3.5
3	☐	45.000	43.501	9844	0.020	P	3.1
4	☐	90.000	85.369	18319	0.037	P	1.0
5	☐	180.000	168.567	35214	0.070	P	1.0
6	☐	400.000	383.184	77746	0.156	P	0.4
7	☐	2500.000	2339.525	453119	0.944	P	0.5
8	☐	4000.000	3783.947	704555	1.526	P	0.4
9	☐	10000.000	10193.243	1756552	4.108	A	1.5
10	☐	50000.000	49986.845	7866874	20.136	A	0.5

y = 4.0278E-004 * x + 0.0021
R = 1.0000
DL = 1.834
BEC = 5.269

Weight: <None>
Min Conc: <None>

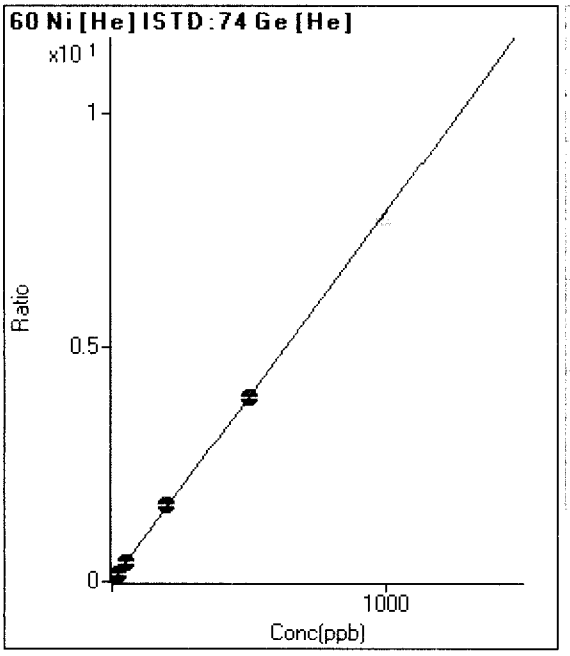
Calibration for 014_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	315	0.001	P	15.1
2	☐	0.180	0.193	1819	0.004	P	9.0
3	☐	0.900	0.909	7418	0.017	P	4.5
4	☐	1.800	1.891	15103	0.034	P	1.8
5	☐	3.600	3.670	29195	0.066	P	2.9
6	☐	20.000	20.325	157331	0.364	P	2.8
7	☐	50.000	50.914	383063	0.910	P	1.8
8	☐	200.000	197.751	1456174	3.533	A	4.6
9	☐	500.000	500.794	3475827	8.946	A	0.6
10	☐			2491	0.007	P	9.6

y = 0.0179 * x + 7.1097E-004
R = 1.0000
DL = 0.01806
BEC = 0.0398

Weight: <None>
Min Conc: <None>

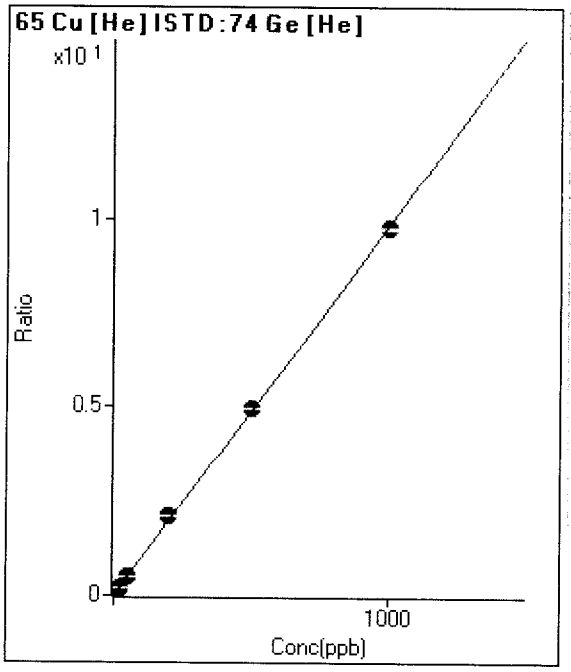


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	246	0.002	P	11.8
2	☑	0.180		480	0.005	P	15.2
3	☐	0.900	1.155	1173	0.012	P	8.0
4	☐	1.800	2.040	1887	0.019	P	3.7
5	☐	3.600	3.963	3413	0.034	P	6.5
6	☐	20.000	20.992	16885	0.168	P	0.9
7	☐	50.000	51.393	40139	0.409	P	1.9
8	☐	200.000	207.764	153537	1.644	P	1.1
9	☐	500.000	496.711	354502	3.928	P	0.4
10	☑	1000.000		648369	7.738	P	1.2

y = 0.0079 * x + 0.0024
R = 0.9999
DL = 0.1074
BEC = 0.3039

Weight: <None>
Min Conc: <None>

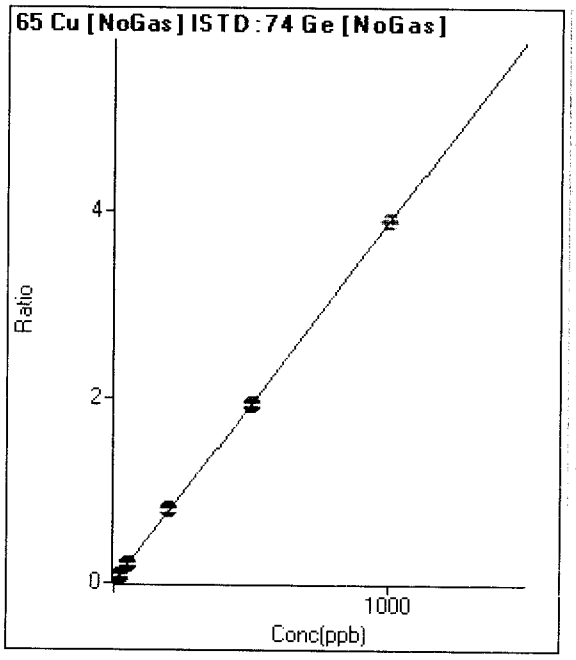
Calibration for 014_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	391	0.004	P	11.6
2	☑	0.180		506	0.005	P	10.1
3	☐	0.900	0.934	1325	0.013	P	2.7
4	☐	1.800	1.878	2269	0.022	P	4.2
5	☐	3.600	3.787	4156	0.041	P	3.4
6	☐	20.000	21.947	22025	0.220	P	1.5
7	☐	50.000	52.926	51484	0.524	P	3.3
8	☐	200.000	216.633	199177	2.133	P	0.7
9	☐	500.000	505.807	449048	4.976	P	0.8
10	☐	1000.000	993.584	818712	9.770	P	0.7

y = 0.0098 * x + 0.0038
R = 0.9998
DL = 0.1355
BEC = 0.3892

Weight: <None>
Min Conc: <None>

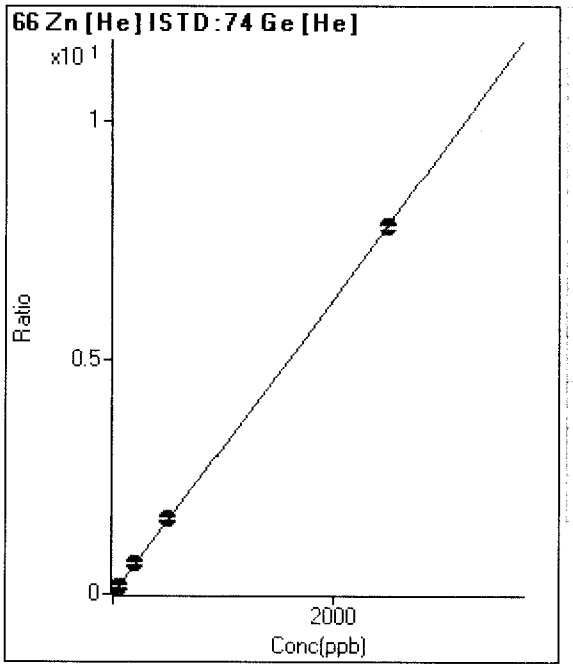


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	630	0.001	P	9.4
2	☐	0.180	0.141	863	0.002	P	10.1
3	☐	0.900	0.989	2304	0.005	P	9.5
4	☐	1.800	1.945	3932	0.009	P	2.6
5	☐	3.600	3.878	7266	0.016	P	3.5
6	☐	20.000	22.316	38118	0.088	P	2.1
7	☐	50.000	52.626	86660	0.206	P	1.6
8	☐	200.000	204.138	327523	0.795	P	3.9
9	☐	500.000	496.933	750753	1.932	P	0.4
10	☐	1000.000	1000.527	1476510	3.889	A	2.0

y = 0.0039 * x + 0.0014
R = 1.0000
DL = 0.1027
BEC = 0.3661

Weight: <None>
Min Conc: <None>

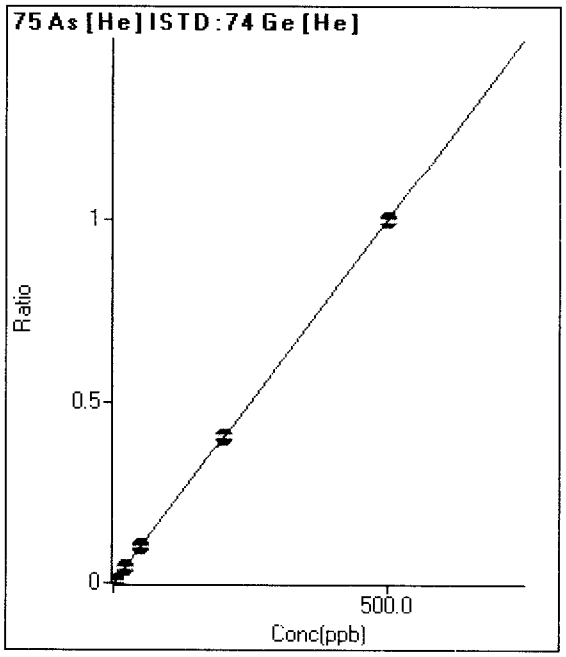
Calibration for 014_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	139	0.001	P	16.1
2	☐	0.180	0.199	201	0.002	P	21.7
3	☐	0.900	0.955	442	0.004	P	5.9
4	☐	1.800	1.883	738	0.007	P	11.0
5	☐	3.600	3.664	1297	0.013	P	6.3
6	☐	20.000	21.250	6801	0.068	P	0.8
7	☐	50.000	51.344	15903	0.162	P	3.9
8	☐	200.000	212.283	62096	0.665	P	0.7
9	☐	500.000	513.902	145124	1.608	P	0.4
10	☐	2500.000	2496.200	654093	7.806	P	0.4

y = 0.0031 * x + 0.0014
R = 1.0000
DL = 0.21
BEC = 0.4346

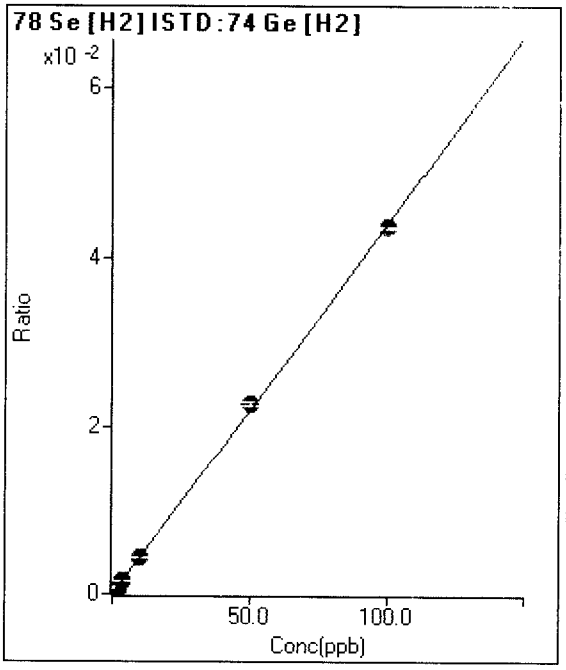
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	11	0.000	P	58.6
2	☐	0.180	0.175	47	0.000	P	24.5
3	☐	0.900	0.920	199	0.002	P	15.8
4	☐	1.800	1.818	382	0.004	P	5.3
5	☐	3.600	3.771	774	0.008	P	7.3
6	☐	20.000	20.100	4045	0.040	P	1.7
7	☐	50.000	50.518	9939	0.101	P	1.3
8	☐	200.000	202.089	37755	0.404	P	1.3
9	☐	500.000	499.107	90114	0.999	P	0.5
10	☐			36	0.000	P	7.6

y = 0.0020 * x + 1.1078E-004
R = 1.0000
DL = 0.09733
BEC = 0.05538

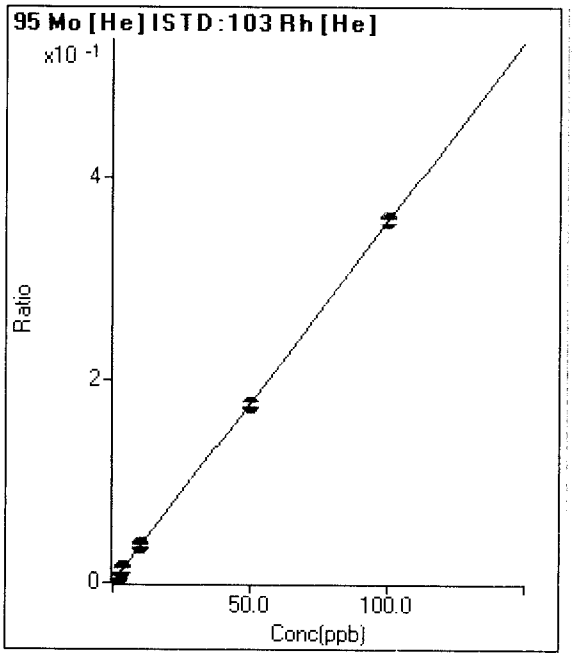
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4	0.000	P	25.3
2	☐	0.180	0.139	35	0.000	P	18.1
3	☐	0.900	0.854	193	0.000	P	10.3
4	☐	1.800	1.816	406	0.001	P	10.8
5	☐	3.600	3.576	797	0.002	P	2.9
6	☐	10.000	9.899	2173	0.004	P	3.7
7	☐	50.000	51.656	10931	0.023	P	1.9
8	☐	100.000	99.183	20193	0.044	P	0.8
9	☐			44	0.000	P	16.7
10	☐			22	0.000	P	43.7

y = 4.4097E-004 * x + 7.8970E-006
R = 0.9998
DL = 0.01357
BEC = 0.01791

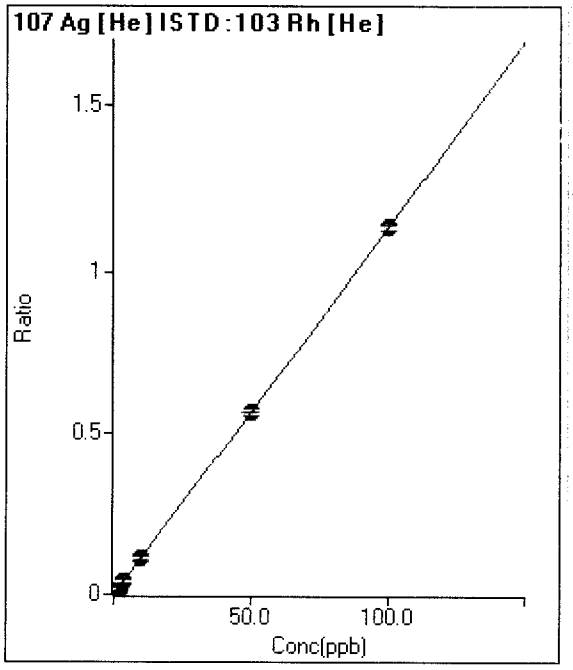
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	13	0.000	P	90.2
2	☐	0.180	0.152	170	0.001	P	8.9
3	☐	0.900	0.973	1007	0.004	P	8.3
4	☐	1.800	1.757	1798	0.006	P	3.3
5	☐	3.600	3.491	3554	0.012	P	3.2
6	☐	10.000	9.971	10048	0.036	P	1.1
7	☐	50.000	49.574	48566	0.177	P	0.4
8	☐	100.000	100.220	93685	0.357	P	0.8
9	☐			118	0.000	P	3.8
10	☐			148	0.001	P	11.5

y = 0.0036 * x + 4.6222E-005
R = 1.0000
DL = 0.03511
BEC = 0.01298

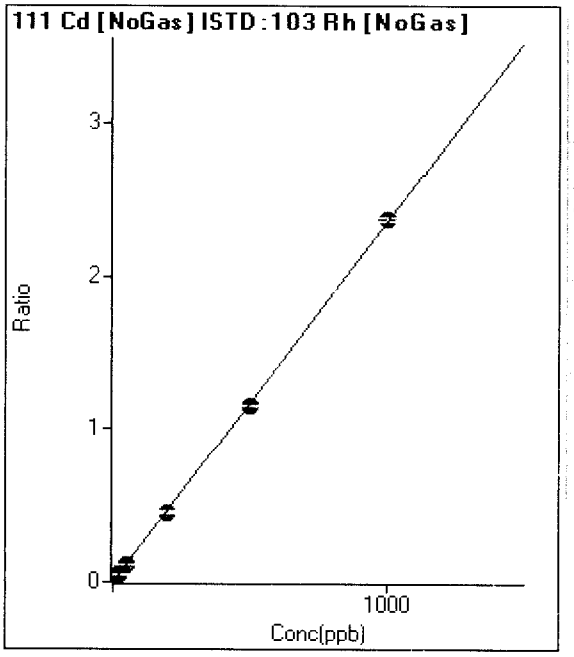
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	0	0.000	P	
2	☐	0.180	0.186	609	0.002	P	11.8
3	☐	0.900	0.900	2924	0.010	P	4.2
4	☐	1.800	1.787	5774	0.020	P	1.9
5	☐	3.600	3.669	11832	0.042	P	2.6
6	☐	10.000	10.157	32528	0.115	P	1.1
7	☐	50.000	49.817	155251	0.565	P	1.5
8	☐	100.000	100.074	297643	1.134	P	0.6
9	☐			103	0.000	P	20.4
10	☐			249	0.001	P	15.4

y = 0.0113 * x + 0.0000E+000
R = 1.0000
DL = 0
BEC = 0

Weight: <None>
Min Conc: <None>

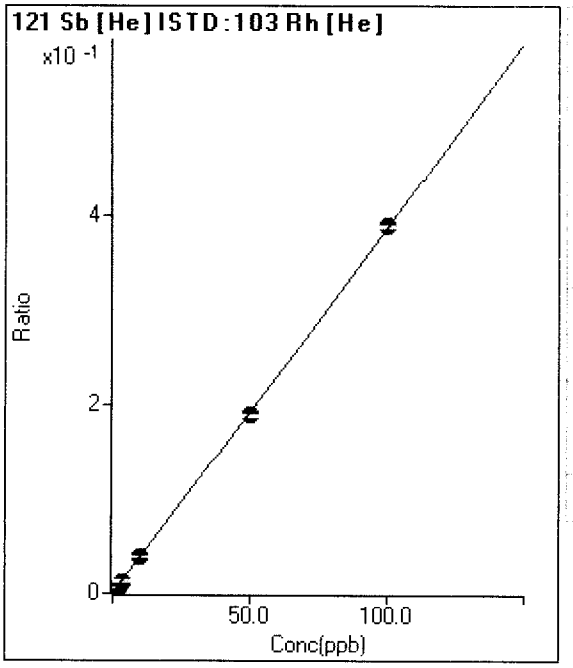


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	7	0.000	P	57.5
2	☐	0.180	0.188	214	0.000	P	16.3
3	☐	0.900	0.802	885	0.002	P	12.3
4	☐	1.800	1.784	1954	0.004	P	1.9
5	☐	3.600	3.527	3872	0.008	P	3.9
6	☐	20.000	19.753	21332	0.046	P	0.3
7	☐	50.000	48.474	50511	0.114	P	2.2
8	☐	200.000	193.369	197840	0.455	P	3.9
9	☐	500.000	491.457	470515	1.157	P	0.7
10	☐	1000.000	1005.679	907638	2.367	P	1.0

y = 0.0024 * x + 1.4999E-005
R = 0.9999
DL = 0.011
BEC = 0.006374

Weight: <None>
Min Conc: <None>

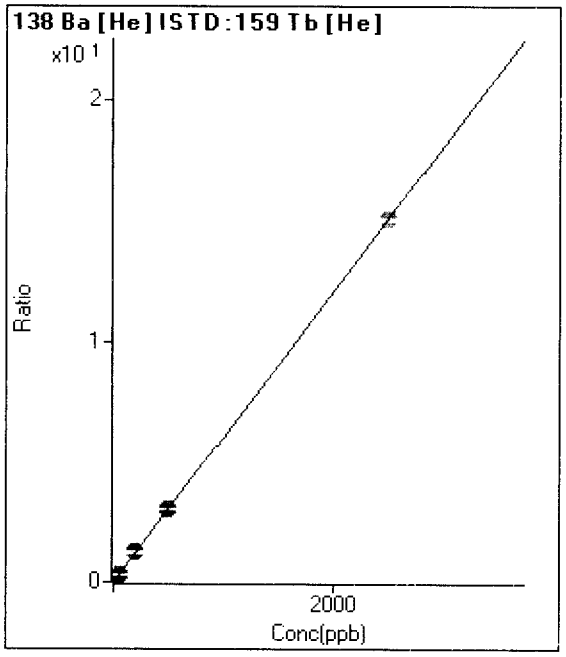
Calibration for 014_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	11	0.000	P	121.3
2	☐	0.180	0.211	247	0.001	P	13.1
3	☐	0.900	0.933	1047	0.004	P	6.0
4	☐	1.800	1.768	1962	0.007	P	4.1
5	☐	3.600	3.435	3796	0.013	P	1.9
6	☐	10.000	9.930	10875	0.038	P	1.5
7	☐	50.000	48.923	52097	0.189	P	1.1
8	☐	100.000	100.552	102180	0.389	P	0.5
9	☐			67	0.000	P	4.3
10	☐			42	0.000	P	32.1

y = 0.0039 * x + 3.8521E-005
R = 0.9999
DL = 0.03621
BEC = 0.009949

Weight: <None>
Min Conc: <None>

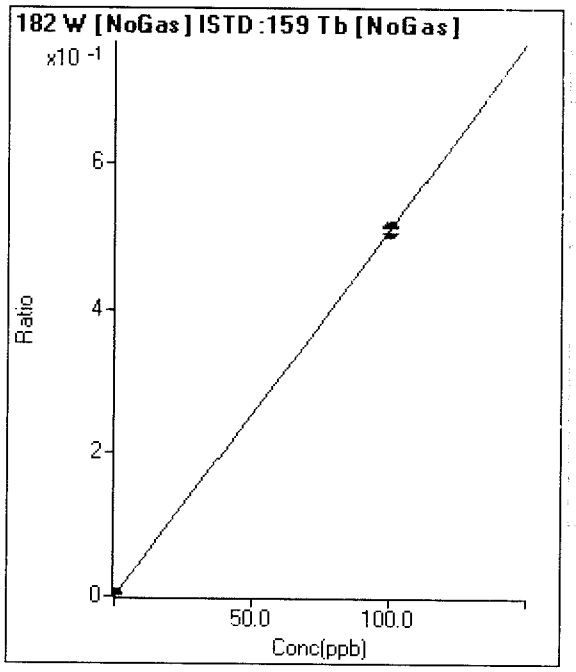


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	124	0.000	P	21.8
2	☐	0.180	0.172	529	0.001	P	15.8
3	☐	0.900	0.924	2301	0.006	P	3.6
4	☐	1.800	1.928	4659	0.012	P	3.1
5	☐	3.600	3.935	9274	0.024	P	5.3
6	☐	20.000	21.162	49485	0.128	P	1.9
7	☐	50.000	52.001	119901	0.314	P	0.5
8	☐	200.000	205.915	459659	1.241	P	0.9
9	☐	500.000	503.645	1097769	3.034	P	0.4
10	☐	2500.000	2498.748	5134258	15.051	A	0.5

y = 0.0060 * x + 3.1565E-004
R = 1.0000
DL = 0.03422
BEC = 0.05241

Weight: <None>
Min Conc: <None>

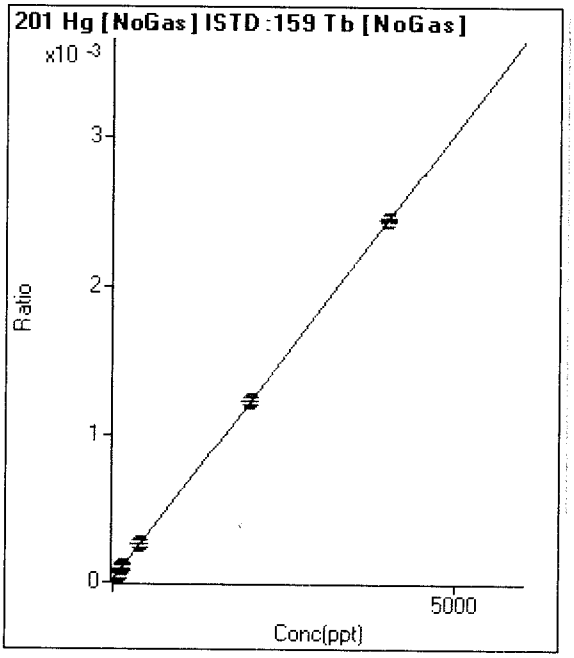
Calibration for 014_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	38	0.000	P	44.4
2	☐			24	0.000	P	41.9
3	☐			27	0.000	P	22.6
4	☐			34	0.000	P	24.7
5	☐			37	0.000	P	47.4
6	☐			37	0.000	P	40.9
7	☐			42	0.000	P	27.3
8	☐			90	0.000	P	18.3
9	☐	100.000	100.000	375378	0.509	P	0.4
10	☐			833	0.001	P	15.1

y = 0.0051 * x + 4.7466E-005
R = 1.0000
DL = 0.01242
BEC = 0.00933

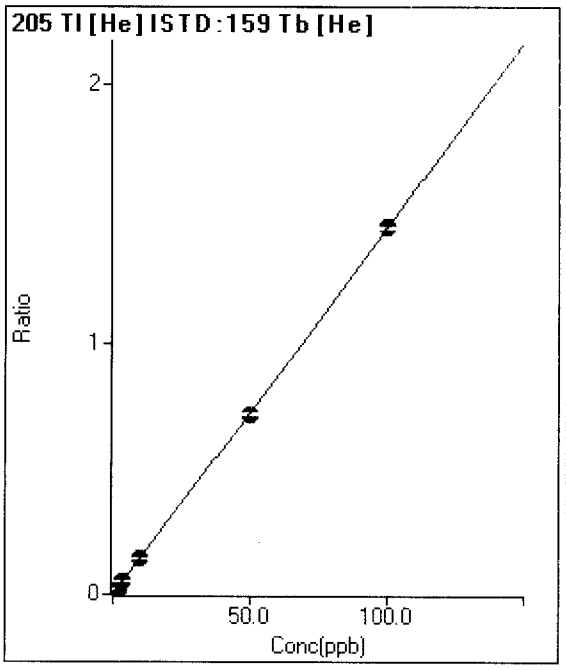
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-5.600	7	0.000	P	27.6
2	☐			10	0.000	P	32.4
3	☐	36.000	32.646	26	0.000	P	12.7
4	☐	72.000	61.825	39	0.000	P	20.9
5	☐	144.000	152.183	83	0.000	P	6.5
6	☐	400.000	408.758	204	0.000	P	7.2
7	☐	2000.000	2006.291	942	0.001	P	1.9
8	☐	4000.000	3995.897	1879	0.002	P	2.3
9	☐			53	0.000	P	9.3
10	☐			26	0.000	P	5.6

y = 6.081977E-007 * x + 1.262430E-005
R = 1.0000
DL = 12.54
BEC = 20.76

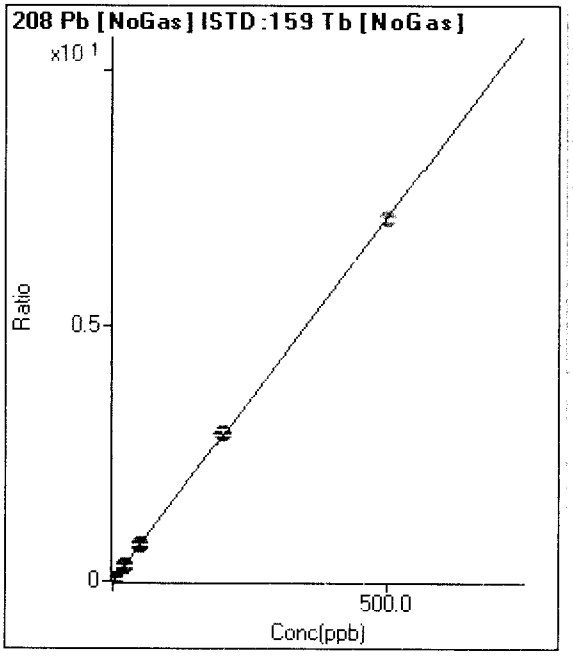
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	74	0.000	P	16.3
2	☐	0.180	0.177	1075	0.003	P	7.2
3	☐	0.900	0.924	5299	0.014	P	5.9
4	☐	1.800	1.792	10190	0.026	P	2.3
5	☐	3.600	3.666	20550	0.053	P	2.9
6	☐	10.000	10.023	56167	0.145	P	1.1
7	☐	50.000	49.636	274422	0.718	P	1.1
8	☐	100.000	100.177	536554	1.448	P	0.5
9	☐			350	0.001	P	20.0
10	☐			176	0.001	P	19.5

y = 0.0145 * x + 1.8894E-004
R = 1.0000
DL = 0.006374
BEC = 0.01307

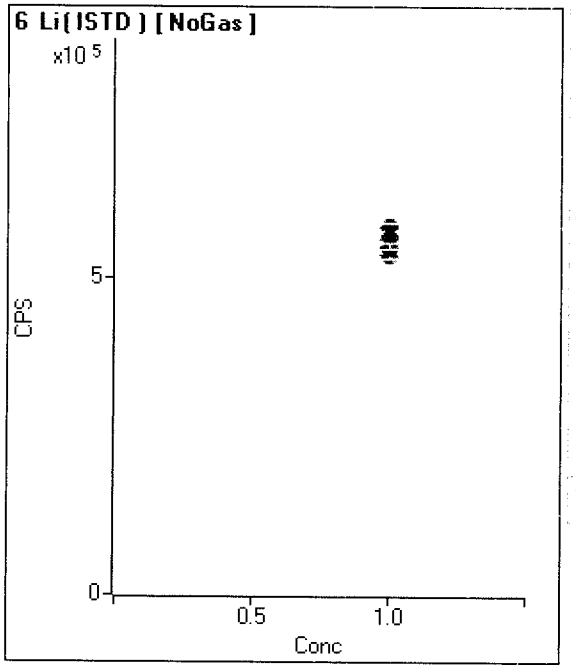
Weight: <None>
Min Conc: <None>



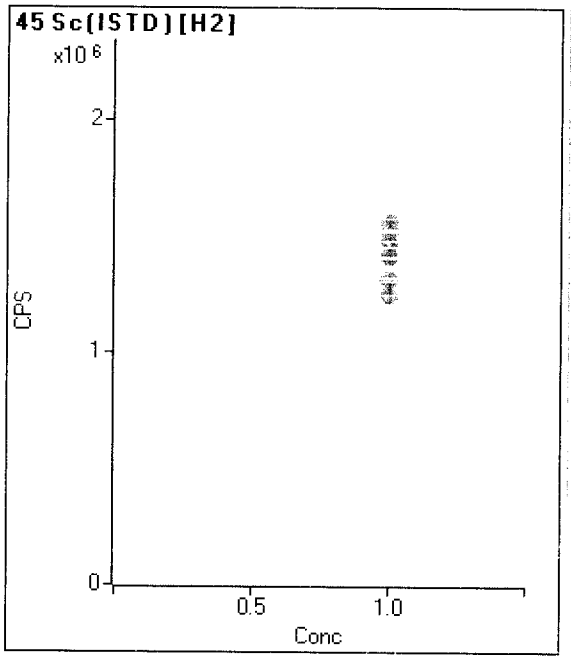
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	661	0.001	P	5.6
2	☐	0.180	0.168	2534	0.003	P	3.3
3	☐	0.900	0.912	10858	0.014	P	2.9
4	☐	1.800	1.805	20789	0.027	P	2.3
5	☐	3.600	3.615	41327	0.052	P	1.7
6	☐	20.000	21.389	238480	0.306	P	1.1
7	☐	50.000	50.389	549584	0.719	P	1.0
8	☐	200.000	204.377	2241631	2.915	P	3.3
9	☐	500.000	498.155	5240036	7.103	A	0.4
10	☐			2769	0.004	P	2.4

y = 0.0143 * x + 8.3143E-004
R = 1.0000
DL = 0.0098
BEC = 0.05832

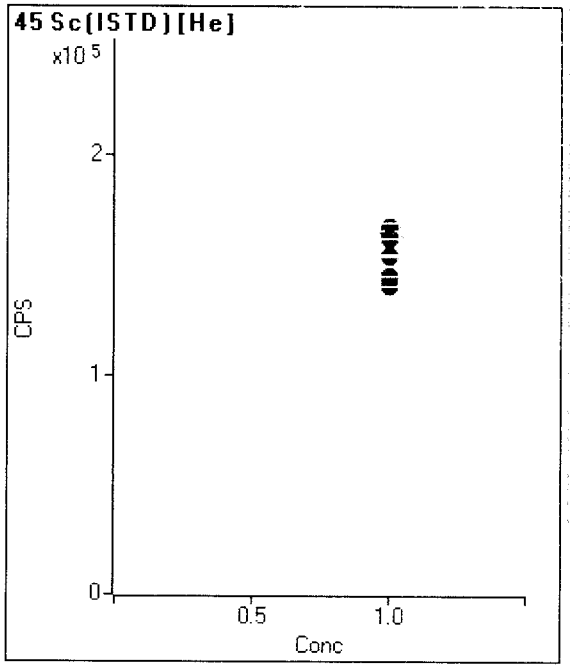
Weight: <None>
Min Conc: <None>



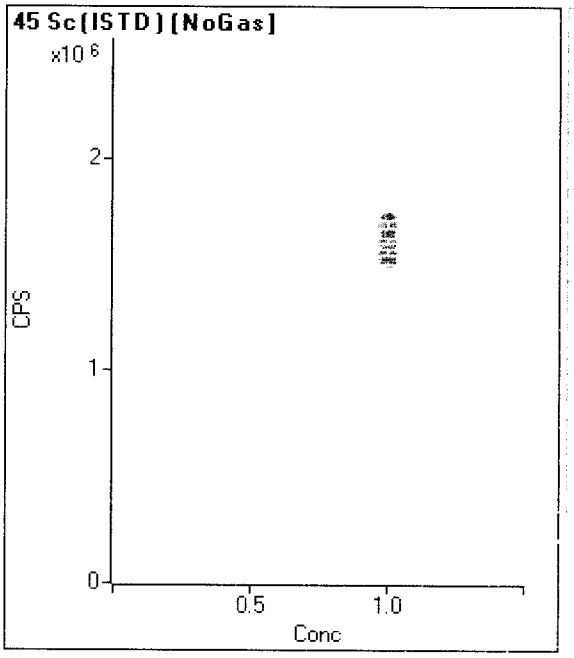
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		580078		P	1.3
2	☐	1.000		574881		P	1.6
3	☐	1.000		572890		P	0.8
4	☐	1.000		576251		P	1.3
5	☐	1.000		580130		P	2.0
6	☐	1.000		573316		P	1.0
7	☐	1.000		562646		P	0.9
8	☐	1.000		558267		P	0.3
9	☐	1.000		537087		P	1.5
10	☐	1.000		551820		P	1.5



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1520020		A	1.0
2	☐	1.000		1559076		A	2.3
3	☐	1.000		1533449		A	0.4
4	☐	1.000		1527339		A	0.8
5	☐	1.000		1540682		A	0.7
6	☐	1.000		1522291		A	0.4
7	☐	1.000		1469018		A	1.6
8	☐	1.000		1411780		A	0.8
9	☐	1.000		1312014		A	1.2
10	☐	1.000		1249693		A	0.3

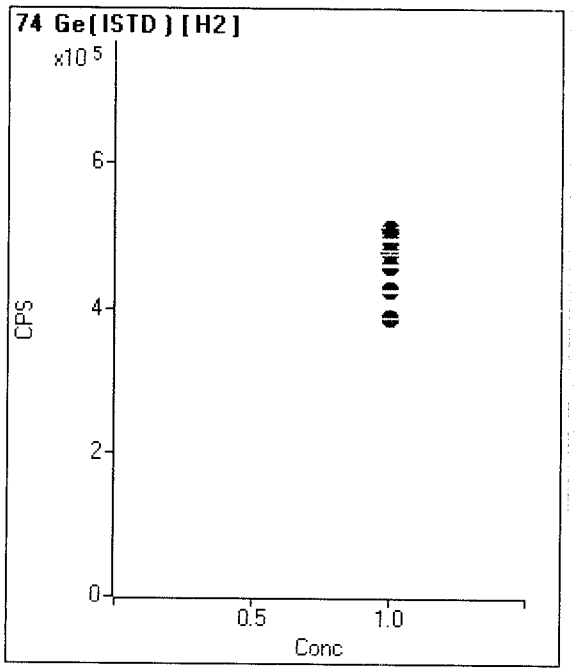


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		167054		P	0.5
2	☐	1.000		167584		P	0.6
3	☐	1.000		167251		P	0.1
4	☐	1.000		166655		P	0.5
5	☐	1.000		166546		P	4.1
6	☐	1.000		165017		P	0.8
7	☐	1.000		162563		P	0.4
8	☐	1.000		154906		P	0.4
9	☐	1.000		145946		P	0.0
10	☐	1.000		141511		P	0.1

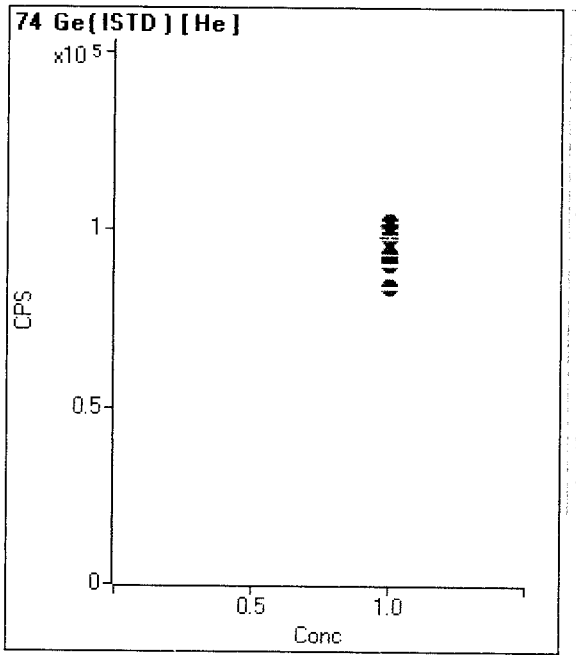


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1673960		A	2.7
2	☐	1.000		1694558		A	1.4
3	☐	1.000		1685240		A	2.6
4	☐	1.000		1696201		A	1.0
5	☐	1.000		1707025		A	1.3
6	☐	1.000		1694859		A	2.0
7	☐	1.000		1620361		A	2.5
8	☐	1.000		1612454		A	1.6
9	☐	1.000		1529733		A	4.0
10	☐	1.000		1559617		A	2.1

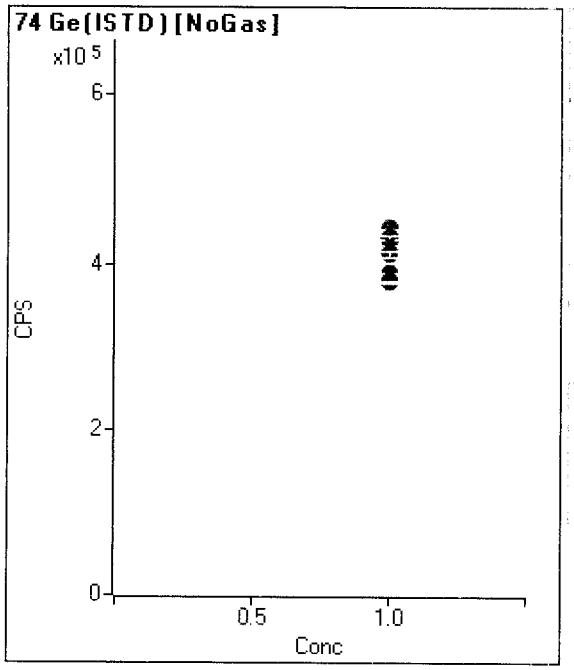
Calibration for 014_ICV.d



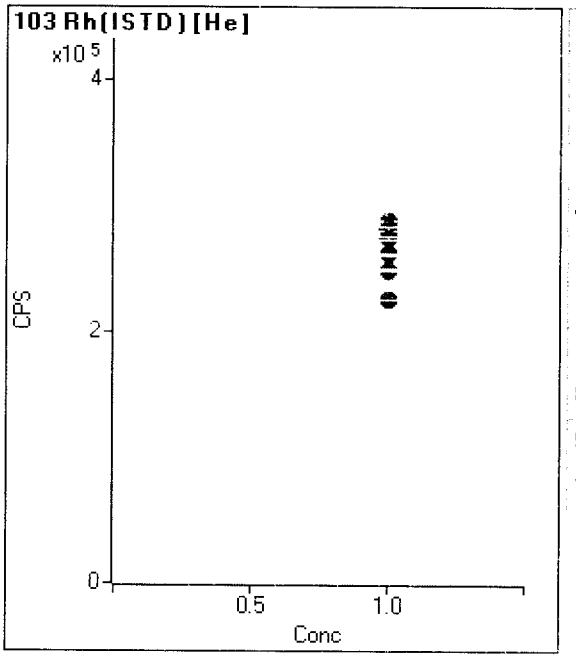
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		506714		P	0.4
2	☐	1.000		510995		P	1.6
3	☐	1.000		501122		P	0.2
4	☐	1.000		501786		P	0.4
5	☐	1.000		502916		P	0.7
6	☐	1.000		496907		P	0.6
7	☐	1.000		479762		P	0.8
8	☐	1.000		461634		P	0.5
9	☐	1.000		427635		P	0.5
10	☐	1.000		390684		P	0.3



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		102245		P	0.2
2	☐	1.000		101442		P	0.6
3	☐	1.000		101824		P	0.9
4	☐	1.000		101834		P	0.3
5	☐	1.000		101298		P	2.3
6	☐	1.000		100320		P	0.3
7	☐	1.000		98254		P	1.0
8	☐	1.000		93368		P	0.2
9	☐	1.000		90247		P	0.3
10	☐	1.000		83798		P	0.8

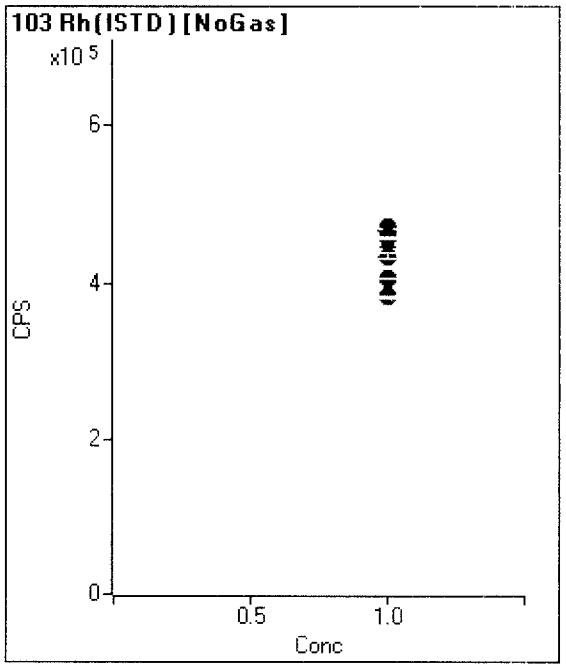


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		442850		P	0.6
2	☐	1.000		437684		P	0.3
3	☐	1.000		437988		P	1.0
4	☐	1.000		437901		P	0.2
5	☐	1.000		440668		P	0.4
6	☐	1.000		432614		P	1.2
7	☐	1.000		420930		P	0.8
8	☐	1.000		412378		P	1.6
9	☐	1.000		388552		P	0.3
10	☐	1.000		379703		P	0.8

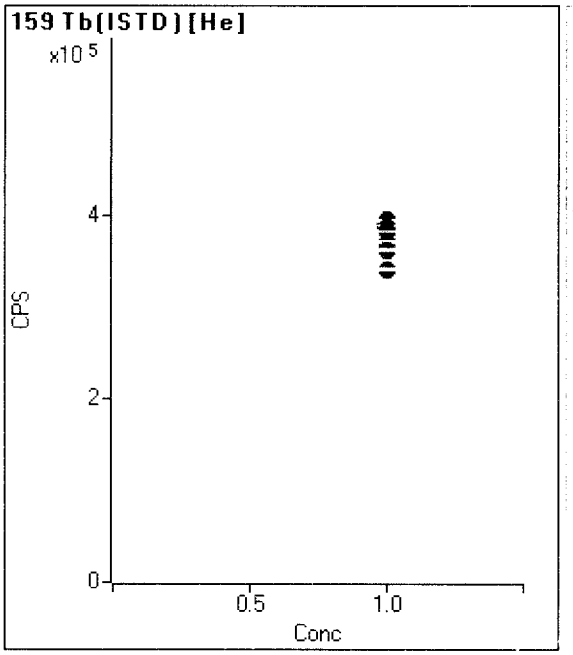


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		288468		P	0.0
2	☐	1.000		288511		P	0.2
3	☐	1.000		286638		P	0.5
4	☐	1.000		285148		P	0.8
5	☐	1.000		284700		P	3.6
6	☐	1.000		282577		P	1.0
7	☐	1.000		274991		P	1.2
8	☐	1.000		262431		P	0.8
9	☐	1.000		249841		P	0.7
10	☐	1.000		225979		P	0.1

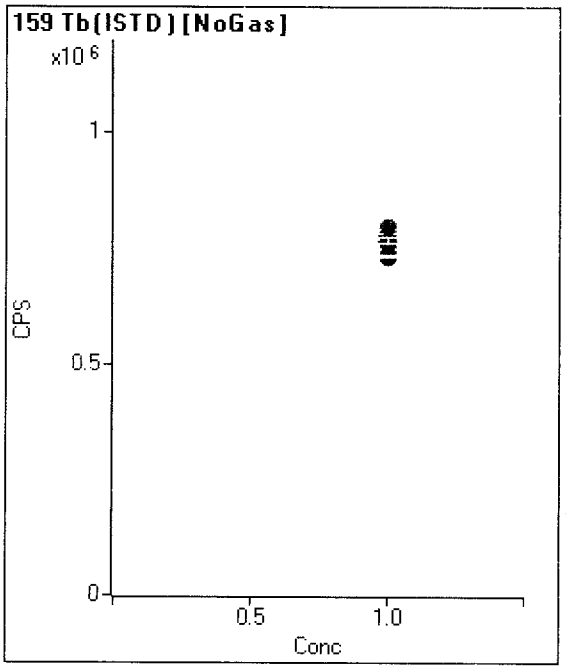
Calibration for 014_ICV.d



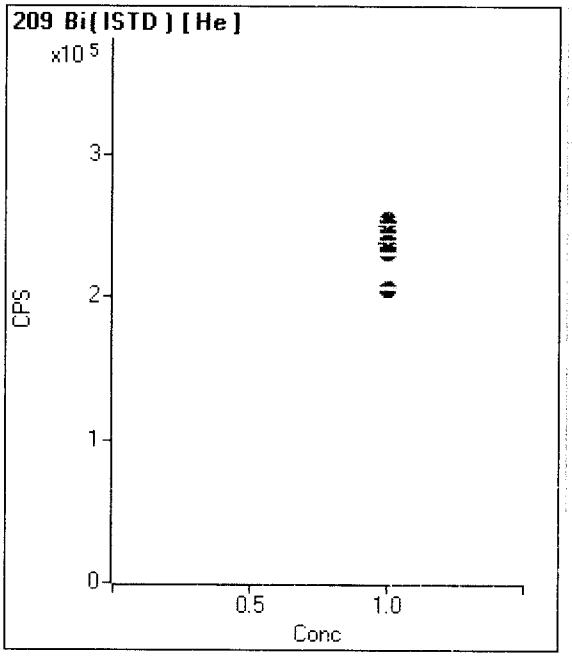
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1		1.000		471098		P	0.4
2		1.000		468231		P	0.5
3		1.000		464769		P	0.7
4		1.000		463678		P	0.8
5		1.000		465716		P	1.4
6		1.000		458763		P	0.5
7		1.000		442762		P	0.4
8		1.000		434934		P	1.7
9		1.000		406830		P	0.2
10		1.000		383536		P	0.8



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1		1.000		394255		P	0.5
2		1.000		391178		P	0.9
3		1.000		391228		P	0.6
4		1.000		390529		P	0.7
5		1.000		386721		P	4.0
6		1.000		387257		P	1.0
7		1.000		382424		P	0.2
8		1.000		370526		P	0.5
9		1.000		361845		P	0.7
10		1.000		341137		P	0.4

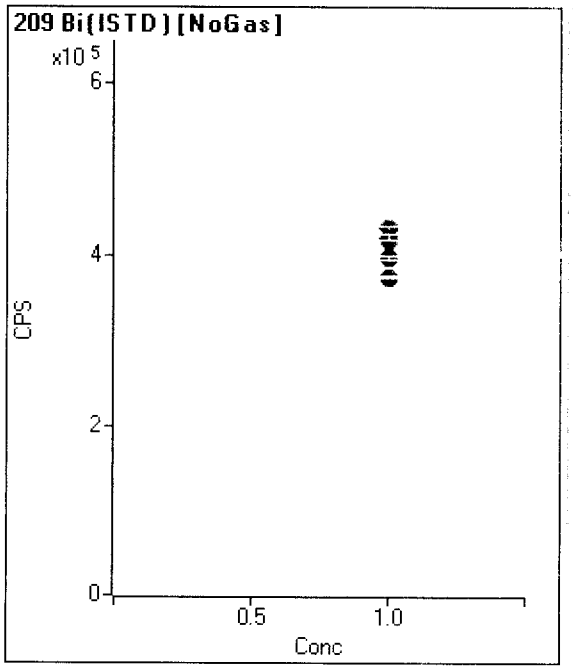


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		795434		P	0.5
2	☐	1.000		786851		P	0.4
3	☐	1.000		785012		P	1.1
4	☐	1.000		782404		P	0.8
5	☐	1.000		789222		P	0.6
6	☐	1.000		779991		P	1.0
7	☐	1.000		764186		P	0.6
8	☐	1.000		769356		P	1.6
9	☐	1.000		737743		P	0.4
10	☐	1.000		735515		P	0.6



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		253637		P	0.2
2	☐	1.000		251340		P	0.1
3	☐	1.000		251393		P	0.3
4	☐	1.000		251205		P	1.2
5	☐	1.000		250473		P	3.8
6	☐	1.000		250235		P	0.7
7	☐	1.000		243904		P	0.6
8	☐	1.000		237908		P	0.6
9	☐	1.000		231078		P	0.5
10	☐	1.000		206259		P	0.5

Calibration for 014_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		432308		P	0.4
2	☐	1.000		428779		P	0.8
3	☐	1.000		427863		P	1.4
4	☐	1.000		430761		P	0.5
5	☐	1.000		431606		P	0.5
6	☐	1.000		432269		P	1.4
7	☐	1.000		420007		P	0.5
8	☐	1.000		422357		P	1.9
9	☐	1.000		398170		P	0.9
10	☐	1.000		376850		P	0.2

Initial Calibration Verification (ICV) Report ICPMS5

Sample Name	9E31026-ICV1
File Name	014_ICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b
Acq Time	5/31/2019 15:19:29
Sample Type	ICV
Total Dilution	1.0000
Comment	A19E109 JPB 05/30
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**ICPMS Analyst**

QC Analyte Table

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	Det.	CPS	Ratio	Integ Time	QC Flag
Na	23	45	1	H2	4076.816	ppb	Analog	12517535	8.784	0.2001	
Ca	44	45	1	H2	4032.503	ppb	Pulse	561640	0.394	0.2001	
Fe	56	74	1	H2	4074.319	ppb	Analog	30226718	65.959	0.3000	
Fe	57	74	1	H2	3906.489	ppb	Pulse	722045	1.576	0.3000	
Se	78	74	1	H2	39.538	ppb	Pulse	7993	0.017	0.9999	
Mg	24	45	2	He	4097.246	ppb	Mix	1071577	6.888	0.0999	
Al	27	45	2	He	4011.686	ppb	Pulse	521531	3.353	0.0999	
K	39	45	2	He	4030.036	ppb	Pulse	974922	6.267	0.0999	
V	51	74	2	He	100.788	ppb	Pulse	172748	1.846	0.3000	
Cr	52	74	2	He	96.524	ppb	Pulse	205917	2.200	0.3000	
Mn	55	74	2	He	98.991	ppb	Pulse	134623	1.438	0.3000	
Ni	60	74	2	He	104.448	ppb	Pulse	77497	0.828	0.3000	
Cu	65	74	2	He	106.808	ppb	Pulse	98637	1.054	0.3000	
Zn	66	74	2	He	105.801	ppb	Pulse	31090	0.332	0.3000	
As	75	74	2	He	98.211	ppb	Pulse	18400	0.197	0.9999	
Mo	95	103	2	He	39.842	ppb	Pulse	36843	0.142	0.3000	
Ag	107	103	2	He	40.003	ppb	Pulse	117680	0.453	0.3000	
Sb	121	103	2	He	41.842	ppb	Pulse	42061	0.162	0.3000	
Ba	138	159	2	He	104.372	ppb	Pulse	229122	0.629	0.3000	
Tl	205	159	2	He	39.001	ppb	Pulse	205425	0.564	0.3000	
Be	9	6	3	NoGas	40.610	ppb	Pulse	60966	0.109	0.3000	
Ti	47	45	3	NoGas	98.673	ppb	Pulse	54775	0.035	0.2001	
Co	59	74	3	NoGas	104.380	ppb	Pulse	740005	1.865	0.2001	
Cu	65	74	3	NoGas	108.150	ppb	Pulse	167289	0.422	0.2001	
Cd	111	103	3	NoGas	98.521	ppb	Pulse	97176	0.232	0.3000	
W	182	159	3	NoGas	0.044	ppb	Pulse	199	0.000	0.3000	
Hg	201	159	3	NoGas	795.147	ppt	Pulse	365	0.000	2.0001	
Pb	208	159	3	NoGas	101.739	ppb	Pulse	1066547	1.451	0.2001	

QC ISTD Table

Name	Mass	Det.	Tune Mode	CPS RSD	ISTD Ref CPS	CPS	ISTD Recovery %	QC flag
Sc	45	Analog	H2	0.9	1520020.26333333	1425176	93.8	
Ge	74	Pulse	H2	0.3	506714.153333333	458267	90.4	
Sc	45	Pulse	He	1.6	167054.08	155579	93.1	
Ge	74	Pulse	He	0.5	102244.75	93605	91.5	
Rh	103	Pulse	He	0.6	288468.213333333	259553	90.0	
Tb	159	Pulse	He	1.1	394255.233333333	364289	92.4	
Bi	209	Pulse	He	1.5	253636.603333333	231137	91.1	
Li	6	Pulse	NoGas	1.8	580078.48	558962	96.4	

Initial Calibration Verification (ICV) Report ICPMS5

Name	Mass	Det.	Tune Mode	CPS RSD	ISTD Ref CPS	CPS	ISTD Recovery %	QC flag
Sc	45	Analog	NoGas	0.9	1673960.24	1554160	92.8	
Ge	74	Pulse	NoGas	0.7	442849.693333333	396797	89.6	
Rh	103	Pulse	NoGas	0.7	471098.29	419110	89.0	
Tb	159	Pulse	NoGas	0.3	795434.166666667	734898	92.4	
Bi	209	Pulse	NoGas	0.5	432307.666666667	401840	93.0	

Initial Calibration Blank (ICB) Report ICPMS5

Sample Name	9E31026-ICB1
File Name	015_ICB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b
Acq Time	5/31/2019 15:23:43
Sample Type	ICB
Total Dilution	1.0000
Comment	Cal Blk 3%HNO3 0.4%HCl
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**ICPMS Analyst**

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QC Analyte Table

Name	Mass	ISTD	Tune Step	Tune Mode	Conc.	Units	Det.	CPS	Ratio	Integ Time	QC flag
Na	23	45	1	H2	3.111	ppb	Pulse	31768	0.023	0.2001	
Ca	44	45	1	H2	0.589	ppb	Pulse	1644	0.001	0.2001	
Fe	56	74	1	H2	1.735	ppb	Pulse	28687	0.063	0.3000	
Fe	57	74	1	H2	1.677	ppb	Pulse	1269	0.003	0.3000	
Se	78	74	1	H2	0.064	ppb	Pulse	16	0.000	0.9999	
Mg	24	45	2	He	1.344	ppb	Pulse	901	0.006	0.0999	
Al	27	45	2	He	1.235	ppb	Pulse	257	0.002	0.0999	
K	39	45	2	He	-0.658	ppb	Pulse	16084	0.103	0.0999	
V	51	74	2	He	-0.128	ppb	Pulse	758	0.008	0.3000	
Cr	52	74	2	He	0.012	ppb	Pulse	227	0.002	0.3000	
Mn	55	74	2	He	0.069	ppb	Pulse	187	0.002	0.3000	
Ni	60	74	2	He	0.034	ppb	Pulse	251	0.003	0.3000	
Cu	65	74	2	He	-0.041	ppb	Pulse	322	0.003	0.3000	
Zn	66	74	2	He	0.120	ppb	Pulse	163	0.002	0.3000	
As	75	74	2	He	0.088	ppb	Pulse	27	0.000	0.9999	
Mo	95	103	2	He	0.031	ppb	Pulse	42	0.000	0.3000	
Ag	107	103	2	He	0.013	ppb	Pulse	40	0.000	0.3000	
Sb	121	103	2	He	0.019	ppb	Pulse	30	0.000	0.3000	
Ba	138	159	2	He	0.059	ppb	Pulse	248	0.001	0.3000	
Tl	205	159	2	He	0.012	ppb	Pulse	134	0.000	0.3000	
Be	9	6	3	NoGas	0.014	ppb	Pulse	38	0.000	0.3000	
Ti	47	45	3	NoGas	0.098	ppb	Pulse	108	0.000	0.2001	
Co	59	74	3	NoGas	0.018	ppb	Pulse	420	0.001	0.2001	
Cu	65	74	3	NoGas	0.045	ppb	Pulse	646	0.002	0.2001	
Cd	111	103	3	NoGas	0.040	ppb	Pulse	48	0.000	0.3000	
W	182	159	3	NoGas	0.007	ppb	Pulse	63	0.000	0.3000	
Hg	201	159	3	NoGas	8.767	ppt	Pulse	13	0.000	2.0001	
Pb	208	159	3	NoGas	0.036	ppb	Pulse	1001	0.001	0.2001	

QC ISTD Table

Name	Mass	Det.	Tune Mode	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	Analog	H2	0.4	1405087	1520020.26333333	92.4	
Ge	74	Pulse	H2	0.4	453560	506714.153333333	89.5	
Sc	45	Pulse	He	0.1	155571	167054.08	93.1	
Ge	74	Pulse	He	0.6	94214	102244.75	92.1	
Rh	103	Pulse	He	0.5	271148	288468.213333333	94.0	
Tb	159	Pulse	He	1.1	369457	394255.233333333	93.7	
Bi	209	Pulse	He	0.7	239655	253636.603333333	94.5	

Initial Calibration Blank (ICB) Report ICPMS5

Name	Mass	Det.	Tune Mode	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Li	6	Pulse	NoGas	1.8	560146	580078.48	96.6	
Sc	45	Analog	NoGas	0.7	1555988	1673960.24	93.0	
Ge	74	Pulse	NoGas	0.8	404588	442849.693333333	91.4	
Rh	103	Pulse	NoGas	0.7	434831	471098.29	92.3	
Tb	159	Pulse	NoGas	0.5	742290	795434.166666667	93.3	
Bi	209	Pulse	NoGas	0.1	413657	432307.666666667	95.7	

CRL Verification ICPMS5

Sample Name	9E31026-CRL1
File Name	016CRL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b
Acq Time	5/31/2019 15:27:57
Sample Type	CRL1
Total Dilution	1.0000
Comment	A19E285 JPB 05/30
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**ICPMS Analyst**

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QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	% Rec	%QC Low	%QC High	Flag
Na	23	45	H2	11.381	ppb	5.3	57450	126.46	70	130	
Ca	44	45	H2	9.171	ppb	10.3	2854	101.9	70	130	
Fe	56	74	H2	9.878	ppb	1.3	89606	109.76	70	130	
Fe	57	74	H2	9.756	ppb	9.7	2780	108.4	70	130	
Se	78	74	H2	0.174	ppb	20.7	39	96.67	70	130	
Mg	24	45	He	9.311	ppb	12.4	2973	103.46	70	130	
Al	27	45	He	9.718	ppb	1.3	1358	107.98	70	130	
K	39	45	He	7.605	ppb	38.4	18015	84.5	70	130	
V	51	74	He	0.129	ppb	50.3	1197	71.67	70	130	
Cr	52	74	He	0.186	ppb	15.3	600	103.33	70	130	
Mn	55	74	He	0.284	ppb	4.4	480	157.78	70	130	<>CRL1 NR<MRL<R-11
Ni	60	74	He	0.311	ppb	11.0	458	172.78	70	130	<>CRL1 NR<MRL<R-11
Cu	65	74	He	0.228	ppb	36.6	571	126.67	70	130	
Zn	66	74	He	0.275	ppb	39.4	209	152.78	70	130	<>CRL1 NR<MRL<R-11
As	75	74	He	0.210	ppb	8.9	50	116.67	70	130	
Mo	95	103	He	0.164	ppb	10.7	169	91.11	70	130	
Ag	107	103	He	0.183	ppb	10.4	554	101.67	70	130	
Sb	121	103	He	0.192	ppb	13.7	209	106.67	70	130	
Ba	138	159	He	0.230	ppb	5.6	627	127.78	70	130	
Tl	205	159	He	0.186	ppb	3.0	1058	103.33	70	130	
Be	9	6	NoGas	0.174	ppb	18.4	279	96.67	70	130	
Ti	47	45	NoGas	0.192	ppb	21.3	162	106.67	70	130	
Co	59	74	NoGas	0.184	ppb	4.4	1621	102.22	70	130	
Cu	65	74	NoGas	0.172	ppb	12.6	848	95.56	70	130	
Cd	111	103	NoGas	0.229	ppb	20.2	241	127.22	70	130	
Hg	201	159	NoGas	9.808	ppt	26.0	14	136.22	70	130	<>CRL1 NR<MRL<R-11
Pb	208	159	NoGas	0.201	ppb	6.3	2752	111.67	70	130	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Analog	1.0	1422446	1520020.26333333	93.6	
Ge	74	H2	Pulse	0.6	459524	506714.153333333	90.7	
Sc	45	He	Pulse	3.3	155359	167054.08	93.0	
Ge	74	He	Pulse	0.2	94153	102244.75	92.1	
Rh	103	He	Pulse	0.9	267606	288468.213333333	92.8	

JB 06/03/19

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Tb	159	He	Pulse	2.4	368346	394255.233333333	93.4	
Bi	209	He	Pulse	1.3	238741	253636.603333333	94.1	
Li	6	NoGas	Pulse	1.5	562211	580078.48	96.9	
Sc	45	NoGas	Analog	1.8	1562657	1673960.24	93.4	
Ge	74	NoGas	Pulse	0.8	405681	442849.693333333	91.6	
Rh	103	NoGas	Pulse	0.8	434247	471098.29	92.2	
Tb	159	NoGas	Pulse	0.1	744149	795434.166666667	93.6	
Bi	209	NoGas	Pulse	0.2	412106	432307.666666667	95.3	

CRL Verification ICPMS5

Sample Name	9E31026-CRL2	1103
File Name	017_CRL.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b	
Acq Time	5/31/2019 15:32:11	
Sample Type	CRL2	
Total Dilution	1.0000	
Comment	A19E286 JPB 05/30	
ISTD Ref FileName	004CALB.d	
Sample QC Pass/Fial	Fail	
ISTD QC Pass/Fail	Pass	
Operator	**ICPMS Analyst**	

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	% Rec	%QC Low	%QC High	Flag
Na	23	45	H2	65.172	ppb	0.4	222056	144.83	70	130	<>CRL2 NR<MRL<R-11
Ca	44	45	H2	48.898	ppb	2.7	8363	108.66	70	130	
Fe	57	74	H2	43.768	ppb	1.0	9129	97.26	70	130	
Se	78	74	H2	0.813	ppb	3.1	169	90.33	70	130	
Mg	24	45	He	43.829	ppb	0.9	12003	97.4	70	130	
Al	27	45	He	43.595	ppb	6.1	5760	96.88	70	130	
K	39	45	He	76.337	ppb	6.1	34386	169.64	70	130	<>CRL2 NR<MRL<R-11
V	51	74	He	0.793	ppb	5.2	2358	88.11	70	130	
Cr	52	74	He	0.844	ppb	5.6	2030	93.78	70	130	
Mn	55	74	He	0.936	ppb	8.4	1385	104	70	130	
Ni	60	74	He	0.942	ppb	15.3	937	104.67	70	130	
Cu	65	74	He	1.058	ppb	15.6	1352	117.56	70	130	
Zn	66	74	He	1.431	ppb	17.6	554	159	70	130	<>CRL2 NR<MRL<R-11
As	75	74	He	0.935	ppb	7.3	188	103.89	70	130	
Mo	95	103	He	0.944	ppb	8.3	918	104.89	70	130	
Ag	107	103	He	0.910	ppb	1.5	2776	101.11	70	130	
Sb	121	103	He	0.830	ppb	13.3	876	92.22	70	130	
Ba	138	159	He	0.968	ppb	2.2	2287	107.56	70	130	
Tl	205	159	He	0.914	ppb	3.1	4989	101.56	70	130	
Be	9	6	NoGas	0.899	ppb	5.1	1378	99.89	70	130	
Ti	47	45	NoGas	0.876	ppb	7.4	541	97.33	70	130	
Co	59	74	NoGas	0.918	ppb	5.4	6939	102	70	130	
Cu	65	74	NoGas	1.116	ppb	7.8	2336	124	70	130	
Cd	111	103	NoGas	0.889	ppb	6.0	919	98.78	70	130	
Hg	201	159	NoGas	36.589	ppt	14.8	26	101.64	70	130	
Pb	208	159	NoGas	0.940	ppb	2.0	10671	104.44	70	130	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Analog	0.1	1422708	1520020.26333333	93.6	
Ge	74	H2	Pulse	0.4	462205	506714.153333333	91.2	
Sc	45	He	Pulse	0.7	155519	167054.08	93.1	
Ge	74	He	Pulse	0.3	95073	102244.75	93.0	
Rh	103	He	Pulse	0.4	269238	288468.213333333	93.3	
Tb	159	He	Pulse	0.7	372147	394255.233333333	94.4	

JPB 06/05/19

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Bi	209	He	Pulse	1.0	240140	253636.603333333	94.7	
Li	6	NoGas	Pulse	1.8	563456	580078.48	97.1	
Sc	45	NoGas	Analog	1.8	1559267	1673960.24	93.1	
Ge	74	NoGas	Pulse	0.3	405578	442849.693333333	91.6	
Rh	103	NoGas	Pulse	0.3	436335	471098.29	92.6	
Tb	159	NoGas	Pulse	0.5	750160	795434.166666667	94.3	
Bi	209	NoGas	Pulse	0.3	416220	432307.666666667	96.3	

CRL Verification ICPMS5

Sample Name	9E31026-CRL3	1104
File Name	018CRL_.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b	
Acq Time	5/31/2019 15:36:25	
Sample Type	CRL3	
Total Dilution	1.0000	
Comment	A19E287 JPB 05/30	
ISTD Ref FileName	004CALB.d	
Sample QC Pass/Fial	Pass	
ISTD QC Pass/Fail	Pass	
Operator	**ICPMS Analyst**	

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	% Rec	%QC Low	%QC High	Flag
Na	23	45	H2	89.850	ppb	0.5	304104	99.83	70	130	
Ca	44	45	H2	87.700	ppb	4.2	14046	97.44	70	130	
Fe	57	74	H2	85.544	ppb	0.4	16992	95.05	70	130	
Se	78	74	H2	1.784	ppb	3.2	369	99.11	70	130	
Mg	24	45	He	90.104	ppb	0.8	24135	100.12	70	130	
Al	27	45	He	86.849	ppb	3.0	11399	96.5	70	130	
K	39	45	He	94.429	ppb	4.0	38759	104.92	70	130	
V	51	74	He	1.766	ppb	4.6	4054	98.11	70	130	
Cr	52	74	He	1.761	ppb	0.1	4026	97.83	70	130	
Mn	55	74	He	1.823	ppb	5.3	2617	101.28	70	130	
Ni	60	74	He	2.054	ppb	3.9	1777	114.11	70	130	
Cu	65	74	He	1.926	ppb	5.3	2169	107	70	130	
Zn	66	74	He	1.989	ppb	7.1	722	110.5	70	130	
As	75	74	He	1.772	ppb	11.9	348	98.44	70	130	
Mo	95	103	He	1.775	ppb	11.3	1715	98.61	70	130	
Ag	107	103	He	1.830	ppb	4.0	5584	101.67	70	130	
Sb	121	103	He	1.821	ppb	3.1	1909	101.17	70	130	
Ba	138	159	He	1.935	ppb	4.1	4450	107.5	70	130	
Tl	205	159	He	1.832	ppb	3.4	9916	101.78	70	130	
Be	9	6	NoGas	1.913	ppb	4.4	2917	106.28	70	130	
Ti	47	45	NoGas	1.741	ppb	14.7	1026	96.72	70	130	
Co	59	74	NoGas	1.920	ppb	0.6	14261	106.67	70	130	
Cu	65	74	NoGas	2.017	ppb	9.5	3772	112.06	70	130	
Cd	111	103	NoGas	1.812	ppb	5.6	1862	100.67	70	130	
Hg	201	159	NoGas	77.491	ppt	6.0	45	107.63	70	130	
Pb	208	159	NoGas	1.864	ppb	0.5	20482	103.56	70	130	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Analog	0.2	1453988	1520020.26333333	95.7	
Ge	74	H2	Pulse	0.6	464536	506714.153333333	91.7	
Sc	45	He	Pulse	0.8	155771	167054.08	93.2	
Ge	74	He	Pulse	0.9	95348	102244.75	93.3	
Rh	103	He	Pulse	0.3	269218	288468.213333333	93.3	
Tb	159	He	Pulse	1.3	371821	394255.233333333	94.3	

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Bi	209	He	Pulse	1.7	242731	253636.603333333	95.7	
Li	6	NoGas	Pulse	1.9	564467	580078.48	97.3	
Sc	45	NoGas	Analog	1.1	1566453	1673960.24	93.6	
Ge	74	NoGas	Pulse	0.2	407359	442849.693333333	92.0	
Rh	103	NoGas	Pulse	0.5	435031	471098.29	92.3	
Tb	159	NoGas	Pulse	0.6	747450	795434.166666667	94.0	
Bi	209	NoGas	Pulse	0.5	416120	432307.666666667	96.3	

Quantitation Report ICPMS5

File Name	019ICSA.d		
File Path	C:\Agilent\ICPMH\1\DATA\9E31026.b		
Acq Time	5/31/2019 15:47:43	Sample Type	
Sample Name	**9E31026-IFA1**		ICSA
Comment	**A19E234**	Last Calib	05/31/2019 15:21:49
Prep Dilution	1.0000	Vial:	1111
Total Dilution	**1.0000**	Operator Name	ICPMS Analyst

FullQuant Table

Element	Mass	ISTD	Tune Mode	Raw Conc	Corrected Conc.	Units	RSD(%)	ExpectedValue	QC Flag
Be	9	6	NoGas	0.006	0.006	ppb	21.5		
Na	23	45	H2	266202.102	266202.102	ppb	0.3		
Mg	24	45	He	100977.517	100977.517	ppb	1.0	100000	
Al	27	45	He	101929.799	101929.799	ppb	1.1	100000	
K	39	45	He	99411.524	99411.524	ppb	1.0	100000	
Ca	44	45	H2	318602.666	318602.666	ppb	0.9		
Ti	47	45	NoGas	2102.321	2102.321	ppb	2.3		
V	51	74	He	0.197	0.197	ppb	3.0	2	
Cr	52	74	He	1.87	1.870	ppb	4.8	2	
Mn	55	74	He	13.594	13.594	ppb	1.7	2	> CRI
Fe	56	74	H2	258262.405	258262.405	ppb	0.8		
Fe	57	74	H2	256785.895	256785.895	ppb	0.2		
Co	59	74	NoGas	1.333	1.333	ppb	3.4		
Ni	60	74	He	0.908	0.908	ppb	10.7	2	
Cu	65	74	He	0.499	0.499	ppb	27.6	2	
Cu	65	74	NoGas	2.174	2.174	ppb	7.2		
Zn	66	74	He	2.576	2.576	ppb	10.5	2	> CRI
As	75	74	He	0.262	0.262	ppb	6.5	0.9	
Se	78	74	H2	0.223	0.223	ppb	15.4	0.9	
Mo	95	103	He	2272.397	2272.397	ppb	0.4	2000	
Ag	107	103	He	0.286	0.286	ppb	9.4		
Cd	111	103	NoGas	0.558	0.558	ppb	9.0		
Sb	121	103	He	0.14	0.140	ppb	9.9	0.9	
Ba	138	159	He	1.727	1.727	ppb	3.2	2	
W	182	159	NoGas	63.575	63.575	ppb	1.1		
Hg	201	159	NoGas	95.565	95.565	ppt	17.1		
Tl	205	159	He	0.005	0.005	ppb	63.4	0.9	
Pb	208	159	NoGas	0.791	0.791	ppb	1.7		

Caution- low Mn in high matrix samples JB 06/03/19

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD Recovery %	QC Flag
Li	6	NoGas	540342	1.0	580078.48	Pulse	93.1	
Sc	45	H2	1038796	0.4	1520020.26333333	Pulse	68.3	IS Q-06
Sc	45	He	130777	0.5	167054.08	Pulse	78.3	
Sc	45	NoGas	1491709	2.8	1673960.24	Analog	89.1	
Ge	74	H2	326192	0.8	506714.153333333	Pulse	64.4	IS Q-06
Ge	74	He	75086	0.3	102244.75	Pulse	73.4	
Ge	74	NoGas	360631	0.4	442849.693333333	Pulse	81.4	
Rh	103	He	192926	0.2	288468.213333333	Pulse	66.9	IS Q-06
Rh	103	NoGas	344954	1.1	471098.29	Pulse	73.2	
Tb	159	He	306048	0.9	394255.233333333	Pulse	77.6	
Tb	159	NoGas	685784	0.4	795434.166666667	Pulse	86.2	
Bi	209	He	169081	0.2	253636.603333333	Pulse	66.7	IS Q-06
Bi	209	NoGas	326061	0.8	432307.666666667	Pulse	75.4	

IFA ok JB 06/03/19

Quantitation Report ICPMS5

File Name	020ICSB.d		
File Path	C:\Agilent\ICPMH\1\DATA\9E31026.b		
Acq Time	5/31/2019 15:51:53	Sample Type	
Sample Name	**9E31026-IFB1**		
Comment	**A19E235**	ICSB Last Calib	05/31/2019 15:21:49
Prep Dilution	1.0000	Vial: 1112	
Total Dilution	**1.0000**	Operator Name	ICPMS Analyst

FullQuant Table

Element	Mass	ISTD	Tune Mode	Raw Conc	Corrected Conc.	Units	RSD(%)	ExpectedValue	QC Flag
Be	9	6	NoGas	0.005	0.005	ppb	49.6		
Na	23	45	H2	279785.546	279785.546	ppb	2.9		
Mg	24	45	He	103841.331	103841.331	ppb	1.5	100000	
Al	27	45	He	103748.488	103748.488	ppb	2.0	100000	
K	39	45	He	96948.935	96948.935	ppb	0.2	100000	
Ca	44	45	H2	324467.04	324467.040	ppb	2.5		
Ti	47	45	NoGas	2091.706	2091.706	ppb	2.0		
V	51	74	He	221.674	221.674	ppb	0.8	200	
Cr	52	74	He	201.498	201.498	ppb	0.9	200	
Mn	55	74	He	217.249	217.249	ppb	1.3	200	
Fe	56	74	H2	268252.446	268252.446	ppb	3.6		
Fe	57	74	H2	265546.356	265546.356	ppb	3.5		
Co	59	74	NoGas	213.654	213.654	ppb	2.6		
Ni	60	74	He	195.086	195.086	ppb	0.4	200	
Cu	65	74	He	193.322	193.322	ppb	0.8	200	
Cu	65	74	NoGas	193.408	193.408	ppb	0.9		
Zn	66	74	He	95.006	95.006	ppb	1.8	100	
As	75	74	He	100.357	100.357	ppb	1.0	100	
Se	78	74	H2	99.354	99.354	ppb	2.5	100	
Mo	95	103	He	2278.17	2278.170	ppb	0.9	2000	
Ag	107	103	He	47.622	47.622	ppb	0.4	50	
Cd	111	103	NoGas	99.241	99.241	ppb	0.8		
Sb	121	103	He	0.138	0.138	ppb	20.2	0.9	
Ba	138	159	He	2.029	2.029	ppb	7.3	2	> +/- 10%
W	182	159	NoGas	64.172	64.172	ppb	0.8		
Hg	201	159	NoGas	2026.163	2026.163	ppt	1.1		
Tl	205	159	He	0.002	0.002	ppb	135.2	0.9	
Pb	208	159	NoGas	0.745	0.745	ppb	2.8		

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD Recovery %	QC Flag
Li	6	NoGas	537147	1.0	580078.48	Pulse	92.6	
Sc	45	H2	1009210	2.4	1520020.26333333	Pulse	66.4	IS Q-06
Sc	45	He	129398	1.6	167054.08	Pulse	77.5	
Sc	45	NoGas	1467887	1.6	1673960.24	Analog	87.7	
Ge	74	H2	321390	2.8	506714.153333333	Pulse	63.4	IS Q-06
Ge	74	He	74153	1.0	102244.75	Pulse	72.5	
Ge	74	NoGas	356084	0.5	442849.693333333	Pulse	80.4	
Rh	103	He	191669	0.3	288468.213333333	Pulse	66.4	IS Q-06
Rh	103	NoGas	340696	0.4	471098.29	Pulse	72.3	
Tb	159	He	305068	0.4	394255.233333333	Pulse	77.4	
Tb	159	NoGas	668959	0.1	795434.166666667	Pulse	84.1	
Bi	209	He	170878	0.7	253636.603333333	Pulse	67.4	IS Q-06
Bi	209	NoGas	316959	0.4	432307.666666667	Pulse	73.3	

IFB OK
VB 06/05/19

Quantitation Report - ICPMS5

Sample Name:	**9051429-BLK1**	Total Dilution:	**10.0000**
File Name:	022SMPL.d	Vial:	3101
File Path:	C:\Agilent\ICPMH\1\DATA\9E31026.b	Sample Type:	Sample
Acq Time:	5/31/2019 16:12:46	Last Calib:	05/31/2019 15:21:49
Comment:	**9051429 Solid Biglist-CoMo**		

FullQuant Table:

Element	Mass	ISTD	Tune Mode	Raw Conc	Units	RSD(%)	CPS	LDR	QC Flag
Be	9	6	NoGas	-0.004	ppb	N/A	10	100	
Na	23	45	H2	12.511	ppb	7.7	52422	50000	
Mg	24	45	He	1.671	ppb	2.0	878	50000	
Al	27	45	He	4.196	ppb	10.5	571	50000	
K	39	45	He	-6.806	ppb	N/A	13009	50000	
Ca	44	45	H2	8.448	ppb	13.4	2371	50000	
Ti	47	45	NoGas	0.083	ppb	9.4	88	2500	
V	51	74	He	-0.126	ppb	N/A	687	500	
Cr	52	74	He	0.031	ppb	180.1	240	1000	
Mn	55	74	He	0.006	ppb	255.2	91	2500	
Fe	56	74	H2	6.192	ppb	0.9	54224	50000	
Fe	57	74	H2	6.218	ppb	8.1	1853	50000	
Co	59	74	NoGas	0.023	ppb	38.0	401	500	
Ni	60	74	He	-0.043	ppb	N/A	176	1000	
Cu	65	74	He	-0.074	ppb	N/A	264	1000	
Cu	65	74	NoGas	0.027	ppb	258.8	550	1000	
Zn	66	74	He	-0.096	ppb	N/A	90	2500	
As	75	74	He	0.031	ppb	78.2	15	500	
Se	78	74	H2	0.009	ppb	40.7	5	100	
Mo	95	103	He	0.071	ppb	27.8	73	100	
Ag	107	103	He	0.003	ppb	56.8	9	100	
Cd	111	103	NoGas	-0.018	ppb	N/A	-11	1000	
Sb	121	103	He	0.002	ppb	649.7	11	100	
Ba	138	159	He	-0.004	ppb	N/A	102	2500	
W	182	159	NoGas	0.004	ppb	12.9	48	40	
Hg	201	159	NoGas	-0.67	ppt	N/A	9	4000	
Tl	205	159	He	0.003	ppb	113.9	80	100	
Pb	208	159	NoGas	-0.007	ppb	N/A	505	500	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD %	QC Flag
Li	6	NoGas	492190	1.4	580078.48	Pulse	84.8	
Sc	45	H2	1224812	1.9	1520020.26333333	Analog	80.6	
Sc	45	He	138386	0.9	167054.08	Pulse	82.8	
Sc	45	NoGas	1377670	1.7	1673960.24	Analog	82.3	
Ge	74	H2	400563	0.8	506714.153333333	Pulse	79.1	
Ge	74	He	85144	0.8	102244.75	Pulse	83.3	
Ge	74	NoGas	359650	0.2	442849.693333333	Pulse	81.2	
Rh	103	He	245625	0.8	288468.213333333	Pulse	85.1	
Rh	103	NoGas	398964	0.8	471098.29	Pulse	84.7	
Tb	159	He	351842	1.1	394255.233333333	Pulse	89.2	
Tb	159	NoGas	695668	0.1	795434.166666667	Pulse	87.5	
Bi	209	He	232664	0.7	253636.603333333	Pulse	91.7	
Bi	209	NoGas	391436	0.7	432307.666666667	Pulse	90.5	

06/03/19

Quantitation Report - ICPMS5

Sample Name:	**9051429-BS1**	Total Dilution:	**10.0000**
File Name:	023SMPL.d	Vial:	3102
File Path:	C:\Agilent\ICPMH\1\DATA\9E31026.b	Sample Type:	Sample
Acq Time:	5/31/2019 16:17:00	Last Calib:	05/31/2019 15:21:49
Comment:	**9051429 Solid Biglist-CoMo**		

FullQuant Table:

Element	Mass	ISTD	Tune Mode	Raw Conc	Units	RSD(%)	CPS	LDR	QC Flag
Be	9	6	NoGas	25.302	ppb	2.7	34824	100	
Na	23	45	H2	2535.954	ppb	0.7	7014995	50000	
Mg	24	45	He	2461.137	ppb	1.0	599457	50000	
Al	27	45	He	2466.613	ppb	0.3	298609	50000	
K	39	45	He	2489.874	ppb	0.6	566610	50000	
Ca	44	45	H2	2437.769	ppb	0.4	306114	50000	
Ti	47	45	NoGas	49.538	ppb	1.4	25978	2500	
V	51	74	He	49.732	ppb	1.1	80783	500	
Cr	52	74	He	47.689	ppb	1.6	95955	1000	
Mn	55	74	He	49.925	ppb	0.4	64019	2500	
Fe	56	74	H2	2556.975	ppb	0.6	17060068	50000	
Fe	57	74	H2	2416.314	ppb	0.4	401851	50000	
Co	59	74	NoGas	51.712	ppb	1.5	351166	500	
Ni	60	74	He	51.418	ppb	2.0	36055	1000	
Cu	65	74	He	52.309	ppb	2.4	45686	1000	
Cu	65	74	NoGas	52.823	ppb	1.2	78509	1000	
Zn	66	74	He	51.175	ppb	0.9	14233	2500	
As	75	74	He	48.785	ppb	0.7	8617	500	
Se	78	74	H2	22.671	ppb	4.0	4122	100	
Mo	95	103	He	24.2	ppb	0.8	21753	100	
Ag	107	103	He	24.263	ppb	0.7	69369	100	
Cd	111	103	NoGas	48.935	ppb	0.5	47536	1000	
Sb	121	103	He	23.399	ppb	1.2	22864	100	
Ba	138	159	He	50.672	ppb	0.2	110904	2500	
W	182	159	NoGas	0.016	ppb	19.9	93	40	
Hg	201	159	NoGas	985.381	ppt	1.3	442	4000	
Tl	205	159	He	24.611	ppb	0.6	129190	100	
Pb	208	159	NoGas	51.888	ppb	0.4	534891	500	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD %	QC Flag
Li	6	NoGas	512443	1.4	580078.48	Pulse	88.3	
Sc	45	H2	1282517	0.3	1520020.26333333	Analog	84.4	
Sc	45	He	144839	0.9	167054.08	Pulse	86.7	
Sc	45	NoGas	1466838	1.0	1673960.24	Analog	87.6	
Ge	74	H2	411994	0.5	506714.153333333	Pulse	81.3	
Ge	74	He	88204	0.5	102244.75	Pulse	86.3	
Ge	74	NoGas	379908	0.3	442849.693333333	Pulse	85.8	
Rh	103	He	252253	0.5	288468.213333333	Pulse	87.4	
Rh	103	NoGas	412744	0.2	471098.29	Pulse	87.6	
Tb	159	He	363000	0.4	394255.233333333	Pulse	92.1	
Tb	159	NoGas	722267	0.4	795434.166666667	Pulse	90.8	
Bi	209	He	236672	0.8	253636.603333333	Pulse	93.3	
Bi	209	NoGas	402824	0.4	432307.666666667	Pulse	93.2	

Quantitation Report - ICPMS5

Sample Name:	**A9E0902-01**	Total Dilution:	**10.0000**
File Name:	024SMPL.d	Vial:	3103
File Path:	C:\Agilent\ICPMH\1\DATA\9E31026.b	Sample Type:	Sample
Acq Time:	5/31/2019 16:21:13	Last Calib:	05/31/2019 15:21:49
Comment:	**9051429 Solid Biglist-CoMo**		

FullQuant Table:

Element	Mass	ISTD	Tune Mode	Raw Conc	Units	RSD(%)	CPS	LDR	QC Flag
Be	9	6	NoGas	0.519	ppb	5.2	751	100	
Na	23	45	H2	234.511	ppb	0.9	704127	50000	
Mg	24	45	He	1419.167	ppb	0.6	356532	50000	
Al	27	45	He	7646.261	ppb	0.4	953932	50000	
K	39	45	He	472.217	ppb	1.0	123394	50000	
Ca	44	45	H2	3893.973	ppb	0.9	515102	50000	
Ti	47	45	NoGas	1719.851	ppb	0.5	968478	2500	
V	51	74	He	84.336	ppb	1.1	137930	500	
Cr	52	74	He	2.17	ppb	1.4	4597	1000	
Mn	55	74	He	327.35	ppb	0.6	424111	2500	
Fe	56	74	H2	44615.27	ppb	0.3	300578831	50000	
Fe	57	74	H2	44363.065	ppb	0.7	7440604	50000	
Co	59	74	NoGas	8.046	ppb	1.7	56787	500	
Ni	60	74	He	4.112	ppb	5.7	3114	1000	
Cu	65	74	He	10.019	ppb	3.6	9128	1000	
Cu	65	74	NoGas	10.574	ppb	2.3	16713	1000	
Zn	66	74	He	40.704	ppb	2.9	11475	2500	
As	75	74	He	2.666	ppb	3.2	486	500	
Se	78	74	H2	0.116	ppb	18.0	25	100	
Mo	95	103	He	0.457	ppb	13.0	423	100	
Ag	107	103	He	0.031	ppb	9.8	89	100	
Cd	111	103	NoGas	0.553	ppb	4.0	557	1000	
Sb	121	103	He	0.129	ppb	9.7	136	100	
Ba	138	159	He	95.932	ppb	1.0	215102	2500	
W	182	159	NoGas	0.114	ppb	8.4	472	40	
Hg	201	159	NoGas	17.21	ppt	29.7	17	4000	
Tl	205	159	He	0.102	ppb	3.7	620	100	
Pb	208	159	NoGas	6.273	ppb	1.0	67760	500	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD %	QC Flag
Li	6	NoGas	528002	2.2	580078.48	Pulse	91.0	
Sc	45	H2	1353452	0.6	1520020.26333333	Analog	89.0	
Sc	45	He	149292	0.3	167054.08	Pulse	89.4	
Sc	45	NoGas	1578002	0.6	1673960.24	Analog	94.3	
Ge	74	H2	416360	0.4	506714.153333333	Pulse	82.2	
Ge	74	He	89220	0.3	102244.75	Pulse	87.3	
Ge	74	NoGas	393207	0.3	442849.693333333	Pulse	88.8	
Rh	103	He	252760	0.5	288468.213333333	Pulse	87.6	
Rh	103	NoGas	423221	0.8	471098.29	Pulse	89.8	
Tb	159	He	372085	0.9	394255.233333333	Pulse	94.4	
Tb	159	NoGas	750726	0.2	795434.166666667	Pulse	94.4	
Bi	209	He	240505	0.8	253636.603333333	Pulse	94.8	
Bi	209	NoGas	407389	0.5	432307.666666667	Pulse	94.2	

Quantitation Report - ICPMS5

Sample Name:	**9051429-DUP1**	Total Dilution:	**10.0000**
File Name:	025SMPL.d	Vial:	3104
File Path:	C:\Agilent\ICPMH\1\DATA\9E31026.b	Sample Type:	Sample
Acq Time:	5/31/2019 16:27:50	Last Calib:	05/31/2019 15:21:49
Comment:	**9051429 Solid Biglist-CoMo**		

FullQuant Table:

Element	Mass	ISTD	Tune Mode	Raw Conc	Units	RSD(%)	CPS	LDR	QC Flag
Be	9	6	NoGas	0.27	ppb	4.2	397	100	
Na	23	45	H2	209.744	ppb	0.9	648177	50000	
Mg	24	45	He	1069.378	ppb	0.7	274343	50000	
Al	27	45	He	4826.871	ppb	0.1	614686	50000	
K	39	45	He	343.871	ppb	3.0	96032	50000	
Ca	44	45	H2	2744.642	ppb	1.4	372787	50000	
Ti	47	45	NoGas	1251.82	ppb	0.6	694320	2500	
V	51	74	He	49.854	ppb	1.0	83864	500	
Cr	52	74	He	1.212	ppb	4.9	2715	1000	
Mn	55	74	He	209.718	ppb	0.3	278212	2500	
Fe	56	74	H2	21068.706	ppb	0.7	148446480	50000	
Fe	57	74	H2	21040.884	ppb	1.5	3690847	50000	
Co	59	74	NoGas	4.51	ppb	0.5	31817	500	
Ni	60	74	He	1.409	ppb	7.5	1237	1000	
Cu	65	74	He	6.64	ppb	0.5	6311	1000	
Cu	65	74	NoGas	7.195	ppb	3.5	11500	1000	
Zn	66	74	He	25.72	ppb	2.4	7470	2500	
As	75	74	He	0.47	ppb	2.9	96	500	
Se	78	74	H2	0.102	ppb	26.3	23	100	
Mo	95	103	He	0.232	ppb	12.2	228	100	
Ag	107	103	He	0.015	ppb	27.9	44	100	
Cd	111	103	NoGas	0.325	ppb	8.2	331	1000	
Sb	121	103	He	0.02	ppb	66.5	30	100	
Ba	138	159	He	49.76	ppb	0.5	112389	2500	
W	182	159	NoGas	0.065	ppb	3.7	279	40	
Hg	201	159	NoGas	10.099	ppt	82.1	14	4000	
Tl	205	159	He	0.029	ppb	4.9	230	100	
Pb	208	159	NoGas	4.308	ppb	0.3	45940	500	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD %	QC Flag
Li	6	NoGas	524921	2.0	580078.48	Pulse	90.5	
Sc	45	H2	1388001	0.5	1520020.26333333	Analog	91.3	
Sc	45	He	152379	0.4	167054.08	Pulse	91.2	
Sc	45	NoGas	1554279	0.9	1673960.24	Analog	92.9	
Ge	74	H2	435416	0.6	506714.153333333	Pulse	85.9	
Ge	74	He	91344	0.2	102244.75	Pulse	89.3	
Ge	74	NoGas	391473	0.5	442849.693333333	Pulse	88.4	
Rh	103	He	260932	0.6	288468.213333333	Pulse	90.5	
Rh	103	NoGas	425276	1.2	471098.29	Pulse	90.3	
Tb	159	He	374589	0.4	394255.233333333	Pulse	95.0	
Tb	159	NoGas	737997	0.7	795434.166666667	Pulse	92.8	
Bi	209	He	242012	1.2	253636.603333333	Pulse	95.4	
Bi	209	NoGas	405860	1.5	432307.666666667	Pulse	93.9	

Quantitation Report - ICPMS5

Sample Name:	**9051429-MS1**	Total Dilution:	**10.0000**
File Name:	026SMPL.d	Vial:	3105
File Path:	C:\Agilent\ICPMH\1\DATA\9E31026.b	Sample Type:	Sample
Acq Time:	5/31/2019 16:32:44	Last Calib:	05/31/2019 15:21:49
Comment:	**9051429 Solid Biglist-CoMo**		

FullQuant Table:

Element	Mass	ISTD	Tune Mode	Raw Conc	Units	RSD(%)	CPS	LDR	QC Flag
Be	9	6	NoGas	24.327	ppb	2.0	34802	100	
Na	23	45	H2	2664.065	ppb	0.8	7824943	50000	
Mg	24	45	He	3657.045	ppb	0.7	928594	50000	
Al	27	45	He	9780.391	ppb	0.5	1234368	50000	
K	39	45	He	2837.666	ppb	0.7	671163	50000	
Ca	44	45	H2	5686.478	ppb	0.4	756278	50000	
Ti	47	45	NoGas	1444.15	ppb	1.4	809807	2500	
V	51	74	He	124.186	ppb	0.6	204583	500	
Cr	52	74	He	49.506	ppb	1.0	101706	1000	
Mn	55	74	He	340.771	ppb	0.1	445671	2500	
Fe	56	74	H2	30786.823	ppb	0.4	212529361	50000	
Fe	57	74	H2	30548.591	ppb	0.4	5250197	50000	
Co	59	74	NoGas	56.468	ppb	0.0	396832	500	
Ni	60	74	He	52.719	ppb	1.7	37742	1000	
Cu	65	74	He	61.677	ppb	0.3	54947	1000	
Cu	65	74	NoGas	62.597	ppb	1.1	96181	1000	
Zn	66	74	He	84.046	ppb	0.9	23789	2500	
As	75	74	He	47.613	ppb	0.3	8588	500	
Se	78	74	H2	22.192	ppb	2.0	4178	100	
Mo	95	103	He	24.126	ppb	2.0	21778	100	
Ag	107	103	He	23.791	ppb	0.7	68299	100	
Cd	111	103	NoGas	47.46	ppb	0.7	47047	1000	
Sb	121	103	He	20.959	ppb	3.5	20563	100	
Ba	138	159	He	122.268	ppb	0.8	273908	2500	
W	182	159	NoGas	0.085	ppb	30.7	358	40	
Hg	201	159	NoGas	1010.612	ppt	1.5	466	4000	
Tl	205	159	He	23.667	ppb	0.6	127241	100	
Pb	208	159	NoGas	55.903	ppb	0.6	593273	500	

ISTD Table:

Element	Mass	Tune Mode	CPS	RSD(%)	ISTD Ref CPS	Det.	ISTD %	QC Flag
Li	6	NoGas	532558	2.6	580078.48	Pulse	91.8	
Sc	45	H2	1361969	0.1	1520020.26333333	Analog	89.6	
Sc	45	He	151030	0.4	167054.08	Pulse	90.4	
Sc	45	NoGas	1571512	1.1	1673960.24	Analog	93.9	
Ge	74	H2	426615	0.2	506714.153333333	Pulse	84.2	
Ge	74	He	90063	0.4	102244.75	Pulse	88.1	
Ge	74	NoGas	393169	1.1	442849.693333333	Pulse	88.8	
Rh	103	He	253306	0.8	288468.213333333	Pulse	87.8	
Rh	103	NoGas	421179	1.4	471098.29	Pulse	89.4	
Tb	159	He	371788	0.9	394255.233333333	Pulse	94.3	
Tb	159	NoGas	743637	0.7	795434.166666667	Pulse	93.5	
Bi	209	He	237266	0.9	253636.603333333	Pulse	93.5	
Bi	209	NoGas	405751	1.0	432307.666666667	Pulse	93.9	

Continuing Calibration Verification (CCV) Report ICPMS5

Sample Name	9E31026-CCV	**Total Dilution**	1.0000
File Name	032_CCV.d	**Sample Type**	CCV
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b	**ISTD Ref FileName**	004CALB.d
Acq Time	5/31/2019 16:58:52	**Comment**	A19E109 JPB 05/29

1 JPB 06/03/19

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	Low	High	% Rec	Flag
Na	23	45	H2	4040.580	ppb	1.0	12240863	4000	90	110	101.01	
Ca	44	45	H2	4005.104	ppb	0.9	550386	4000	90	110	100.13	
Fe	56	74	H2	4120.385	ppb	0.1	30163619	4000	90	110	103.01	
Fe	57	74	H2	3897.573	ppb	0.4	710856	4000	90	110	97.44	
Se	78	74	H2	39.809	ppb	2.2	7942	40	90	110	99.52	
Mg	24	45	He	4054.642	ppb	0.7	1045562	4000	90	110	101.37	
Al	27	45	He	3948.509	ppb	0.2	506171	4000	90	110	98.71	
K	39	45	He	3968.949	ppb	1.3	946971	4000	90	110	99.22	
V	51	74	He	101.237	ppb	0.5	172142	100	90	110	101.24	
Cr	52	74	He	95.739	ppb	0.4	202636	100	90	110	95.74	
Mn	55	74	He	97.843	ppb	0.3	132012	100	90	110	97.84	
Ni	60	74	He	104.131	ppb	2.2	76641	100	90	110	104.13	
Cu	65	74	He	106.464	ppb	0.8	97535	100	90	110	106.46	
Zn	66	74	He	103.587	ppb	1.9	30199	100	90	110	103.59	
As	75	74	He	97.835	ppb	0.2	18185	100	90	110	97.84	
Mo	95	103	He	39.296	ppb	0.5	36633	40	90	110	98.24	
Ag	107	103	He	39.881	ppb	1.4	118256	40	90	110	99.7	
Sb	121	103	He	42.524	ppb	1.2	43089	40	90	110	106.31	
Ba	138	159	He	102.886	ppb	0.9	231809	100	90	110	102.89	
Tl	205	159	He	39.812	ppb	0.5	215230	40	90	110	99.53	
Be	9	6	NoGas	40.544	ppb	0.6	59112	40	90	110	101.36	
Ti	47	45	NoGas	98.822	ppb	1.4	54248	100	90	110	98.82	
Co	59	74	NoGas	103.910	ppb	1.0	732844	100	90	110	103.91	
Cu	65	74	NoGas	107.234	ppb	0.6	165007	100	90	110	107.23	
Cd	111	103	NoGas	97.988	ppb	0.6	96640	100	90	110	97.99	
Hg	201	159	NoGas	850.221	ppt	4.4	388	800	90	110	106.28	
Pb	208	159	NoGas	102.285	ppb	0.4	1069990	100	90	110	102.28	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Analog	1.1	1406186	1520020.26333333	92.5	
Ge	74	H2	Pulse	0.1	452197	506714.153333333	89.2	
Sc	45	He	Pulse	0.5	153386	167054.08	91.8	
Ge	74	He	Pulse	1.1	92866	102244.75	90.8	
Rh	103	He	Pulse	1.0	261649	288468.213333333	90.7	
Tb	159	He	Pulse	1.5	373913	394255.233333333	94.8	
Bi	209	He	Pulse	1.9	241680	253636.603333333	95.3	
Li	6	NoGas	Pulse	2.1	543009	580078.48	93.6	
Sc	45	NoGas	Analog	1.5	1536775	1673960.24	91.8	
Ge	74	NoGas	Pulse	0.3	394694	442849.693333333	89.1	
Rh	103	NoGas	Pulse	0.4	419065	471098.29	89.0	
Tb	159	NoGas	Pulse	0.4	733344	795434.166666667	92.2	
Bi	209	NoGas	Pulse	0.4	402956	432307.666666667	93.2	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	9E31026-CCB 1 B06/03/19
File Name	033_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b
Acq Time	5/31/2019 17:03:06
Sample Type	CCB
Total Dilution	1.0000
Comment	Cal Blk 3%HNO3 0.4%HCl
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**ICPMS Analyst**

QC Analyte Table

Name	Mass	ISTD	Tune Mode	Conc.	Units	Conc. RSD	CPS	Limit	QC Flag
Na	23	45	H2	5.722	ppb	17.5	37601	45	
Ca	44	45	H2	0.571	ppb	169.7	1559	45	
Fe	56	74	H2	0.819	ppb	68.8	20579	22.5	
Fe	57	74	H2	1.384	ppb	66.2	1142	22.5	
Se	78	74	H2	0.048	ppb	50.7	12	0.45	
Mg	24	45	He	0.777	ppb	54.4	761	45	
Al	27	45	He	0.755	ppb	48.7	197	22.5	
K	39	45	He	-5.243	ppb	N/A	15159	45	
V	51	74	He	-0.018	ppb	N/A	956	0.45	
Cr	52	74	He	0.008	ppb	181.9	219	0.45	
Mn	55	74	He	-0.019	ppb	N/A	67	0.45	
Ni	60	74	He	-0.029	ppb	N/A	207	0.45	
Cu	65	74	He	-0.021	ppb	N/A	344	0.45	
Zn	66	74	He	0.115	ppb	80.2	163	1.8	
As	75	74	He	0.071	ppb	70.4	24	0.45	
Mo	95	103	He	0.021	ppb	57.7	33	0.45	
Ag	107	103	He	0.007	ppb	24.0	21	0.09	
Sb	121	103	He	0.013	ppb	68.8	24	0.45	
Ba	138	159	He	0.005	ppb	234.2	132	0.45	
Tl	205	159	He	0.006	ppb	120.4	107	0.09	
Be	9	6	NoGas	0.010	ppb	146.7	32	0.09	
Ti	47	45	NoGas	0.021	ppb	224.4	67	0.45	
Co	59	74	NoGas	0.008	ppb	26.6	350	0.09	
Cu	65	74	NoGas	0.016	ppb	289.7	608	0.45	
Cd	111	103	NoGas	0.016	ppb	5.9	23	0.09	
Hg	201	159	NoGas	3.452	ppt	95.0	11	36	
Pb	208	159	NoGas	0.017	ppb	65.6	816	0.09	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Sc	45	H2	Analog	9.0	1338270	1520020.26333333	88.0	
Ge	74	H2	Pulse	9.9	430174	506714.153333333	84.9	
Sc	45	He	Pulse	1.0	157301	167054.08	94.2	
Ge	74	He	Pulse	0.6	95183	102244.75	93.1	
Rh	103	He	Pulse	0.2	272799	288468.213333333	94.6	

Continuing Calibration Blank (CCB) Report ICPMS6

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Tb	159	He	Pulse	0.6	381412	394255.233333333	96.7	
Bi	209	He	Pulse	0.3	249219	253636.603333333	98.3	
Li	6	NoGas	Pulse	1.7	562313	580078.48	96.9	
Sc	45	NoGas	Analog	2.0	1585618	1673960.24	94.7	
Ge	74	NoGas	Pulse	0.8	409337	442849.693333333	92.4	
Rh	103	NoGas	Pulse	0.5	445246	471098.29	94.5	
Tb	159	NoGas	Pulse	0.5	758288	795434.166666667	95.3	
Bi	209	NoGas	Pulse	0.6	420354	432307.666666667	97.2	

Continuing Calibration Verification (CCV) Report ICPMS5

Sample Name	9E31026-CCV 2 JPB 06/03/19	**Total Dilution**	1.0000
File Name	044_CCV.d	**Sample Type**	CCV
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b	**ISTD Ref FileName**	004CALB.d
Acq Time	5/31/2019 17:52:40	**Comment**	A19E109 JPB 05/29

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	Low	High	% Rec	Flag
Na	23	45	H2	4068.332	ppb	0.8	11741958	4000	90	110	101.71	
Ca	44	45	H2	3937.313	ppb	0.8	515508	4000	90	110	98.43	
Fe	56	74	H2	4201.775	ppb	0.7	28681501	4000	90	110	105.04	
Fe	57	74	H2	3927.851	ppb	0.8	667972	4000	90	110	98.2	
Se	78	74	H2	39.139	ppb	1.5	7281	40	90	110	97.85	
Mg	24	45	He	4128.888	ppb	0.5	1015482	4000	90	110	103.22	
Al	27	45	He	4031.100	ppb	0.5	492863	4000	90	110	100.78	
K	39	45	He	4001.107	ppb	0.7	910397	4000	90	110	100.03	
V	51	74	He	100.617	ppb	0.2	164341	100	90	110	100.62	
Cr	52	74	He	96.024	ppb	0.8	195201	100	90	110	96.02	
Mn	55	74	He	98.232	ppb	0.0	127299	100	90	110	98.23	
Ni	60	74	He	102.272	ppb	1.7	72309	100	90	110	102.27	
Cu	65	74	He	105.164	ppb	1.3	92545	100	90	110	105.16	
Zn	66	74	He	104.038	ppb	1.7	29136	100	90	110	104.04	
As	75	74	He	92.632	ppb	0.7	16538	100	90	110	92.63	
Mo	95	103	He	39.776	ppb	1.7	35463	40	90	110	99.44	
Ag	107	103	He	39.949	ppb	1.2	113302	40	90	110	99.87	
Sb	121	103	He	42.297	ppb	0.7	40996	40	90	110	105.74	
Ba	138	159	He	102.197	ppb	0.8	223560	100	90	110	102.2	
Tl	205	159	He	40.130	ppb	0.4	210619	40	90	110	100.32	
Be	9	6	NoGas	41.271	ppb	0.4	59689	40	90	110	103.18	
Ti	47	45	NoGas	98.772	ppb	1.0	52238	100	90	110	98.77	
Co	59	74	NoGas	103.363	ppb	1.3	697701	100	90	110	103.36	
Cu	65	74	NoGas	107.047	ppb	1.0	157652	100	90	110	107.05	
Cd	111	103	NoGas	97.915	ppb	0.3	93309	100	90	110	97.92	
Hg	201	159	NoGas	811.370	ppt	2.9	363	800	90	110	101.42	
Pb	208	159	NoGas	104.199	ppb	0.6	1066037	100	90	110	104.2	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Analog	0.6	1339629	1520020.26333333	88.1	
Ge	74	H2	Pulse	0.7	421661	506714.153333333	83.2	
Sc	45	He	Pulse	0.7	146298	167054.08	87.6	
Ge	74	He	Pulse	0.4	89197	102244.75	87.2	
Rh	103	He	Pulse	1.0	250263	288468.213333333	86.8	
Tb	159	He	Pulse	1.0	363017	394255.233333333	92.1	
Bi	209	He	Pulse	1.4	235463	253636.603333333	92.8	
Li	6	NoGas	Pulse	1.6	538661	580078.48	92.9	
Sc	45	NoGas	Analog	1.6	1480555	1673960.24	88.4	
Ge	74	NoGas	Pulse	0.3	377765	442849.693333333	85.3	
Rh	103	NoGas	Pulse	0.9	404931	471098.29	86.0	
Tb	159	NoGas	Pulse	0.5	717232	795434.166666667	90.2	
Bi	209	NoGas	Pulse	0.6	402212	432307.666666667	93.0	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	9E31026-CCB 2
File Name	045_CCB.d JB 06/03/19
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b
Acq Time	5/31/2019 17:56:53
Sample Type	CCB
Total Dilution	1.0000
Comment	Cal Blk 3%HNO3 0.4%HCl
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**ICPMS Analyst**

QC Analyte Table

Name	Mass	ISTD	Tune Mode	Conc.	Units	Conc. RSD	CPS	Limit	QC Flag
Na	23	45	H2	16.113	ppb	0.7	68054	45	
Ca	44	45	H2	3.981	ppb	44.5	2019	45	
Fe	56	74	H2	3.313	ppb	3.3	37960	22.5	
Fe	57	74	H2	3.165	ppb	20.1	1452	22.5	
Se	78	74	H2	0.039	ppb	89.3	11	0.45	
Mg	24	45	He	2.075	ppb	23.0	1044	45	
Al	27	45	He	1.489	ppb	53.3	277	22.5	
K	39	45	He	-4.893	ppb	N/A	14425	45	
V	51	74	He	0.090	ppb	63.4	1085	0.45	
Cr	52	74	He	0.033	ppb	68.5	261	0.45	
Mn	55	74	He	0.042	ppb	83.3	143	0.45	
Ni	60	74	He	-0.032	ppb	N/A	194	0.45	
Cu	65	74	He	-0.024	ppb	N/A	324	0.45	
Zn	66	74	He	0.089	ppb	79.0	148	1.8	
As	75	74	He	0.079	ppb	15.7	24	0.45	
Mo	95	103	He	0.041	ppb	31.5	50	0.45	
Ag	107	103	He	0.012	ppb	43.9	36	0.09	
Sb	121	103	He	0.008	ppb	48.8	18	0.45	
Ba	138	159	He	0.013	ppb	24.1	144	0.45	
Tl	205	159	He	-0.002	ppb	N/A	61	0.09	
Be	9	6	NoGas	0.007	ppb	69.3	27	0.09	
Ti	47	45	NoGas	0.062	ppb	15.9	85	0.45	
Co	59	74	NoGas	0.024	ppb	69.9	436	0.09	
Cu	65	74	NoGas	-0.022	ppb	N/A	511	0.45	
Cd	111	103	NoGas	0.022	ppb	65.7	28	0.09	
Hg	201	159	NoGas	4.930	ppt	147.3	11	36	
Pb	208	159	NoGas	0.016	ppb	24.8	773	0.09	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Sc	45	H2	Analog	0.5	1345702	1520020.26333333	88.5	
Ge	74	H2	Pulse	0.2	427542	506714.153333333	84.4	
Sc	45	He	Pulse	0.6	148837	167054.08	89.1	
Ge	74	He	Pulse	0.2	90331	102244.75	88.3	
Rh	103	He	Pulse	0.5	259666	288468.213333333	90.0	

Continuing Calibration Blank (CCB) Report ICPMS6

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Tb	159	He	Pulse	0.7	368705	394255.233333333	93.5	
Bi	209	He	Pulse	0.8	242503	253636.603333333	95.6	
Li	6	NoGas	Pulse	1.3	545555	580078.48	94.0	
Sc	45	NoGas	Analog	1.1	1495795	1673960.24	89.4	
Ge	74	NoGas	Pulse	0.5	382326	442849.693333333	86.3	
Rh	103	NoGas	Pulse	0.1	415581	471098.29	88.2	
Tb	159	NoGas	Pulse	0.4	725752	795434.166666667	91.2	
Bi	209	NoGas	Pulse	0.4	407488	432307.666666667	94.3	

Continuing Calibration Verification (CCV) Report ICPMS5

Sample Name	9E31026-CCV 3 JB 06/03/19	**Total Dilution**	1.0000
File Name	056_CCV.d	**Sample Type**	CCV
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b	**ISTD Ref FileName**	004CALB.d
Acq Time	5/31/2019 18:43:31	**Comment**	A19E109 JPB 05/29

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	Low	High	% Rec	Flag
Na	23	45	H2	4248.797	ppb	1.9	12976303	4000	90	110	106.22	
Ca	44	45	H2	3962.185	ppb	2.5	548925	4000	90	110	99.05	
Fe	56	74	H2	4330.136	ppb	0.6	31063116	4000	90	110	108.25	
Fe	57	74	H2	4024.741	ppb	0.1	719310	4000	90	110	100.62	
Se	78	74	H2	39.686	ppb	1.8	7759	40	90	110	99.22	
Mg	24	45	He	4266.608	ppb	2.1	1098924	4000	90	110	106.67	
Al	27	45	He	4107.553	ppb	0.3	525947	4000	90	110	102.69	
K	39	45	He	4000.298	ppb	0.6	953247	4000	90	110	100.01	
V	51	74	He	101.873	ppb	0.7	172678	100	90	110	101.87	
Cr	52	74	He	96.743	ppb	0.6	204110	100	90	110	96.74	
Mn	55	74	He	100.347	ppb	1.1	134965	100	90	110	100.35	
Ni	60	74	He	103.366	ppb	0.6	75855	100	90	110	103.37	
Cu	65	74	He	105.046	ppb	0.3	95946	100	90	110	105.05	
Zn	66	74	He	103.375	ppb	1.6	30045	100	90	110	103.38	
As	75	74	He	96.618	ppb	0.7	17903	100	90	110	96.62	
Mo	95	103	He	39.864	ppb	2.0	36103	40	90	110	99.66	
Ag	107	103	He	40.025	ppb	0.6	115301	40	90	110	100.06	
Sb	121	103	He	42.445	ppb	2.0	41779	40	90	110	106.11	
Ba	138	159	He	103.064	ppb	1.1	225135	100	90	110	103.06	
Tl	205	159	He	39.266	ppb	0.5	205798	40	90	110	98.16	
Be	9	6	NoGas	40.527	ppb	2.2	62721	40	90	110	101.32	
Ti	47	45	NoGas	98.710	ppb	0.7	54161	100	90	110	98.71	
Co	59	74	NoGas	105.517	ppb	1.6	739429	100	90	110	105.52	
Cu	65	74	NoGas	108.312	ppb	1.2	165606	100	90	110	108.31	
Cd	111	103	NoGas	97.705	ppb	0.6	95449	100	90	110	97.7	
Hg	201	159	NoGas	843.854	ppt	3.5	373	800	90	110	105.48	
Pb	208	159	NoGas	103.479	ppb	0.5	1046512	100	90	110	103.48	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Analog	2.3	1418056	1520020.26333333	93.3	
Ge	74	H2	Pulse	0.0	443136	506714.153333333	87.5	
Sc	45	He	Pulse	0.2	153209	167054.08	91.7	
Ge	74	He	Pulse	0.8	92577	102244.75	90.5	
Rh	103	He	Pulse	0.9	254180	288468.213333333	88.1	
Tb	159	He	Pulse	1.5	362526	394255.233333333	92.0	
Bi	209	He	Pulse	1.4	229729	253636.603333333	90.6	
Li	6	NoGas	Pulse	2.4	576603	580078.48	99.4	
Sc	45	NoGas	Analog	0.9	1536169	1673960.24	91.8	
Ge	74	NoGas	Pulse	0.9	392197	442849.693333333	88.6	
Rh	103	NoGas	Pulse	1.0	415121	471098.29	88.1	
Tb	159	NoGas	Pulse	0.2	708982	795434.166666667	89.1	
Bi	209	NoGas	Pulse	0.4	393395	432307.666666667	91.0	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	9E31026-CCB 4
File Name	058_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b
Acq Time	5/31/2019 18:52:00
Sample Type	CCB
Total Dilution	1.0000
Comment	Cal Blk 3%HNO3 0.4%HCl
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**ICPMS Analyst**

D36/05/19

QC Analyte Table

Name	Mass	ISTD	Tune Mode	Conc.	Units	Conc. RSD	CPS	Limit	QC Flag
Na	23	45	H2	38.794	ppb	2.7	136531	45	
Ca	44	45	H2	1.066	ppb	25.2	1673	45	
Fe	56	74	H2	1.123	ppb	6.2	22954	22.5	
Fe	57	74	H2	1.515	ppb	18.4	1176	22.5	
Se	78	74	H2	0.019	ppb	146.9	7	0.45	
Mg	24	45	He	0.966	ppb	49.8	781	45	
Al	27	45	He	0.840	ppb	72.5	200	22.5	
K	39	45	He	2.598	ppb	45.3	16402	45	
V	51	74	He	-0.031	ppb	N/A	891	0.45	
Cr	52	74	He	-0.001	ppb	N/A	191	0.45	
Mn	55	74	He	0.034	ppb	43.8	134	0.45	
Ni	60	74	He	-0.003	ppb	N/A	216	0.45	
Cu	65	74	He	-0.021	ppb	N/A	329	0.45	
Zn	66	74	He	0.074	ppb	67.1	144	1.8	
As	75	74	He	0.031	ppb	72.2	16	0.45	
Mo	95	103	He	0.007	ppb	111.0	19	0.45	
Ag	107	103	He	0.002	ppb	87.6	7	0.09	
Sb	121	103	He	0.000	ppb	33409.9	10	0.45	
Ba	138	159	He	0.020	ppb	38.6	159	0.45	
Tl	205	159	He	0.000	ppb	N/A	67	0.09	
Be	9	6	NoGas	0.004	ppb	143.1	23	0.09	
Ti	47	45	NoGas	0.027	ppb	125.3	67	0.45	
Co	59	74	NoGas	0.011	ppb	38.7	345	0.09	
Cu	65	74	NoGas	0.024	ppb	58.7	576	0.45	
Cd	111	103	NoGas	0.015	ppb	203.8	21	0.09	
Hg	201	159	NoGas	4.676	ppt	102.7	11	36	
Pb	208	159	NoGas	0.009	ppb	65.4	686	0.09	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Sc	45	H2	Analog	1.2	1374485	1520020.26333333	90.4	
Ge	74	H2	Pulse	0.2	430217	506714.153333333	84.9	
Sc	45	He	Pulse	1.1	151368	167054.08	90.6	
Ge	74	He	Pulse	1.3	90859	102244.75	88.9	
Rh	103	He	Pulse	1.0	260179	288468.213333333	90.2	

Continuing Calibration Blank (CCB) Report ICPMS6

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Tb	159	He	Pulse	0.6	365475	394255.233333333	92.7	
Bi	209	He	Pulse	1.5	238643	253636.603333333	94.1	
Li	6	NoGas	Pulse	1.1	555267	580078.48	95.7	
Sc	45	NoGas	Analog	1.5	1496518	1673960.24	89.4	
Ge	74	NoGas	Pulse	0.6	380749	442849.693333333	86.0	
Rh	103	NoGas	Pulse	0.6	418532	471098.29	88.8	
Tb	159	NoGas	Pulse	1.0	711860	795434.166666667	89.5	
Bi	209	NoGas	Pulse	0.6	395874	432307.666666667	91.6	

Continuing Calibration Verification (CCV) Report ICPMS5

Sample Name	9E31026-CCV 5	**Total Dilution**	1.0000
File Name	070_CCV.d	**Sample Type**	CCV
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b Mg Q-41	**ISTD Ref FileName**	004CALB.d
Acq Time	5/31/2019 19:42:32	**Comment**	A19E109 JPB 05/29

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	Low	High	% Rec	Flag
Na	23	45	H2	4314.499	ppb	0.6	12860599	4000	90	110	107.86	
Ca	44	45	H2	3997.540	ppb	0.4	540553	4000	90	110	99.94	
Fe	56	74	H2	4363.915	ppb	0.9	30574090	4000	90	110	109.1	
Fe	57	74	H2	4033.707	ppb	0.3	704087	4000	90	110	100.84	
Se	78	74	H2	40.092	ppb	1.9	7655	40	90	110	100.23	
Mg	24	45	He	4430.381	ppb	0.4	1119195	4000	90	110	110.76	> +/- 10%
Al	27	45	He	4148.593	ppb	1.2	520973	4000	90	110	103.71	
K	39	45	He	4034.360	ppb	1.6	942661	4000	90	110	100.86	
V	51	74	He	103.311	ppb	0.7	170448	100	90	110	103.31	
Cr	52	74	He	98.669	ppb	0.7	202636	100	90	110	98.67	
Mn	55	74	He	101.875	ppb	1.8	133368	100	90	110	101.88	
Ni	60	74	He	105.151	ppb	1.3	75104	100	90	110	105.15	
Cu	65	74	He	105.942	ppb	0.6	94193	100	90	110	105.94	
Zn	66	74	He	102.721	ppb	1.9	29061	100	90	110	102.72	
As	75	74	He	98.657	ppb	2.1	17794	100	90	110	98.66	
Mo	95	103	He	40.407	ppb	1.6	35754	40	90	110	101.02	
Ag	107	103	He	40.362	ppb	0.3	113624	40	90	110	100.9	
Sb	121	103	He	42.707	ppb	1.5	41076	40	90	110	106.77	
Ba	138	159	He	105.715	ppb	1.4	223965	100	90	110	105.72	
Tl	205	159	He	39.938	ppb	0.9	203015	40	90	110	99.84	
Be	9	6	NoGas	40.023	ppb	3.3	63215	40	90	110	100.06	
Ti	47	45	NoGas	97.521	ppb	3.5	53316	100	90	110	97.52	
Co	59	74	NoGas	104.046	ppb	2.8	727331	100	90	110	104.05	
Cu	65	74	NoGas	106.738	ppb	2.7	162801	100	90	110	106.74	
Cd	111	103	NoGas	96.090	ppb	1.5	93000	100	90	110	96.09	
Hg	201	159	NoGas	828.309	ppt	6.5	364	800	90	110	103.54	
Pb	208	159	NoGas	101.042	ppb	3.3	1016593	100	90	110	101.04	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Analog	0.8	1383612	1520020.26333333	91.0	
Ge	74	H2	Pulse	0.4	432796	506714.153333333	85.4	
Sc	45	He	Pulse	1.3	150270	167054.08	90.0	
Ge	74	He	Pulse	1.0	90118	102244.75	88.1	
Rh	103	He	Pulse	1.4	248387	288468.213333333	86.1	
Tb	159	He	Pulse	1.9	351629	394255.233333333	89.2	
Bi	209	He	Pulse	1.9	224262	253636.603333333	88.4	
Li	6	NoGas	Pulse	1.2	588230	580078.48	101.4	
Sc	45	NoGas	Analog	2.8	1531574	1673960.24	91.5	
Ge	74	NoGas	Pulse	0.7	391269	442849.693333333	88.4	
Rh	103	NoGas	Pulse	0.2	411252	471098.29	87.3	
Tb	159	NoGas	Pulse	1.2	705493	795434.166666667	88.7	
Bi	209	NoGas	Pulse	0.3	386560	432307.666666667	89.4	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	9E31026-CCB
File Name	072_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b
Acq Time	5/31/2019 19:50:59
Sample Type	CCB
Total Dilution	1.0000
Comment	Cal Blk 3%HNO3 0.4%HCl
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**ICPMS Analyst**

6 JB 06/03/19

Na B-02 JB 6/03/19

QC Analyte Table

Name	Mass	ISTD	Tune Mode	Conc.	Units	Conc. RSD	CPS	Limit	QC Flag
Na	23	45	H2	58.725	ppb	2.1	190593	45	> 1/2 MRL
Ca	44	45	H2	2.257	ppb	43.8	1786	45	
Fe	56	74	H2	0.556	ppb	13.0	18444	22.5	
Fe	57	74	H2	0.916	ppb	25.3	1040	22.5	
Se	78	74	H2	0.004	ppb	507.9	4	0.45	
Mg	24	45	He	0.606	ppb	36.2	671	45	
Al	27	45	He	0.722	ppb	22.8	180	22.5	
K	39	45	He	1.794	ppb	132.4	15790	45	
V	51	74	He	-0.089	ppb	N/A	776	0.45	
Cr	52	74	He	-0.014	ppb	N/A	160	0.45	
Mn	55	74	He	0.003	ppb	487.5	90	0.45	
Ni	60	74	He	-0.081	ppb	N/A	157	0.45	
Cu	65	74	He	-0.044	ppb	N/A	301	0.45	
Zn	66	74	He	0.046	ppb	162.2	133	1.8	
As	75	74	He	0.048	ppb	17.9	18	0.45	
Mo	95	103	He	0.021	ppb	78.7	30	0.45	
Ag	107	103	He	0.007	ppb	20.1	19	0.09	
Sb	121	103	He	0.014	ppb	64.7	23	0.45	
Ba	138	159	He	0.006	ppb	98.3	124	0.45	
Tl	205	159	He	-0.004	ppb	N/A	46	0.09	
Be	9	6	NoGas	0.008	ppb	66.7	29	0.09	
Ti	47	45	NoGas	-0.020	ppb	N/A	40	0.45	
Co	59	74	NoGas	0.013	ppb	50.2	353	0.09	
Cu	65	74	NoGas	-0.009	ppb	N/A	518	0.45	
Cd	111	103	NoGas	0.006	ppb	86.5	12	0.09	
Hg	201	159	NoGas	-5.644	ppt	N/A	6	36	
Pb	208	159	NoGas	0.012	ppb	50.9	686	0.09	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Sc	45	H2	Analog	1.5	1340410	1520020.26333333	88.2	
Ge	74	H2	Pulse	0.6	417484	506714.153333333	82.4	
Sc	45	He	Pulse	0.4	147378	167054.08	88.2	
Ge	74	He	Pulse	0.6	88786	102244.75	86.8	
Rh	103	He	Pulse	0.3	251221	288468.213333333	87.1	

Continuing Calibration Blank (CCB) Report ICPMS6

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Tb	159	He	Pulse	0.7	356120	394255.233333333	90.3	
Bi	209	He	Pulse	0.9	231949	253636.603333333	91.4	
Li	6	NoGas	Pulse	1.7	549538	580078.48	94.7	
Sc	45	NoGas	Analog	0.7	1449037	1673960.24	86.6	
Ge	74	NoGas	Pulse	0.7	372914	442849.693333333	84.2	
Rh	103	NoGas	Pulse	0.7	406410	471098.29	86.3	
Tb	159	NoGas	Pulse	0.0	689083	795434.166666667	86.6	
Bi	209	NoGas	Pulse	0.6	385591	432307.666666667	89.2	

Continuing Calibration Verification (CCV) Report ICPMS5

Sample Name	9E31026-CCV	**Total Dilution**	1.0000
File Name	083_CCV.d	**Sample Type**	CCV
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b	**ISTD Ref FileName**	004CALB.d
Acq Time	5/31/2019 20:37:20	**Comment**	A19E109 JPB 05/29

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	Low	High	% Rec	Flag
Na	23	45	H2	4136.143	ppb	0.7	12284875	4000	90	110	103.4	
Ca	44	45	H2	4010.729	ppb	0.9	540375	4000	90	110	100.27	
Fe	56	74	H2	4315.082	ppb	0.3	30131638	4000	90	110	107.88	
Fe	57	74	H2	4009.556	ppb	0.7	697528	4000	90	110	100.24	
Se	78	74	H2	40.539	ppb	1.1	7714	40	90	110	101.35	
Mg	24	45	He	4114.237	ppb	0.9	1038066	4000	90	110	102.86	
Al	27	45	He	4012.542	ppb	0.8	503289	4000	90	110	100.31	
K	39	45	He	4014.345	ppb	0.5	937018	4000	90	110	100.36	
V	51	74	He	101.382	ppb	0.3	168411	100	90	110	101.38	
Cr	52	74	He	96.045	ppb	0.3	198586	100	90	110	96.04	
Mn	55	74	He	98.743	ppb	0.6	130146	100	90	110	98.74	
Ni	60	74	He	104.323	ppb	0.5	75018	100	90	110	104.32	
Cu	65	74	He	106.662	ppb	0.9	95463	100	90	110	106.66	
Zn	66	74	He	102.314	ppb	0.4	29143	100	90	110	102.31	
As	75	74	He	98.339	ppb	0.5	17856	100	90	110	98.34	
Mo	95	103	He	39.217	ppb	1.1	35388	40	90	110	98.04	
Ag	107	103	He	39.728	ppb	1.1	114030	40	90	110	99.32	
Sb	121	103	He	42.109	ppb	1.1	41303	40	90	110	105.27	
Ba	138	159	He	103.988	ppb	0.2	225181	100	90	110	103.99	
Tl	205	159	He	39.105	ppb	0.8	203166	40	90	110	97.76	
Be	9	6	NoGas	41.049	ppb	0.6	61785	40	90	110	102.62	
Ti	47	45	NoGas	97.032	ppb	3.5	54314	100	90	110	97.03	
Co	59	74	NoGas	104.403	ppb	0.8	730528	100	90	110	104.4	
Cu	65	74	NoGas	107.109	ppb	0.2	163521	100	90	110	107.11	
Cd	111	103	NoGas	96.760	ppb	1.8	94332	100	90	110	96.76	
Hg	201	159	NoGas	787.328	ppt	2.0	352	800	90	110	98.42	
Pb	208	159	NoGas	102.005	ppb	0.9	1042045	100	90	110	102	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Analog	0.7	1378591	1520020.26333333	90.7	
Ge	74	H2	Pulse	0.7	431342	506714.153333333	85.1	
Sc	45	He	Pulse	0.5	150084	167054.08	89.8	
Ge	74	He	Pulse	0.6	90723	102244.75	88.7	
Rh	103	He	Pulse	0.7	253259	288468.213333333	87.8	
Tb	159	He	Pulse	0.5	359339	394255.233333333	91.1	
Bi	209	He	Pulse	0.3	229429	253636.603333333	90.5	
Li	6	NoGas	Pulse	2.8	560672	580078.48	96.7	
Sc	45	NoGas	Analog	1.6	1567519	1673960.24	93.6	
Ge	74	NoGas	Pulse	0.7	391594	442849.693333333	88.4	
Rh	103	NoGas	Pulse	2.2	414352	471098.29	88.0	
Tb	159	NoGas	Pulse	0.9	716182	795434.166666667	90.0	
Bi	209	NoGas	Pulse	1.1	393403	432307.666666667	91.0	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	9E31026-CCB 7
File Name	084_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b
Acq Time	5/31/2019 20:41:34
Sample Type	CCB
Total Dilution	1.0000
Comment	Cal Blk 3%HNO3 0.4%HCl
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**ICPMS Analyst**

JB 06/03/19

QC Analyte Table

Name	Mass	ISTD	Tune Mode	Conc.	Units	Conc. RSD	CPS	Limit	QC Flag
Na	23	45	H2	12.435	ppb	2.3	59933	45	
Ca	44	45	H2	-0.724	ppb	N/A	1464	45	
Fe	56	74	H2	1.845	ppb	7.5	28975	22.5	
Fe	57	74	H2	2.056	ppb	2.1	1315	22.5	
Se	78	74	H2	0.050	ppb	16.0	13	0.45	
Mg	24	45	He	0.106	ppb	135.1	564	45	
Al	27	45	He	1.467	ppb	38.6	280	22.5	
K	39	45	He	0.004	ppb	70674.6	15854	45	
V	51	74	He	-0.123	ppb	N/A	750	0.45	
Cr	52	74	He	0.006	ppb	320.5	209	0.45	
Mn	55	74	He	0.042	ppb	58.0	147	0.45	
Ni	60	74	He	-0.056	ppb	N/A	181	0.45	
Cu	65	74	He	-0.045	ppb	N/A	312	0.45	
Zn	66	74	He	0.112	ppb	40.5	158	1.8	
As	75	74	He	0.038	ppb	52.1	17	0.45	
Mo	95	103	He	0.042	ppb	42.4	51	0.45	
Ag	107	103	He	0.007	ppb	23.9	21	0.09	
Sb	121	103	He	0.007	ppb	132.0	17	0.45	
Ba	138	159	He	0.012	ppb	32.1	140	0.45	
Tl	205	159	He	0.007	ppb	58.1	106	0.09	
Be	9	6	NoGas	0.005	ppb	143.1	26	0.09	
Ti	47	45	NoGas	0.112	ppb	42.4	117	0.45	
Co	59	74	NoGas	0.008	ppb	24.2	335	0.09	
Cu	65	74	NoGas	-0.001	ppb	N/A	560	0.45	
Cd	111	103	NoGas	0.016	ppb	88.0	22	0.09	
Hg	201	159	NoGas	2.791	ppt	206.9	10	36	
Pb	208	159	NoGas	0.015	ppb	24.5	746	0.09	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Sc	45	H2	Analog	0.3	1404846	1520020.26333333	92.4	
Ge	74	H2	Pulse	0.4	445559	506714.153333333	87.9	
Sc	45	He	Pulse	0.7	151863	167054.08	90.9	
Ge	74	He	Pulse	0.6	92292	102244.75	90.3	
Rh	103	He	Pulse	1.1	260071	288468.213333333	90.2	

Continuing Calibration Blank (CCB) Report ICPMS6

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Tb	159	He	Pulse	0.5	361887	394255.233333333	91.8	
Bi	209	He	Pulse	0.7	235886	253636.603333333	93.0	
Li	6	NoGas	Pulse	1.7	563938	580078.48	97.2	
Sc	45	NoGas	Analog	0.9	1566758	1673960.24	93.6	
Ge	74	NoGas	Pulse	0.6	394353	442849.693333333	89.0	
Rh	103	NoGas	Pulse	1.1	425481	471098.29	90.3	
Tb	159	NoGas	Pulse	0.6	709681	795434.166666667	89.2	
Bi	209	NoGas	Pulse	0.5	392409	432307.666666667	90.8	

Continuing Calibration Verification (CCV) Report ICPMS5

Sample Name	9E31026-CCV 7 JPB 6/03/19	**Total Dilution**	1.0000
File Name	095_CCV.d	**Sample Type**	CCV
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b	**ISTD Ref FileName**	004CALB.d
Acq Time	5/31/2019 21:27:55	**Comment**	A19E109 JPB 05/29

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	Low	High	% Rec	Flag
Na	23	45	H2	3930.369	ppb	2.1	12228408	4000	90	110	98.26	
Ca	44	45	H2	3842.856	ppb	2.6	542339	4000	90	110	96.07	
Fe	56	74	H2	4148.020	ppb	2.5	30323277	4000	90	110	103.7	
Fe	57	74	H2	3821.978	ppb	2.3	696134	4000	90	110	95.55	
Se	78	74	H2	38.935	ppb	3.3	7756	40	90	110	97.34	
Mg	24	45	He	4080.375	ppb	2.7	1053943	4000	90	110	102.01	
Al	27	45	He	3921.619	ppb	0.7	503577	4000	90	110	98.04	
K	39	45	He	3971.081	ppb	0.2	949130	4000	90	110	99.28	
V	51	74	He	101.412	ppb	1.9	170648	100	90	110	101.41	
Cr	52	74	He	96.057	ppb	1.3	201199	100	90	110	96.06	
Mn	55	74	He	98.108	ppb	1.4	130993	100	90	110	98.11	
Ni	60	74	He	103.630	ppb	1.9	75489	100	90	110	103.63	
Cu	65	74	He	105.106	ppb	1.9	95296	100	90	110	105.11	
Zn	66	74	He	101.212	ppb	1.2	29207	100	90	110	101.21	
As	75	74	He	97.989	ppb	1.7	18024	100	90	110	97.99	
Mo	95	103	He	39.253	ppb	0.5	35872	40	90	110	98.13	
Ag	107	103	He	39.275	ppb	0.1	114174	40	90	110	98.19	
Sb	121	103	He	41.330	ppb	2.3	41052	40	90	110	103.32	
Ba	138	159	He	102.599	ppb	1.3	224027	100	90	110	102.6	
Tl	205	159	He	39.288	ppb	1.2	205823	40	90	110	98.22	
Be	9	6	NoGas	40.757	ppb	1.4	61081	40	90	110	101.89	
Ti	47	45	NoGas	99.239	ppb	2.0	55027	100	90	110	99.24	
Co	59	74	NoGas	104.517	ppb	0.6	736671	100	90	110	104.52	
Cu	65	74	NoGas	107.050	ppb	1.4	164628	100	90	110	107.05	
Cd	111	103	NoGas	97.162	ppb	0.9	94976	100	90	110	97.16	
Hg	201	159	NoGas	769.612	ppt	6.1	341	800	90	110	96.2	
Pb	208	159	NoGas	101.885	ppb	0.1	1030925	100	90	110	101.88	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Analog	2.3	1444411	1520020.26333333	95.0	
Ge	74	H2	Pulse	1.9	451709	506714.153333333	89.1	
Sc	45	He	Pulse	0.6	153652	167054.08	92.0	
Ge	74	He	Pulse	1.4	91913	102244.75	89.9	
Rh	103	He	Pulse	0.9	256494	288468.213333333	88.9	
Tb	159	He	Pulse	0.9	362362	394255.233333333	91.9	
Bi	209	He	Pulse	1.6	231629	253636.603333333	91.3	
Li	6	NoGas	Pulse	1.7	558128	580078.48	96.2	
Sc	45	NoGas	Analog	1.7	1552709	1673960.24	92.8	
Ge	74	NoGas	Pulse	0.4	394454	442849.693333333	89.1	
Rh	103	NoGas	Pulse	0.9	415357	471098.29	88.2	
Tb	159	NoGas	Pulse	0.3	709338	795434.166666667	89.2	
Bi	209	NoGas	Pulse	0.3	386217	432307.666666667	89.3	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	9E31026-CCB 8 06/03/19
File Name	096_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b
Acq Time	5/31/2019 21:32:10
Sample Type	CCB
Total Dilution	1.0000
Comment	Cal Blk 3%HNO3 0.4%HCl
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**ICPMS Analyst**

QC Analyte Table

Name	Mass	ISTD	Tune Mode	Conc.	Units	Conc. RSD	CPS	Limit	QC Flag
Na	23	45	H2	11.201	ppb	2.4	57269	45	
Ca	44	45	H2	-0.434	ppb	N/A	1533	45	
Fe	56	74	H2	4.652	ppb	2.5	49573	22.5	
Fe	57	74	H2	4.218	ppb	19.2	1715	22.5	
Se	78	74	H2	0.046	ppb	64.3	13	0.45	
Mg	24	45	He	0.120	ppb	253.8	581	45	
Al	27	45	He	2.263	ppb	23.5	390	22.5	
K	39	45	He	3.023	ppb	63.4	16956	45	
V	51	74	He	-0.064	ppb	N/A	856	0.45	
Cr	52	74	He	0.000	ppb	N/A	198	0.45	
Mn	55	74	He	0.074	ppb	23.4	191	0.45	
Ni	60	74	He	-0.062	ppb	N/A	178	0.45	
Cu	65	74	He	-0.032	ppb	N/A	327	0.45	
Zn	66	74	He	0.031	ppb	138.0	136	1.8	
As	75	74	He	0.043	ppb	19.0	18	0.45	
Mo	95	103	He	0.018	ppb	114.3	29	0.45	
Ag	107	103	He	0.010	ppb	47.0	29	0.09	
Sb	121	103	He	0.014	ppb	82.9	24	0.45	
Ba	138	159	He	0.023	ppb	13.0	164	0.45	
Tl	205	159	He	0.002	ppb	110.7	78	0.09	
Be	9	6	NoGas	0.010	ppb	59.4	33	0.09	
Ti	47	45	NoGas	0.155	ppb	48.7	143	0.45	
Co	59	74	NoGas	0.013	ppb	50.3	376	0.09	
Cu	65	74	NoGas	0.006	ppb	533.5	581	0.45	
Cd	111	103	NoGas	0.011	ppb	185.6	18	0.09	
Hg	201	159	NoGas	7.133	ppt	45.2	12	36	
Pb	208	159	NoGas	0.021	ppb	41.0	806	0.09	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Sc	45	H2	Analog	0.6	1431460	1520020.26333333	94.2	
Ge	74	H2	Pulse	0.5	448848	506714.153333333	88.6	
Sc	45	He	Pulse	0.7	155525	167054.08	93.1	
Ge	74	He	Pulse	0.1	93071	102244.75	91.0	
Rh	103	He	Pulse	1.1	263341	288468.213333333	91.3	

Continuing Calibration Blank (CCB) Report ICPMS6

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Tb	159	He	Pulse	0.8	362141	394255.233333333	91.9	
Bi	209	He	Pulse	1.2	233517	253636.603333333	92.1	
Li	6	NoGas	Pulse	2.1	568794	580078.48	98.1	
Sc	45	NoGas	Analog	1.8	1593506	1673960.24	95.2	
Ge	74	NoGas	Pulse	0.7	402379	442849.693333333	90.9	
Rh	103	NoGas	Pulse	1.3	431694	471098.29	91.6	
Tb	159	NoGas	Pulse	0.4	717089	795434.166666667	90.2	
Bi	209	NoGas	Pulse	0.2	393242	432307.666666667	91.0	

Continuing Calibration Verification (CCV) Report ICPMS5

Sample Name	9E31026-CCV 8 JPB 06/03/19	**Total Dilution**	1.0000
File Name	097_CCV.d	**Sample Type**	CCV
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b	**ISTD Ref FileName**	004CALB.d
Acq Time	5/31/2019 21:36:23	**Comment**	A19E109 JPB 05/30

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	Conc. RSD	CPS	ExpValue	Low	High	% Rec	Flag
Na	23	45	H2	4103.958	ppb	1.0	12170288	4000	90	110	102.6	
Ca	44	45	H2	4018.672	ppb	1.4	540580	4000	90	110	100.47	
Fe	56	74	H2	4249.557	ppb	1.3	29599208	4000	90	110	106.24	
Fe	57	74	H2	3980.538	ppb	1.1	690749	4000	90	110	99.51	
Se	78	74	H2	40.158	ppb	1.7	7624	40	90	110	100.4	
Mg	24	45	He	4137.199	ppb	2.6	1032577	4000	90	110	103.43	
Al	27	45	He	4043.390	ppb	3.7	501577	4000	90	110	101.08	
K	39	45	He	4072.060	ppb	2.7	939967	4000	90	110	101.8	
V	51	74	He	102.087	ppb	0.5	167067	100	90	110	102.09	
Cr	52	74	He	97.260	ppb	1.0	198111	100	90	110	97.26	
Mn	55	74	He	98.900	ppb	0.6	128426	100	90	110	98.9	
Ni	60	74	He	103.737	ppb	0.6	73494	100	90	110	103.74	
Cu	65	74	He	106.160	ppb	0.8	93610	100	90	110	106.16	
Zn	66	74	He	103.202	ppb	0.8	28961	100	90	110	103.2	
As	75	74	He	99.386	ppb	1.0	17779	100	90	110	99.39	
Mo	95	103	He	40.789	ppb	1.2	35906	40	90	110	101.97	
Ag	107	103	He	40.322	ppb	0.3	112908	40	90	110	100.8	
Sb	121	103	He	43.298	ppb	0.7	41428	40	90	110	108.25	
Ba	138	159	He	105.236	ppb	1.2	222805	100	90	110	105.24	
Tl	205	159	He	39.609	ppb	1.7	201202	40	90	110	99.02	
Be	9	6	NoGas	40.648	ppb	1.1	60535	40	90	110	101.62	
Ti	47	45	NoGas	96.351	ppb	1.3	53764	100	90	110	96.35	
Co	59	74	NoGas	103.330	ppb	0.5	721625	100	90	110	103.33	
Cu	65	74	NoGas	106.301	ppb	1.4	161966	100	90	110	106.3	
Cd	111	103	NoGas	96.035	ppb	1.7	93390	100	90	110	96.04	
Hg	201	159	NoGas	809.141	ppt	3.4	357	800	90	110	101.14	
Pb	208	159	NoGas	100.714	ppb	1.1	1015784	100	90	110	100.71	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Analog	0.8	1376500	1520020.26333333	90.6	
Ge	74	H2	Pulse	1.1	430297	506714.153333333	84.9	
Sc	45	He	Pulse	2.6	148524	167054.08	88.9	
Ge	74	He	Pulse	0.7	89381	102244.75	87.4	
Rh	103	He	Pulse	0.9	247064	288468.213333333	85.6	
Tb	159	He	Pulse	0.6	351351	394255.233333333	89.1	
Bi	209	He	Pulse	0.1	223782	253636.603333333	88.2	
Li	6	NoGas	Pulse	2.7	554775	580078.48	95.6	
Sc	45	NoGas	Analog	1.0	1562185	1673960.24	93.3	
Ge	74	NoGas	Pulse	0.8	390839	442849.693333333	88.3	
Rh	103	NoGas	Pulse	1.9	413300	471098.29	87.7	
Tb	159	NoGas	Pulse	1.2	707107	795434.166666667	88.9	
Bi	209	NoGas	Pulse	0.8	382509	432307.666666667	88.5	

Continuing Calibration Blank (CCB) Report ICPMS6

Sample Name	9E31026-CCB 9 06/03/19
File Name	098_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b
Acq Time	5/31/2019 21:40:36
Sample Type	CCB
Total Dilution	1.0000
Comment	Cal Blk 3%HNO3 0.4%HCl
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**ICPMS Analyst**

QC Analyte Table

Name	Mass	ISTD	Tune Mode	Conc.	Units	Conc. RSD	CPS	Limit	QC Flag
Na	23	45	H2	9.573	ppb	3.7	50932	45	
Ca	44	45	H2	-0.249	ppb	N/A	1519	45	
Fe	56	74	H2	3.195	ppb	2.0	38080	22.5	
Fe	57	74	H2	3.147	ppb	25.0	1486	22.5	
Se	78	74	H2	0.051	ppb	28.6	13	0.45	
Mg	24	45	He	-0.191	ppb	N/A	504	45	
Al	27	45	He	2.155	ppb	44.7	380	22.5	
K	39	45	He	0.902	ppb	375.1	16556	45	
V	51	74	He	-0.090	ppb	N/A	819	0.45	
Cr	52	74	He	-0.014	ppb	N/A	170	0.45	
Mn	55	74	He	0.033	ppb	55.2	137	0.45	
Ni	60	74	He	-0.082	ppb	N/A	166	0.45	
Cu	65	74	He	-0.044	ppb	N/A	319	0.45	
Zn	66	74	He	0.092	ppb	84.5	154	1.8	
As	75	74	He	0.057	ppb	50.6	21	0.45	
Mo	95	103	He	0.022	ppb	16.5	33	0.45	
Ag	107	103	He	0.006	ppb	41.8	18	0.09	
Sb	121	103	He	0.016	ppb	36.5	27	0.45	
Ba	138	159	He	0.044	ppb	97.0	213	0.45	
Tl	205	159	He	0.006	ppb	80.0	100	0.09	
Be	9	6	NoGas	0.009	ppb	94.2	30	0.09	
Ti	47	45	NoGas	0.074	ppb	31.6	95	0.45	
Co	59	74	NoGas	0.012	ppb	100.6	368	0.09	
Cu	65	74	NoGas	-0.025	ppb	N/A	525	0.45	
Cd	111	103	NoGas	0.010	ppb	69.8	16	0.09	
Hg	201	159	NoGas	-2.078	ppt	N/A	8	36	
Pb	208	159	NoGas	0.019	ppb	47.1	775	0.09	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Sc	45	H2	Analog	2.9	1395698	1520020.26333333	91.8	
Ge	74	H2	Pulse	1.3	438305	506714.153333333	86.5	
Sc	45	He	Pulse	1.9	156601	167054.08	93.7	
Ge	74	He	Pulse	2.1	93936	102244.75	91.9	
Rh	103	He	Pulse	2.3	265438	288468.213333333	92.0	

Continuing Calibration Blank (CCB) Report ICPMS6

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC flag
Tb	159	He	Pulse	3.0	366210	394255.233333333	92.9	
Bi	209	He	Pulse	2.6	235820	253636.603333333	93.0	
Li	6	NoGas	Pulse	1.5	558763	580078.48	96.3	
Sc	45	NoGas	Analog	2.2	1559408	1673960.24	93.2	
Ge	74	NoGas	Pulse	0.5	396027	442849.693333333	89.4	
Rh	103	NoGas	Pulse	0.2	424226	471098.29	90.1	
Tb	159	NoGas	Pulse	0.4	704086	795434.166666667	88.5	
Bi	209	NoGas	Pulse	0.1	388166	432307.666666667	89.8	

CRL Verification ICPMS5

Sample Name	9E31026-CRL4
File Name	099CRL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b
Acq Time	5/31/2019 21:44:51
Sample Type	CRL1
Total Dilution	1.0000
Comment	A19E285 JPB 05/30
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**ICPMS Analyst**

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QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	% Rec	%QC Low	%QC High	Flag
Na	23	45	H2	22.160	ppb	0.4	90474	246.22	70	130	<>CRL1 NR<MRL<R-11
Ca	44	45	H2	10.095	ppb	6.5	2984	112.17	70	130	
Fe	56	74	H2	10.759	ppb	1.0	93831	119.54	70	130	
Fe	57	74	H2	11.658	ppb	3.6	3057	129.53	70	130	
Se	78	74	H2	0.178	ppb	9.9	39	98.89	70	130	
Mg	24	45	He	8.134	ppb	9.2	2620	90.38	70	130	
Al	27	45	He	10.902	ppb	9.6	1482	121.13	70	130	
K	39	45	He	16.285	ppb	17.2	19698	180.94	70	130	<>CRL1 NR<MRL<R-11
V	51	74	He	0.073	ppb	11.3	1083	40.56	70	130	<>CRL1 NR<MRL<R-11
Cr	52	74	He	0.161	ppb	12.9	538	89.44	70	130	
Mn	55	74	He	0.195	ppb	6.3	353	108.33	70	130	
Ni	60	74	He	0.130	ppb	46.0	318	72.22	70	130	
Cu	65	74	He	0.143	ppb	62.5	484	79.44	70	130	
Zn	66	74	He	1.130	ppb	4.7	453	627.78	70	130	<>CRL1 NR<MRL<R-11
As	75	74	He	0.249	ppb	28.1	56	138.33	70	130	<>CRL1 NR<MRL<R-11
Mo	95	103	He	0.178	ppb	16.1	178	98.89	70	130	
Ag	107	103	He	0.207	ppb	2.0	612	115	70	130	
Sb	121	103	He	0.180	ppb	5.8	192	100	70	130	
Ba	138	159	He	0.213	ppb	4.6	576	118.33	70	130	
Tl	205	159	He	0.190	ppb	7.7	1056	105.56	70	130	
Be	9	6	NoGas	0.190	ppb	25.0	304	105.56	70	130	
Ti	47	45	NoGas	0.209	ppb	41.7	175	116.11	70	130	
Co	59	74	NoGas	0.192	ppb	12.0	1666	106.67	70	130	
Cu	65	74	NoGas	0.137	ppb	42.8	788	76.11	70	130	
Cd	111	103	NoGas	0.185	ppb	21.6	194	102.78	70	130	
Hg	201	159	NoGas	9.700	ppt	41.6	13	134.72	70	130	<>CRL1 NR<MRL<R-11
Pb	208	159	NoGas	0.190	ppb	8.0	2516	105.56	70	130	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Analog	0.2	1423048	1520020.26333333	93.6	
Ge	74	H2	Pulse	0.1	448392	506714.153333333	88.5	
Sc	45	He	Pulse	0.6	152334	167054.08	91.2	
Ge	74	He	Pulse	0.3	92662	102244.75	90.6	
Rh	103	He	Pulse	0.4	261140	288468.213333333	90.5	

JPB 06/05/19

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Tb	159	He	Pulse	0.3	360310	394255.233333333	91.4	
Bi	209	He	Pulse	0.3	230659	253636.603333333	90.9	
Li	6	NoGas	Pulse	1.8	564929	580078.48	97.4	
Sc	45	NoGas	Analog	1.4	1597393	1673960.24	95.4	
Ge	74	NoGas	Pulse	0.8	403084	442849.693333333	91.0	
Rh	103	NoGas	Pulse	0.4	428934	471098.29	91.0	
Tb	159	NoGas	Pulse	0.7	710728	795434.166666667	89.4	
Bi	209	NoGas	Pulse	0.2	390560	432307.666666667	90.3	

CRL Verification ICPMS5

Sample Name	9E31026-CRL5
File Name	100_CRL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b
Acq Time	5/31/2019 21:49:05
Sample Type	CRL2
Total Dilution	1.0000
Comment	A19E286 JPB 05/30
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**ICPMS Analyst**

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QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	% Rec	%QC Low	%QC High	Flag
Na	23	45	H2	69.384	ppb	1.5	238553	154.19	70	130	<>CRL2 NR<MRL<R-11
Ca	44	45	H2	47.314	ppb	2.5	8268	105.14	70	130	
Fe	57	74	H2	45.855	ppb	1.5	9356	101.9	70	130	
Se	78	74	H2	0.864	ppb	21.2	177	96	70	130	
Mg	24	45	He	42.670	ppb	4.4	11786	94.82	70	130	
Al	27	45	He	43.511	ppb	4.6	5794	96.69	70	130	
K	39	45	He	67.187	ppb	2.4	32454	149.3	70	130	<>CRL2 NR<MRL<R-11
V	51	74	He	0.835	ppb	7.1	2401	92.78	70	130	
Cr	52	74	He	0.853	ppb	10.5	2022	94.78	70	130	
Mn	55	74	He	0.914	ppb	7.8	1338	101.56	70	130	
Ni	60	74	He	0.899	ppb	14.4	893	99.89	70	130	
Cu	65	74	He	1.055	ppb	5.3	1333	117.22	70	130	
Zn	66	74	He	1.155	ppb	20.1	467	128.33	70	130	
As	75	74	He	0.992	ppb	2.2	197	110.22	70	130	
Mo	95	103	He	0.942	ppb	0.8	899	104.67	70	130	
Ag	107	103	He	0.882	ppb	1.7	2644	98	70	130	
Sb	121	103	He	0.880	ppb	4.5	911	97.78	70	130	
Ba	138	159	He	0.929	ppb	11.7	2154	103.22	70	130	
Tl	205	159	He	0.901	ppb	3.7	4815	100.11	70	130	
Be	9	6	NoGas	0.956	ppb	4.8	1476	106.22	70	130	
Ti	47	45	NoGas	1.026	ppb	10.1	636	114	70	130	
Co	59	74	NoGas	0.978	ppb	2.5	7343	108.67	70	130	
Cu	65	74	NoGas	1.064	ppb	3.1	2246	118.22	70	130	
Cd	111	103	NoGas	0.880	ppb	6.5	900	97.78	70	130	
Hg	201	159	NoGas	36.361	ppt	12.1	25	101	70	130	
Pb	208	159	NoGas	0.918	ppb	5.6	9883	102	70	130	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Analog	1.0	1444666	1520020.26333333	95.0	
Ge	74	H2	Pulse	0.4	454362	506714.153333333	89.7	
Sc	45	He	Pulse	0.4	156678	167054.08	93.8	
Ge	74	He	Pulse	0.7	93896	102244.75	91.8	
Rh	103	He	Pulse	0.1	264392	288468.213333333	91.7	
Tb	159	He	Pulse	0.3	364338	394255.233333333	92.4	

JPB 6/03/19

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Bi	209	He	Pulse	1.1	233120	253636.603333333	91.9	
Li	6	NoGas	Pulse	1.5	568198	580078.48	98.0	
Sc	45	NoGas	Analog	1.0	1588622	1673960.24	94.9	
Ge	74	NoGas	Pulse	0.4	404099	442849.693333333	91.2	
Rh	103	NoGas	Pulse	0.9	431192	471098.29	91.5	
Tb	159	NoGas	Pulse	0.5	710074	795434.166666667	89.3	
Bi	209	NoGas	Pulse	1.1	393158	432307.666666667	90.9	

CRL Verification ICPMS5

Sample Name	9E31026-CRL6	1104
File Name	101CRL_.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b	
Acq Time	5/31/2019 21:53:19	
Sample Type	CRL3	
Total Dilution	1.0000	
Comment	A19E287 JPB 05/30	
ISTD Ref FileName	004CALB.d	
Sample QC Pass/Fial	Pass	
ISTD QC Pass/Fail	Pass	
Operator	**ICPMS Analyst**	

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	% Rec	%QC Low	%QC High	Flag
Na	23	45	H2	96.848	ppb	1.1	321306	107.61	70	130	
Ca	44	45	H2	88.870	ppb	2.7	14006	98.74	70	130	
Fe	57	74	H2	88.173	ppb	3.1	17113	97.97	70	130	
Se	78	74	H2	1.907	ppb	6.0	386	105.94	70	130	
Mg	24	45	He	87.576	ppb	1.1	23437	97.31	70	130	
Al	27	45	He	89.596	ppb	1.2	11739	99.55	70	130	
K	39	45	He	94.187	ppb	4.1	38635	104.65	70	130	
V	51	74	He	1.870	ppb	4.3	4182	103.89	70	130	
Cr	52	74	He	1.705	ppb	3.4	3855	94.72	70	130	
Mn	55	74	He	1.865	ppb	2.0	2641	103.61	70	130	
Ni	60	74	He	1.917	ppb	7.4	1652	106.5	70	130	
Cu	65	74	He	1.796	ppb	2.8	2022	99.78	70	130	
Zn	66	74	He	1.898	ppb	3.7	687	105.44	70	130	
As	75	74	He	1.879	ppb	3.8	364	104.39	70	130	
Mo	95	103	He	1.716	ppb	1.2	1619	95.33	70	130	
Ag	107	103	He	1.860	ppb	4.2	5543	103.33	70	130	
Sb	121	103	He	1.687	ppb	2.5	1728	93.72	70	130	
Ba	138	159	He	1.922	ppb	2.8	4284	106.78	70	130	
Tl	205	159	He	1.856	ppb	0.9	9731	103.11	70	130	
Be	9	6	NoGas	1.908	ppb	4.0	2946	106	70	130	
Ti	47	45	NoGas	1.895	ppb	6.7	1140	105.28	70	130	
Co	59	74	NoGas	1.877	ppb	2.1	13856	104.28	70	130	
Cu	65	74	NoGas	1.858	ppb	8.3	3495	103.22	70	130	
Cd	111	103	NoGas	1.829	ppb	0.3	1862	101.61	70	130	
Hg	201	159	NoGas	77.436	ppt	6.3	43	107.55	70	130	
Pb	208	159	NoGas	1.849	ppb	0.9	19427	102.72	70	130	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Analog	0.8	1433149	1520020.26333333	94.3	
Ge	74	H2	Pulse	0.6	454710	506714.153333333	89.7	
Sc	45	He	Pulse	0.9	155520	167054.08	93.1	
Ge	74	He	Pulse	0.2	94143	102244.75	92.1	
Rh	103	He	Pulse	0.6	262969	288468.213333333	91.2	
Tb	159	He	Pulse	0.4	360175	394255.233333333	91.4	

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Bi	209	He	Pulse	1.3	232831	253636.603333333	91.8	
Li	6	NoGas	Pulse	1.6	571389	580078.48	98.5	
Sc	45	NoGas	Analog	0.6	1603377	1673960.24	95.8	
Ge	74	NoGas	Pulse	0.8	404664	442849.693333333	91.4	
Rh	103	NoGas	Pulse	0.3	431178	471098.29	91.5	
Tb	159	NoGas	Pulse	0.1	714462	795434.166666667	89.8	
Bi	209	NoGas	Pulse	0.7	395077	432307.666666667	91.4	

CRL Verification ICPMS5

Sample Name	9E31026-CRL7	1105
File Name	102CRL4.d	
Data Path Name	C:\Agilent\ICPMH\1\DATA\9E31026.b	
Acq Time	5/31/2019 21:57:34	
Sample Type	CRL4	
Total Dilution	1.0000	
Comment	A19E288 JPB 05/30	
ISTD Ref FileName	004CALB.d	
Sample QC Pass/Fial	Pass	
ISTD QC Pass/Fail	Pass	
Operator	**ICPMS Analyst**	

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	% Rec	%QC Low	%QC High	Flag
Na	23	45	H2	186.196	ppb	1.9	598510	103.44	70	130	
Ca	44	45	H2	175.480	ppb	3.6	26182	97.49	70	130	
Fe	56	74	H2	187.152	ppb	1.2	1402614	103.97	70	130	
Fe	57	74	H2	171.414	ppb	3.2	32583	95.23	70	130	
Se	78	74	H2	3.671	ppb	3.6	745	101.97	70	130	
Mg	24	45	He	175.131	ppb	0.4	46478	97.3	70	130	
Al	27	45	He	174.928	ppb	3.8	22909	97.18	70	130	
K	39	45	He	183.521	ppb	1.7	60092	101.96	70	130	
V	51	74	He	3.678	ppb	4.9	7255	102.17	70	130	
Cr	52	74	He	3.462	ppb	5.6	7594	96.17	70	130	
Mn	55	74	He	3.558	ppb	1.9	4937	98.83	70	130	
Ni	60	74	He	3.629	ppb	2.1	2916	100.81	70	130	
Cu	65	74	He	3.981	ppb	2.7	4029	110.58	70	130	
Zn	66	74	He	3.563	ppb	2.0	1172	98.97	70	130	
As	75	74	He	3.739	ppb	3.4	712	103.86	70	130	
Mo	95	103	He	3.525	ppb	6.1	3318	97.92	70	130	
Ag	107	103	He	3.671	ppb	1.4	10960	101.97	70	130	
Sb	121	103	He	3.572	ppb	2.0	3654	99.22	70	130	
Ba	138	159	He	3.705	ppb	0.5	8178	102.92	70	130	
Tl	205	159	He	3.692	ppb	1.1	19350	102.56	70	130	
Be	9	6	NoGas	3.547	ppb	2.7	5550	98.53	70	130	
Ti	47	45	NoGas	3.634	ppb	5.7	2169	100.94	70	130	
Co	59	74	NoGas	3.619	ppb	2.4	27030	100.53	70	130	
Cu	65	74	NoGas	3.742	ppb	3.3	6601	103.94	70	130	
Cd	111	103	NoGas	3.495	ppb	3.4	3608	97.08	70	130	
Hg	201	159	NoGas	157.777	ppt	5.6	79	109.57	70	130	
Pb	208	159	NoGas	3.653	ppb	1.1	38322	101.47	70	130	

QC ISTD Table

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Sc	45	H2	Analog	1.7	1437792	1520020.26333333	94.6	
Ge	74	H2	Pulse	0.6	457882	506714.153333333	90.4	
Sc	45	He	Pulse	0.0	156066	167054.08	93.4	
Ge	74	He	Pulse	0.1	93805	102244.75	91.7	
Rh	103	He	Pulse	1.0	263433	288468.213333333	91.3	

CRL Verification ICPMS5

Name	Mass	Tune Mode	Det.	CPS RSD	CPS	ISTD Ref CPS	ISTD Recovery %	QC Flag
Tb	159	He	Pulse	0.5	361329	394255.233333333	91.6	
Bi	209	He	Pulse	0.9	233805	253636.603333333	92.2	
Li	6	NoGas	Pulse	2.8	581324	580078.48	100.2	
Sc	45	NoGas	Analog	0.5	1629265	1673960.24	97.3	
Ge	74	NoGas	Pulse	1.0	413611	442849.693333333	93.4	
Rh	103	NoGas	Pulse	1.1	437932	471098.29	93.0	
Tb	159	NoGas	Pulse	0.8	724351	795434.166666667	91.1	
Bi	209	NoGas	Pulse	0.5	399621	432307.666666667	92.4	

APEX LABORATORIES, LLC
6700 SW Sandburg St. Tigard OR 97223 phone 503-718-2323

Metals IFA/IFB Metals Internal Standards Recovery Summary

A19E234 IFA

A19E235 IFB

A9E0902 (I.S. Tables)

Analytical Standard Record

Apex Laboratories

A19E234

Description:	ICSA working std	Expires:	06/01/19
Standard Type:	Calibration Standa	Prepared:	05/20/19
Solvent:	3.5% HNO3 + 0.4% HCl	Prepared By:	John P. Beck
Final Volume (mls):	50	Department:	Metals
Vials:	1	Last Edit:	06/10/19 16:51 by jsj

Prepare as needed.

Analyte	CAS Number	Concentration	Units
Aluminum	7429-90-5	100	ug/mL
Calcium	7440-70-2	300	ug/mL
Iron	7439-89-6	250	ug/mL
Magnesium	7439-95-4	100	ug/mL
Molybdenum	7439-98-7	2	ug/mL
Phosphorus	7723-14-0	100	ug/mL
Potassium	7440-09-7	100	ug/mL
Sodium	7440-23-5	250	ug/mL
Titanium	7440-32-6	2	ug/mL
Tungsten	7440-33-7	0.1	ug/mL

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
A18L138	6020A ICS Interferents A	12/11/18	John P. Beck	12/03/19	02/08/19 14:53 by arf	5
A19C191	Conc. HCl - Omnitrace	03/04/19	Kevin Taucher	03/04/22	03/22/19 15:55 by jsj	0.2
A19C372	Conc. HNO3 - Omnitrace	03/29/19	Kevin Taucher	03/29/24	04/02/19 14:01 by jsj	1.75
A19D312	1 W 10 ppm intermediate	04/23/19	John P. Beck	06/01/19	06/10/19 16:51 by jsj	0.5

Reviewed By Date

Analytical Standard Record

Apex Laboratories

A19E235

Description:	ICSA+B working std	Expires:	06/01/19
Standard Type:	Calibration Standa	Prepared:	05/20/19
Solvent:	3.5% HNO3 + 0.4% HCl	Prepared By:	John P. Beck
Final Volume (mls):	50	Department:	Metals
Vials:	1	Last Edit:	06/10/19 16:51 by jsj

Prepared as needed.

Analyte	CAS Number	Concentration	Units
Aluminum	7429-90-5	100	ug/mL
Arsenic	7440-38-2	0.1	ug/mL
Cadmium	7440-43-9	0.1	ug/mL
Calcium	7440-70-2	300	ug/mL
Chromium	7440-47-3	0.2	ug/mL
Cobalt	7440-48-4	0.2	ug/mL
Copper	7440-50-8	0.2	ug/mL
Iron	7439-89-6	250	ug/mL
Magnesium	7439-95-4	100	ug/mL
Manganese	7439-96-5	0.2	ug/mL
Mercury	7439-97-6	0.002	ug/mL
Molybdenum	7439-98-7	2	ug/mL
Nickel	7440-02-0	0.2	ug/mL
Phosphorus	7723-14-0	100	ug/mL
Potassium	7440-09-7	100	ug/mL
Selenium	7782-49-2	0.1	ug/mL
Silver	7440-22-4	0.05	ug/mL
Sodium	7440-23-5	250	ug/mL
Titanium	7440-32-6	2	ug/mL
Tungsten	7440-33-7	0.1	ug/mL
Vanadium	7440-62-2	0.2	ug/mL
Zinc	7440-66-6	0.1	ug/mL

Reviewed By Date

Analytical Standard Record

Apex Laboratories

A19E235

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	Last Edit	(mls)
A18L138	6020A ICS Interferents A	12/11/18	John P. Beck	12/03/19	02/08/19 14:53 by arf	5
A18L139	6020A & CLP-M ICS Analytes B	12/11/18	John P. Beck	12/03/19	12/18/18 13:34 by jsj	0.5
A19C191	Conc. HCl - Omnitrace	03/04/19	Kevin Taucher	03/04/22	03/22/19 15:55 by jsj	0.2
A19C372	Conc. HNO3 - Omnitrace	03/29/19	Kevin Taucher	03/29/24	04/02/19 14:01 by jsj	1.75
A19D217	Hg Stock 1.00ppm Std Primary	04/15/19	Emily S. Stefansson	08/10/19	04/15/19 18:15 by mnp	0.1
A19D312	1 W 10 ppm intermediate	04/23/19	John P. Beck	06/01/19	06/10/19 16:51 by jsj	0.5

Reviewed By Date

		6 Li (ISTD) [NoGas]	45 Sc (ISTD) [H2]	45 Sc (ISTD) [He]	45 Sc (ISTD) [NoGas]	74 Ge (ISTD) [H2]	74 Ge (ISTD) [He]	74 Ge (ISTD) [NoGas]	103 Rh (ISTD) [He]	103 Rh (ISTD) [NoGas]	159 Tb (ISTD) [He]	159 Tb (ISTD) [NoGas]	209 Bi (ISTD) [He]	209 Bi (ISTD) [NoGas]
Acq. Date-Time	Sample Name	QC Measured Value	QC Measured Value	QC Measured Value	QC Measured Value	QC Measured Value	QC Measured Value	QC Measured Value	QC Measured Value	QC Measured Value	QC Measured Value	QC Measured Value	QC Measured Value	QC Measured Value
05/31/2019 14:11	rinse													
05/31/2019 14:16	rinse													
05/31/2019 14:20	cal blk													
05/31/2019 14:24	9E31026-CAL0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
05/31/2019 14:28	9E31026-CAL1	99.10	102.57	100.32	101.23	100.84	99.22	98.83	100.01	99.39	99.22	98.92	99.09	99.18
05/31/2019 14:33	9E31026-CAL2	98.76	100.88	100.12	100.67	98.90	99.59	98.90	99.37	98.66	99.23	98.69	99.12	98.97
05/31/2019 14:37	9E31026-CAL3	99.34	100.48	99.76	101.33	99.03	99.60	98.88	98.85	98.42	99.05	98.36	99.04	99.64
05/31/2019 14:42	9E31026-CAL4	100.01	101.36	99.70	101.98	99.25	99.07	99.51	98.69	98.86	98.09	99.22	98.75	99.84
05/31/2019 14:46	9E31026-CAL5	98.83	100.15	98.78	101.25	98.06	98.12	97.69	97.96	97.38	98.22	98.06	98.66	99.99
05/31/2019 14:51	9E31026-CAL6	96.99	96.64	97.31	96.80	94.68	96.10	95.05	95.33	93.99	97.00	96.07	96.16	97.15
05/31/2019 14:55	9E31026-CAL7	96.24	92.88	92.73	96.33	91.10	91.32	93.12	90.97	92.32	93.98	96.72	93.80	97.70
05/31/2019 15:00	9E31026-CAL8	92.59	86.32	87.36	91.38	84.39	88.27	87.74	86.61	86.36	91.78	92.75	91.11	92.10
05/31/2019 15:04	9E31026-CAL9	95.13	82.22	84.71	93.17	77.10	81.96	85.74	78.34	81.41	86.53	92.47	81.32	87.17
05/31/2019 15:19	9E31026-ICV1	96.36	93.76	93.13	92.84	90.44	91.55	89.60	89.98	88.96	92.40	92.39	91.13	92.95
05/31/2019 15:23	9E31026-ICB1	96.56	92.44	93.13	92.95	89.51	92.15	91.36	94.00	92.30	93.71	93.32	94.49	95.69
05/31/2019 15:27	9E31026-CRL1	96.92	93.58	93.00	93.35	90.69	92.09	91.61	92.77	92.18	93.43	93.55	94.13	95.33
05/31/2019 15:32	9E31026-CRL2	97.13	93.60	93.10	93.15	91.22	92.99	91.58	93.33	92.62	94.39	94.31	94.68	96.28
05/31/2019 15:36	9E31026-CRL3	97.31	95.66	93.25	93.58	91.68	93.26	91.99	93.33	92.34	94.31	93.97	95.70	96.26
05/31/2019 15:47	9E31026-IFA1	93.15	68.34	78.28	89.11	64.37	73.44	81.43	66.88	73.22	77.63	86.22	66.66	75.42
05/31/2019 15:51	9E31026-IFB1	92.60	66.39	77.46	87.69	63.43	72.52	80.41	66.44	72.32	77.38	84.10	67.37	73.32
05/31/2019 16:08	rinse	86.08	84.05	84.14	82.55	81.93	85.43	81.48	85.92	85.28	90.54	87.59	92.64	91.34
05/31/2019 16:12	9051429-BLK1	84.85	80.58	82.84	82.30	79.05	83.27	81.21	85.15	84.69	89.24	87.46	91.73	90.55
05/31/2019 16:17	9051429-BS1	88.34	84.38	86.70	87.63	81.31	86.27	85.79	87.45	87.61	92.07	90.80	93.31	93.18
05/31/2019 16:21	A9E0902-01	91.02	89.04	89.37	94.27	82.17	87.26	88.79	87.62	89.84	94.38	94.38	94.82	94.24
05/31/2019 16:27	9051429-DUP1	90.49	91.31	91.22	92.85	85.93	89.34	88.40	90.45	90.27	95.01	92.78	95.42	93.88
05/31/2019 16:32	9051429-MS1	91.81	89.60	90.41	93.88	84.19	88.09	88.78	87.81	89.40	94.30	93.49	93.55	93.86
05/31/2019 16:37	A9E0933-01	91.53	91.28	91.57	91.99	87.36	91.04	89.92	90.84	91.08	94.87	92.58	97.51	95.87
05/31/2019 16:41	9051429-MSD1	91.00	92.60	92.29	91.85	88.60	91.73	89.06	91.06	90.01	94.45	91.44	96.32	93.75
05/31/2019 16:46	9051472-BLK1	93.04	93.07	92.23	92.96	89.86	92.82	91.21	93.35	93.57	94.49	93.42	96.55	95.23
05/31/2019 16:50	9051472-BS1	93.03	91.33	89.86	93.04	87.62	90.05	89.78	89.35	91.18	93.70	93.74	94.27	94.26
05/31/2019 16:54	A9E0550-02RE1	96.76	89.17	91.61	97.24	82.98	90.28	90.23	86.86	88.83	92.99	93.36	94.25	95.84
05/31/2019 16:58	9E31026-CCV1	93.61	92.51	91.82	91.80	89.24	90.83	89.13	90.70	88.95	94.84	92.19	95.29	93.21
05/31/2019 17:03	9E31026-CCB1	96.94	88.04	94.16	94.72	84.89	93.09	92.43	94.57	94.51	96.74	95.33	98.26	97.23
05/31/2019 17:07	A9E0550-04RE1	97.29	91.89	91.07	96.16	84.84	90.47	90.34	87.61	88.01	94.50	93.84	91.35	92.18
05/31/2019 17:14	9051472-DUP1	97.14	94.74	91.29	94.85	86.39	89.51	88.03	85.00	85.97	93.12	92.52	90.25	90.74
05/31/2019 17:18	9051472-MS1	98.10	91.88	89.33	94.22	83.34	87.91	88.37	83.74	84.93	91.95	91.71	89.18	89.80
05/31/2019 17:23	A9E0768-03RE1	116.76	98.74	94.85	103.69	80.29	87.55	90.12	79.42	83.31	86.87	89.11	77.69	80.87
05/31/2019 17:27	A9E0890-02	111.54	103.72	100.82	101.21	95.40	98.06	96.56	95.75	95.46	97.83	96.81	95.75	95.80
05/31/2019 17:31	A9E0890-03	102.91	98.82	95.78	95.36	89.48	91.86	90.31	90.90	90.92	95.01	94.21	93.67	94.56
05/31/2019 17:35	9051405-BLK1	99.29	94.21	91.92	92.71	88.15	90.06	88.46	91.09	90.19	94.11	92.22	94.75	95.35
05/31/2019 17:40	9051405-BS1	89.26	90.28	89.77	84.12	84.71	88.08	79.41	87.87	80.52	92.39	84.79	93.42	86.59
05/31/2019 17:44	A9E0667-01	93.58	87.62	87.23	87.28	83.08	86.39	84.61	86.91	85.49	92.04	89.62	94.17	93.43
05/31/2019 17:48	A9E0668-01	92.94	85.59	86.29	87.74	81.90	86.32	84.02	87.14	85.86	92.19	89.53	94.20	94.02
05/31/2019 17:52	9E31026-CCV2	92.86	88.13	87.58	88.45	83.21	87.24	85.30	86.76	85.95	92.08	90.17	92.83	93.04
05/31/2019 17:56	9E31026-CCB2	94.05	88.53	89.09	89.36	84.38	88.35	86.33	90.02	88.22	93.52	91.24	95.61	94.26
05/31/2019 18:01	A9E0685-01	89.97	80.78	83.43	85.77	77.42	83.35	81.73	81.82	80.70	90.02	88.49	89.49	89.50
05/31/2019 18:05	A9E0688-01	93.30	88.81	85.48	88.69	84.38	84.92	84.25	81.49	82.67	88.60	88.85	88.12	89.42
05/31/2019 18:09	A9E0690-01	94.47	90.09	87.24	91.33	82.92	86.36	85.72	82.47	82.09	88.92	88.12	87.29	87.32
05/31/2019 18:13	A9E0691-01	113.70	81.23	86.68	94.02	67.03	74.82	80.32	66.19	71.66	71.24	71.45	58.67	59.30
05/31/2019 18:18	A9E0707-03	126.14	111.41	108.05	109.07	99.11	100.70	98.96	97.23	95.13	96.58	93.66	91.77	91.33
05/31/2019 18:22	9051405-MS1	114.20	104.86	104.29	102.73	93.37	97.87	94.71	94.78	91.04	96.76	91.85	91.69	89.62
05/31/2019 18:26	9051405-MSD1	108.46	99.56	97.13	100.28	90.02	93.36	92.61	90.40	90.62	93.15	92.95	89.16	91.23
05/31/2019 18:30	A9E0707-08	99.77	94.20	91.95	90.29	88.18	90.26	87.61	89.90	88.55	92.03	89.19	92.43	92.17
05/31/2019 18:35	A9E0714-02	109.51	87.62	91.17	96.21	78.85	86.58	90.08	79.39	82.53	84.52	85.81	75.54	78.30
05/31/2019 18:39	A9E0726-01	105.76	97.83	95.22	95.81	89.72	92.14	91.18	87.01	86.80	91.08	90.33	86.13	87.57
05/31/2019 18:43	9E31026-CCV3	99.40	93.29	91.71	91.77	87.45	90.54	88.56	88.11	88.12	91.95	89.13	90.57	91.00
05/31/2019 18:47	9E31026-CCB3	96.54	94.74	89.51	89.41	85.18	88.93	86.40	89.37	87.46	91.66	88.55	92.05	90.95
05/31/2019 18:52	9E31026-CCB4	95.72	90.43	90.61	89.40	84.90	88.86	85.98	90.19	88.84	92.70	89.49	94.09	91.57
05/31/2019 18:56	A9E0726-02	94.44	84.76	85.23	88.13	79.19	85.00	84.26	81.57	82.38	88.14	87.54	85.92	86.54
05/31/2019 19:00	A9E0726-03	95.49	87.08	86.48	89.35	80.65	85.50	84.79	81.47	82.51	88.30	87.29	85.89	85.79
05/31/2019 19:04	A9E0726-04	97.20	86.94	87.34	91.28	80.55	85.97	86.01	82.17	83.30	88.61	88.37	85.98	87.14
05/31/2019 19:08	A9E0726-05	96.93	86.70	85.65	91.34	80.49	84.78	85.18	81.11	83.19	87.89	87.70	85.24	86.61
05/31/2019 19:13	A9E0760-01	95.60	87.97	87.98	88.24	82.86	86.78	84.61	86.61	85.62	91.10	87.93	93.24	91.34
05/31/2019 19:17	A9E0760-02	91.42	83.90	83.93	86.07	78.60	83.36	81.63	81.58	81.61	88.72	87.00	89.67	88.13
05/31/2019 19:21	A9E0769-01	91.22	83.87	84.98	85.95	80.47	84.42	82.40	84.19	83.40	89.76	87.19	91.84	90.42
05/31/2019 19:25	A9E0779-01	93.47	83.57	84.71	88.09	76.94	82.99	82.94	80.01	81.07	88.39	86.95	85.50	85.36
05/31/2019 19:29	A9E0780-01	111.04	84.64	90.63	96.08	74.56	84.00	88.15	76.80	80.68	82.30	83.51	72.57	75.51
05/31/2019 19:34	9051405-MS2	112.66	90.00	90.81	96.73	77.76	82.87	86.75	75.47	79.26	81.09	82.20	70.76	73.81
05/31/2019 19:38	9E31026-CCV4	110.26	100.21	97.27	98.37	91.89	93.77	93.29	90.61	91.65	91.45	91.29	88.87	90.88
05/31/2019 19:42	9E31026-CCV5	101.41	91.03	89.95	91.49	85.41	88.14	88.35	86.11	87.30	89.19	88.69	88.42	89.42
05/31/2019 19:46	9E31026-CCB5	97.38	89.78	88.49	89.89	83.82	88.34	86.31	87.93	87.91	90.54	87.78	91.61	90.56
05/31/2019 19:50	9E31026-CCB6	94.74	88.18	88.22	86.56	82.39	86.84	84.21	87.09	86.27	90.33	86.63	91.45	89.19
05/31/2019 19:55	9051440-BLK1	91.74	85.27	85.09	85.54	79.62	84.47	82.47	85.17	85.11	89.08	86.39	90.15	89.35
05/31/2019 19:59	9051440-BS1	93.91	83.67	85.80	88.49	79.63	84.83	85.07	84.51	85.68	89.53	88.56	90.08	90.80
05/31/2019 20:03	A9E0919-01	95.21	87.82	89.27	93.62	79.29	85.17	86.06	84.01	86.55	91.01	90.70	90.28	90.83
05/31/2019 20:07	A9E0919-02	94.26	88.58	89.88	92.90	80.43	85.72	85.48	85.26	86.15	91.45	89.72	90.79	90.07
05/31/2019 20:12	A9E0919-03	96.03	90.60	91.16	94.47	80.84	86.77	87.14	86.43	87.73	92.55	90.71	91.84	90.79
05/31/2019 20:16	A9E0919-04	96.55	90.66	91.21	95.81	81.61	86.68	87.66	86.26	88.61	91.84	92.07	91.60	91.99
05/31/2019 20:20	9051440-DUP1	95.49	91.26	91.11	94.98	81.63	86.52	87.51	85.89	87.45	91.41	91.00	90.26	90.48
05/31/2019 20:24	9051440-MS1	95.92	90.12	90.46	95.85	81.02	85.20	86.86	84.86	86.70	90.65	90.66	88.99	89.09
05/31/2019 20:28	A9E0919-05	96.00	91.89	91.92	94.23	82.85	87.17	87.59	86.52	87.81	91.96	90.78	91.16	90.59
05/31/2019 20:33	A9E0919-06	97.04	93.22	91.29	97.56	83.52	86.80	88.28	86.90	88.86	92.04	91.63	91.35	91.20
05/31/2019 20:37	9E31026-CCV6	96.65	90.70	89.84	93.64	85.13	88.73	88.43	87.79	87.95	91.14	90.04	90.46	91.00
05/31/2019 20:41	9E31026-CCB7	97.22	92.42	90.91	93.60	87.93	90.27	89.05	90.16	90.32	91.79	89.22	93.00	90.77
05/31/2019 20:45	A9E0919-07	96.46	90.62	91.60	96.13	81.58	87.07	88.88	86.65	89.25	91.11	91.46	90.10	91.45
05/31/2019 20:50	A9E0919-08	95.71	93.35	91.97	95.18	84.50	87.86	88.59	87.26	88.60	92.08	90.43	91.94	91.19
05/31/2019 20:54	A9E0919-09	95.58	92.12	92.16	96.43	83.64	87.34	88.59	86.88	88.68	91.54	90.75	90.06	90.63
05/31/2019 20:58	A9E0919-10	95.75	91.74	91.02	96.21	83.57	87.11	89.17	86.12	88.97	91.73	91.15	90.87	90.95
05/31/2019 21:02	A9E0929-01	96.19	91.96	92.63	96.54	84.26	88.37	89.47	87.79	89.60	92.57	90.99	91.65	90.96
05/31/2019 21:06	A9E0929-02	97.29	93.72	92.40	97.24	85.68	89.11	90.65	89.06	90.25	91.81	91.75	92.25	91.83
05/31/2019 21:11	A9E0929-03	96.00	97.23	92.45	97.34	87.90	89.13	89.40	88.52	89.44	91.39	90.55	90.85	90.17
05/31/2019 21:15	A9E0932-01	95.22	94.77	91.03	97.28	84.47	86.22	88.74	85.78	88.82	90.28	90.75	89.06	90.31
05/31/2019 21:19	A9E0952-01	94.59	91.12	90.17	95.88	83.19	86.40	87.90	86.03	87.85	91.18	90.02	90.53	90.23
05/31/2019 21:23	9051440-MSD1	96.60	92.55	92.23	94.73	87.05	90.60	90.56	90.15	89.86	91.90	89.73	93.03	90.81
05/31/2019 21:27	9E31026-CCV7	96.22	95.03	91.98	92.76	89.14	89.90	89.07	88.92	88.17	91.91	89.18	91.32	89.34
05/31/2019 21:32	9E31026-CCB8	98.05	94.17	93.10	95.19	88.58	91.03	90.86	91.29	91.64	91.85	90.15	92.07	90.96
05/31/2019 21:36	9E31026-CCV8	95.64	90.56	88.91	93.32	84.92	87.42	88.26	85.65	87.73	89.12	88.90	88.23	88.48
05/31/2019 21:40	9E31026-CCB9	96.33	91.82	93.74	93.16	86.50	91.87	89.43	92.02	90.05	92.89	88.52	92.98	89.79
05/31/2019 21:44	9E31026-CRL4	97.39	93.62	91.19	95.43	88.49	90.63	91.02	90.53	91.05	91.39	89.35	90.94	90.34
05/31/2019 21:49	9E31026-CRL5	97.95	95.04	93.79	94.90	89.67	91.83	91.25	91.65	91.53	92.41	89.27	91.91	90.94
05/31/2019 21:53	9E31026-CRL6	98.50	94.28	93.10	95.78	89.74	92.08	91.38	91.16	91.53	91.36	89.82	91.80	91.39
05/31/2019 21:57	9E31026-CRL7	100.21	94.59	93.42	97.33	90.36	91.75	93.40	91.32	92.96	91.65	91.06	92.18	92.44
05/31/2019 22:01	rinse	98.25	96.60	93.67	95.56	90.15	92.22	91.46	91.65	91.14	91.93	89.71	91.74	90.68
05/31/2019 22:06	rinse	98.08	94.38	93.48	96.19	90.11	91.34	90.65	90.23	91.02	91.46	89.45	90.62	89.79

APEX LABORATORIES, LLC
6700 SW Sandburg St. Tigard OR 97223 phone 503-718-2323

Cyanide – Total (aqueous) by EPA 335.4

Benchsheet Data & Analysis Sequence Data (Includes Calibration Unless noted)

Batch 9051383

Sequence 9E30019 (A9E0902-01)

Apex Laboratories

PREPARATION BENCH SHEET

BATCH #: 9051383 (Solid)

Prep Method: ASTM D7511-12mod (S)

JUN 2 1 2019

#	Lab Number		Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surr.	Sample ID	Extraction Comments	pH <2	pH other	pH >11
	9051383-BLK1		QC	05/30/19 06:59	2.5	50									
	9051383-BS1		QC	05/30/19 06:59	2.5	50	A19B182		100						
	A9E0902-01	A	Cyanide, Total (ASTM D7511, OIA)	05/30/19 06:59	2.5654	50					2708-190524-014				
	9051383-MS1		QC	05/30/19 06:59	2.5765	50	A19E319	A9E0902-01	200						
	9051383-MSD1		QC	05/30/19 06:59	2.5687	50	A19E319	A9E0902-01	200						

Standards/Reagents

Reagent(s)

Std ID	Exp. Date	Description
A19C292	03/26/24	Syringe Filters 0.45um.
A19D009	09/29/19	Total CN-TA1 working
A19D010	09/29/19	Total CN-TA2/SAR-working
A19E298	11/20/19	0.1 N NaOH

Analyte Spike(s)

Std ID	Exp. Date	Description
A19B182	07/07/19	Cyanide working -2- TOTAL
A19E319	09/06/19	Cyanide working -1-

Surrogate(s)

Std ID	Exp. Date	Description

JKP 5-30-19
Prepared By: Date

Reviewed By: 5/30/19 Date

ELEMENT SEQUENCE LOG

Apex Laboratories

JUN 2 4 2019

Sequence: **9E30019** Instrument: **OIA FS3000-2**

Date: **05/30/19 08:42** Calibration: **A9E3002**

#	Lab Number	Matrix	Analysis	Client	Due	Batch	ISTD ID	STD ID
1	9E30019-CAL1	Water	QC	QC				
2	9E30019-CAL2	Water	QC	QC				A19E320
3	9E30019-CAL3	Water	QC	QC				A19E321
4	9E30019-CAL4	Water	QC	QC				A19E322
5	9E30019-CAL5	Water	QC	QC				A19E323
6	9E30019-CAL6	Water	QC	QC				A19E324
7	9E30019-CAL7	Water	QC	QC				A19E325
8	9E30019-ICV1	Water	QC	QC				A19E327
9	9E30019-ICB1	Water	QC	QC				JKP 5-30-19
10	9E30019-ICV2	Water	QC	QC				A19E327
11	9E30019-ICB2	Water	QC	QC				
12	9051387-BS2	Water	QC	QC		9051387		
13	9051387-BLK1	Water	QC	QC		9051387		
14	9051387-BS1	Water	QC	QC		9051387		
15	A9E0837-08	Water	Cyanide, Total (ASTM D7511, OIA)		06/03/19	9051387		
16	9051387-MS1	Water	QC	QC		9051387		
17	9051387-MSD1	Water	QC	QC		9051387		
18	A9E0872-01	Water	Cyanide, Total (ASTM D7511, OIA)		06/11/19	9051387		
19	9051383-BLK1	Solid	QC	QC		9051383		
20	9051383-BS1	Solid	QC	QC		9051383		
21	A9E0902-01	Solid	Cyanide, Total (ASTM D7511, OIA)	Hahn and Associates	06/03/19	9051383		
22	9E30019-CCV1	Water	QC	QC				A19E327
23	9E30019-CCB1	Water	QC	QC				
24	9051383-MS1	Solid	QC	QC		9051383		
25	9051383-MSD1	Solid	QC	QC		9051383		
26	9E30019-CCV2	Water	QC	QC				A19E327
27	9E30019-CCB2	Water	QC	QC				
28	9051387-MS2	Water	QC	QC		9051387		
29	9051387-MSD2	Water	QC	QC		9051387		
30	9E30019-CCV3	Water	QC	QC				A19E327
31	9E30019-CCB3	Water	QC	QC				

Data Entered By: JKP 5-30-19

Data Reviewed By: 6/24/19

Comments:

Run Results Report

Apex Laboratories OIA FS3000-2

Operator Name	jkp
Operator ID	jkp
Platform	FS 3000
Software Rev Code	234
Data system ID	57
Result path	C:\FLOW_4\9E30019.RST
Sample table path	C:\FLOW_4\totcn50.tbl
Method path	C:\FLOW_4\totcn50.mth
Date acquired	30-May-19
Time acquired	13:42

	TOTAL CN 50ppb					
Name	Response	Calc [ppb]	Flags	Mean Response	Mean Calc [ppb]	RSD
Sync 25 ppb	1057608	25.131	OL			
Sync 25 ppb	1112604	26.401				
Sync 25 ppb	1087239	25.815				
(Statistics)				1099921	26.108	2.5%
Carryover	12250	1.073				
Baseline	-26044	0.194	BL			
Cal 0.0 ppb	-46190	-0.268	LO			
Cal 1.0 ppb	1099	0.817				
Cal 2.0 ppb	48072	1.894				
Cal 5.0 ppb	173576	4.775				
Cal 10.0 ppb	396549	9.898				
Cal 25.0 ppb	1056927	25.115				
Cal 50.0 ppb	2129933	49.977				
Blank	-3082	0.721				
Read Baseline	-14533	0.458	BL			
9E30019-ICV1	-27411	0.163				
9E30019-ICB1	-24389	0.232				
Read Baseline	10650	1.036	BL			
9051387-BS2	n/m	n/m	n/m			
9051387-BLK1	n/m	n/m	n/m			
9051387-BS1	n/m	n/m	n/m			
Read Baseline	n/m	n/m	n/m			
A9E0837-08@5	n/m	n/m	n/m			
9051387-MS1@5	n/m	n/m	n/m			

L4% dl CMW 5/30/19

ICV failed. See ICV2 JKP 5-30-19

JKP 5-30-19

Run Results Report

Apex Laboratories OIA FS3000-2

Operator Name	jkp
Operator ID	jkp
Platform	FS 3000
Software Rev Code	234
Data system ID	57
Result path	C:\FLOW_4\9E30019.RST
Sample table path	C:\FLOW_4\totcn50.tbl
Method path	C:\FLOW_4\totcn50.mth
Date acquired	30-May-19
Time acquired	13:42

Date	Time	Cup	Name
30-May-19	12:57	106	Sync 25 ppb
30-May-19	12:59	106	Sync 25 ppb
30-May-19	13:01	106	Sync 25 ppb (Statistics)
30-May-19	13:03	0	Carryover
30-May-19	13:05	0	Baseline
30-May-19	13:07	101	Cal 0.0 ppb
30-May-19	13:09	102	Cal 1.0 ppb
30-May-19	13:11	103	Cal 2.0 ppb
30-May-19	13:13	104	Cal 5.0 ppb
30-May-19	13:15	105	Cal 10.0 ppb
30-May-19	13:17	106	Cal 25.0 ppb
30-May-19	13:19	107	Cal 50.0 ppb
30-May-19	13:21	0	Blank
30-May-19	13:23	0	Read Baseline
30-May-19	13:25	108	9E30019-ICV1
30-May-19	13:27	0	9E30019-ICB1
30-May-19	13:29	0	Read Baseline
30-May-19	13:31	109	9051387-BS2
30-May-19	13:33	110	9051387-BLK1
30-May-19	13:35	111	9051387-BS1
30-May-19	13:37	0	Read Baseline
30-May-19	13:39	112	A9E0837-08@5
30-May-19	13:41	113	9051387-MS1@5

JKP
5-30-19

TOTAL CN 50ppb:Calibration 1: Peak 6-23

File name: C:\FLOW_4\9E30019.RST
Date: 30-May-19
Operator: jkp

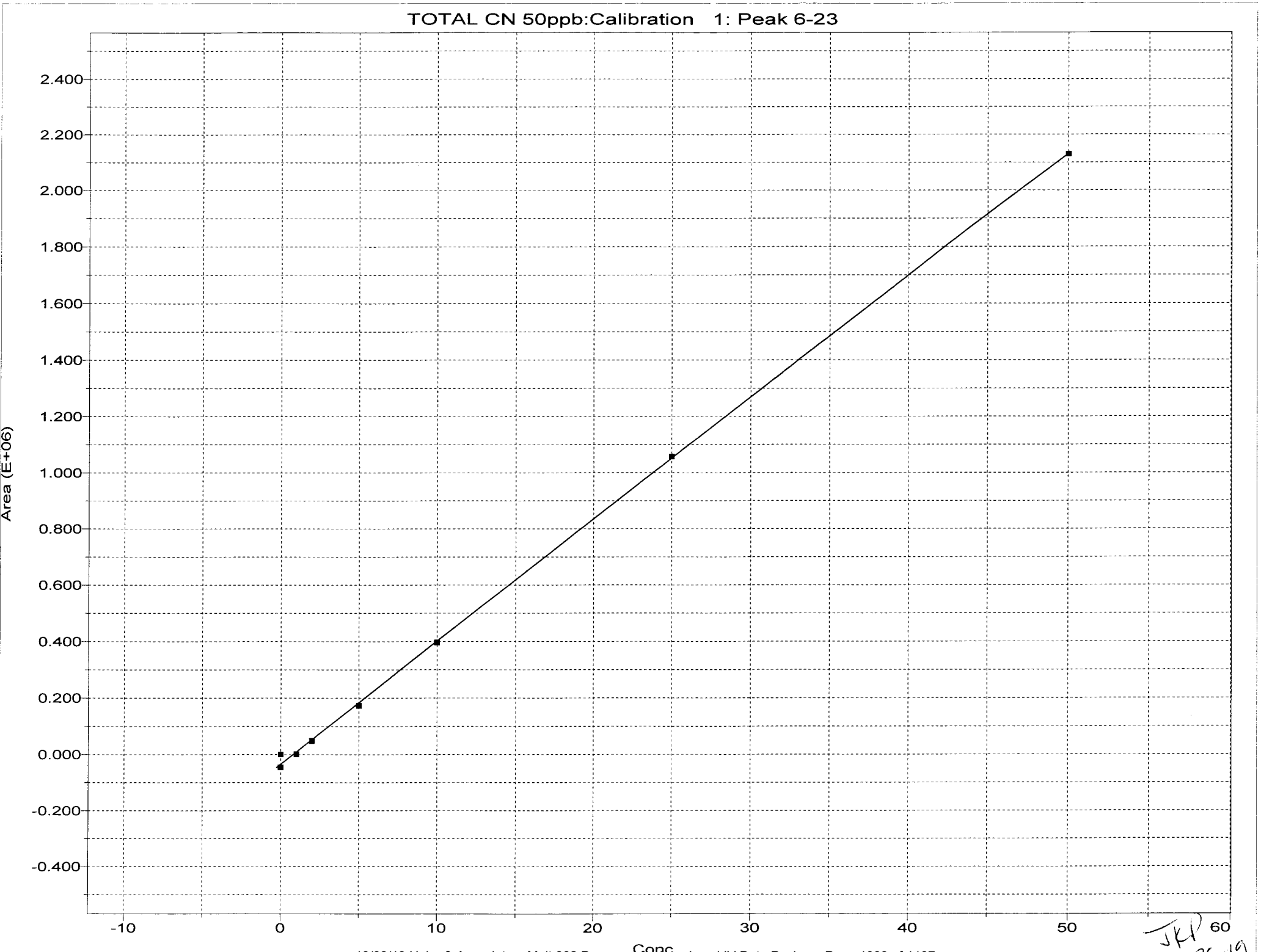
*	Name	Conc	Area
*	Cal 0.0 ppb	0.000000	-46190.351562
*	Cal 1.0 ppb	1.000000	1099.275513
*	Cal 2.0 ppb	2.000000	48072.230469
*	Cal 5.0 ppb	5.000000	173576.031250
*	Cal 10.0 ppb	10.000000	396548.593750
*	Cal 25.0 ppb	25.000000	1056927.000000
*	Cal 50.0 ppb	50.000000	2129933.000000

Calib Coef:
x=cyy+by+a
a: (intercept) 7.9157e-01
b: 2.2936e-05
c: 7.3605e-14

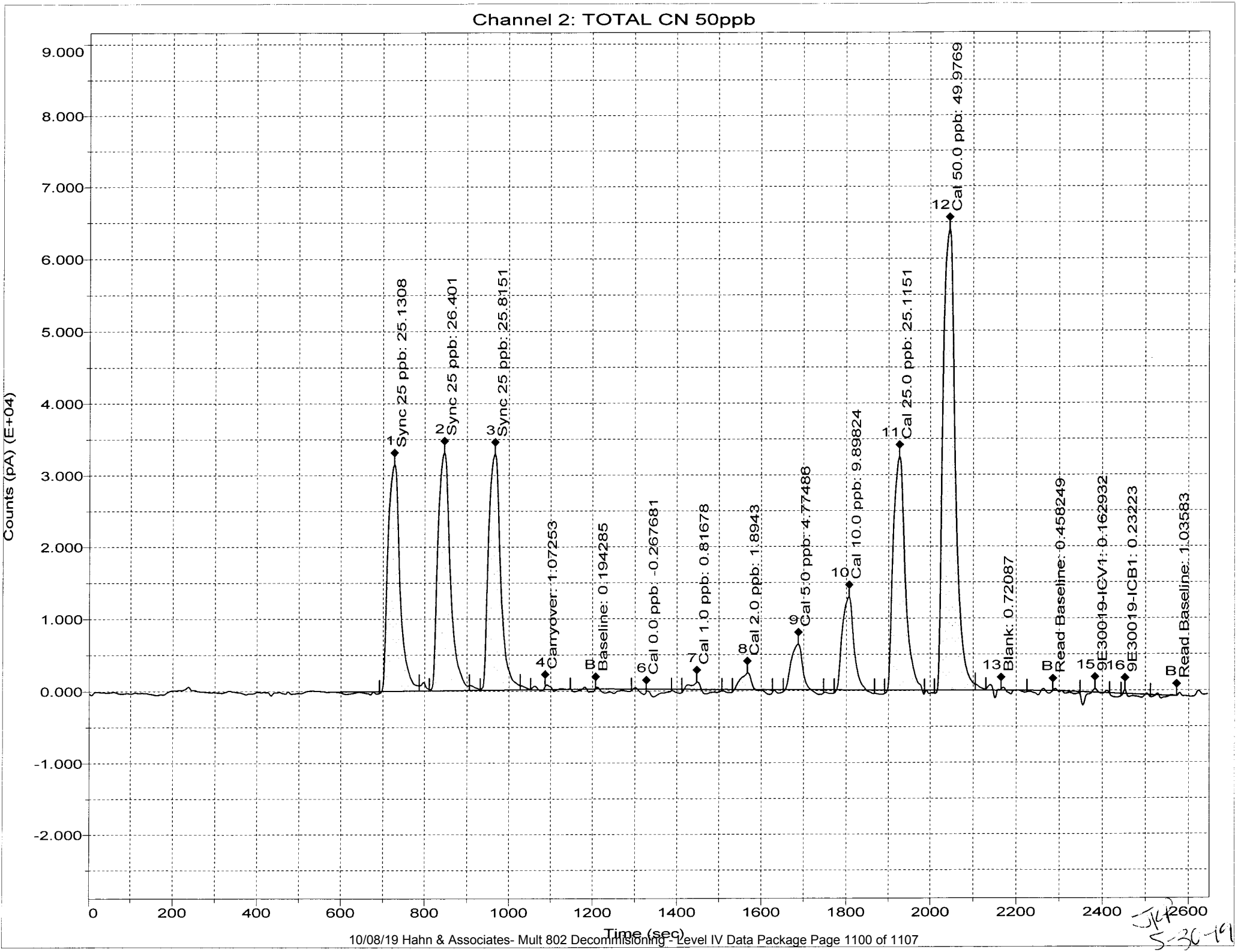
Corr Coef: 0.999812

Carryover: n/a

No Drift Peaks


TOTAL CN 50ppb:Calibration 1: Peak 6-23
Area (E+06)
2.400
2.200
2.000
1.800
1.600
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
-0.200
-0.400
-10
0
10
20
30
40
50
60
Conc

JKP 5.20.19


Channel 2: TOTAL CN 50ppb
Counts (pA) (E+04)
Time (sec)
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0.000
-1.000
-2.000
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
1 Sync 25 ppb: 25.1308
2 Sync 25 ppb: 26.401
3 Sync 25 ppb: 25.8151
4 Carryover: 1.07253
B Baseline: 0.194285
6 Cal 0.0 ppb: -0.267681
7 Cal 1.0 ppb: 0.81678
8 Cal 2.0 ppb: 1.8943
9 Cal 5.0 ppb: 4.77488
10 Cal 10.0 ppb: 9.89824
11 Cal 25.0 ppb: 25.1151
12 Cal 50.0 ppb: 49.9769
13 Blank: 0.72087
B Read Baseline: 0.458249
15 9E30019-ICV1: 0.162932
16 9E30019-ICB1: 0.23223
B Read Baseline: 1.03583

JKP 5-30-19

Run Results Report

Apex Laboratories OIA FS3000-2

Operator Name	jkp
Operator ID	jkp
Platform	FS 3000
Software Rev Code	234
Data system ID	57
Result path	C:\FLOW_4\9E30019B.RST
Sample table path	C:\FLOW_4\totcn50.tbl
Method path	C:\FLOW_4\totcn50.mth
Date acquired	30-May-19
Time acquired	15:44

TOTAL CN 50ppb

Name	Response	Calc [ppb]	Flags	Mean Response	Mean Calc [ppb]	RSD
Sync 25 ppb	1109233	26.323	OL			
Sync 25 ppb	1132224	26.854				
Sync 25 ppb	1144821	27.145				
(Statistics)				1138523	27.000	1.58%
Carryover	59773	2.163				
Baseline	5134	0.909	BL			
Blank	24050	1.343				
Read Baseline	-17147	0.398	BL			
9E30019-ICV1 2	1155097	27.383				
9E30019-ICB1 2	61297	2.198				
Read Baseline	1168	0.818	BL			
9051387-BS2	53837	2.027				
9051387-BLK1	-41792	-0.167	LO			
9051387-BS1	1160840	27.515				
Read Baseline	-12441	0.506	BL			
A9E0837-08@5	1260859	29.827				
9051387-MS1@5	2272603	53.295				
9051387-MSD1@5	2346156	55.007	HI			
A9E0872-01	182723	4.985	FL			
Read Baseline	-38760	-0.097	BL			
9051383-BLK1	-32802	0.039				
9051383-BS1	834590	19.985				
A9E0902-01@10	250597	6.544				
Read Baseline	-29824	0.108	BL			
9E30019-CCV1	1116168	26.483				
9E30019-CCB1	-10024	0.562				
Read Baseline	-28969	0.127	BL			

JKP 5-30-19

< 3% JKP 5/30/19

JKP 5-30-19

Result path	C:\FLOW_4\9E30019B.RST
Sample table path	C:\FLOW_4\totcn50.tbl
Method path	C:\FLOW_4\totcn50.mth
Date acquired	30-May-19
Time acquired	15:44

TOTAL CN 50ppb

Name	Response	Calc [ppb]	Flags	Mean Response	Mean Calc [ppb]	RSD
9051383-MS1@10	320665	8.154				
Read Baseline	4400	0.892	BL			
9051383-MSD1@10	341079	8.623				
Read Baseline	-31507	0.069	BL			
9E30019-CCV2	1099779	26.105				
9E30019-CCB2	-22313	0.280				
Read Baseline	-57966	-0.538	BL			
9051387-MS2@10	1517938	35.776				
9051387-MSD2@10	1718222	40.417				
Read Baseline	9913	1.019	BL			
9E30019-CCV3	1105079	26.227				
9E30019-CCB3	19159	1.231				
Read Baseline	1980	0.837	BL			

JKP
5-30-19

Run Results Report

Apex Laboratories OIA FS3000-2

Operator Name	jkp
Operator ID	jkp
Platform	FS 3000
Software Rev Code	234
Data system ID	57
Result path	C:\FLOW_4\9E30019B.RST
Sample table path	C:\FLOW_4\totcn50.tbl
Method path	C:\FLOW_4\totcn50.mth
Date acquired	30-May-19
Time acquired	15:44

Date	Time	Cup	Name
30-May-19	14:01	106	Sync 25 ppb
30-May-19	14:03	106	Sync 25 ppb
30-May-19	14:05	106	Sync 25 ppb (Statistics)
30-May-19	14:07	0	Carryover
30-May-19	14:09	0	Baseline
30-May-19	14:11	0	Blank
30-May-19	14:13	0	Read Baseline
30-May-19	14:15	108	9E30019-ICV1
30-May-19	14:17	0	9E30019-ICB1
30-May-19	14:19	0	Read Baseline
30-May-19	14:21	109	9051387-BS2
30-May-19	14:23	110	9051387-BLK1
30-May-19	14:25	111	9051387-BS1
30-May-19	14:27	0	Read Baseline
30-May-19	14:29	112	A9E0837-08@5
30-May-19	14:31	113	9051387-MS1@5
30-May-19	14:33	114	9051387-MSD1@5
30-May-19	14:35	115	A9E0872-01
30-May-19	14:37	0	Read Baseline
30-May-19	14:39	116	9051383-BLK1
30-May-19	14:41	117	9051383-BS1
30-May-19	14:43	118	A9E0902-01@10
30-May-19	14:45	0	Read Baseline
30-May-19	14:47	108	9E30019-CCV1
30-May-19	14:49	0	9E30019-CCB1
30-May-19	14:51	0	Read Baseline

JKP
5-30-19

Result path	C:\FLOW_4\9E30019B.RST
Sample table path	C:\FLOW_4\totcn50.tbl
Method path	C:\FLOW_4\totcn50.mth
Date acquired	30-May-19
Time acquired	15:44

Date	Time	Cup	Name
30-May-19	14:53	119	9051383-MS1@10
30-May-19	14:55	0	Read Baseline
30-May-19	14:57	120	9051383-MSD1@10
30-May-19	14:59	0	Read Baseline
30-May-19	15:01	108	9E30019-CCV2
30-May-19	15:03	0	9E30019-CCB2
30-May-19	15:05	0	Read Baseline
30-May-19	15:20	113	9051387-MS2@10
30-May-19	15:22	114	9051387-MSD2@10
30-May-19	15:24	0	Read Baseline
30-May-19	15:26	108	9E30019-CCV3
30-May-19	15:28	0	9E30019-CCB3
30-May-19	15:30	0	Read Baseline

JMP
5-30-19

TOTAL CN 50ppb:Calibration None

File name: C:\FLOW_4\9E30019B.RST
Date: 30-May-19
Operator: jkp

*	Name	Conc	Area
*	<Loaded>	0.000000	-46190.398438
*	<Loaded>	1.000000	1099.280029
*	<Loaded>	2.000000	48072.199219
*	<Loaded>	5.000000	173576.000000
*	<Loaded>	10.000000	396549.000000
*	<Loaded>	25.000000	1056930.000000
*	<Loaded>	50.000000	2129930.000000

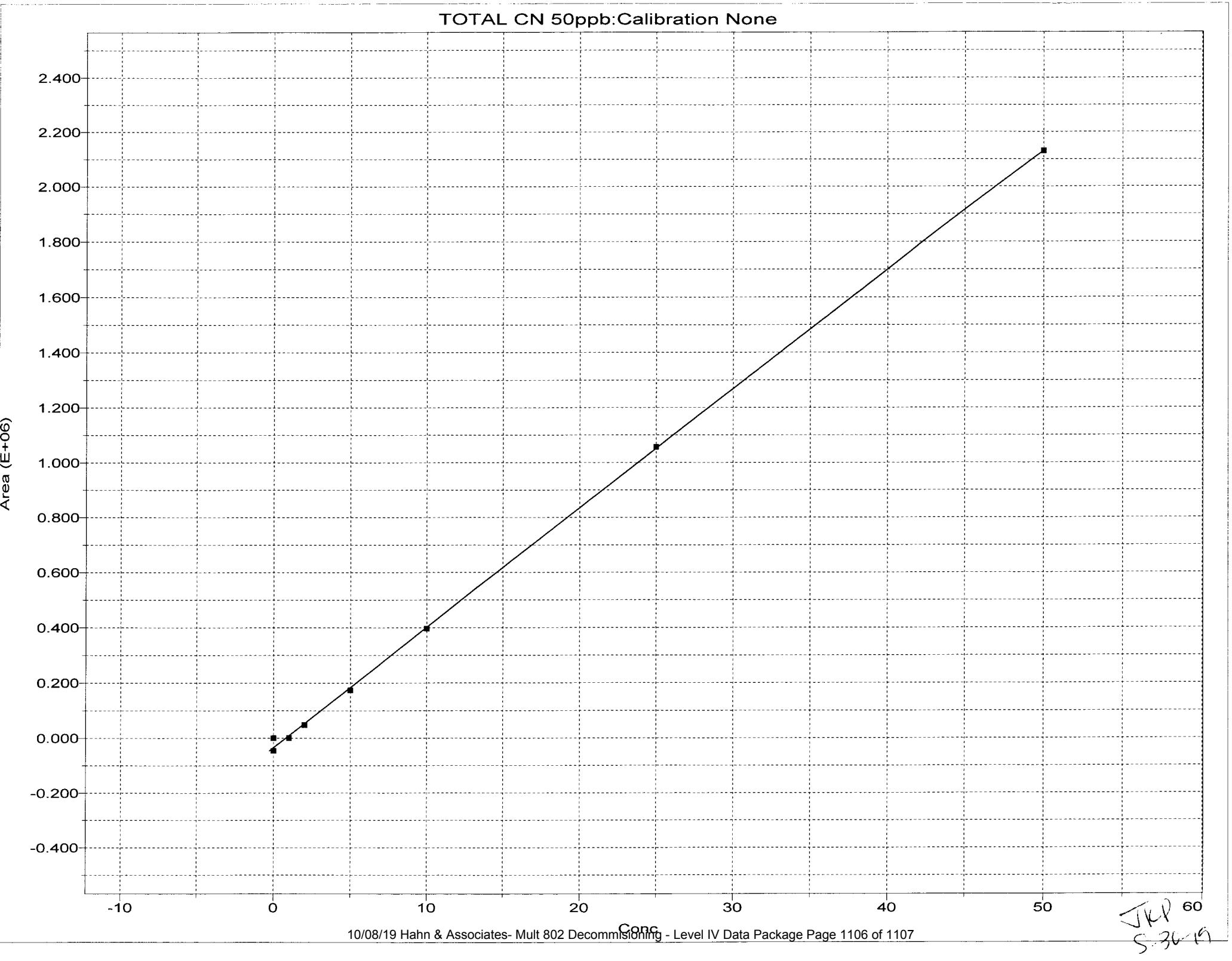
Calib Coef:
x=cyy+by+a
a: (intercept) 7.9157e-01
b: 2.2935e-05
c: 7.3679e-14

Corr Coef: 0.999812

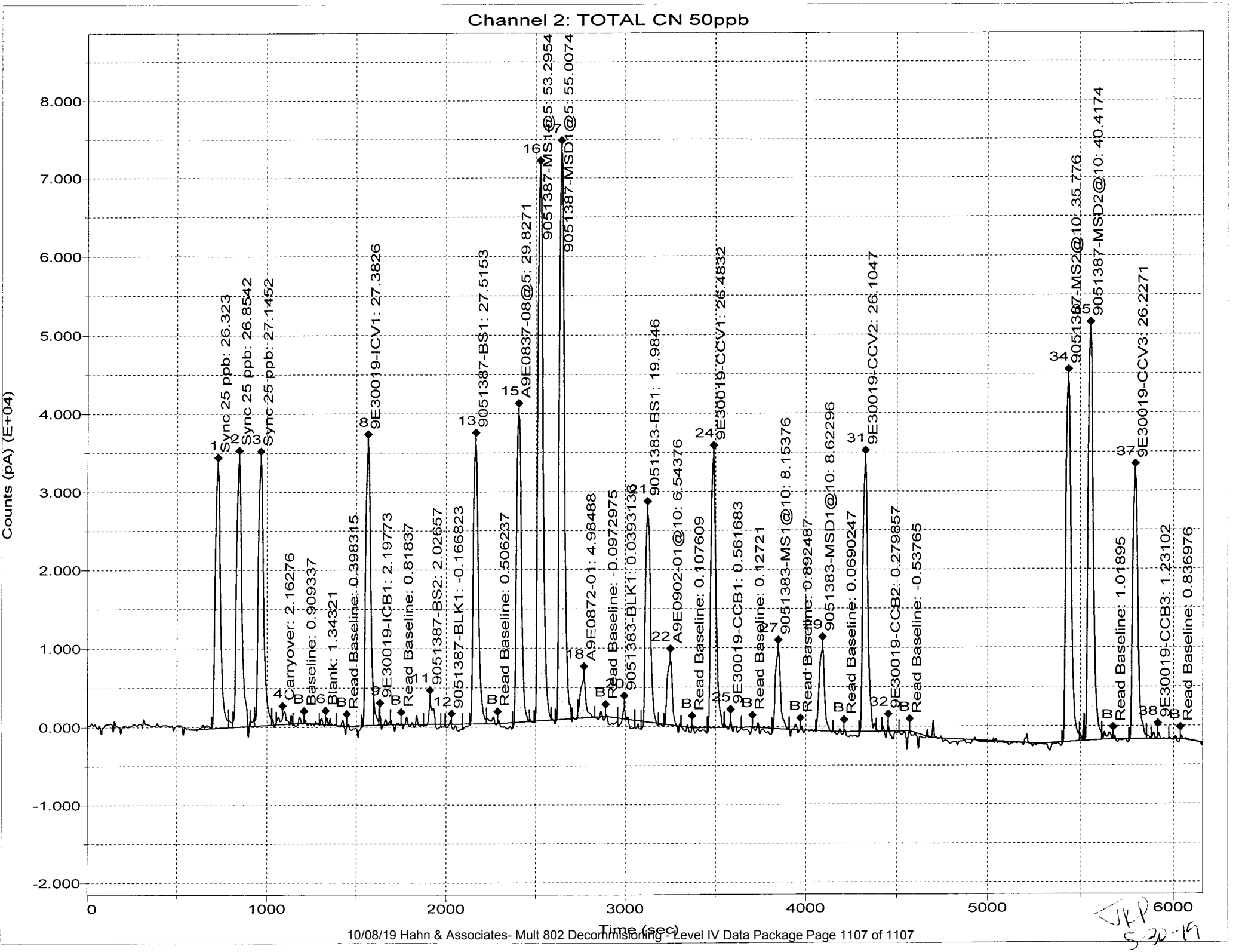
Carryover: n/a

No Drift Peaks

JKP 5-30-19


TOTAL CN 50ppb:Calibration None
Area (E+06)
2.400
2.200
2.000
1.800
1.600
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
-0.200
-0.400
-10
0
10
20
30
40
50
60
Conc

JKP
5.30.19


Channel 2: TOTAL CN 50ppb
Counts (pA) (E+04)
Time (sec)
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0.000
-1.000
-2.000
0
1000
2000
3000
4000
5000
6000
1 Sync 25 ppb: 26.323
2 Sync 25 ppb: 26.8542
3 Sync 25 ppb: 27.1452
4 Carryover: 2.16276
5 Baseline: 0.909337
6 Blank: 1.34321
7 Read Baseline: 0.398315
8 9E30019-ICV1: 27.3826
9 9E30019-ICB1: 2.19773
10 Read Baseline: 0.81837
11 9051387-BS2: 2.02657
12 9051387-BLK1: -0.166823
13 9051387-BS1: 27.5153
14 Read Baseline: 0.506237
15 A9E0837-08@5: 29.8271
16 9051387-MS1@5: 53.2954
17 9051387-MSD1@5: 55.0074
18 A9E0872-01: 4.98488
19 Read Baseline: -0.0972975
20 9051383-BLK1: 0.0393136
21 9051383-BS1: 19.9846
22 A9E0902-01@10: 6.54376
23 Read Baseline: 0.107609
24 9E30019-CCV1: 26.4832
25 9E30019-CCB1: 0.561683
26 Read Baseline: 0.12721
27 9051383-MS1@10: 8.15376
28 Read Baseline: 0.892487
29 9051383-MSD1@10: 8.62296
30 Read Baseline: 0.0690247
31 9E30019-CCV2: 26.1047
32 9E30019-CCB2: 0.279857
33 Read Baseline: -0.53765
34 9051387-MS2@10: 35.776
35 9051387-MSD2@10: 40.4174
36 Read Baseline: 1.01895
37 9E30019-CCV3: 26.2271
38 9E30019-CCB3: 1.23102
39 Read Baseline: 0.836976

JLP 5-30-19